Powder River

Powder River Training Complex
Ellsworth Air Force Base, South Dakota
Environmental Impact Statement

Executive Summary

Final
November 2014

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This volume contains the printed Executive Summary of the Powder River Training Complex (PRTC), Ellsworth Air Force Base (AFB) South Dakota, Final Environmental Impact Statement (EIS). The entire EIS is on the CD in the pocket below and online at www.ellsworth.af.mil. To view the Final EIS (FEIS) on CD, you will need Adobe Acrobat® Reader, which can be downloaded at www.adobe.com. The CD files are read-only, which means you may view and/or print them from the CD.

The CD includes all comments received on the Draft EIS. FEIS Section 2.12.1 summarizes the comments received and explains how substantive comments received on the PRTC proposal were reviewed and responded to by either edits in the Final EIS or by explanation in Appendix G, Draft EIS Comments and Responses. The mitigations described in this Executive Summary are the result of public, agency, and tribal comments on the Draft EIS and other inputs including comments in Appendix H, FAA Circularization Comments and Aeronautical Study Inputs. To review the PRTC FEIS and all comments on the Draft EIS, please do the following:

- Insert the CD in your computer's CD drive and double-click on the file in the CD directory.
- Either scroll through the document or click on a heading in the Table of Contents and it will take you to that section of the FEIS.

A printed copy of the PRTC FEIS can be viewed at Montana State Library, Miles City, Ekalaka, Henry A. Malley Memorial, Fallon County, Rosebud County, Bicentennial, Parmly Billings, Montana; Bowman Regional, Dickinson Area, North Dakota State, North Dakota; Deadwood, Belle Fourche, Grace Balloch Memorial, South Dakota State, Rapid City, South Dakota; Wyoming State, Crook County, Sheridan County Fulmer, Sheridan College Griffith Memorial, Gillette College, Campbell County, Wyoming public libraries.

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EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This Executive Summary (ES) is designed to adequately and accurately summarize the Powder River Training Complex (PRTC) Final Environmental Impact Statement (EIS). This ES is comprised of text extracted from the Final EIS (FEIS) and explains the major conclusions and presents mitigations designed to address issues raised by agencies, the public, and tribes. The ES concludes with a comparison of environmental effects of the FEIS modified alternatives.

ES.2 PURPOSE AND NEED

The overarching purpose of any military force is to be able to successfully conduct combat operations. To accomplish this purpose, the military force must train often and realistically. A trained military force is essential to support national policy and security objectives. Capabilities in the air and capabilities in space can rapidly provide the national command structure a full range of military options to meet national objectives and protect national interests.

The 28th Bomb Wing (28 BW), based at Ellsworth Air Force Base (AFB), South Dakota (SD), currently manages and trains in military training airspace overlying parts of the states of South Dakota, Wyoming, and Montana. The 5th Bomb Wing (5 BW), based at Minot AFB, North Dakota, also trains in the existing military training airspace. B-1 and B-52 aircraft have the range to reach and remain near a target area, combat capability to carry a variety of munitions, sensors for specific targets, responsiveness to be at the scene when needed, and flexibility to relocate and respond to time-sensitive targets. These capabilities make United States (U.S.) Air Force bombers flown by trained aircrews a key asset in national defense.

The proposed PRTC training airspace would provide aircrews the ability to develop conditioned responses to threats and provide additional space for realistic combat training maneuvers. PRTC would improve support for maneuvers and tactics and would improve aircrew combat success and survivability as mission capabilities evolve in response to national security objectives and other global missions. The proposed PRTC includes adjusting the boundaries of existing airspace, creating new airspace, improving pilot training realism, and deploying defensive countermeasures (chaff and flares), occasional large force exercises, and occasional supersonic maneuvers in the new airspace.

The existing Powder River airspace includes the Powder River MOAs, associated Air Traffic Control Assigned Airspace (ATCAA), and an array of electronic threats and simulated targets.

The proposed PRTC builds upon the existing Powder River airspace and adds and reconfigures MOA and ATCAA assets to meet today's and tomorrow's training needs.

Figure ES-1 presents an overview of the modular nature of the proposed PRTC and describes the airspace segments of the PRTC. The summary of factors that drive the need to implement the proposed airspace is presented in Table ES-1.

Table ES-2 summarizes the improved training capabilities of the proposed PRTC depicted on Figure ES-1 and includes the section where the need is addressed in the EIS. Figure 1-3 in the EIS provides an overview of the existing Powder River airspace.

Table ES-1. Summary of Factors That Establish the Need for Expanded Local Airspace

1. B-1 and B-52 missions, aircraft advanced technology capabilities, and training requirements have increased and will continue to increase, and the existing Powder River airspace cannot accommodate these requirements.
2. Commuting consumes limited available aircrew and aircraft flying hours without accomplishing essential training, and distant complexes that theoretically could provide needed training with long commutes have a limited accessibility because locally based aircraft and other users have priority.
3. Flight hours spent commuting consumes excessive fuel and require extensive on-ground maintenance hours for airframes to be ready for the next mission. Commuting long hours to training missions forces aircraft inspections and maintenance sooner than the same number of local training missions. This results in a reduction in available airframes for aircrew training.
4. Combat readiness requires complex multiple mission training, but the existing Powder River airspace accommodates approximately 46 percent of required B-1 aircrew training sorties and 31 percent of required B-52 aircrew training sorties.
5. The existing Powder River airspace does not permit certain required training activities essential to today's combat, such as supersonic flight, training in the deployment of defensive chaff and flares, diversified low-altitude training, or LFEs.
6. The number of users has increased, but the capacity of the existing Powder River airspace does not provide for multiple or dissimilar aircraft training with current sensors and weapon capabilities.
7. The B-1 and B-52 aircrews currently face aircraft and threat systems with ranges far in excess of the existing Powder River airspace. Training must include detecting and reacting to such threats.
8. The existing Powder River airspace has inadequate space and diversity to accommodate necessary B-1 and B-52 training requirements for combat readiness.

LFE = Large Force Exercise

Table ES-2. Summary of PRTC Purposes and Improved Training Capabilities

1. Provides for aircrew training to implement and employ technology upgrades and fulfill both current and anticipated future operational requirements (Section EIS 2.10.5). ***Addresses Need Factors 1, 4, 5, 6, 7, and 8 in*** Table ES-1***.***
2. Enables aircrews to conduct diverse training missions while dramatically reducing commuting hours and issues of accessibility to remote ranges (EIS Section 2.10.5) and provides locally available airspace with scheduling priority for bombers (EIS Section 2.10.5.6). ***Addresses Need Factors 2 and 3 in*** Table ES-1***.***
3. Enables maintenance turnaround of the aircraft to generate adequate training sorties (EIS Section 2.10.5) and provides more efficient use of fuel resulting in realistic training to improve both training quality and quantity. ***Addresses Need Factors 2 and 3 in*** Table ES-1***.***
4. Accommodates approximately 85 percent of required aircrew complex multi-mission training sorties for both B-1 and B-52 aircrews (EIS Section 1.4). ***Addresses Need Factors 1, 4, 5, 6, 7, and 8 in*** Table ES-1***.***
5. Increases the proportion of training time for new and diversified training requirements, including defensive chaff and flares and diversified areas for low-altitude training (EIS Section 2.10.4). During LFEs, not to exceed 10 days per year, supersonic maneuvers permitted above 20,000 feet MSL for B-1 and above 10,000 feet AGL for fighters . ***Addresses Need Factors 1, 4, 5, 6, 7, and 8 in*** Table ES-1***.***
6. Improves integrated aircrew combat training operations by quarterly support of realistic tactics using various aircraft types and expanded network based operations training (EIS Section 2.8.4). ***Addresses Need Factors 4, 5, 6, 7, and 8 in*** Table ES-1***.***
7. Increases the availability of real world training at realistic distances for multiple, concurrent flights of aircraft from Ellsworth and Minot AFBs (EIS Section 2.10.5). ***Addresses Need Factors 4, 5, 6, 7, and 8 in*** Table ES-1***.***
8. Restructures and adds local airspace and capabilities to meet the training needs for the 28th Bomb Wing and Minot AFB 5th Bomb Wing aircrews (EIS Section 1.4). ***Addresses Need Factors 1, 2, 3, 4, 5, 6, 7, and 8 in*** Table ES-1***.***

AFB = Air Force Base; LFE = Large Force Exercise; PRTC = Powder River Training Complex

ES.3 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Aviation and Airspace Use Terminology

Above ground level (AGL): *Altitude expressed in feet measured above the ground surface.*

Mean sea level (MSL): *Altitude expressed in feet measured above average (mean) sea level.*

Flight level (FL): *Manner in which altitudes at 18,000 feet MSL and above are expressed, as measured by a standard altimeter setting of 29.92.*

Visual flight rules (VFR): *A standard set of rules that all pilots, both civilian and military, must follow when not operating under instrument flight rules and in visual meteorological conditions (conditions with sufficient conditions to maintain visual separation from terrain and aircraft). These rules require that pilots remain clear of clouds and avoid other aircraft.*

Instrument flight rules (IFR): *A standard set of rules that all pilots, civilian and military, must follow when operating under flight conditions that are more stringent than visual flight rules. These conditions include operating an aircraft in clouds, operating above certain altitudes prescribed by FAA regulations, and operating in some locations such as major civilian airports. Air traffic control (ATC) agencies ensure separation of all aircraft operating under IFR.*

Source: FAA Pilot/Controller Glossary 2010

Table ES-3 provides an overview of proposed PRTC airspace components for the FEIS Modified Alternative A, Modified Alternative B, Modified Alternative C, and the No- Action Alternative. These Modified Alternatives are detailed in the FEIS Sections 2.5 through 2.9. The Modified Alternatives were developed by the United States Air Force (Air Force) and Federal Aviation Administration (FAA) in response to issues and concerns raised by the public, tribes, and agencies during review of the Draft EIS and consultation under Section 106 of the National Historic Preservation Act (NHPA), as well as part of the Government-to-Government consultation.

The Modified Alternative A would expand the current Powder River Military Operations Area (MOA) into four separate Low and High MOA complexes for day-to-day training and maximum flexibility to accommodate non-military users of the airspace. The Modified Alternative A is the Air Force's Proposed Action and preferred alternative.

A comparison of Table ES-1 and Table ES-2 demonstrates that PRTC would provide bomber aircrews with adequately sized, configured, and available airspace to train as they would fight during worldwide deployment. The long time frame for any future bomber development places an even greater emphasis on B-1 capabilities and training. Bomber aircrews face reduced budgets, a reduced number of airframes, high aircraft utilization requirements, new multi-role taskings, and expanded capabilities to achieve U.S. military objectives. Bomber aircrews must train to be experts with their own weapons systems and to function as an integrated force package with other aircraft to leverage the capabilities of each weapon system and enhance survivability of the collective force. During annual Large Force Exercises (LFEs), which would be scheduled an estimated four hours per day, not more than 10 days per year, one to three days per quarter, the MOA complexes would be connected by the Gap A, Gap B, and Gap C MOAs/Air Traffic Control Assigned Airspace (ATCAAs) so that bomber aircrews and pilots of an estimated 20 aircraft, such as fighters and tankers, would more readily "train as they will fight." PRTC would create training airspaces to realistically train for existing and expected combat conditions. Expanding the existing Powder River airspace to form the PRTC would improve realistic combat training and increase flexibility and availability of limited resources and assets.

Table ES-3. Overview of Proposed PRTC Airspace Components

MOA/ATCAA	*Description*
Powder River 1A, PR-1B, PR-1C, and PR-1D MOA/ATCAA complex	Consists of PR-1A, PR-1B, PR-1C, and PR-1D MOAs, each of which would be stratified vertically into a Low MOA, a High MOA, and an ATCAA[1,2]
Powder River 2 MOA/ATCAA complex (PR-2)	Consists of the PR-2 MOAs, which basically consists of the existing training airspace comprised of Powder River A and B MOAs and associated ATCAAs. PR-2 would be stratified vertically into a Low MOA, a High MOA, and an ATCAA[1]
Powder River 3 MOA/ATCAA complex (PR-3)	Consists of the PR-3 MOAs, which would be stratified vertically into a Low MOA, a High MOA, and an ATCAA[1]
Powder River 4 MOA/ATCAA complex (PR-4)	Consists of the PR-4 MOA, which would be stratified vertically into a Low MOA (Modified Alternative B only), a High MOA, and an ATCAA[1,3]
Gap A MOA/ATCAA	Used only during LFEs and separates PR-1 and PR-2, would consist of a Low MOA, a High MOA, and an ATCAA[1]
Gap B MOA/ATCAA	Used only during LFEs and separates PR-2 and PR-3, would consist of a Low MOA, a High MOA, and an ATCAA[1]
Gap C MOA/ATCAA	Used only during LFEs and separates PR-3 and PR-4, would consist of a Low MOA (Modified Alternative B only), a High MOA, and an ATCAA[1]
Gateway ATCAA	Modified and expanded to create the Gateway West ATCAA and, only during LFEs, a Gateway East ATCAA[4]

Notes:
1. Low MOA = altitudes from 500 feet AGL up to, but not including 12,000 feet MSL; High MOA = altitudes from 12,000 feet MSL up to, but not including 18,000 feet MSL; ATCAA = altitudes from 18,000 feet MSL up to 26,000 feet MSL
2. PR-1A, B, C, and D MOAs are included in Modified Alternatives A and C. Modified Alternative B does not include the Powder River 1A, B, C, D or Gap A MOAs.
3. Modified Alternative B includes PR-4 Low and Gap C Low MOAs. Modified Alternative A does not include a PR-4 Low MOA or a Gap C Low MOA; Modified Alternative C does not include PR-4 or Gap C MOA.
4. Gateway ATCAA does not include a MOA and consists of Gateway West and Gateway East ATCAAs.

ES.4 PRTC FINAL EIS DEVELOPMENT

In August 2010, in accordance with the National Environmental Policy Act (NEPA) and its implementing regulations, the Air Force released a Draft EIS. The Draft EIS presented the potential environmental consequences of the Air Force's proposal to improve training for primarily bomber aircrews assigned to Ellsworth AFB and Minot AFB.

As a result of public, agency, and tribal comments during the 100-day public comment period on the Draft EIS, and the FAA aeronautical review process, the Air Force, FAA, other federal and state agencies, and tribal governments have been consulting to mitigate concerns while continuing to meet national defense training requirements. The Air Force has participated in continued communication, consultation, and/or meetings with state agencies and tribal representatives from 2008 through 2014. Consultation and coordination on the environmental and related impacts will continue beyond completion of the EIS. The Air Force is the proponent for the PRTC and is the lead agency for the preparation of the EIS. The FAA is a cooperating agency as defined in 40 Code of Federal Regulations (CFR) §1508.5.

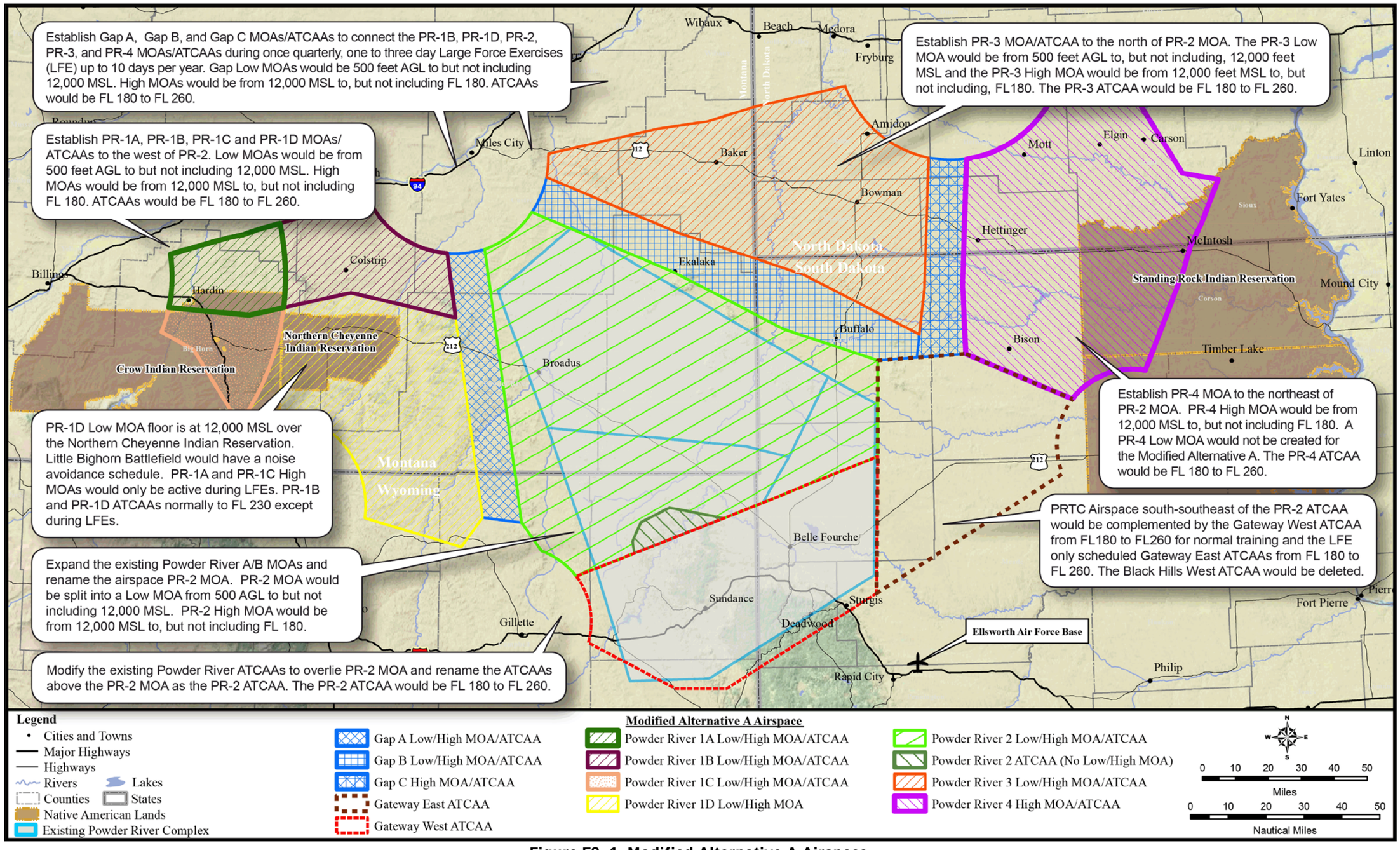

Figure ES-1. Modified Alternative A Airspace

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ES.5 DEVELOPMENT OF THE FEIS MODIFIED ALTERNATIVES

The Modified Alternatives described in ES.2 have been developed to address agency, tribal, and public environmental and aeronautical concerns about the proposal to expand and enhance the Powder River airspace to become the PRTC. The PRTC would address the training deficiencies and limitations described in ES.2. The Air Force conducted 19 public hearings on the Draft EIS during the public comment period from 20 August 2010 to 20 January 2011. Issues and concerns identified during public, state and federal agency, and tribal consultation and communication were reviewed by the Air Force and the FAA. In coordination with the FAA, the Air Force has developed Modified Alternatives that include the following changes to the Draft EIS Alternatives.

ES.5.1 *MITIGATIONS INCORPORATED INTO THE FEIS MODIFIED ALTERNATIVES*

The FEIS Modified Alternatives briefly described in ES.2 and detailed in FEIS Sections 2.5, 2.6, and 2.7, incorporate multiple mitigation measures to address public, agency, and tribal concerns. The mitigation measures, some of which were included in the Draft EIS, are:

1. Commercial and General Aviation Aircraft Operations
    a. Limiting all PRTC activity to altitudes at or below Flight Level (FL) 260 to avoid some of the effect on aircraft utilizing high-altitude routing.
    b. Moving airspace boundaries back from Billings and Miles City, Montana (MT), Dickinson and Bismarck North Dakota (ND); and Hulett, Gillette, and Sheridan, Wyoming (WY) to facilitate Instrument Flight Rules (IFR) procedures at these airports.
    c. Dividing PR-1 into eight MOA segments to better enable arrivals and departures from local airports as well as to allow parts of the airspace to be used while other parts are avoided to reduce potential impacts on the ground.
    d. Providing reasonable and timely aerial access to underlying private or public use land. Provisions are included in Section 4.1.3.1.4 to accommodate instrument arrivals/departures with minimum delay and for terminal Visual Flight Rules (VFR) and IFR operations.
    e. Supporting general aviation flight operations by raising the floor of PR-4 MOA and Gap C MOA from 500 feet above ground level (AGL) to 12,000 feet mean sea level (MSL) (the average surface elevation is 2,300 feet MSL, resulting in the average floor of 9,700 feet AGL).
    f. Reducing B-1 flight operations in the proposed PR-1, PR-3, and PR-4 MOAs by 12 percent from that proposed in the Draft EIS in accordance with the Ready Aircrew Program (RAP). (The RAP specifies the extent of training required by each aircrew member.)
    g. Providing adequate navigation for civil aviation by adjusting the proposed Gap MOA boundaries.

h. Adjusting airspace boundaries to support navigation (such as the use of the global positioning system [GPS]) on Victor airways.

i. Avoiding potential conflict with Victor Route 247 (V-247), an aircraft flight route between Sheridan, WY and Billings, MT, by adjusting the southwest border of the proposed PR-1B MOA/ATCAA.

j. Publishing information about when a MOA is active and when a MOA is no longer active to general aviation using FAA-established frequencies, phone lines, and websites. The proposed PRTC airspace would have published times of use on FAA aeronautical charts and websites (such as http://sua.faa.gov/sua/). The Air Force and FAA would continue coordination to enhance the situational awareness of aircraft operators as to whether PRTC low-altitude MOAs (airspace below 12,000 feet MSL) were active. This would include practices, such as the use of existing data, equipment, and procedures, as well as integration of advancements in software and/or equipment. The procedures developed would also handle those nonparticipants (i.e., aircraft not participating in MOA training) operating IFR entirely within the PRTC while simultaneously supporting the expeditious completion of the training flight and the return of the affected airspace to Air Traffic Control (ATC).

k. All PRTC training activity will be announced via Notices to Airmen (NOTAM). PRTC published times of use would be available on FAA aeronautical charts and specified in the Air Force's aeronautical proposal (Appendix A). NOTAM information is available by dialing 1-800-WXBRIEF, online at https://www.1800wxbrief.com/, or https://pilotweb.nas.faa.gov/, or in-flight by contacting Flight Service. Training activity scheduled within published times of use will be announced by NOTAM not later than 2 hours prior to training use of the airspace. Training activity scheduled outside of the published times of use will be announced by NOTAM not later than 4 hours prior to training use of the airspace. PRTC airspace would be activated by ATC, and when a flight is completed within a MOA, the airspace would be returned to ATC. For planning purposes, the airspace schedule will be entered into the Military Airspace Data Entry (MADE) system, no later than 1500 hrs (3:00 PM) Mountain Time the day prior to training use. This information automatically feeds into the FAA's Special Use Airspace Management System (SAMS), which disseminates information throughout the FAA, to the NOTAM system, and is available to the public via http://sua.faa.gov/sua.

l. Scheduling of airspace outside of published times of use, and for airspace only used during LFEs, PRTC activity will be announced by NOTAM not later than 4 hours prior to use. NOTAM information is available by dialing 1-800-WXBRIEF, going online at https://www.1800wxbrief.com or https://pilotweb.nas.faa.gov, or in-flight by contacting Flight Service. All PRTC training activity outside published times of use will be announced by NOTAM.

m. Allowing ATC to vector IFR traffic through Low and High MOAs as soon as training is completed in an airspace segment.

n. Although not regularly expected, where schedule changes require use of airspace outside of published times of use, the Air Force would inform Air Route Traffic Control Centers (ARTCCs) at least 4 hours in advance to facilitate issuance of a NOTAM.

o. Establishing communication procedures to ensure the ability of the Air Force to recall the military aircraft from the low-altitude MOAs. Controlling agencies would recall the low MOA airspace whenever necessary to allow IFR aircraft access to and from public-use airports under the proposed MOA.

p. Establishing appropriate communication procedures to ensure the ability of the Air Force to control military aircraft and provide safe deconfliction with emergency flight operations and fire-fighting operations within the proposed airspace.

q. Posting informational flyers and posters at public airports underlying the airspace with annual updates by the Ellsworth AFB Flight Safety Office as part of the Mid-Air Collision Avoidance Program at (605) 385-4419.

r. Supporting civil aviation planning and scheduling by publishing at least 30 days in advance the LFE schedule and related information.

s. Committing to the use of a scheduled low MOA early in a mission so that, as the mission allows, the low MOA can be released as early as possible to the controlling agency.

t. Providing a NOTAM for activation of a scheduled MOA to disseminate the maximum information to civil aircraft regarding whether or not a scheduled MOA is to be activated even during published times of use.

2. Tribal Reservation Lands

a. Avoiding low-altitude overflight of the Standing Rock and Cheyenne River Reservations under PR-4 by raising the MOA floor for Modified Alternatives A and C from 500 feet AGL (i.e., above ground level) to 12,000 feet MSL (i.e., mean sea level) (average surface elevation of 2,300 feet MSL).

b. Avoiding low-altitude overflight over the Northern Cheyenne Reservation under the proposed PR-1D by establishing an avoidance area over the reservation, that also encompasses Deer Medicine Rocks National Historic Landmark (NHL), with a floor of 12,000 feet MSL (average surface elevation of 3,785 feet).

c. Providing advance notice of LFEs, limited to no more than 3 days per quarter for a maximum of 10 days per year, to the Reservations at least 30 days before the LFE to inform of increased training flight activity.

d. Limiting supersonic flights to LFEs only (above 20,000 feet MSL for B-1 aircraft and above 10,000 feet AGL for transient fighter aircraft) and providing advance publication of LFEs to reduce noise concerns.

e. Scheduling no supersonic flights over the Little Bighorn Battlefield National Monument, located within the Crow Reservation, under PR-1C.

f. Establishing an ongoing Government-to-Government communication protocol to identify and periodically update avoidance areas for specific time periods.

g. Avoiding ceremonies identified in consultation with tribes by an appropriate distance, in no case less than 2,000 feet.

h. Establishing reasonable temporary or seasonal avoidance areas or adopting other measures to reduce intrusive impacts.

3. Cultural and Historic Areas

   a. Identifying sensitive cultural and historic areas in a Programmatic Agreement developed in consultation with the Air Force, federal and state agencies and federally recognized tribes (see FEIS Appendix N), which establishes a process to reduce overflight impacts.

   b. Avoiding overflight below 5,000 feet AGL of the Little Bighorn Battlefield National Monument from 1 hour before to 1 hour after posted hours of operation and other times as coordinated with Park management.

   c. Avoiding PRTC military flights over Devils Tower National Monument, WY and Deadwood NHL, South Dakota (SD) below 18,000 feet MSL, and Bear Butte State Park, SD by 10,000 feet AGL or 2 nautical miles (NM) horizontally.

   d. Working with agencies and tribes to avoid sensitive areas to the extent possible, including by flying across the Tongue River Valley rather than lengthwise along the valley.

   e. Prohibiting supersonic flights over the Little Bighorn Battlefield National Monument within PR-1C.

4. Communities and Ranching Operations

   a. Establishing avoidance areas as necessary for airports, airfields, and communities under the proposed airspace.

   b. Continuing the current practice of establishing reasonable temporary or seasonal avoidance areas over residences, communities, and ranching operations, including those on reservations, to reduce the potential for impact during concentration of range animals for branding, calving, weaning, and/or other ranch operation.

   c. Reducing the number of proposed B-1 operations from that presented in the Draft EIS by 12 percent in all segments of PR-1, PR-3, and PR-4 in accordance with training adjustments.

   d. Limiting Low-altitude overflight over ranches or communities under PR-4 with the proposed raising of the PR-4 MOA floor for Modified Alternatives A and C from 500 feet AGL to 12,000 feet MSL (average surface elevation of 2,300 feet AGL).

5. Other Mitigation Measures

   a. Publishing a notice at least 30 days in advance of LFEs to the public, the aviation community, and Native American tribes, to help these parties plan for LFE airspace

activation. All other signatories of the Programmatic Agreement will receive a minimum of 15 days' notice.

b. Establishing procedures to avoid low-altitude overflight of and frequency interference with known blasting operations such as those associated with coal mining operations.

c. Making available airspace use and long-term planning information on deconfliction of special events/cultural events during normal business hours, 8:00 AM to 5:00 PM local, Monday through Friday, from the Ellsworth AFB Airspace Management Office at (605) 385-1230.

d. In the event of any damage or injury associated with PRTC operations, descriptive documentation related to the Air Force Claims Program can be sent in to the Ellsworth AFB Public Affairs Office. The Ellsworth AFB Public Affairs Office is available to answer inquiries and complaints at (605) 385-5056 8:00 a.m. to 5:00 p.m. Monday through Friday.

e. Limiting deployment of chaff within 60 NM of airport approach radars to ensure that chaff does not interfere with ATC radars.

f. Training with chaff comparable to that described in this EIS. The Air Force would conduct additional environmental analysis before the use of other chaff types.

g. Limiting flare release altitudes within the PRTC airspace to above 2,000 feet AGL (flares burn out by the time they fall approximately 500 feet).

h. Discontinuing flare releases in PRTC MOAs (e.g., PRTC 2 Low, 2 High MOA) above areas where the fire danger is rated very high or extreme under the National Fire Danger Rating System. Flare use in the PRTC ATCAAs would be discontinued when the fire danger rating is Extreme.

i. Continuing cooperation with local fire agencies for mutual aid response to wildland fires attributable to Air Force operations.

j. Coordinating with local fire departments underlying the airspace to educate them on flare identification and potential hazards. This education would include distributing flyers to fire departments describing chaff and flare deployments, residual materials and dud flares.

Application of the mitigations listed above would substantially reduce public, agency, and tribal concern regarding impacts or the potential for impacts. The FEIS Sections 2.3.2, 2.3.3, and 2.3.4 provide a brief explanation of the reduced impacts related to the FEIS Modified Alternatives when the mitigations listed above are applied.

ES.5.2 *MITIGATION MANAGEMENT OVER TIME*

Throughout the planning process to develop the proposed PRTC, it has become apparent that there may be various uncertainties concerning the significance and scope of environmental impacts until the operations can be experienced over time. In response, and within certain parameters, the Air Force may develop an adaptive management program as part of its overarching mitigation and monitoring program[1]. In doing so, the Air Force would follow the President's Council on Environmental Quality mitigation and monitoring guidance[2], and other legal and generally accepted practices.

New knowledge and information gained through experience can be incorporated into management options and recommendations to appropriate decision makers. Many of the mitigation measures listed in Section ES.5.1 incorporate continuing communication, consultation, and feedback to adapt PRTC operations to the needs of the public, agencies, and tribes as well as training aircrews. This EIS identifies and describes the affected environment and assesses the potential environmental impacts resulting from implementation of the proposed PRTC. The analysis identifies specific mitigation measures to prevent or minimize environmental impacts, if required. Air Force Environmental Impact Analysis Process (EIAP) regulations require the action proponent to prepare a mitigation plan and forward it to Headquarters (HQ), Air Force for review within 90 days of the signing of the Record of Decision (ROD). Among other things, the mitigation plan must specifically identify each mitigation measure, how the measures will be executed, and who will fund and implement the mitigations.

Requiring the detailed mitigation plan after the signing of the ROD enables the mitigation plan to be tailored precisely to the decision that is made. In the analysis of anticipated impacts in the EIS, the Air Force has done its best to accurately predict potential impacts and anticipate future conditions. However, given the nature of the alternatives analyzed and public, agency, and tribal interest, new information may become available, or the effectiveness of mitigation measures may be different than expected.

Adaptive management techniques are well suited to such circumstances. Since the adaptive management approach is being adopted as part of the implementation for the PRTC, the mitigation plan will have provisions for determining the success of the mitigations, as well as procedures for making necessary adaptations.

Where the proposed use of adaptations is considered, the Air Force will, before adapting, fully consider whether or not the adaptation triggers the need for additional analysis under the NEPA and the EIAP. For example, the Air Force could supplement this EIS or prepare a new NEPA analysis, as necessary. Thus, the post-ROD mitigation plan will include an adaptive

[1] NEPA's Section 101 goals to "protect, restore, and enhance the environment" (40 CFR 1500.1(c)) would be advanced with the development of the mitigation and monitoring program.

[2] "Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact," January 14, 2011

management program incorporating, for example, the following kinds of adaptive management approaches.

- Identifying the type of monitoring for the action and each mitigation.
- Delineating how the monitoring will be executed.
- Identifying who will fund and oversee its implementation.
- Establishing the process and responsibilities for identifying and making changes to the action or mitigations to influence beneficial results or avoid/reduce adverse ones.

ES.6 COMPARISON OF ENVIRONMENTAL CONSEQUENCES

Table ES-4 summarizes the analysis included in EIS Chapter 4.0, *Environmental Consequences*, and compares the potential environmental consequences of the Modified Alternative A, Modified Alternative B, Modified Alternative C, and the No-Action Alternative.

Table ES-4. Summary of Impacts by Resource (Page 1 of 18)

Environmental Resource	*Modified Alternative A*
Airspace/Air Traffic (EIS Section 4.1)	Airspace will be scheduled in advance and NOTAMs will be issued 2 to 4 hours prior to the initiation of military training in the airspace to provide near real-time information to civil aircraft. Section 2.3 lists multiple airspace mitigations designed to reduce effects upon airspace use and users. Mitigations include issuing NOTAMs to announce the activation of scheduled airspace, changing the shape of the proposed airspace to accommodate civil aviation, and restricting training to below FL260. The Air Force would not activate or use PR-1A, 1B, 1C, 1D, or PR-3 Low MOAs for Modified Alternative A or C or PR-3 or PR-4 Low MOAs for Modified Alternative B unless communication to recall training aircraft is in place. Proposed MOAs/ATCAAs have been adjusted to avoid traffic at major airports. MOAs were segmented high and low to support civil traffic. If all the MOAs were activated at one time for military training, the training could impact an estimated 86 civilian aircraft flights daily under the airspace during Monday through Thursday. If all the MOAs were activated Friday morning, there would be approximately 30 civilian aircraft operations impacted. Impacts include an estimated up to 4 hours of ground holds, diversions, or needing to fly VFR see-and-avoid in an active MOA. IFR arrivals and departures to airports within an active MOA would be accomplished by temporarily relocating the training aircraft to another airspace and vectoring the IFR aircraft. MOAs/ATCAAs are adjusted to avoid traffic at major airports. MOA published times of use are on FAA charts, daily scheduling is provided on sites such as http://sua.faa.gov, and NOTAMs would be issued for when a MOA is active. Information by NOTAM about MOA activation and expeditious release of the active MOA are designed to reduce uncertainty and support civil aviation. MOAs would not normally be scheduled from Friday noon through Monday morning to support higher volume weekend civil operations. Civil aircraft could fly VFR using see-and-avoid, weather permitting. Training aircraft will be relocated from an area that needs emergency access, as is currently done in the Powder River airspace, and the MOA would be deactivated to allow IFR emergency and related arrivals and departures from an airport under the MOA. Agricultural applicators with a near gross weight aircraft expressed concerned that low-altitude training could affect operations. Increased information with NOTAM activation/deactivation of MOAs could reduce uncertainty, although aerial applications are driven by meteorological conditions. Coordination and communication on weather modification, aerial mapping, recreational gliding, and skydiving could avoid potential impacts. Daily training below FL230 avoids impacts to most overflying commercial traffic. LFEs would be scheduled at least 30 days in advance for 1 to 3 days quarterly, not to exceed 10 days per year. An LFE day could impact an estimated 78 civil aviation flights for a period of up to 4 hours. Any airspace constraints or communication requirements could be perceived as an impact by existing users of the airspace.

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Table ES-4. Summary of Impacts by Resource (Page 2 of 18)

Modified Alternative B	*Modified Alternative C*	*No-Action Alternative*
Airspace/Air Traffic, continued		
Airspace will be scheduled in advance and NOTAMs will be issued 2 to 4 hours prior to the initiation of military training in the airspace to provide near real-time information to civil aircraft. Public airports, private airfields, and civilian aircraft flights below FL180 would be impacted in PR-2, PR-3, PR-4, and associated Gap B and C MOAs (during LFEs) as described for Modified Alternative A. No PR-1 or Gap A MOAs would be established and civil aircraft operations within the Billings-Miles City-Gillette triangle would not be impacted below FL180. If all the MOAs were activated at one time for military training, the training could impact an estimated 107 civilian aircraft flights daily under the airspace during Monday through Thursday. If all the MOAs were activated Friday morning, there would be approximately 36 civilian aircraft operations impacted. Impacts would be a mix of ground delays, re-routing, or having to fly VFR see-and-avoid, weather permitting, in an active MOA. IFR arrivals and departures would be as described for Modified Alternative A. ATCAA effects would be comparable to Modified Alternative A. Modified Alternative B would not include military training overflights below FL180 in the Billings-Miles City-Gillette triangle. LFEs could impact an estimated 88 civil aviation flights as described for Modified Alternative A. Any airspace constraints or communication requirements could be perceived as an impact by existing users of the airspace.	Airspace will be scheduled in advance and NOTAMs will be issued 2 to 4 hours prior to the initiation of military training in the airspace to provide near real-time information to civil aircraft. Public airports, private airfields, and civilian aircraft flights below FL180 would be impacted in PR-1, PR-2, PR-3, and associated Gap A and B MOAs as described for Modified Alternative A. There would be no training below FL180 under PR-4 or Gap C ATCAAs. Civil aircraft operations in the Bismarck-Dickinson-Rapid City triangle would not be impacted below FL180. If all the MOAs were activated at one time for military training, the training could impact an estimated 80 civilian aircraft flights daily under the airspace during Monday through Thursday. If all the MOAs were activated Friday morning, there would be approximately 27 civilian aircraft operations impacted. Impacts would be a mix of delays, re-routing, or having to fly see-and-avoid, weather permitting, in an active MOA. IFR arrivals and departures would be as described for Modified Alternative A. ATCAA effects would be comparable to Modified Alternative A. Modified Alternative C would not include military training flights below FL180 in the Bismarck-Dickinson-Rapid City triangle. LFEs could impact an estimated 74 civil aviation flights as described for Modified Alternative A. Any airspace constraints or communication requirements could be perceived as an impact by existing users of the airspace.	The No-Action Alternative would not change projected baseline conditions with B-1 and B-52 flight training in the Powder River A/B MOAs (essentially all of the proposed PR-2 MOA). Projected operations in the existing Powder River airspace would be expected to be as described for PR-2. An estimated 24 civilian operations would be impacted weekdays by delay, re-routing, or having to fly VFR see-and-avoid in an active MOA. Flight training in Powder River ATCAAs would continue as permitted under existing letters of agreement with the FAA. Powder River airspace would continue to provide limited training to B-1 and B-52 aircrews.

Table ES-4. Summary of Impacts by Resource (Page 3 of 18)

Environmental Resource	*Modified Alternative A*
Noise (EIS Section 4.2)	Day-night average sound level (DNL) under the proposed PR-1, PR-3, and PR-4 MOAs would be expected to change from existing less than 45 dB to a calculated <45 to 48 dB range. If such a change were discerned, it could be seen as an annoyance. DNL under existing Powder River A and B MOAs would minimally decline from 49 dB DNL to 47 dB. Noise levels under the existing Gateway ATCAAs would remain below 45 dB DNL. USEPA had identified DNL of 55 dB as the level above which to assess public health and welfare. Increased noise from a sudden low overflight would be noticed and could be perceived as a significant impact by residents under the airspace. Low-altitude overflight of a bomber, defined as 2,000 feet AGL or below to a minimum of 500 feet AGL within 0.25 mile of the flight path, would be expected to occur over 2 to 4 percent of each active MOA each training day, or an average at any given location under a Low MOA in PR-1, PR-2, or PR-3 of 6 to 9 low-level overflights per year (could be more or fewer than average at any specific location). Issuing NOTAMs to announce MOA activation could reduce uncertainty about when a low-altitude flight could occur. While operating at high speeds at 500 feet AGL, B-1 aircraft generate a localized single event onset rate adjusted sound exposure level (SEL_r) of 117 dB. B-52 aircraft generate an SEL_r of 100 dB during overflight at 1,000 feet AGL. Rapid B-1 acceleration and climb with afterburners, performed once per training mission, creates an SEL_r of 133 dB. Sudden onset sounds can be startling to humans and animals and have resulted in damage to penned cattle and fencing. Sudden low-level overflights were identified as an impact by public commenters. The Air Force would extend the Powder River airspace policy of establishing seasonal avoidance areas to reduce potential impacts to ranching, other sensitive areas, and cultural/historic resources. Supersonic flight during LFEs (not to exceed 10 days per year) with B-1s above 20,000 feet MSL and fighters above 10,000 feet AGL could result in an average of one sonic boom per LFE day at any given location on the ground. Most sonic booms are heard as thunder although a boom could result in a local area experiencing an overpressure of 4 psf or greater. Glass, plaster, and other structural elements in good condition normally would not be expected to fail as a result of overpressures, but failure would be possible. Should a sonic boom or low-level overflight occur during a hunting or ranching operation, it could result in a reaction on the part of the animals. Reactions would not be likely to significantly impact the species but could be an annoyance to persons on the ground.

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Table ES-4. Summary of Impacts by Resource (Page 4 of 18)

Modified Alternative B	*Modified Alternative C*	*No-Action Alternative*
Noise, continued		
PR-4 low-level overflight impacts would be as described for PR-3 under Modified Alternative A. Sudden onset noise from 6 to 9 low-altitude overflights per year, an average of one sonic boom per LFE day, and startle effects would occur under PR-2, PR-3, and PR-4 MOAs. Low-level overflights would not occur under PR-1 or Gap A ATCAAs. Noise under these areas range from 47 dB DNL to less than 45 dB DNL.	Noise under PR-1, PR-2, PR-3, and associated Gap MOAs and ATCAAs would be as described for Modified Alternative A. Sudden onset noise from 6 to 9 low-altitude overflights per year, an average of one sonic boom per LFE day, and startle effects in these MOAs would be as described under Modified Alternative A. Low-level overflights would not occur under PR-4 or Gap C ATCAAs. Noise under these areas would range from 47 dB DNL to less than 45 dB DNL.	Noise under the existing Powder River airspace would continue at 49 dB DNL as the base returns to the peacetime operational tempo. Low-altitude startle effects would continue to be experienced within Powder River A/B MOAs. Supersonic flight would not be authorized.

Table ES-4. Summary of Impacts by Resource (Page 5 of 18)

Environmental Resource	*Modified Alternative A*
Safety (EIS Section 4.3)	The FEIS has proposed airspace altitude caps at FL260, MOA boundaries moved back from major airports, MOAs segmented, Gap MOA boundaries adjusted, and NOTAMs for MOA activation to address public concerns. The Air Force and FAA would continue coordination to enhance the situational awareness of aircraft operators as to whether PRTC low-altitude MOAs (airspace below 12,000 feet MSL) were active. This may include best practices for use of existing data, equipment, and procedures as well as integration of advancements in software and equipment. Capabilities to communicate with and recall training aircraft would be in place prior to activiating PR-1A, 1B, 1C, 1D, or PR-3 Low MOAs for Modified Alternative A or C or PR-3 or PR-4 Low MOAs for Modified Alternative B. IFR traffic would incur no undue delay during departure and arrival operations to/from airports beneath PRTC. . General aviation pilots accustomed to flying through the airspace with GPS coordinates could perceive communication requirements as an impact to their transit of the airspace. Class A mishap and bird strikes are expected to be proportional to the amount of training time in the proposed airspace. Having no PR-4 Low MOA would reduce training flights in a migration flyway. Chaff or flare residual materials would not result in a safety impact, although finding a piece of chaff or flare material on the ground could annoy persons. Flare use would be restricted to above 2,000 feet AGL and discontinued in airspace with very high to extreme fire conditions. Flares would not be expected to increase fire risk. There would be little safety risk from an estimated one dud flare falling within the entire airspace every three years. Large aircraft wake vortex of air turbulence at the wing tips could, in rapid maneuvering and unusual meteorological conditions, damage windmills. Atmospheric conditions and winds such as those common to the ROI cause accelerated vortex decay and dissipation. Most wake vortices would not reach ground level. Wake vortices from low-altitude military training aircraft were identified as a safety concern by crop dusters and other small aircraft operators. A light aircraft could experience the effects of a wake vortex in the unlikely event that the aircraft flew through the trail of a low-altitude training military aircraft. Procedures would be established to communicate with known mining operations regarding potential interference with mining radio frequencies to avoid significant impacts from aircraft electronic emissions inadvertently setting off mining or construction explosives. Startle effects from low-altitude overflight or sonic booms during LFEs could impact the safety of recreationists or ranchers. Low-altitude training flights would overfly any given location under a Low MOA an average of 6 to 9 times per year. The number of actual overflights experienced at any given location could be more or fewer than average. An unexpected low-altitude overflight could have safety impacts to a recreationist on a horse or a rancher working penned cattle. Seasonal or temporary avoidance of sensitive locations areas could reduce potential impacts. Communication regarding seasonal ranching operations and seasonal avoidance areas could reduce impacts to ranching or other sensitive activities.
Air Quality (EIS Section 4.4)	B-1 and B-52 low-level overflight in PR-1B and PR-1D would contribute approximately 2.06 tons of PM_{10} per year within the Lame Deer nonattainment area and 1.43 tons of PM_{10} per year within the Sheridan nonattainment area. Emissions would not increase the number of days when the PM_{10} air quality standard is exceeded. Training aircraft would not produce enough emissions to affect air quality or visibility to nearest PSD Class I areas (Wind Caves National Park and Badlands National Park) or the Northern Cheyenne Reservation. Defensive flare emissions are insignificant. National GHG emissions would be the same as the No-Action Alternative with training aircraft flying essentially the same amount of time to achieve lesser quality training in more distant ranges. Modified Alternative A would not be expected to produce emissions that would significantly affect air quality or visibility within the four-state region.

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Table ES-4. Summary of Impacts by Resource (Page 6 of 18)

Modified Alternative B	*Modified Alternative C*	*No-Action Alternative*
Safety, continued		
Modified Alternative B includes the same mitigations to improve flight safety and ground safety effects under PR-2, PR-3, PR-4, and associated Gap MOAs and ATCAAs as explained for Modified Alternative A. PR-4 Low MOA would have low-altitude and startle effects as described for Low MOAs under Modified Alternative A. Under the PR-1 and Gap A ATCAAs, there would be no low-altitude startle effects and few environmental impacts other than very infrequent sonic booms and chaff and flare residual materials. There would be no impacts to mining or construction under the PR-1 ATCAAs.	Modified Alternative C includes the same mitigations to improve flight safety and ground safety effects under PR-1, PR-2, PR-3, and associated Gap MOAs and ATCAAs as explained for Modified Alternative A. There would not be low-flying startle or other environmental effects under the PR-4 and Gap C ATCAAs. Few impacts from infrequent sonic booms and chaff and flare residual materials would occur under PR-4 and Gap C ATCAAs.	For the No-Action Alternative, no changes to Powder River airspace would be made. Low-level overflights would continue in the Powder River A/B MOAs, and communication would continue to be required to identify seasonal avoidance areas and reduce impacts from low-level overflight to ranching, recreation, or other activities.
Air Quality, continued		
Modified Alternative B would not be expected to produce emissions that would significantly affect air quality or visibility within the four-state region. Aircraft training would not impact any federal PSD Class I areas. National GHG emissions would not substantially change from the No-Action Alternative, under which B-1 and B-52 aircraft would continue to fly essentially the same amount of time to achieve lesser quality training.	Modified Alternative C would not be expected to produce emissions that would significantly affect air quality or visibility within the four-state region. Potential effects to air quality would be comparable to those described under Modified Alternative A, including low-level overflight in Lame Deer and Sheridan nonattainment areas (PR-1). National GHG emissions would not substantially change from the No-Action Alternative.	There would be no anticipated air quality impacts. Overflights below 3,000 feet AGL would continue within Powder River A/B MOAs.

Table ES-4. Summary of Impacts by Resource (Page 7 of 18)

Environmental Resource	***Modified Alternative A***
Physical Sciences (EIS Section 4.5)	No construction or direct impact to water or soils is expected. Chaff particles on the surface would be chemically stable and subject to mechanical degradation. The soils' pH is outside the range necessary to degrade the aluminum coating on chaff particles. Chaff and flare residual materials would be inert and not in sufficient quantities to impact physical resources. No impact to soils or water bodies is expected.
Biological Sciences (EIS Section 4.6)	Loud, sudden noises combined with a visual stimulus produce the most intense reaction by animals. Most species within the areas under the proposed PRTC already occupy comparable environments under the Powder River A/B MOAs where low-level overflights occur. Sound exposure levels (SELs) above 90 dB are associated with a number of behaviors such as retreating from the sound, freezing, or a strong startle response. Animals under the newly proposed PR-1, PR-3, PR-4, and associated Gap MOAs would be expected to be temporarily more sensitive to noise due to lower previous exposure. Animals typically exhibit continually decreasing responses to noise exposure, and this suggests habituation as the noise is not perceived as a threat. Minimal to no effects are expected to threatened, endangered, and other special status species including greater sage-grouse or rare migrants, such as the piping plover, least tern, whooping crane, or yellow-billed cuckoo. Any impact to sensitive species would likely be short-term and unlikely to significantly affect the population. Potential bird aircraft strikes could occur in the PR-2 Low MOA where migratory flyways converge. No change in effects to flyways would be expected under PR-4 High MOA. Migratory bird species involved in bird-aircraft strike would be considered an incidental taking and would be exempt from any permitting requirement. An infrequent special status bird-aircraft strike would not be expected to adversely affect any populations. There is no evidence of chaff and flare residual materials or chaff fibers affecting wildlife or domestic animals through ingestion, inhalation, or direct body contact. The potential for fire as a result of Air Force activity is minimal and is not considered a significant risk to wildlife habitat quality or quantity.

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Table ES-4. Summary of Impacts by Resource (Page 8 of 18)

Modified Alternative B	*Modified Alternative C*	*No-Action Alternative*
Physical Sciences, continued		
Modified Alternative B effects on physical resources would be the same as those described for Modified Alternative A.	Modified Alternative C effects on physical resources would be the same as those described under Modified Alternative A.	The No-Action Alternative would not affect physical resources under the Powder River airspace.
Biological Sciences, continued		
Modified Alternative B has same effects as Modified Alternative A with exception that the more environmentally diversified area and higher terrain under the PR-1 and Gap A ATCAAs would not be subject to low-level overflights. This would result in no low-altitude noise impacts to species in those areas. The PR-4 Low MOA would be over migratory flyways, and species under the PR-4 Low MOA would be subject to low-level overflights. Impacts to other areas of proposed low-altitude airspace would be as described for Modified Alternative A. Modified Alternative B biological effects could be somewhat greater than Modified Alternative A due to the eastern PR-4 Low MOA.	Modified Alternative C would be expected to have the same effects as those described for Modified Alternative A. The more-agricultural area under the proposed PR-4 and Gap C ATCAAs would not be subject to low-level overflights. This would result in no expected low-altitude startle impacts or bird-aircraft strikes to species in those areas. No effects to flyways would be anticipated under the PR-4 ATCAA. The more environmentally diversified area under the PR-1 MOAs are included in Modified Alternatives A and C. Modified Alternative C biological effects would be expected to be somewhat less than for Modified Alternative A or Modified Alternative B.	Low-level overflight of the Powder River A/B MOAs would continue. Existing biological conditions would continue.

Table ES-4. Summary of Impacts by Resource (Page 9 of 18)

Environmental Resource	*Modified Alternative A*
Cultural and Historic Resources (EIS Section 4.7)	As of spring 2014, there were 241 National Register of Historic Places (NRHP)-listed sites under Modified Alternative A MOA and ATCAA airspace. Impacts to cultural resources at any given location under the Low MOAs could occur from an estimated average of 6 to 9 low-level overflights per year (at or below 2,000 feet AGL and above 500 feet AGL) or from approximately one sonic boom per LFE day (1 to 3 days per quarter, not more than 10 days per year). Sonic booms are normally experienced as distant thunder, though a boom could result in local areas experiencing an overpressure of 4 psf or greater. Infrequent and random sonic booms are not expected to cause structural damage to historic buildings, but bric-a-brac could be vibrated off shelves and structures subject to a focus boom could be impacted. Even infrequent sonic booms at historic landmarks such as Bear Butte NHL, national monuments such as Devils Tower National Monument or the Little Bighorn Battlefield National Monument, or locations such as the Deadwood Historic District could be seen as intrusions. The Little Bighorn Battlefield National Monument would not have overflights below 5,000 feet AGL during operating hours, or from 1 hour before park opening to 1 hour after park closing or other times as coordinated. The change in setting created by increased noise from 6 to 9 low-level overflights per year and even infrequent sonic booms could be seen as an adverse effect upon traditional cultural properties and cultural landscapes. Visual intrusions can include overflights of a tribal ceremony or residual materials from chaff and flares. Amish and Hutterite settlements may be similarly impacted under the proposed PR-1D MOA. During consultations, Native Americans from the four directly impacted reservations explained that low-level overflights and intrusive noise would be detrimental to their cultural practices. No overflights below 12,000 feet MSL would occur over the Standing Rock, Cheyenne River, or Northern Cheyenne Reservations. Noise analysis demonstrated that although increased noise during overflights could affect historic properties and traditional cultural properties, it would be sporadic and temporary, and avoidance measures over sensitive areas would result in no adverse effect to historic properties or traditional cultural properties on these three reservations. Visual analysis documents the infrequency of visual intrusions in the airspace, and the implementation of horizontal and vertical avoidance areas. No adverse effect would be anticipated to historical properties on the Standing Rock, Cheyenne River, or Northern Cheyenne Reservations from noise or visual intrusions. The change in setting on portions of the Crow Reservation created by increased noise and low-level training overflights has the potential to create an adverse effect. Crow Reservation residents would experience noise and startle effects from an estimated annual average of 6 to 9 low-level overflights at or below 2,000 feet AGL and above 500 feet AGL. The noise, startle effects, and uncertainty of low-level overflights at any given location under an activated low MOA are identified as adverse impacts. An average of one sonic boom per day could be experienced at any given location under the airspace during LFEs, 1 to 3 days quarterly, not to exceed 10 days per year. The Air Force would establish a Government-to-Government communication protocol to identify reasonable avoidance areas for specific time periods, provide advance notice of LFEs, adopt other measures identified in Government-to-Government consultation to reduce intrusive impacts, and adhere to provisions stipulated in a Programmatic Agreement (refer to Appendix N). The Air Force has reasonably determined per 36 CFR 800.6(b)(2), in the light of consultations, that modifying the undertaking and adopting mitigations in the Programmatic Agreement would resolve potential adverse effects to historic properties on the Crow tribal lands.

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Table ES-4. Summary of Impacts by Resource (Page 10 of 18)

Modified Alternative B	*Modified Alternative C*	*No-Action Alternative*
Cultural and Historic Resources, continued		
Modified Alternative B has 207 NRHP-listed sites under the Modified Alternative B MOAs/ATCAAs, with impacts similar to those described for Modified Alternative A. The exception is that there would be no overflight below FL180 over the Little Bighorn Battlefield National Monument, Deer Medicine Rocks NHL, the Tongue River Cultural Landscape, the Crow Reservation, or the Northern Cheyenne Reservation. Intrusions could occur to sites under the PR-1 ATCAAs from infrequent sonic booms but not from low-level overflights (below 2,000 feet AGL). There would be an estimated one sonic boom experienced at any given location during LFEs that take place 1 to 3 days per quarter, not to exceed 10 days per year. Effects to Devils Tower National Monument, Bear Butte NHL, the Deadwood Historic District, and other historic locations could occur as under Modified Alternative A. Portions of the Standing Rock and Cheyenne River Reservations would be affected by low-altitude overflights and sonic booms, though populations are not concentrated in areas overflown. Mitigations noted for Modified Alternative A would be applied to appropriate airspaces under Modified Alternative B, although additional consultations would likely be necessary to identify further mitigations. Sonic boom impacts to cultural resources would be as described for Modified Alternative A.	Modified Alternative C has 213 NRHP-listed sites under the MOAs and ATCAAs with impacts similar to those described for Modified Alternative A. Impacts from infrequent sonic booms and low-level overflights would generally be comparable to those described for Modified Alternative A, including impacts to the Little Bighorn Battlefield National Monument and traditional cultural properties under the PR-1 MOAs. Portions of the Crow Reservation could experience an average of 6 to 9 low-level overflights (below 2,000 feet AGL) at any given location. Similar to Modified Alternative A, application of mitigations identified in the Programmatic Agreement would resolve potential adverse impacts on the Crow Reservation. Additionally, the Air Force would avoid adverse effects to the Standing Rock, Cheyenne River, and Northern Cheyenne Reservations by establishing avoidance areas up to 12,000 feet MSL over these reservations. Sonic boom impacts to cultural resources would be as described for Modified Alternative A.	There would be no change to overflight of historic properties within the Powder River airspace. PR-A and PR-B MOAs do not overlie Native American reservations.

Table ES-4. Summary of Impacts by Resource (Page 11 of 18)

Environmental Resource	*Modified Alternative A*
Land Use **(EIS Section 4.8)**	Land uses under the existing Powder River airspace have been overflown by a variety of military aircraft for over 20 years. Public concerns during the Draft EIS review included the effect of sonic booms and low-level overflight on the use of the land. Land uses under existing Powder River airspace within Wyoming, South Dakota, and Montana are comparable to those in other portions of the area proposed for the PRTC airspace. Supersonic training would be scheduled only during LFEs 1 to 3 days per quarter, not to exceed 10 days per year and an estimate of one sonic boom could be experienced at any given location per LFE day (not to exceed 10 days per year). Infrequent sonic booms would not be expected to impact land uses. Approximately 2 to 4 percent of the MOAs would be overflown by an aircraft at 2,000 feet AGL or below and above 500 feet AGL on a daily basis. Low-level overflight in Low MOAs could cause individual annoyance and could result in sleep disturbance or temporarily interfere with personal communication. The random nature of the aircraft overflight could result in any given location under Low MOAs being overflown an average of approximately 6 to 9 times per year (any given location could be overflown more or less frequently). Overflight is not expected to impact overall land use although some individuals could be annoyed. Low-level overflight impacts to communities, ranches, and other land uses could be reduced through communication with Air Force to identify temporary or seasonal avoidance areas. Hunting and other recreational land uses coexist with military training in the existing Powder River airspace. Such land uses may be disturbed by infrequent low-level military flights but overall land use is not expected to be impacted. Military training would generally not be scheduled from Friday noon through Monday morning, and weekend recreation would not be expected to be impacted. Land use for energy development would not be impacted, assuming Air Force electronic emissions are coordinated for mine and construction safety. Chaff or flare residual debris, which consists of plastic pieces or wrapping material, would not be expected to affect land uses but could cause annoyance if found.

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Table ES-4. Summary of Impacts by Resource (Page 12 of 18)

Modified Alternative B	*Modified Alternative C*	*No-Action Alternative*
Land Use, continued		
Modified Alternative B land use effects would be comparable to those described for Modified Alternative A. Land uses under the PR-1 and associated Gap A ATCAAs would not be subject to low-level overflight. Low MOA airspace would be subject to low-level overflight an average of approximately 6 to 9 times per year. These events and infrequent supersonic events would not be expected to impact land use, though this could be seen as an annoyance to persons using the land.	Modified Alternative C land use effects would be comparable to those described for Modified Alternative A. Areas under PR-4 and associated Gap C ATCAAs would not be subject to low-level overflight. PR-1, PR-2, and PR-3 Low MOAs would be subject to low-level overflight and intermittent sonic booms as described for Modified Alternative A. Land uses would not be expected to be impacted, though frequent low-level overflights and infrequent supersonic events could be seen as an annoyance to persons using the land.	The No-Action Alternative would not change effects on land use under the existing Powder River airspace.

Table ES-4. Summary of Impacts by Resource (Page 13 of 18)

Environmental Resource	*Modified Alternative A*
Socioeconomics (EIS Section 4.9)	Establishing avoidance areas, reduced B-1 operations from those proposed in the Draft EIS, resizing the MOAs, advanced scheduling, and NOTAMs to activate training airspace are all designed to reduce potential socioeconomic impacts. If all the MOAs were activated at one time for military training, the training could impact an estimated 86 civilian aircraft flights daily under the airspace during Monday through Thursday. If all the MOAs were activated Friday morning, there would be approximately 30 civilian aircraft operations impacted. Impacts could include delay, re-routing, needing to fly VFR in an active MOA, or not being able to transit IFR. IFR arrivals or departures would be given priority in training airspace. Delays of up to 4 hours could be seen as an economic impact at public airports and private airfields under the affected airspace. During LFEs, 1 to 3 days per quarter, not to exceed 10 days per year, the entire airspace would be unavailable for IFR traffic for a period of up to 4 hours per day. LFE civil aviation impacts are estimated to be 78 civilian flights per LFE day. Issuing NOTAMs to announce activation of the MOA airspaces reduces uncertainty for civil aviation. Crop duster aerial applicators unwilling to fly in an active Low MOA could be impacted and affect business decisions and economics. Knowing where and at what altitude a training bomber could fly over an area could reduce uncertainty. Review of assessor procedures and Montana, North Dakota, South Dakota, or Wyoming state laws has shown no requirement for disclosure under a MOA. The existing Powder River MOAs are not considered relevant by assessors in Montana, South Dakota, and Wyoming. No quantifiable property value impacts are anticipated. The proposed PRTC is not expected to impact energy resource development. Time-critical deliveries flying IFR would incur no undue delay during departure and arrival operations to/from airports beneath PRTC. Coordination would be required between mine operators or other blasting operations and the Air Force to ensure that radio frequencies used for mining are not used by Air Force aircraft during training. Modified Alternative A noise level changes in PR-1, PR-3, and PR-4 from a DNL of <45 dB DNL to between <45 dB DNL to 48 dB would not normally be noticeable but could be perceived as an impact, though noise levels would be below the USEPA-identified DNL of 55 dB, which is a noise protective of the public health and welfare. An average of 6 to 9 low-level overflights would be experienced at any given location under a Low MOA. Approximately one sonic boom could be experienced at any given location under the airspace during LFEs, 1 to 3 days per quarter, not to exceed 10 days per year. Sudden noise or visual effects could impact ranching operations, especially when range stock are penned. The public expressed extensive concern about low-level overflight. Low-altitude overflight impacts include uncertainty, startle effects, and noise. The Air Force would continue the process within the Powder River A/B MOAs whereby ranchers have coordinated with the Air Force to identify temporary avoidance areas to reduce the potential for low-altitude aircraft impacts. Sonic booms cannot be directed to avoid a location, although the schedule for LFEs would be published in advance. Chaff and flare impacts would not affect economic activity, although an individual finding a piece of chaff or flare plastic or wrapper residual material could be annoyed. Emergency flight operations such as firefighting and air ambulance would continue under ATC emergency flight procedures. No impact would be expected because the Air Force would expeditiously move training activities outside the required airspace to meet the emergency.

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Table ES-4. Summary of Impacts by Resource (Page 14 of 18)

Modified Alternative B	*Modified Alternative C*	*No-Action Alternative*
Socioeconomics, continued		
All mitigations noted for Modified Alternative A would apply to Modified Alternative B. If all the MOAs were activated at one time for military training, the training could impact an estimated 107 civilian aircraft flights daily under the airspace during Monday through Thursday. If all the MOAs were activated Friday morning, there would be approximately 36 civilian aircraft operations impacted. Modified Alternative B low-level impacts would occur under PR-2, PR-3, and PR-4. These impacts would be comparable to those described for Modified Alternative A. Modified Alternative B does not have airspace below FL180 under the PR-1, and Gap A ATCAAs. This means no low-altitude overflights over existing or proposed mining operations in the area. Ranching, tribal, other settlements, and recreational activities in the Billings-Miles City-Gillette triangle are not overflown below FL180. Any given location could experience an average of one sonic boom per LFE day, 1 to 3 days per quarter, not to exceed 10 days per year. During LFEs, there would be an estimated 88 civil operations impacted as described for Modified Alternative A. Impacts to other areas are as described for Modified Alternative A.	All mitigations noted for Modified Alternative A would apply to Modified Alternative C. If all the MOAs were activated at one time for military training, the training could impact an estimated 80 civilian aircraft flights daily under the airspace during Monday through Thursday. If all the MOAs were activated Friday morning, there would be approximately 27 civilian aircraft operations impacted. Modified Alternative C impacts include adverse, low-level effects under PR-1, PR-2, and PR-3 Low MOAs. Modified Alternative C does not have airspace below FL180 under the PR-4 and Gap C ATCAAs. This means that tribal lands, ranching, recreation, and other activities within this area would not experience low-altitude overflights. During LFEs, 1 to 3 days per quarter, not to exceed 10 days per year, an estimated 74 civil operations in MOAs could be expected to be impacted by delays of up to 4 hours. Impacts to other areas are as described for Modified Alternative A.	Under the No-Action Alternative, training would continue as it is now, including low-level overflights in Powder River airspace with an estimated 7 civilian operations impacted daily and no change in socioeconomic effects.

Table ES-4. Summary of Impacts by Resource (Page 15 of 18)

Environmental Resource	*Modified Alternative A*
Environmental Justice (EIS Section 4.10)	Native Americans typically account for between 86 and 96 percent of the minority populations within the counties in the area of effect. Under PR-1, the minority and low-income population concentrations are on the Northern Cheyenne Reservation and portions of the Crow Reservation. PR-4 overlies portions of the Standing Rock and Cheyenne River reservations, but does not directly overly major population centers on these reservations. FEIS mitigations exclude overflight below 12,000 feet MSL of the Northern Cheyenne, Standing Rock, and Cheyenne River Reservations. Noise conditions under the four reservations would not exceed 48 dB DNL_{mr}. Within PR-1, there are 12,316 persons, of whom 4,560 are minority, 1,391 live below the poverty level, and 2,788 are children. Nearly all of the minority persons potentially affected by low-level overflights reside on portions of the Crow Reservation. The uncertainty of low-level overflights and the average of 6 to 9 low-level overflights of 2,000 feet AGL within 0.25 mile of the aircraft flight track at any given location under the Low MOAs are identified as adverse impacts to the general human population under the proposed Low MOA airspace. The PR-1A, PR-1C, and PR-1D MOAs overlie portions of the Crow Reservation that have a minority population in excess of 50 percent. If there is an adverse impact not adequately or acceptably mitigated, such as by the proposed mitigations in Section 2.3.1, there would be a potential for a disproportionately high and adverse effect on that population (Air Force 1997b). Traditional cultural properties, battlefield sites, archaeological sites, and landscape areas that have been identified as probable sacred sites are beneath the proposed airspace. Throughout the year, many Native Americans visit these and other sacred sites for spiritual ceremonies, vision quests or other cultural activities. If these ceremonies were to occur during the 10 days per year when a sonic boom could be heard or at a location and time when a low-level overflight would occur, an average of 6 to 9 times per year, there would be a startle effect and the potential to disrupt activities at sacred sites and to disturb participating tribal members. Youth populations potentially impacted by low-level overflights are concentrated on the Crow Reservation under PR-1. Reaction to an estimated 6 to 9 low-level overflights per year or a sonic boom during the 10 days per year of LFEs could temporarily disrupt classrooms but would not be expected to have long-term learning or health effects upon children. The Air Force is continuing Government-to-Government consultations and has committed to coordinating flight schedules and avoidance areas with affected tribes to reduce the potential for effects to identified sacred sites or ceremonies at specific times of year. Advance coordination between the Air Force and the tribes on scheduling LFEs could address potential effects from sonic booms on the larger ceremonies conducted under the airspace. Despite these consultations, there is the potential that small, individual, or unidentified ceremonies could be disturbed. The potential exists for such disturbance to be perceived as an adverse effect to these Native American cultural resources. Modified Alternative A could produce annoyance from visual and audible intrusion and annoyance to persons on the Northern Cheyenne, Standing Rock, or Cheyenne River Reservations. The level of effect would not be expected to have a negative effect on human health or the environment that is significant, unacceptable or above generally accepted norms. The mitigations identified in Section 2.3.1 and the Programmatic Agreement adequately mitigate impacts to less than significant under NEPA and resolve or avoid adverse effects under NHPA. Consequently, Modified Alternative A with the specified mitigations would not result in disproportionately high and adverse impacts within the context of environmental justice.

continued on next page…

Table ES-4. Summary of Impacts by Resource (Page 16 of 18)

Modified Alternative B	*Modified Alternative C*	*No-Action Alternative*
Environmental Justice, continued		
The western one-third of the Standing Rock Indian Reservation and the northwest corner of the Cheyenne River Reservation would be located beneath the PR-4 Low MOA. An estimated annual average 6 to 9 low-level overflights at any given location could be experienced under the PR-4 Low MOA. Should this alternative be selected, and without changes to flying protocols, areas overflown on these two reservations would experience a change in the noise and visual setting as described for PR-1 under Modified Alternative A. The minority population under PR-4 is much less than under PR-1. Tribal members of the Cheyenne River Reservation and Standing Rock Reservation who live on the reservations and under the PR-4 Low MOA would be impacted by the uncertainty and actual low-level overflights comparable to the impacts described for the portions of the Crow Reservation under Modified Alternative A. Schools would be considered a compatible land use although infrequent low-level overflights may temporarily disrupt learning. No other health or environmental conditions have been identified that could adversely impact children. Modified Alternative B has no overflight below 18,000 feet MSL (FL180) of the Crow or Northern Cheyenne Reservations, so there would be no anticipated adverse effects to these reservations. The Air Force is continuing Government-to-Government consultations and has committed to coordinating flight schedules with affected tribes to avoid ceremonies at identified sacred sites at specific times of year. Advance coordination between the Air Force and the tribes on scheduling LFEs could address potential effects from sonic booms on the larger ceremonies conducted under the airspace. There is the potential that small or individual ceremonies could be disturbed, and the potential exists for such disturbance to be perceived as an adverse effect to these Native American cultural resources. Under Modified Alternative B there would be adverse effects to low-income and minority populations, as compared to Modified Alternative A or C, where adverse effects would be resolved or avoided under NHPA. Modified Alternative B, though, would not result in disproportionately high human health or environmental effects in the context of environmental justice.	The population on the Crow Reservation under the proposed MOAs would be potentially subject to the uncertainty and an estimated average of 6 to 9 low-level flight operations at any given location annually., The Air Force would continue to work with tribes and agencies to identify and avoid, during specified periods, traditional cultural properties and other cultural sites. Audible or visual intrusion into sacred sites and spiritual ceremonies conducted by Native Americans under the proposed airspace could be perceived as being adversely affected by training overflights at any altitude. Modified Alternative C has no overflight below 18,000 feet MSL (FL180) of the Cheyenne River or Standing Rock Reservations, so there would be no anticipated adverse effects to these reservations. Impacts under the PR-1 MOAs of Modified Alternative C would be effectively the same as those for Modified Alternative A. As discussed under that alternative, the mitigations identified in Section 2.3.1 and committed to in the Programmatic Agreement would resolve or avoid adverse effects under NHPA. Consequently Modified Alternative C with the specified mitigations would not result in disproportionately high and adverse human health and environmental effects in the context of environmental justice.	The Air Force would continue to use the existing Powder River airspace, which does not directly affect Native American reservations or other areas where the populations of concern may be disproportionately represented.

Table ES-4. Summary of Impacts by Resource (Page 17 of 18)

Environmental Resource	*Cumulative*
Cumulative (EIS Section 5.0)	Cumulative effects analysis considers the potential incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency or person undertakes any such action. Potential cumulative projects in the region of influence include plans and permits to develop mineral reserves, including oil, gas, and coal reserves, and transportation of excavated resources. Other cumulative projects include the recent beddown of an additional B-52 squadron at Minot AFB, airspace actions in North Dakota and Utah, and potential addition of threat emitters and simulated targets to add realism to aircrew training. **Airspace, Noise, and Safety** The additional B-52 squadron has been included throughout the EIS as a baseline condition. Cumulative potential effects upon other airspace users or potential users have been included throughout this EIS, including impacts to airspace access and impacts to time-sensitive deliveries as a result of delays in transiting an active MOA IFR. Training aircraft would be relocated from the airspace segment to accommodate IFR arrivals and departures to airports under the airspace. Delays up to 4 hours or re-routing could affect time-sensitive deliveries to existing or proposed mining, transportation projects, industrial development, or agricultural operations. Limited communication and radar coverage, which impact safe civil aircraft operations and airports, would continue below 12,000 feet MSL in much of the proposed airspace. The B-1 or B-52 would randomly overfly at levels of 2,000 feet AGL or below approximately 2 to 4 percent of each low-level MOA during any training workday. This low overflight and potential startle effect is not expected to significantly alter or cumulatively affect any development plan or resources within the region. Infrequent sonic booms during LFEs not expected to interfere or cumulatively affect other ongoing or proposed activities. Aircraft training overflight noise is expected to be random and would not cumulatively interact with construction sites. Coordination and communication with mining or other blasting related activities, such as new rail lines, would be required for safety to avoid significant cumulative impacts. No cumulative effects to noise or safety from PRTC would be expected in conjunction with other projects in the region of influence. **Physical Sciences and Air Quality** Mineral excavation and transportation line construction could potentially impact large amounts of soil and water resources and could contribute to air quality impacts. Separate environmental analyses, prepared for the projects, will document impacts and mitigations. Potential construction of emitter sites would not be expected to have an impact on soils, water, or air quality resources. No threat emitters are proposed as part of PRTC and any threat emitters on 15-acre sites would be subject to environmental review. Siting criteria would include being near power for electricity to run the threat emitters, so no air quality effects from generators would be anticipated. Aircraft overflights do not produce an amount of emissions that could contribute to cumulative air quality impacts or result in discernible contributions to present or future nonattainment areas. No cumulative effects are anticipated to physical resources or air quality as a result of the proposed PRTC.

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Table ES-4. Summary of Impacts by Resource (Page 18 of 18)

Environmental Resource	*Cumulative*
Cumulative (EIS Section 5.0) (continued)	**Natural and Cultural Resources** Mineral excavation and transportation line construction could impact natural and cultural resources. Construction and other ground-disturbing projects could impact tribal lands and cultural resources. Separate environmental documentation would assess direct and indirect impacts of these projects. Cultural resources on tribal lands experiencing construction or other ground-disturbing effects could be impacted directly as a result of other projects in the region of influence. Some cumulative effects could occur from infrequent low-level overflights in conjunction with extensive planned mineral operations on tribal lands. Potential construction of emitter sites would not be expected to have a cumulative impact in conjunction with large scale mining projects based on the relatively small size of the emitter sites and the need for sites to be on an open rise where they could project out as far as possible. Emitters would be located to avoid environmentally sensitive areas and would not be expected to cumulatively contribute to disturbance of natural or cultural resources. **Land Use, Socioeconomics, and Environmental Justice** Substantial construction projects in the region of influence would alter employment patterns in areas of mineral development or transportation projects. Construction projects and additional large-scale mining would contribute to regional employment while changing the nature of the economy. Agreements regarding construction and operation jobs for tribal members could improve economic opportunities for minority and low-income populations. Temporary avoidance areas would be established over construction sites where tall cranes or helicopters would be used in the construction. Permanent avoidance areas would be mapped for tall structures such as smokestacks or wind generation machines. Cumulative impacts from overflight in conjunction with mining operations would not be anticipated. Low-level overflight and associated hunting and other recreation continue throughout the area overlain by the existing Powder River A/B MOAs. The fact that recreation occurs in areas of current low-level overflights suggests that the actual military aircraft overflight impacts could be less than the uncertainty of an average of 6 to 9 low-level overflights per year. For all environmental resources except civilian air operations and cultural resources to which impacts would occur, the establishment of the PRTC in combination with any other ongoing activity by federal or other agencies or enterprises would not be expected to cumulatively impact environmental resources.

For further information on this Final EIS, contact

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AIR COMBAT COMMAND

GUARDIAN OF THE NORTH

Powder River

Powder River Training Complex
Ellsworth Air Force Base, South Dakota
Environmental Impact Statement

Final

November 2014

COVER SHEET
FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR POWDER RIVER TRAINING COMPLEX (PRTC)

a. Responsible Agency: United States Air Force (Air Force)

b. Cooperating Agency: Federal Aviation Administration (FAA)

c. Proposals and Actions: This Final Environmental Impact Statement (EIS) analyzes the potential environmental consequences of a proposal to improve airspace for training, primarily, B-1 aircrews at Ellsworth Air Force Base (AFB), South Dakota, and B-52 aircrews at Minot AFB, North Dakota. PRTC alternatives have been modified in this Final EIS to incorporate mitigations in response to public, agency, and tribal comments from the proposal presented in the 2010 Draft EIS. The modified proposal incorporates mitigations designed to avoid, minimize, rectify, or otherwise reduce anticipated impacts. The existing Powder River airspace no longer supports realistic training missions with the bombers' new communication and networking capabilities, targeting capabilities, optical target tracking capabilities, smart weapons, and threat distances from opposing weapons. The proposed PRTC would provide for realistic training altitudes, employment of chaff and defensive flares, and simulation of realistic combat. The Final EIS evaluates Modified Alternatives A, B, and C, and the No Action Alternative.

d. Inquiries: For further information on this Final EIS, contact Ms. Judith Keith, AFCEC/CZN, 2261 Hughes Avenue, Ste 155, JBSA Lackland AFB, TX 78236-9853

e. Designation: Final Environmental Impact Statement

f. Abstract: This Final EIS has been prepared in accordance with the National Environmental Policy Act. Extensive time has been spent identifying and incorporating mitigations to address public, agency, and tribal comments on the Draft EIS. Mitigations include improved communication, issuance of NOTAMs to announce MOA activation and deactivation, MOA boundary adjustments, identification of specified avoidance areas, capping military training at or below Flight Level (FL) 260, relocating training aircraft from a MOA to allow Instrument Flight Rules (IFR) arrival and departure to airports, and relocating training aircraft to allow for life flight, firefighting, or other emergencies. Training aircraft would have recall capabilities prior to the activation of any PR-1A, 1B, 1C, 1D, or PR-3 Low MOA for Modified Alternative A or C or prior to the activation of any PR-3 or PR-4 Low MOA for Modified Alternative B. Any given location under an activated low MOA could experience an estimated annual average of 6 to 9 low-altitude overflights at or below 2,000 feet AGL, but not below 500 feet AGL. The low-altitude overflights would result in noise, startle effects, and an uncertainty of when such overflights could occur. Restrictions on supersonic flight to not more than 10 days per year when approximately 20 aircraft would participate in a Large Force Exercise (LFE) would reduce the potential for sonic booms to an estimated average of one per LFE day experienced at any given location under or near the airspace. If all the published airspaces were activated on a weekday and a pilot chose not to depart or arrive IFR and/or chose not to fly see-and-avoid in an active MOA, up to an estimated 91, 107, or 80 civil flights under Modified Alternative A, B, or C, respectively, could be impacted by rescheduling or by ground hold from a few minutes up to 4 hours. The Air Force would make information available, continue to work with ranchers and others to establish temporary avoidance areas, and train at low altitudes early in a mission to address socioeconomic concerns, such as those of hunters and other recreationalists. Avoidance areas, MOA altitude limitations, and continuing Government-to-Government consultations address tribal member concerns about low overflight. The Standing Rock, Cheyenne River, and Northern Cheyenne Reservations would not be overflown below 12,000 feet MSL with Modified Alternative A or C. With Modified Alternative A or C, residents on portions of the Crow Reservation would experience an average of 6 to 9 low-altitude overflights per year. Under Modified Alternative B, residents on portions of the Standing Rock and Cheyenne River Reservation would experience comparable low-altitude overflights. Avoidance areas and schedules address some of these potential impacts and avoid disproportionate health impacts. This Final EIS addresses environmental consequences for airspace/air traffic, noise, safety, air quality, physical and biological sciences, cultural resources, land use, socioeconomics, and environmental justice, and also discusses cumulative actions. The Air Force-preferred alternative, Modified Alternative A, would meet the purpose and need and allow aircrews to train in a realistic combat environment to increase aircrew combat capability and survivability.

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Acronyms and Abbreviations

28 BW	28th Bomb Wing
5 BW	5th Bomb Wing
ACC	Air Combat Command
ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
AFB	Air Force Base
AFI	Air Force Instruction
AGL	above ground level
AHAS	Avian Hazard Advisory System
Air Force	United States Air Force
ANG	Air National Guard
APD	application for permit to drill
ARTCC	Air Route Traffic Control Center
ATC	Air Traffic Control
ATCAA	Air Traffic Control Assigned Airspace
BAM	Bird Avoidance Model
BASH	Bird-Aircraft Strike Hazard
BFO	Buffalo Field Office
BLM	Bureau of Land Management
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CAN	Canadian
CBNG	coal bed natural gas
CDNL	C-Weighted Day-Night Average Sound Level
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COC	Community of Comparison
CWA	Clean Water Act
dB	decibel
dBC	C-weighted decibel
DEIS	Draft Environmental Impact Statement
DME	distance measuring equipment
DNL	Day-Night Average Sound Level
DNL_{mr}	Onset-Rate Adjusted Monthly Day-Night Average Sound Level
DoD	Department of Defense
DOT	Department of Transportation
DR	Decision of Record
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
ERCC	Engine Running Crew Change

ESA	Endangered Species Act
ESS	Electronic Scoring Site
°F	degrees Fahrenheit
FAA	Federal Aviation Administration
FCA	Fortification Creek Area
FEIS	Final Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
FL	Flight Level
FONSI	Finding of No Significant Impact
FY	fiscal year
GA	general aviation
GAO	Government Accountability Office
GHG	greenhouse gas
GIS	Geographic Information System
GPS	Global Positioning System
HQ	headquarters
HR	hour
Hz	Hertz
IBLA	Interior Board of Land Appeals
IFR	Instrument Flight Rules
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
ILS	instrument landing system
INRMP	Integrated Natural Resources Management Plan
IR	Instrument Route
LBS	pounds of thrust
LBS/HR	pounds per hour
LFE	Large Force Exercise
L_{max}	maximum sound level
LOA	Letter of Agreement
$\mu g/m^3$	micrograms per cubic meter
MADE	Military Airspace Data Entry
MHRC	Mountain Home Range Complex
MOA	Military Operations Area
MOB	Main Operating Base
mph	miles per hour
MSL	mean sea level
MT	Montana
MTANG	Montana Air National Guard
MTR	Military Training Route
N	near
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAS	National Airspace System
navaid	navigational aid
NC	core engine fan speed
ND	North Dakota
NDDA	North Dakota Department of Agriculture

NE	Nebraska
NEPA	National Environmental Policy Act
NEXRAD	Next Generation Radar
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NM	nautical miles
NM^2	square nautical miles
NO_2	nitrogen dioxide
NOA	Notice of Availability
NOTAM	Notice to Airmen
NO_x	nitrogen oxides
NPS	National Park Service
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NTTR	Nevada Test and Training Range
O_3	ozone
PA	Programmatic Agreement
Pb	lead
PDARS	Performance Data Analysis and Reporting
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
POC	Point of Contact
POD	Plan of Development
ppm	parts per million
PR-1A	Powder River 1A
PR-1B	Powder River 1B
PR-1C	Powder River 1C
PR-1D	Powder River 1D
PR-3	Powder River 3
PR-4	Powder River 4
PRB	Powder River Basin
PRTC	Powder River Training Complex
PSD	prevention of significant deterioration
psf	pounds per square foot
RAP	Ready Aircrew Program
RMP	Resource Management Plan
ROD	Record of Decision
ROI	region of influence
RPA	Remotely Piloted Aircraft
RPM	revolutions per minute
SAA	Special Activity Airspace
SAMS	Special Use Airspace Management System
SD	South Dakota
SDDA	South Dakota Department of Agriculture
SEL	Sound Exposure Level
SEL_r	Onset Rate-Adjusted Sound Exposure Level
SHPO	State Historic Preservation Office [or Officer]

SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_x	sulfur oxides
SUA	Special Use Airspace
TAC	Toxic Air Contaminants
TFR	Temporary Flight Restrictions
U	under
U.S.	United States
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UTTR	Utah Test and Training Range
VFR	Visual Flight Rules
VOC	volatile organic compounds
VOR	very high frequency omni-directional radio range
VR	Visual Routes
WSA	wilderness study area
WY	Wyoming
WYNDD	WY Natural Diversity Database

1.0 PURPOSE AND NEED

The overarching purpose of any military force is to be able to successfully conduct combat operations. To accomplish this purpose, the military force must train often and realistically. A trained military force is essential to support national policy and security objectives. Capabilities in the air and capabilities in space can rapidly provide the national command structure a full range of military options to meet national objectives and protect national interests.

1.1 INTRODUCTION

B-1 and B-52 aircraft have the range to reach and remain near a target area, combat capability to carry a variety of munitions, sensors for specific targets, responsiveness to be at the scene when needed, and flexibility to relocate and respond to time-sensitive targets. These capabilities make United States (U.S.) Air Force bombers flown by trained aircrews a key asset in national defense.

The 28th Bomb Wing (28 BW), based at Ellsworth Air Force Base (AFB), South Dakota (SD), currently manages and trains in military training airspace overlying parts of the states of South Dakota, Wyoming, and Montana. The 5th Bomb Wing (5 BW), based at Minot AFB, North Dakota, also trains in the existing military training airspace. As described in Section 1.4 of this Environmental Impact Statement (EIS), this airspace does not meet mission training needs for current and projected combat conditions. The 28 BW is proposing effective and realistic military training airspace to support training primarily for B-1 and B-52 bomber aircrews assigned to Ellsworth AFB, South Dakota, and Minot AFB, North Dakota. These proposed changes include adjusting the boundaries of existing airspace, creating new airspace, improving pilot training realism, and deploying defensive countermeasures (chaff and flares) in the new airspace. Collectively, these proposals constitute the Powder River Training Complex (PRTC).

PRTC has been proposed to improve support for missions and tactics. As described in Section 1.5, PRTC would enable pilots to more readily "train as they will fight." PRTC would create training airspaces to realistically train for existing and expected combat conditions. The PRTC training airspace would provide aircrews the ability to develop conditioned responses to threats and provide additional space for realistic combat training maneuvers. PRTC would improve support for maneuvers and tactics and would improve aircrew combat success and survivability as mission capabilities evolve in response to national security objectives and other global missions.

This EIS addresses potential environmental consequences that could result from proposed implementation of PRTC.

1.2 PRTC EIS DEVELOPMENT

In August 2010, in accordance with the National Environmental Policy Act (NEPA) and its implementing regulations, the Air Force released a Draft EIS (DEIS). The DEIS presented the potential environmental consequences of the Air Force's proposal to improve training for primarily bomber aircrews assigned to Ellsworth AFB and Minot AFB. The DEIS Proposed Action

and alternatives, including the No-Action Alternative, were called the "Powder River Training Complex."

As a result of public and agency comments received during the DEIS review, the 100-day public comment period, and the Federal Aviation Administration (FAA) aeronautical review process, the Air Force, FAA, other federal and state agencies, and tribal governments have been consulting to mitigate concerns while continuing to meet national defense training requirements. The Air Force has participated in continued communication, consultation, and/or meetings with state agencies and tribal representatives from 2008 through 2014. Consultation and coordination on the environmental and related impacts will continue beyond completion of the EIS.

Subsequent to the release of the DEIS for public comment, the Air Force held 19 public hearings and completed consultations with federal and state agencies and the Native American tribes with reservations underlying the proposed airspace. Public comments and consultations assisted the Air Force in identifying mitigations that would avoid, minimize, rectify, or otherwise reduce anticipated impacts. These mitigations were integrated into the DEIS alternatives carried forward for analysis in the Final EIS (FEIS) as modified alternatives. These modified alternatives, developed in the four years since the DEIS was issued, are designed to address many agency, public, and tribal concerns.

The result is the three modified alternatives set forth in this FEIS. The modified alternatives incorporate mitigations that address numerous areas of public, agency and tribal concern, including:

- Commercial and General Aviation Aircraft Operations
- Tribal Reservation Lands
- Cultural and Historic Areas
- Communities and Ranching Operations

Chapter 2.0 of this FEIS describes the Modified Alternative A, Modified Alternative B, Modified Alternative C, and the No-Action Alternative. Chapter 4.0 analyzes the environmental consequences of these alternatives. The Modified Alternative A is the Air Force's Proposed Action and preferred alternative.

1.3 OVERVIEW

Bomber aircrews need to train to continue to serve as a key asset to national defense, and training requires, among other things, airspace with the proper dimensions and characteristics. Historically, the two B-1 squadrons at Ellsworth AFB and the two B-52 squadrons at Minot AFB have used the Powder River Military Operations Area (MOA) and low-level Military Training Routes (MTRs) to train to meet national defense requirements. Due to several factors, expanded in Section 2.10, the current airspace is inadequate for mission needs. The purpose of the Modified Alternative A is to establish and configure airspace needed for B-1 and B-52 training. B-1 and B-52 aircraft have received substantial system upgrades that necessitate, in addition to mission requirements, training airspace with certain size and topographic contour

characteristics. Adjustments in the current airspace are needed to accommodate aircraft and threat systems, which now have longer range and higher altitude capabilities; fuel conservation, which has become increasingly important and necessitates shorter sortie durations; low-altitude training and targeting sensor training, which require more diverse airspace; an increase in the types of missions; and complex multi-mission training required as a result of combat experience.

The Air Force needs to improve airspace assets for required training primarily by the two B-1 squadrons stationed at Ellsworth AFB, and the two B-52 squadrons stationed at Minot AFB. The existing Powder River airspace can no longer support realistic training missions for these four squadrons. This airspace also supports training missions for two B-1 squadrons at Dyess AFB, two B-2 squadrons at Whiteman AFB, two B-52 squadrons at Barksdale AFB, one RC-135 squadron at Offutt AFB, as well as many other military units. The proposed training airspace improvements, collectively referred to as PRTC, would increase the amount and quality of local airspace available as training assets primarily for B-1 and B-52 aircrews. PRTC would improve training through:

- Establishing new airspace and modifying existing airspace in the region of Ellsworth AFB and Minot AFB
- Providing for complex multi-mission training in the new and modified airspace
- Permitting defensive training with chaff and flare countermeasures in the new and modified airspace
- Providing for realistic Large Force Exercises (LFEs) with various aircraft types for 1 to 3 days per quarter, an expected total not to exceed 10 days per year
- Authorizing supersonic flight for the B-1s above 20,000 feet mean sea level (MSL) in the new and modified airspace to be scheduled only during the not more than 10 days per year of LFEs
- Authorizing other military units with fighters to conduct supersonic flight above 10,000 feet above ground level (AGL) in the new and modified airspaces to be scheduled only during the not more than 10 days per year of LFEs

Figure 1-1 describes the bases, training, and range assets considered for B-1 and B-52 training and summarizes some of the key considerations used in the alternatives identification process described in Chapter 2.0. Airspaces such as the Tiger, Devils Lake, Hays, and Lake Andes MOAs were created and configured for Cold War era missions. These airspaces do not have the dimensions, altitude structure, or electronic capabilities to meet today's or tomorrow's warfighting requirements or for training to meet ongoing and future Overseas Contingency Operations.

Airspaces such as the Mountain Home Range Complex (MHRC), Utah Test and Training Range (UTTR), and Nevada Test and Training Range (NTTR) are excellent ranges with updated electronic and target capabilities; however, they are distant from B-1 and B-52 bases. In addition, the realistic training offered by these ranges leads to intensive use for both test and training missions by locally based aircraft, which are given priority over Ellsworth-based aircraft

to use the ranges. The crowded use and lack of priority severely limit access for bomber training. This limited access, combined with the distance from B-1 and B-52 home bases, makes it difficult to conduct realistic training and maintain bomber aircrew proficiency.

Existing training airspace and range assets are inadequately configured, excessively distant, and/or inconsistently available to support the needs of the B-1s and B-52s from Ellsworth AFB and Minot AFBs, respectively. The proposed PRTC would provide appropriately configured local airspace which would be consistently available and alleviate most of the constraints on realistic B-1 and B-52 training.

1.4 PURPOSE OF PRTC

The purpose of the proposed PRTC is to provide local airspace that would support primarily Ellsworth and Minot AFBs with the capability to adequately train aircrews and ensure their readiness to succeed and survive in combat while mitigating, to the extent possible, agency, tribal, and public concerns. No bombing range is proposed for this action. The Modified Alternative A would provide adequate airspace to provide capabilities necessitated by the following factors.

Since 9/11, the Air Force has evolved multiple new roles and responsibilities for the B-1, including support for Nontraditional Intelligence, Surveillance, and Reconnaissance.

The B-1 and B-52 capabilities and combat missions have changed and expanded in recent years. Technological upgrades to B-1s and B-52s have resulted in the need for responsive, improved training. B-1 upgrades include new target acquisition capabilities, new communication and networking capabilities, new laser targeting capabilities, new optical target tracking capabilities, and new smart weapons. B-1 and B-52 technological upgrades require training time for aircrews to be proficient in these capabilities and mission requirements. Expanded local airspace would permit aircrews to use their flight time in productive training rather than on unproductive commuting to distant training ranges. The B-1 is the only aircraft in the U.S. with the ability to remain over targets for an extended period and rapidly respond to precisely employ any of a broad array of munitions on multiple separate targets spread across a large area. Missions and tactics assigned to the B-1 include Close Air Support, Time-Sensitive Targeting, distant target identification, and networking with multiple aircraft and ground assets. The B-1 continues to have a role as the only U.S. bomber capable of high-speed, low-level penetrations for a breadth of worldwide missions.

The number of users has increased. Minot AFB, a frequent user of the current Powder River airspace, has added a second B-52 squadron. Minot's Operations Group commander estimated that their training airspace needs would increase by 70 to 80 percent. Expanding the Powder River MOA airspace into several airspace sections would permit simultaneous airspace use by both Minot's squadrons, as well as Ellsworth AFB B-1 squadrons.

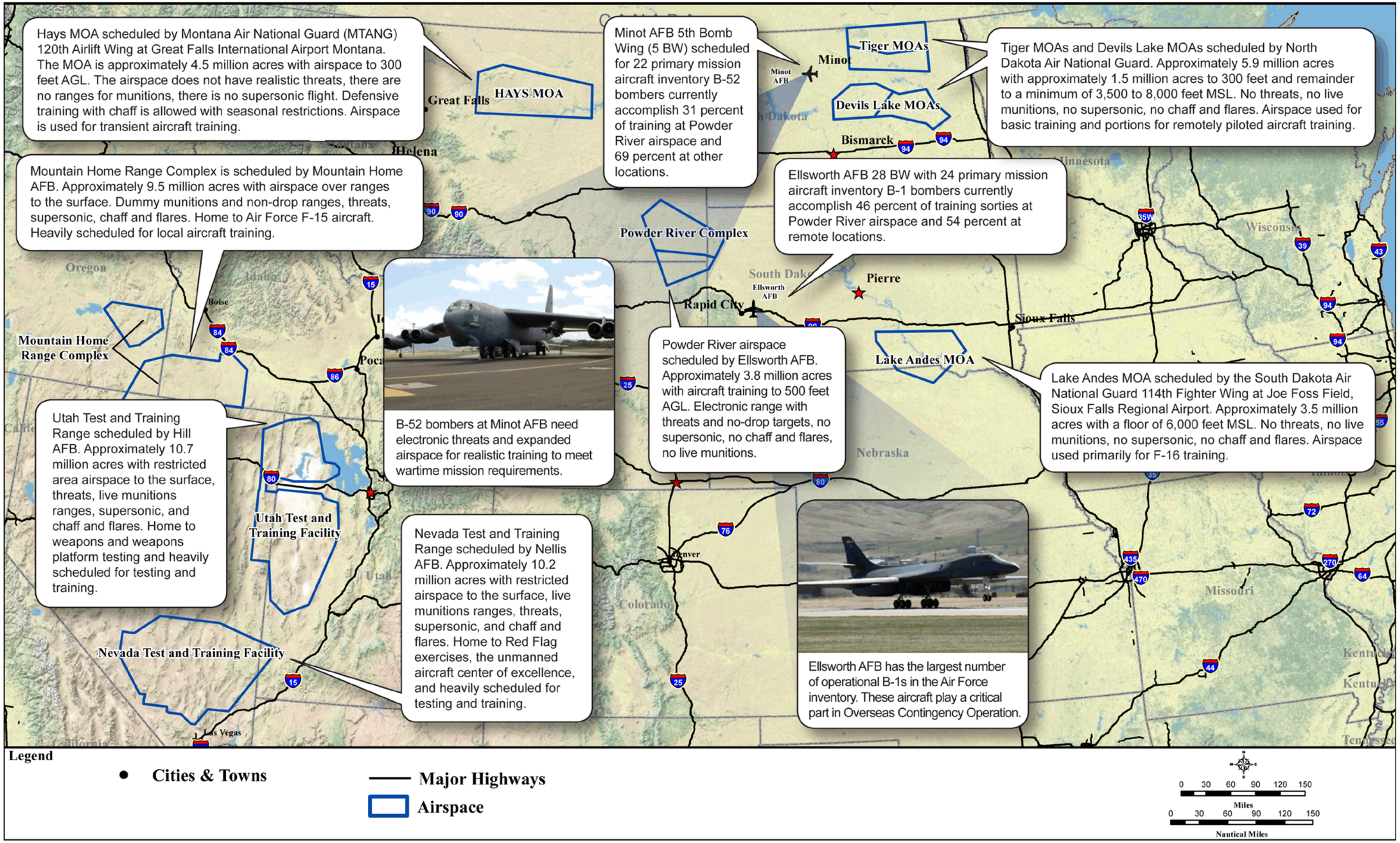

Figure 1-1. Regional Location of Existing Powder River Airspace and Remote Training Airspaces and Ranges

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Training must mirror combat to the greatest extent possible, and airspace and range training needs to provide the opportunity for realistic, effective training operations. As noted in Figure 1-1, the existing local and remote airspace and range assets available to the B-1s from Ellsworth AFB and B-52s from Minot AFB are either not configured for current B-1 or B-52 mission training or, if configured for current training, the airspaces are distant from Ellsworth or Minot and heavily scheduled for training locally based aircraft. For bomber training, these airspace assets suffer from substantial limitations and/or deficiencies.

Several range improvements under the existing Powder River airspace include threat emitter upgrades, a simulated urban area, a ground laser pointer, and the addition of an improvised explosive device simulation area. As a result of these ongoing and potential upgrades, the 28th Operations Group Commander anticipates that bomber and fighter aircraft with high-fidelity targeting sensors containing substantially expanded video and electronic targeting capabilities would use the training airspace. Additionally, RC-135 squadrons have expressed interest in increasing their use of Powder River assets. Expansion of the airspace would allow these units to schedule and access these improved training aids.

Aircraft and threat systems now have longer range and higher altitude capabilities. The current Powder River airspace was designed when ground threats had ranges of 25 nautical miles (NM) or less and air-to-air radars had ranges of less than 35 NM. Today, ground threats have ranges that exceed 100 NM and air-to-air radar ranges have more than doubled. Due to these advances in threat systems and aircraft capabilities, bomber aircraft have current mission requirements to employ at greater distances from targets and/or threats. Training scenarios using modern threats in Powder River's current airspace do not have areas for aircraft marshalling or areas for full tactical maneuvers outside of simulated threat ranges. To realistically train against these threats and to integrate better with modern aircraft requires more airspace.

The current Powder River airspace supports training from the surface up to Flight Level (FL) 450 (i.e., 45,000 feet MSL) and provides opportunities for aircrews to maintain limited proficiency with simulated attack and ground-based defense systems. Aircrews simulating air-to-surface attacks within the existing airspace cannot train with defensive chaff and flares and cannot train with maneuvers that could break the sound barrier. Current fighter and bomber engagements cannot be realistic because the aircrews must break off the simulated fight rather than momentarily exceed the sound barrier, since supersonic flight is not authorized in the existing training airspace.

The proposed airspace would permit aircraft preparing to exercise battlefield tactics to include supersonic speeds during the not more than 10 days per year of previously published and publically announced LFEs. The airspace would provide enough space for realistic and modern training scenarios, and flights could conduct training using required safe separation criteria. The proposed airspace configuration provides for high and low training altitudes, employment of chaff and flares, and improved use of existing electronic combat simulation. More importantly, the airspace size allows multiple aircraft types to conduct air-to-air and air-to-ground engagements with simulated deployment of air-to-air or air-to-ground munitions. Training aircraft would continue to commute to ranges approved for actual munitions

deployment. Airspace expansion would allow aircrews to train in a realistic combat environment, which would increase their overall combat capability and survivability. Realistic multiple aircrew training would especially occur during quarterly 1- to 3-day LFEs when various aircraft types would train as they fight.

Increase combat readiness training results from improved fuel efficiency. Fuel continues to be one of the Air Force's largest expenses, and the Air Force actively seeks opportunities to maintain or increase readiness while realizing fuel efficiency or reduced fuel costs. The current local airspace supports less than 50% of the sorties required to maintain combat readiness. The PRTC airspace described in this EIS would allow more than 85% of the sorties required for readiness to use the PRTC training area. This would greatly reduce the need to use airspace farther from the base, which would save an average of 3 hours per non-local sortie of unproductive transient time and result in significant improvement both to training quality and quantity. This increased readiness is valued at more than $24 million per year. Some training at other locations will still be needed to accomplish training requirements that are not part of this proposal, such as dropping ordnance on ranges.

Low-altitude training and targeting sensor training requires more diverse airspace. Operations require low-altitude training and targeting sensor use for B-1 and fighter aircraft. Additionally, B-52 aircraft recently received advanced targeting sensors and began training with them. For this the Powder River airspace requires expansion and modification to meet these diverse training needs.

B-1 aircrews require proficiency in low-altitude unguided munitions employment, low-altitude ingress and egress, and terrain-following procedures to 500 feet AGL. Low-altitude flight remains a requirement to support show-of-force and show-of-presence passes in combat operations. For the purposes of this analysis, low-altitude overflight is defined as 2,000 feet AGL to a minimum of 500 feet AGL. Aircrew proficiency remains a critical aspect of low-altitude operations, and low-altitude employment proficiency continues to constitute a significant portion of required B-1 training. However, after a few years of using the existing Powder River MOAs for low-altitude training, aircrews become overly familiar with the terrain and thus, training becomes memorized. Expanding the airspace would provide varied and different terrain for training, which in turn would permit more challenging scenarios. Sectioning of the proposed airspace into multiple MOAs simulates the sector control airspace measures currently used in combat operations, which would also add to training realism. Avoidance areas within the proposed airspace can be used to simulate combat threat avoidance. The current Powder River airspace cannot support all of these training missions.

Some B-52 units also have requirements for low-altitude proficiency. They maintain proficiency in low-altitude, counter-sea, and mine-laying operations. B-52 low-altitude training is currently limited to no lower than 1,000 feet AGL.

Advanced sensors on the bombers permit target acquisition at greater distances, and training with these sensors requires increased airspace. Current combat operations require aircraft to use the targeting sensor to search for improvised explosive devices, to escort ground convoys, and to gather intelligence. Similar to low-altitude training, "sensor targets" become memorized over time. The proposed airspace expansion would permit a three-fold increase in targeting

sensor training opportunities with additional "ground space" to find and track new targets. Both the B-1 and B-52 require a wide range of practice targets to remain proficient in targeting sensor operations.

Combat readiness has demonstrated a requirement for complex multiple mission training. In combat, B-1s are often launched fully loaded and set up to orbit a battlefield area with a variety of munitions near the expected action. B-1s are the weapon of choice in combat where they can be called on to target everything from an enemy mobile SCUD missile minutes from launching to an enemy pinning down a Sea, Air, Land team on a hilltop to a weapons cache found by a Special Operations team. B-1 aircrews must be trained to be experts in every potential B-1 mission. Training the B-1 four-man aircrew to accomplish these multiple new and existing assignments, often on the same mission, requires dynamic, realistic training airspace. The expanded B-1 capabilities and the aircraft's performance mean that one or two B-1s require all the current Powder River for a realistic training mission. The B-1 operational wing at Ellsworth AFB does not have adequate airspace to train aircrews for present and future training requirements. The B-52 operational aircraft at Minot AFB face comparable training limitations.

Airspace and ground assets must be integrated into a local training complex accessible to Ellsworth AFB and Minot AFB with the opportunity for multiple missions training. The capability to launch more local training flights would permit aircrews to fulfill requirements for combat readiness because a higher proportion of training time per flying hour would be spent in multi-mission training for today's and tomorrow's conflicts. B-1 aircrews cannot accomplish the array of expanded training requirements while commuting to remote training complexes, and these remote training complexes have limited availability. Commuting and availability further reduce flexibility and efficiency.

B-52s from Minot AFB face the same training challenge. B-52 aircrews must fulfill a broad range of missions, with new missions for electronic suppression and smart weapons arising from the Overseas Contingency Operation. This varied array of missions include strategic attacks, counter land-and-air, and preparation for deployment with the Aerospace Expeditionary Forces. Meeting these requirements demands efficient and effective use of limited available training hours. As with the B-1s, the B-52s must train in an airspace complex located and configured to provide a high proportion of training and minimal low-value commuting time. Such a complex would permit Minot AFB to generate quality local sorties and fulfill training requirements for combat readiness.

1.5 NEED FOR PRTC

The Air Force needs to overcome the limitations and deficiencies described in Section 1.4. The bombers' new capabilities and 21st century missions need extended horizontal airspace size and capacity to adequately support necessary B-1 and B-52 training. Expanded local airspace would allow aircrews to fulfill needed training.

The existing Powder River airspace includes the Powder River MOAs, associated Air Traffic Control Assigned Airspace (ATCAA), and an array of electronic threats and simulated targets.

The proposed PRTC builds upon the existing Powder River airspace and adds and reconfigures MOA and ATCAA assets to meet today's and tomorrow's training needs.

Figure 1-2 presents an overview of the modular nature of the proposed PRTC and describes the proposed airspace segments

of the PRTC. The summary of factors that drive the need to implement the proposed airspace is presented in Table 1.5-1.

Table 1.5-1. Summary of Factors That Establish the Need for Expanded Local Airspace

1.	B-1 and B-52 missions, aircraft advanced technology capabilities, and training requirements have increased and will continue to increase, and the existing Powder River airspace cannot accommodate these requirements.
2.	Commuting consumes limited available aircrew and aircraft flying hours without accomplishing essential training, and distant complexes that theoretically could provide needed training with long commutes have a limited accessibility because locally based aircraft and other users have priority.
3.	Flight hours spent commuting consumes excessive fuel and require extensive on-ground maintenance hours for airframes to be ready for the next mission. Commuting long hours to training missions forces aircraft inspections and maintenance sooner than the same number of local training missions. This results in a reduction in available airframes for aircrew training.
4.	Combat readiness requires complex multiple mission training, but the existing Powder River airspace accommodates approximately 46 percent of required B-1 aircrew training sorties and 31 percent of required B-52 aircrew training sorties.
5.	The existing Powder River airspace does not permit certain required training activities essential to today's combat, such as supersonic flight, training in the deployment of defensive chaff and flares, diversified low-altitude training, or LFEs.
6.	The number of users has increased, but the capacity of the existing Powder River airspace does not provide for multiple or dissimilar aircraft training with current sensors and weapon capabilities.
7.	The B-1 and B-52 aircrews currently face aircraft and threat systems with ranges far in excess of the existing Powder River airspace. Training must include detecting and reacting to such threats.
8.	The existing Powder River airspace has inadequate space and diversity to accommodate necessary B-1 and B-52 training requirements for combat readiness.

LFE = Large Force Exercise

Table 1.5-2 summarizes the improved training capabilities of the proposed PRTC depicted on Figure 1-2 and includes the section where the need is addressed in this EIS. Figure 1-3 provides an overview of the existing Powder River airspace.

A comparison of Table 1.5-1 and Table 1.5-2 demonstrates that PRTC would provide bomber aircrews with adequately sized, configured, and available airspace to train as they would fight during worldwide deployment. The long time frame for any future bomber development places an even greater emphasis on B-1 capabilities and training. Bomber aircrews face reduced budgets, a reduced number of airframes, high aircraft utilization requirements, new multi-role taskings, and expanded capabilities to achieve U.S. military objectives. Bomber aircrews must train to be experts with their own weapons systems and to function as an integrated force package with other aircraft to leverage the capabilities of each weapon system and enhance survivability of the collective force. Expanding the existing Powder River airspace to form the PRTC would improve realistic combat training and increase flexibility and availability of limited resources and assets.

Table 1.5-2. Summary of PRTC Purposes and Improved Training Capabilities

1. Provides for aircrew training to implement and employ technology upgrades and fulfill both current and anticipated future operational requirements (Section 2.10.5). ***Addresses Need Factors 1, 4, 5, 6, 7, and 8 in Table 1.5-1.***
2. Enables aircrews to conduct diverse training missions while dramatically reducing commuting hours and issues of accessibility to remote ranges (Section 2.10.5) and provides locally available airspace with scheduling priority for bombers (Section 2.10.5.6). ***Addresses Need Factors 2 and 3 in Table 1.5-1.***
3. Enables maintenance turnaround of the aircraft to generate adequate training sorties (Section 2.10.5) and provides more efficient use of fuel resulting in realistic training to improve both training quality and quantity. ***Addresses Need Factors 2 and 3 in Table 1.5-1.***
4. Accommodates approximately 85 percent of required aircrew complex multi-mission training sorties for both B-1 and B-52 aircrews (Section 1.4). ***Addresses Need Factors 1, 4, 5, 6, 7, and 8 in Table 1.5-1.***
5. Increases the proportion of training time for new and diversified training requirements, including defensive chaff and flares, LFEs not to exceed 10 days per year, supersonic maneuvers only during LFEs, and diversified areas for low-altitude training (Section 2.10.4). ***Addresses Need Factors 1, 4, 5, 6, 7, and 8 in Table 1.5-1.***
6. Improves integrated aircrew combat training operations by quarterly support of realistic tactics using various aircraft types and expanded network based operations training (Section 2.8.4). ***Addresses Need Factors 4, 5, 6, 7, and 8 in Table 1.5-1.***
7. Increases the availability of real world training at realistic distances for multiple, concurrent flights of aircraft from Ellsworth and Minot AFBs (Section 2.10.5). ***Addresses Need Factors 4, 5, 6, 7, and 8 in Table 1.5-1.***
8. Restructures and adds local airspace and capabilities to meet the training needs for the 28th Bomb Wing and Minot AFB 5th Bomb Wing aircrews (Section 1.4). ***Addresses Need Factors 1, 2, 3, 4, 5, 6, 7, and 8 in Table 1.5-1.***

AFB = Air Force Base; LFE = Large Force Exercise; PRTC = Powder River Training Complex

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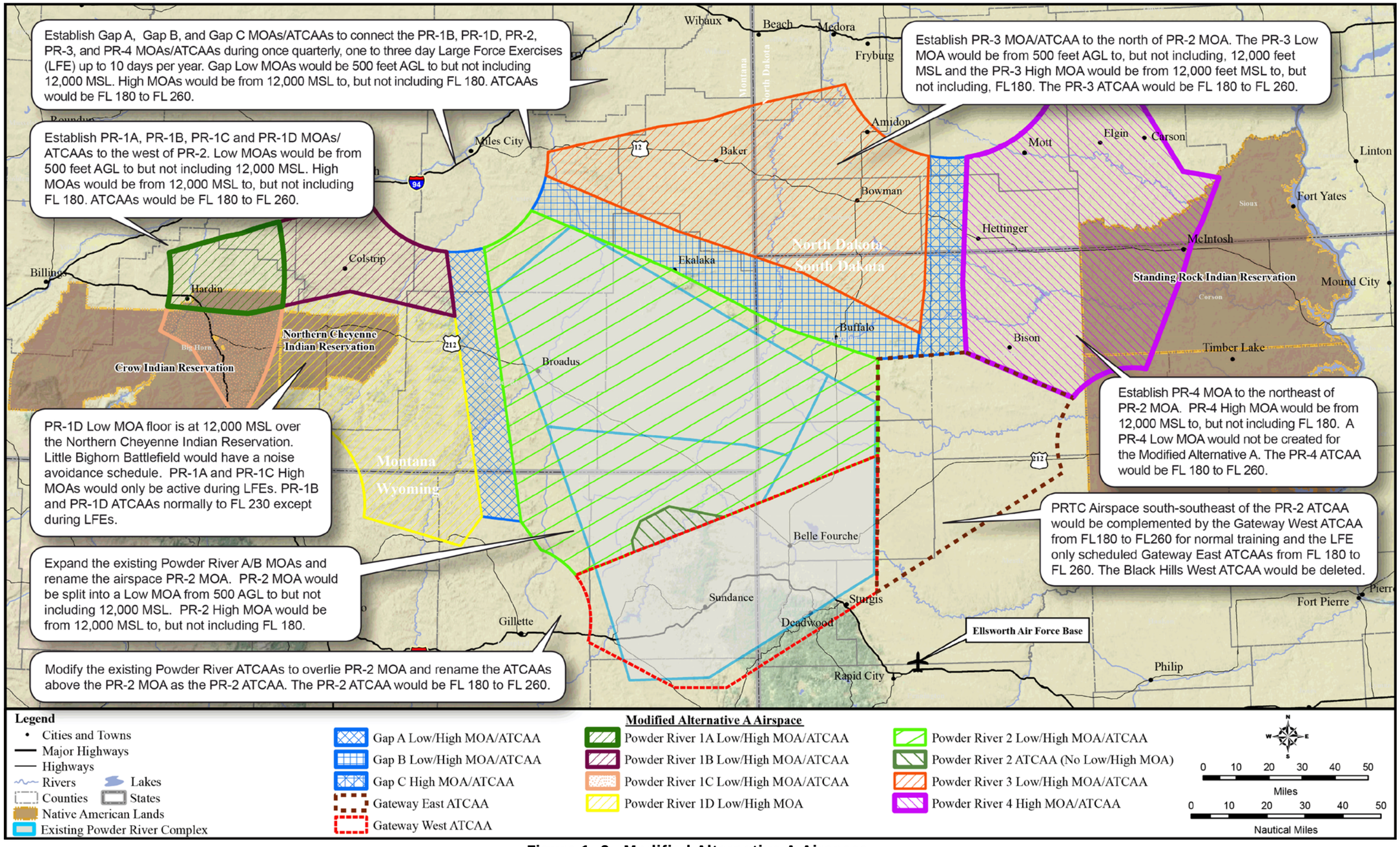

Figure 1-2. Modified Alternative A Airspace

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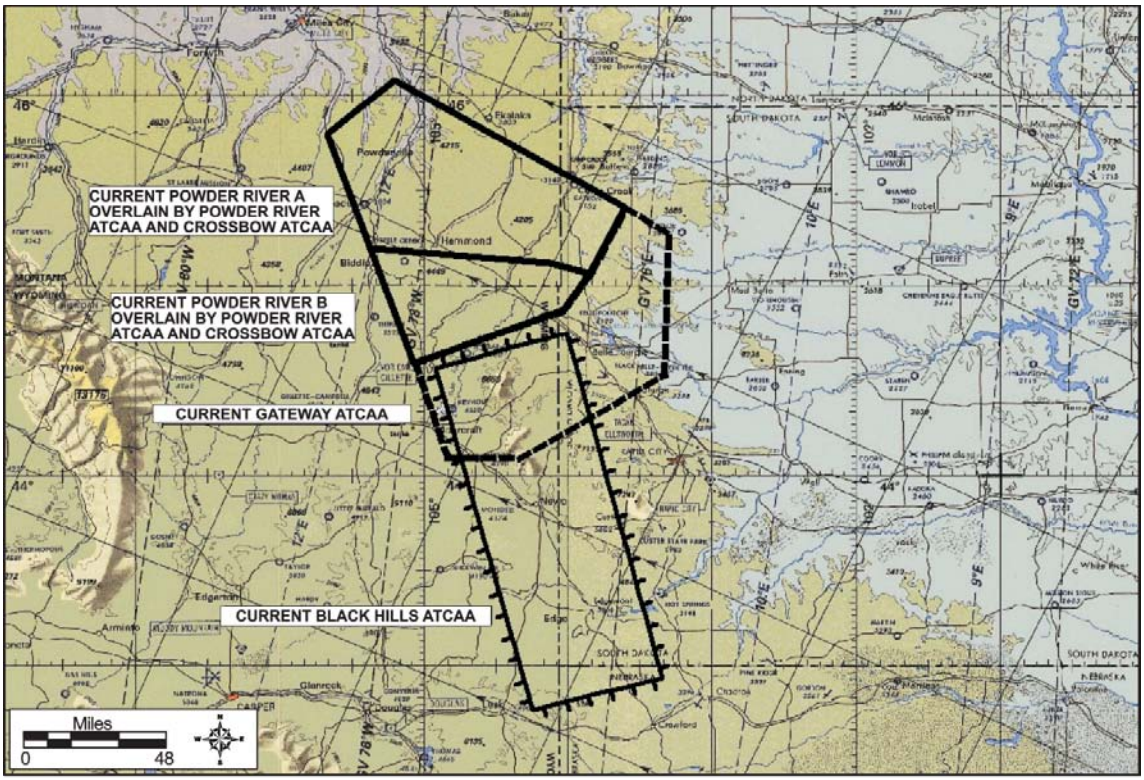

Figure 1-3. Existing Powder River Airspace

1.6 LEAD AND COOPERATING AGENCIES

The Air Force is the proponent for the PRTC proposal and is the lead agency for the preparation of the EIS and the Section 106 consultation associated with the National Historic Preservation Act (NHPA). The FAA is a cooperating agency. As defined in 40 Code of Federal Regulations (CFR) §1508.5, a cooperating agency…

> *means any Federal agency other than a lead agency which has jurisdiction by law over, or special expertise with respect to any environmental impact involved in, a proposal (or a reasonable alternative) for legislation or other major Federal action significantly affecting the quality of the human environment.*

Congress has charged the FAA with administering all navigable airspace in the public interest as necessary to ensure the safety of aircraft and the efficient use of such airspace. The FAA is the agency with jurisdiction by law and special expertise with respect to those portions of the PRTC proposal regarding changes in the configuration of the airspace and establishment of new airspace. The FAA is participating as a cooperating agency in this EIS. As a cooperating agency, FAA has participated in public hearings during preparation of this EIS. FAA's input has been critical in developing the proposed airspace. Table 1.6-1 presents a list of relevant correspondence between the Air Force and the FAA (Appendix E).

Table 1.6-1. Correspondence with the FAA

From	To	Letter Date	Subject
Air Force	FAA	28 September 2007	Request for participation by the FAA as a cooperating agency
FAA	Air Force	10 October 2007	Acceptance of participation as a cooperating agency
Air Force	FAA	December 2013	Request FAA action on Aeronautical Proposal
FAA	Air Force	25 July 2014	Aeronautical Study Consultations, Powder River Training Complex, Military Operations Area, 14-AGL-06NR

FAA = Federal Aviation Administration

No charted airspace decision has been made or will be made prior to complete environmental review. The PRTC Modified Alternative A aeronautical proposal has been submitted by the Air Force to the FAA. The Air Force worked with the FAA to prepare this FEIS. The Air Force's decision on the proposed PRTC will be documented in an Air Force Record of Decision (ROD). The Air Force will request FAA action on the airspace modifications and establishment of new airspace as recorded in the FEIS and ROD.

The FAA has reviewed the aeronautical proposal submitted by the Air Force in accordance with FAA Order 7400.2K, *Procedures for Handling Airspace Matters*. The FAA's environmental policy and procedures are found in FAA Order 1050.1, *Environmental Impacts: Policies and Procedures*, and ensure FAA's compliance with the requirements set forth in the Council on Environmental Quality (CEQ) regulations for implementing the provisions of NEPA (40 CFR 1500–1508) and Department of Transportation Order DOT 5610.1C, *Procedures for Considering Environmental Impacts*. The FAA's federal action triggering NEPA is the charting of any airspace modification, as submitted in the aeronautical proposal. The Air Force's goal in its cooperative effort with the FAA is for this EIS to fulfill the NEPA requirements of both agencies.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 ORGANIZATION OF THIS CHAPTER

This chapter describes the Air Force proposal to expand and enhance existing Powder River training capabilities by establishing the Powder River Training Complex (PRTC). Section 2.2 is a brief introduction to this Final Environmental Impact Statement (FEIS) with modified alternatives designed to respond to public and agency comments. Section 2.3 presents the mitigation measures that are incorporated into the Modified Alternative A, Modified Alternative B, and Modified Alternative C. Section 2.4 presents a background of the Air Force bases and existing training airspace. Section 2.5 details the Modified Alternative A. Sections 2.6 and 2.7 describe the Modified Alternatives B and C, respectively. Section 2.8 explains the elements common to all the action alternatives. Section 2.9 explains the No-Action Alternative and describes the existing Powder River Military Operations Areas (MOAs) and the existing training assets under the established airspace.

Section 2.10 details the multiple different types of bomber combat missions and threats for which bomber aircrews need to be trained. Section 2.10 also describes the existing Powder River ground-based training assets and the required training for Ellsworth Air Force Base (AFB) and Minot AFB aircrews. Section 2.11 explains the alternative selection criteria and the application of those criteria to develop the alternatives carried forward for analysis in this Environmental Impact Statement (EIS). Section 2.12 describes public and agency involvement, including hearings on the August 2010 Draft EIS (DEIS) and resulting and subsequent public and agency comments. Section 2.13 compares environmental consequences for each environmental resource under each alternative.

2.2 INTRODUCTION

The DEIS released for public comment described the Air Force's proposal to expand and enhance the Powder River airspace to become the PRTC. The training deficiencies, limitations, requirements for B-1 and B-52 aircraft, and similar issues were carried forward to this FEIS. The DEIS (page 2-38, Section 2.4) provided an overview of the proposed action, including elements common to all action alternatives, and described three action alternatives that were developed in response to the defined training deficiencies. Limitations on the current Powder River airspace, enhanced bomber technological capabilities, combat readiness training complexities, and increasing capabilities of threats to bombers establish the need for expanded local training airspace. The alternatives discussed in the DEIS included Alternative A (Proposed Action) (DEIS, Section 2.5, pg. 2-50); Alternative B (DEIS, Section 2.6, pg. 2-66); and Alternative C (DEIS, Section 2.7, pg. 2-76).

As explained in Section 1.2 of this FEIS, public comments and agency and tribal consultations assisted the Air Force in identifying mitigations that would avoid, minimize, rectify, or otherwise reduce anticipated impacts. These mitigations were integrated into the DEIS alternatives to be

carried forward for analysis in the FEIS as modified alternatives. Section 2.3 explains the mitigations incorporated into the FEIS.

Table 2.2-1 presents an overview of the PRTC airspace components. These airspace components are combined in various ways in the modified alternatives. The FEIS Modified Alternative A is compared with the DEIS Alternative A in Section 2.3.2. Sections 2.3.3 and 2.3.4 compare the FEIS Modified Alternatives B and C with DEIS Alternatives B and C.

Table 2.2-1. Overview of Proposed PRTC Airspace Components

MOA/ATCAA	*Description*
Powder River 1 MOA/ATCAA complex (PR-1)	Consists of PR-1A, PR-1B, PR-1C, and PR-1D MOAs, each of which would be stratified vertically into a Low MOA, a High MOA, and an ATCAA[1,2]
Powder River 2 MOA/ATCAA complex (PR-2)	Consists of the PR-2 MOAs, which would be stratified vertically into a Low MOA, a High MOA, and an ATCAA[1]
Powder River 3 MOA/ATCAA complex (PR-3)	Consists of the PR-3 MOAs, which would be stratified vertically into a Low MOA, a High MOA, and an ATCAA[1]
Powder River 4 MOA/ATCAA complex (PR-4)	Consists of the PR-4 MOA, which would be stratified vertically into a Low MOA (Modified Alternative B only), a High MOA, and an ATCAA[1,3]
Gap A MOA/ATCAA	Separates PR-1 and PR-2, would consist of a Low MOA, a High MOA, and an ATCAA[1]
Gap B MOA/ATCAA	Separates PR-2 and PR-3, would consist of a Low MOA, a High MOA, and an ATCAA[1]
Gap C MOA/ATCAA	Separates PR-3 and PR-4, would consist of a Low MOA (Modified Alternative B only), a High MOA, and an ATCAA[1]
Gateway ATCAA	Modified and expanded to create the Gateway West and Gateway East ATCAAs[4]

Notes:
1. Low MOA = altitudes from 500 feet AGL up to, but not including 12,000 feet MSL; High MOA = altitudes from 12,000 feet MSL up to, but not including 18,000 feet MSL; ATCAA = altitudes from 18,000 feet MSL up to 26,000 feet MSL
2. PR-1 MOAs are included in Modified Alternatives A and C. Modified Alternative B does not include the Powder River 1 MOA.
3. Modified Alternative B includes a PR-4 and Gap C Low MOAs. Modified Alternative A and Modified Alternative C do not include a PR-4 and Gap C Low MOAs.
4. Gateway ATCAA does not include a MOA and consists of Gateway West and Gateway East ATCAAs.

2.3 DEVELOPMENT OF THE MODIFIED ALTERNATIVES

Modified Alternatives have been developed to address agency, tribal, and public environmental and aeronautical concerns about the proposal to expand and enhance the Powder River airspace to become the PRTC. The PRTC would address the training deficiencies and limitations described in Chapter 1.0. The Air Force conducted 19 public hearings on the DEIS during the public comment period from 20 August 2010 to 20 January 2011. Issues and concerns identified during public, state and federal agency, and tribal consultation and communication were reviewed by the Air Force and the Federal Aviation Administration (FAA). In coordination with the FAA, the Air Force has developed Modified Alternatives that include the following changes to the DEIS Alternatives.

2.3.1 *MITIGATIONS INCORPORATED INTO THE FEIS MODIFIED ALTERNATIVES*

The FEIS Modified Alternatives, described in Sections 2.5, 2.6, and 2.7, incorporate multiple mitigation measures to address public, agency, and tribal concerns. The mitigation measures, some of which were included in the DEIS, are:

1. Commercial and General Aviation Aircraft Operations
    a. Limiting all PRTC activity to altitudes at or below Flight Level (FL) 260 to avoid some of the effect on aircraft utilizing high-altitude routing.
    b. Moving airspace boundaries back from Billings and Miles City, Montana (MT), Dickinson and Bismarck North Dakota (ND); and Hulett, Gillette, and Sheridan, Wyoming (WY) to facilitate Instrument Flight Rules (IFR) procedures at these airports.
    c. Dividing PR-1 into eight MOA segments to better enable arrivals and departures from local airports as well as to allow parts of the airspace to be used while other parts are avoided to reduce potential impacts on the ground.
    d. Providing reasonable and timely aerial access to underlying private or public use land. Provisions are included in Section 4.1.3.1.4 to accommodate instrument arrivals/departures with minimum delay and for terminal Visual Flight Rules (VFR) and IFR operations.
    e. Supporting general aviation flight operations by raising the floor of PR-4 MOA and Gap C MOA from 500 feet above ground level (AGL) to 12,000 feet mean sea level (MSL) (the average surface elevation is 2,300 feet MSL, resulting in the average floor of 9,700 feet AGL).
    f. Reducing B-1 flight operations in the proposed PR-1, PR-3, and PR-4 MOAs by 12 percent from that proposed in the DEIS in accordance with the Ready Aircrew Program (RAP). (The RAP specifies the extent of training required by each aircrew member.)
    g. Providing adequate navigation for civil aviation by adjusting the proposed Gap MOA boundaries.
    h. Adjusting airspace boundaries to support navigation (such as the use of the global positioning system [GPS]) on Victor airways.
    i. Avoiding potential conflict with Victor Route 247 (V-247), an aircraft flight route between Sheridan, WY and Billings, MT, by adjusting the southwest border of the proposed PR-1B MOA/Air Traffic Control Assigned Airspace (ATCAA).
    j. Publishing information about when a MOA is active and when a MOA is no longer active to general aviation using FAA-established frequencies, phone lines, and websites. The proposed PRTC airspace would have published times of use on FAA aeronautical charts and websites (such as http://sua.faa.gov/sua/). The Air Force and FAA would continue coordination to enhance the situational awareness of aircraft operators as to whether PRTC low-altitude MOAs (airspace below

12,000 feet MSL) were active. This would include practices, such as the use of existing data, equipment, and procedures, as well as integration of advancements in software and/or equipment. The procedures developed would also handle those nonparticipants (i.e., aircraft not participating in MOA training) operating IFR entirely within the PRTC while simultaneously supporting the expeditious completion of the training flight and the return of the affected airspace to Air Traffic Control (ATC).

k. All PRTC training activity will be announced via Notices to Airmen (NOTAM). PRTC published times of use would be available on FAA aeronautical charts and specified in the Air Force's aeronautical proposal (Appendix A). NOTAM information is available by dialing 1-800-WXBRIEF, online at https://www.1800wxbrief.com/, or https://pilotweb.nas.faa.gov/, or in-flight by contacting Flight Service. Training activity scheduled within published times of use will be announced by NOTAM not later than 2 hours prior to training use of the airspace. Training activity scheduled outside of the published times of use will be announced by NOTAM not later than 4 hours prior to training use of the airspace. PRTC airspace would be activated by ATC, and when a flight is completed within a MOA, the airspace would be returned to ATC. For planning purposes, the airspace schedule will be entered into the Military Airspace Data Entry (MADE) system, no later than 1500 hrs (3:00 p.m.) Mountain Time the day prior to training use. This information automatically feeds into the FAA's Special Use Airspace Management System (SAMS), which disseminates information throughout the FAA, to the NOTAM system, and is available to the public via http://sua.faa.gov/sua.

l. Scheduling of airspace outside of published times of use, and for airspace only used during LFEs, PRTC activity will be announced by NOTAM not later than 4 hours prior to use. NOTAM information is available by dialing 1-800-WXBRIEF, going online at https://www.1800wxbrief.com or https://pilotweb.nas.faa.gov, or in-flight by contacting Flight Service. All PRTC training activity outside published times of use will be announced by NOTAM.

m. Allowing ATC to vector IFR traffic through Low and High MOAs as soon as training is completed in an airspace segment.

n. Although not regularly expected, where schedule changes require use of airspace outside of published times of use, the Air Force would inform Air Route Traffic Control Centers (ARTCCs) at least 4 hours in advance to facilitate issuance of a NOTAM.

o. Establishing communication procedures to ensure the ability of the Air Force to recall the military aircraft from the low-altitude MOAs. Controlling agencies would recall the low MOA airspace whenever necessary to allow IFR aircraft access to and from public-use airports under the proposed MOA.

p. Establishing appropriate communication procedures to ensure the ability of the Air Force to control military aircraft and provide safe deconfliction with emergency flight operations and fire-fighting operations within the proposed airspace.

q. Posting informational flyers and posters at public airports underlying the airspace with annual updates by the Ellsworth AFB Flight Safety Office as part of the Mid-Air Collision Avoidance Program at (605) 385-4419.

r. Supporting civil aviation planning and scheduling by publishing at least 30 days in advance the Large Force Exercise (LFE) schedule and related information.

s. Committing to the use of a scheduled low MOA early in a mission so that, as the mission allows, the low MOA can be released as early as possible to the controlling agency.

t. Providing a NOTAM for activation of a scheduled MOA to disseminate the maximum information to civil aircraft regarding whether or not a scheduled MOA is to be activated even during published times of use.

2. Tribal Reservation Lands

a. Avoiding low-altitude overflight of the Standing Rock and Cheyenne River Reservations under PR-4 by raising the MOA floor from 500 feet AGL (i.e., above ground level) to 12,000 feet MSL (i.e., mean sea level) (average surface elevation of 2,300 feet MSL).

b. Avoiding low-altitude overflight over the Northern Cheyenne Reservation under the proposed PR-1D by establishing an avoidance area over the reservation, that also encompasses Deer Medicine Rocks National Historic Landmark (NHL), with a floor of 12,000 feet MSL (average surface elevation of 3,785 feet).

c. Providing advance notice of LFEs, limited to no more than 3 days per quarter for a maximum of 10 days per year, to the Reservations at least 30 days before the LFE to inform of increased training flight activity.

d. Limiting supersonic flights to LFEs only (above 20,000 feet MSL for B-1 aircraft and above 10,000 feet AGL for transient fighter aircraft) and providing advance publication of LFEs to reduce noise concerns.

e. Scheduling no supersonic flights over the Little Bighorn Battlefield National Monument, located within the Crow Reservation, under PR-1C.

f. Establishing an ongoing Government-to-Government communication protocol to identify and periodically update avoidance areas for specific time periods.

g. Avoiding ceremonies identified in consultation with tribes by an appropriate distance, in no case less than 2,000 feet.

h. Establishing reasonable temporary or seasonal avoidance areas or adopting other measures to reduce intrusive impacts.

3. Cultural and Historic Areas

a. Identifying sensitive cultural and historic areas in a Programmatic Agreement developed in consultation with the Air Force, federal and state agencies, and

federally recognized tribes (see Appendix N), which establishes a process to reduce overflight impacts.

b. Avoiding overflight below 5,000 feet AGL of the Little Bighorn Battlefield National Monument from 1 hour before to 1 hour after posted hours of operation and other times as coordinated with Park management.

c. Avoiding PRTC military flights over Devils Tower National Monument, WY and Deadwood NHL, South Dakota (SD) below 18,000 feet MSL, and Bear Butte State Park, SD by 10,000 feet AGL or 2 nautical miles (NM) horizontally.

d. Working with agencies and tribes to avoid sensitive areas to the extent possible, including by flying across the Tongue River Valley rather than lengthwise along the valley.

e. Prohibiting supersonic flights over the Little Bighorn Battlefield National Monument within PR-1C.

4. Communities and Ranching Operations

a. Establishing avoidance areas as necessary for airports, airfields, and communities under the proposed airspace.

b. Continuing the current practice of establishing reasonable temporary or seasonal avoidance areas over residences, communities, and ranching operations, including those on reservations, to reduce the potential for impact during concentration of range animals for branding, calving, weaning, and/or other ranch operation.

c. Reducing the number of proposed B-1 operations from that presented in the DEIS by 12 percent in all segments of PR-1, PR-3, and PR-4 in accordance with adjustments to the RAP.

d. Limiting Low-altitude overflight over ranches or communities under PR-4 with the proposed raising of the PR-4 MOA floor from 500 feet AGL to 12,000 feet MSL (average surface elevation of 2,300 feet AGL).

5. Other Mitigation Measures

a. Publishing a notice at least 30 days in advance of LFEs to the public, the aviation community, and Native American tribes, to help these parties plan for LFE airspace activation. All other signatories of the Programmatic Agreement will receive a minimum of 15 days' notice.

b. Establishing procedures to avoid low-altitude overflight of and frequency interference with known blasting operations such as those associated with coal mining operations.

c. Making available airspace use and long-term planning information on deconfliction of special events/cultural events during normal business hours, 8:00 AM to 5:00 PM local, Monday through Friday, from the Ellsworth AFB Airspace Management Office at (605) 385-1230.

d. In the event of any damage or injury associated with PRTC operations, descriptive documentation related to the Air Force Claims Program can be sent in to the Ellsworth AFB Public Affairs Office. The Ellsworth AFB Public Affairs Office is available to answer inquiries and complaints at (605) 385-5056 8:00 a.m. to 5:00 p.m. Monday through Friday.

e. Limiting deployment of chaff within 60 NM of airport approach radars to ensure that chaff does not interfere with ATC radars.

f. Training with chaff comparable to that described in this EIS. The Air Force would conduct additional environmental analysis before the use of other chaff types.

g. Limiting flare release altitudes within the PRTC airspace to above 2,000 feet AGL (flares burn out by the time they fall approximately 500 feet).

h. Discontinuing flare releases in PRTC MOAs (e.g., PRTC 2 Low, 2 High MOA) above areas where the fire danger is rated very high or extreme under the National Fire Danger Rating System. Flare use in the PRTC ATCAAs would be discontinued when the fire danger rating is Extreme.

i. Continuing cooperation with local fire agencies for mutual aid response to wildland fires attributable to Air Force operations.

j. Coordinating with local fire departments underlying the airspace to educate them on flare identification and potential hazards. This education would include distributing flyers to fire departments describing chaff and flare deployments, residual materials and dud flares.

2.3.2 *Comparison of DEIS Alternative A With FEIS Modified Alternative A*

Application of the mitigations listed in Section 2.3.1 could substantially reduce agency and public concern regarding impacts or the potential for impacts. Table 2.3-1 lists the mitigations and provides a brief comparison of the DEIS Alternative A with the FEIS Modified Alternative A.

Table 2.3-1. Comparison of DEIS Alternative A With FEIS Modified Alternative A

Mitigation	*DEIS Alternative A*	*FEIS Modified Alternative A*	*Result of Mitigation*
1. Commercial and General Aviation Aircraft Operations			
1a: ATCAA Cap	No	Yes	Avoids some impacts to commercial, business, charter, and other aircraft utilizing high-altitude routing
1b: MOA Boundary Changes for IFR Procedures	No	Yes	Avoids impacts to IFR procedures at Billings and Miles City, MT, Bismarck and Dickinson, ND, and Hulett, Gillette, and Sheridan, WY
1c: PR-1 Eight Segments	No	Yes	Provides for aviation access by having airspace segments which can be made separately available for training

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Table 2.3-1. Comparison of DEIS Alternative A With FEIS Modified Alternative A

Mitigation	*DEIS Alternative A*	*FEIS Modified Alternative A*	*Result of Mitigation*
1d: Aerial access to private and public use land	No	Yes	Accommodates instrument arrivals/departures with minimum delay and for terminal VFR and IFR operations
1e: Raising the Floor of PR-4 MOA and Gap C MOA	No	Yes	Provides aviation access under PR-4 and Gap C High MOAs
1f: Reduced B-1 Flight Operations	No	Yes	Reduces frequency of low-level startle and noise effects in PR-1 and PR-3 Low MOAs
1g: Gap Boundary Adjustment	Yes	Yes	Changes made to widen Gap airspaces to support civil aviation use of the established airways
1h: Additional Airspace Boundaries Adjustments	No	Yes	Changes made to airspace boundaries to support civil aviation use of the established airways
1i: Avoid Conflict with V-247	Yes	Yes	Facilitates general aviation (GA) and other flight operations
1j: Information Availability	Yes	Yes	Responds to GA and other aviation concerns about when airspace would no longer be active and allows the public to plan around military operations
1k: Published Times of Use	Yes	Yes	Online times of use facilitate GA and other aviators' knowledge of MOA use
1l: NOTAMs 4 Hours Before Airspace Use Outside Published Times of Use	Yes	Yes	Web availability of information improves GA knowledge and planning
1m: Low and High MOAs	Yes	Yes	Improves controlling agency vectoring of IFR traffic
1n: Advance Notice of Schedule Changes	Yes	Yes	Coordination with controlling agency improves information flow to civil aviation
1o: Recall Communication	No	Yes	Communication to recall training aircraft supports IFR departures and arrivals to airports under airspaces
1p: Emergency Flight and Fire-Fighting operations procedures	Yes	Yes	Communication to control training aircraft for safe deconfliction of operations
1q: Public Airport Posters and Pamphlets	Yes	Yes	Provides the public with useful information about military training aircraft
1r: LFE Notification	Yes	Yes	30-day advance notification supports civil aviation scheduling
1s: Early Release of Information to ATC	No	Yes	Air Traffic Control (ATC) can provide nearly real-time deactivation information to civil aircraft; provides rapid information regarding airspace deactivation for civilian flight decisions
1t: NOTAM for Actual MOA Activation During Published Times of Use	No	Yes	Increases availability of airspace for GA and others by providing extraordinary notification in scheduling

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Table 2.3-1. Comparison of DEIS Alternative A With FEIS Modified Alternative A

Mitigation	*DEIS Alternative A*	*FEIS Modified Alternative A*	*Result of Mitigation*
2. Tribal Reservation Land			
2a: Raising MOA Floor Over Reservations Under PR-4	No	Yes	Avoids low-altitude overflight over Standing Rock and Cheyenne River Reservations
2b: Establishing Avoidance Area Over Northern Cheyenne Reservation	No	Yes	Avoids low-altitude overflight over Northern Cheyenne Reservation
2c: Advance LFE Notice to Tribes	No	Yes	30-day advance notification supports tribal understanding and reduces concern from greater activity
2d: Supersonic Flights Only During LFEs	Yes	Yes	Reduces supersonic flights to LFEs only and provides advance publication of LFEs to reduce noise concerns
2e: Supersonic Flight Avoidance over Little Bighorn Battlefield National Monument, Montana	No	Yes	Reduces potential for sonic boom effect over Little Bighorn Battlefield National Monument under the airspace during LFEs
2f: Seasonal Avoidance Areas	Yes	Yes	Establishes process to identify reasonable, seasonal avoidance areas to reduce potential overflight noise impacts
2g: Avoidance of Ceremonies	Yes	Yes	Avoids low-level overflight and reduces potential for noise impacts during tribal ceremonies
2h: Continuing Government-to-Government communication	Yes	Yes	Establishes a process for identifying sensitive locations at specific times to be avoided by low-level overflights
3. Cultural and Historic Areas			
3a: Programmatic Agreement	No	Yes	Identifies sensitive cultural and historic areas, and provides a resolution process to address potential PRTC-related adverse effects on historic properties
3b: Avoidance Schedule for Little Bighorn Battlefield National Monument	No	Yes	Avoids low altitude from 1 hour before opening to 1 hour after closing and at other times by agreement
3c: Altitude Over Specific Locations	Yes	Yes	Avoids adverse effects to specific locations under Gateway West ATCAA
3d: Flight Patterns Over Sensitive Areas (such as the Tongue River valley)	No	Yes	Addresses sensitive areas for scheduling of flight training
3e: Supersonic Flight Avoidance over Little Bighorn Battlefield National Monument in PR-1C	No	Yes	Reduces potential for impacts to Little Bighorn Battlefield National Monument during LFEs
4. Communities and Ranching Operations			
4a: Avoidance Areas for Communities and Other Locations	Yes	Yes	Reduces low-level overflight of established communities and other locations
4b: Identifies Seasonal Avoidance Areas	Yes	Yes	Ranching coordination to identify temporary avoidance areas reduces potential impacts during ranch operations
4c: Reduction in B-1 Flight Operation	No	Yes	Reduces low-level overflight over communities and ranches under PR-1 and PR-3

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Table 2.3-1. Comparison of DEIS Alternative A With FEIS Modified Alternative A

Mitigation	*DEIS Alternative A*	*FEIS Modified Alternative A*	*Result of Mitigation*
4d: Temporary or Seasonal Avoidance Areas	Yes	Yes	Continued coordination results in avoidance of low-altitude impacts to seasonal activities
4e: Raising Floor of PR-4	No	Yes	Avoids low-overflight impacts over communities and ranches, including those on reservations, under PR-4
5. Other Mitigations			
5a: Advance LFE Notification	Yes	Yes	Provides advance planning to reduce impact during the LFEs, which would not exceed 10 days per year
5b: Avoidance of Frequency Interference	Yes	Yes	Avoids potential for impacts for known construction or mining blasting
5c: Deconfliction Notification	Yes	Yes	Avoids impacts to planned special events/cultural events under proposed airspace
5d: Inquiries and/or Complaints	Yes	Yes	Addresses concerns about public access for potential damage claims
5e: Communication Procedure for Safety Deconfliction	Yes	Yes	Avoids impacts to firefighting or emergency flight through deconfliction procedures
5f: Chaff Deployed to Avoid Airport Approach Radars	Yes	Yes	Ensures that no chaff cloud interferes with ATC
5g: -Only Evaluated Chaff Deployed During Training	Yes	Yes	Avoids use of non-approved chaff; other chaff types would require separate environmental analysis
5h: Flare Release Altitude Not Below 2,000 Feet AGL	Yes	Yes	Reduces risk of flare deployment; flares burn out in approximately 500 feet
5i: Flare Release Discontinued in a MOA When Fire Danger is Rated Extreme	Yes	Yes	Reduces fire risk
5j: Cooperate With Local Fire Agencies	Yes	Yes	Supports mutual aid response to wildland fires
5k: Provide Education Information, Including on Chaff and Flares Use, to Local Fire Departments Underlying the Airspace	Yes	Yes	Provides for education and understanding of chaff and flare deployment, residual materials, and dud flares

2.3.3 *COMPARISON OF DEIS ALTERNATIVE B WITH FEIS MODIFIED ALTERNATIVE B*

Application of the mitigations listed in Section 2.3.1 could substantially reduce agency and public concern regarding impacts or the potential for impacts. Table 2.3-2 lists the mitigations and provides a brief comparison of the DEIS Alternative B with the Modified Alternative B.

Table 2.3-2. Comparison of DEIS Alternative B With FEIS Modified Alternative B

Mitigation	*DEIS Alternative B*	*FEIS Modified Alternative B*	*Result of Mitigation*
1. Commercial and General Aviation Aircraft Operations			
1a: ATCAA Cap	No	Yes	Avoids some impacts to commercial, business, charter, and other aircraft utilizing high-altitude routing
1b: MOA Boundary Changes for IFR Procedures	No	Yes	Avoids impacts to IFR procedures at Bismarck and Dickinson, ND, Miles City, MT, and Hulett, and Gillette, WY
1c: PR-1 Eight Segments	Not Applicable	Not Applicable	Does not include PR-1 MOAs
1d: Aerial access to private and public use land	No	Yes	Accommodates instrument arrivals/departures with minimum delay and for terminal VFR and IFR operations
1e: Raising the Floor of PR-4 MOA and Gap C MOA	No	No	Modified Alternative B would retain a Low MOA in PR-4 and Gap C
1f: Reduced B-1 Flight Operations	No	Yes	Reduces frequency of low-level startle and noise effects in PR-1 and PR-3 Low MOAs
1g: Gap Boundary Adjustment	Yes	Yes	Changes made to widen Gap airspaces to support civil aviation use of the established airways
1h: Additional Airspace Boundaries Adjustments	No	Yes	Changes made to airspace boundaries to support civil aviation use of the established airways
1i: Avoid Conflict with V-247	Not Applicable	Not Applicable	Does not include PR-1 MOAs
1j: Information Availability	Yes	Yes	Responds to general aviation (GA) concerns about when airspace would no longer be active, and allows the public to plan around military operations
1k: Published Times of Use	Yes	Yes	Online times of use facilitate GA and other aviators' knowledge of MOA use
1l: NOTAMs 4 Hours Before Airspace Use Outside Published Times of Use	Yes	Yes	Web availability of information improves GA knowledge and planning
1m: Low and High MOAs	Yes	Yes	Improves controlling agency vectoring of IFR traffic
1n: Advance Notice of Schedule Changes	Yes	Yes	Coordination with controlling agency improves information flow to civil aviation
1o: Recall Communication	No	Yes	Communication to recall training aircraft supports IFR departures and arrivals to airports under airspaces
1p: Emergency Flight and Fire-Fighting operations procedures	Yes	Yes	Communication to control training aircraft for safe deconfliction of operations
1q: Public Airport Posters and Pamphlets	Yes	Yes	Provides the public with useful information about military training aircraft
1r: LFE Notification	Yes	Yes	30-day advance notification supports civil aviation scheduling

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Table 2.3-2. Comparison of DEIS Alternative B With FEIS Modified Alternative B

Mitigation	*DEIS Alternative B*	*FEIS Modified Alternative B*	*Result of Mitigation*
1s: Early Release of Information to ATC	No	Yes	Air Traffic Control (ATC) can provide nearly real-time deactivation information to civil aircraft; provides rapid information regarding airspace deactivation for civilian flight decisions
1t: NOTAM for Actual MOA Activation During Published Times of Use	No	Yes	Increases availability of airspace for GA and others by providing extraordinary notification in scheduling
2. Tribal Reservation Land			
2a: Raising MOA Floor Over Reservations Under PR-4	No	No	PR-4 low MOA includes low-altitude overflight over Standing Rock and Cheyenne River Reservations
2b: Establishing Avoidance Area Over Northern Cheyenne Reservation	Not Applicable	Not Applicable	Does not include PR-1 MOAs
2c. Advance LFE Notice to Tribes	No	Yes	30-day advance notification supports tribal understanding and reduces concern from greater activity
2d: Supersonic Flights Only During LFEs	Yes	Yes	Reduces supersonic flights to LFEs only, and provides advance publication of LFEs to reduce noise concerns
2e: Supersonic Flight Avoidance over Little Bighorn Battlefield National Monument, Montana	No	Yes	Reduces potential for sonic boom effect over Little Bighorn Battlefield National Monument under the airspace during LFEs
2f: Seasonal Avoidance Areas	Yes	Yes	Establishes process to identify reasonable, seasonal avoidance areas to reduce potential overflight noise impacts
2g: Avoidance of Ceremonies	Yes	Yes	Avoids low-level overflight and reduces potential for noise impacts during tribal ceremonies
2h: Continuing Government-to-Government communication	Yes	Yes	Establishes a process for identifying sensitive locations at specific times to be avoided by low-level overflights
3. Cultural and Historic Areas			
3a: Programmatic Agreement	No	Yes	Identifies sensitive cultural and historic areas and provides a resolution process to address potential PRTC-related adverse effects on historic properties
3b: Avoidance Schedule for Little Bighorn Battlefield National Monument	Not Applicable	Not Applicable	Modified Alternative B does not include PR-1 MOAs
3c: Altitude Over Specific Locations	Yes	Yes	Avoids adverse effects to specific locations under Gateway West ATCAA
3d: Flight Patterns Over Sensitive Areas	No	Yes	Addresses sensitive areas for scheduling of flight training
3e: Supersonic Flight in ATCAAs Avoidance over Little Bighorn Battlefield National Monument in PR-1C	No	Yes	Reduces potential for impacts to Little Bighorn Battlefield National Monument during LFEs

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Table 2.3-2. Comparison of DEIS Alternative B With FEIS Modified Alternative B

Mitigation	*DEIS Alternative B*	*FEIS Modified Alternative B*	*Result of Mitigation*
4. Communities and Ranching Operations			
4a: Avoidance Areas for Communities, and Other Locations	Yes	Yes	Reduces low-level overflight of established communities and other locations
4b: Identifies Ranching Seasonal Avoidance Areas	Yes	Yes	Ranching coordination to identify temporary avoidance areas reduces potential impacts during ranch operations
4c: Reduction in B-1 Flight Operation	No	Yes	Reduces low-level overflight over communities and ranches under PR-3 and PR-4
4d: Temporary or Seasonal Avoidance Areas	Yes	Yes	Continued coordination results in avoidance of low-altitude impacts to identified seasonal activities
4e: Raising Floor of PR-4	No	No	Modified Alternative B includes the PR-4 Low and High MOAs
5. Other Mitigations			
5a: Advance LFE Notification	Yes	Yes	Provides advance planning to reduce impact during the not more than 10 days per year of LFEs
5b: Avoidance of Frequency Interference	Yes	Yes	Avoids potential for impacts for known construction or mining blasting
5c: Deconfliction Notification	Yes	Yes	Avoids impacts to planned special events/cultural events under proposed airspace
5d: Inquiries and/or Complaints	Yes	Yes	Addresses concerns about public access for potential damage claims
5e: Communication Procedure for Safety Deconfliction	Yes	Yes	Avoids impacts to firefighting or emergency flight through deconfliction procedures
5f: Chaff Deployed to Avoid Airport Approach Radars	Yes	Yes	Ensures that no chaff cloud interferes with ATC.
5g: Only -Evaluated Chaff Deployed during Training	Yes	Yes	Avoids use of non-approved chaff; other chaff types would require separate environmental analysis
5h: Flare Release Altitude Not Below 2,000 Feet AGL	Yes	Yes	Reduces risk of flare deployment; flares burn out in approximately 500 feet
5i: Flare Release Discontinued in a MOA When Fire Danger is Rated Extreme	Yes	Yes	Reduces fire risk
5j: Cooperate With Local Fire Agencies	Yes	Yes	Supports mutual aid response to wildland fires
5k: Provide Education Information, including on Chaff and Flares Use, to Local Fire Departments Underlying the Airspace	Yes	Yes	Provides for education and understanding of chaff and flare deployment, residual materials, and dud flares

2.3.4 *COMPARISON OF DEIS ALTERNATIVE C WITH FEIS MODIFIED ALTERNATIVE C*

Application of the mitigations listed in Section 2.3.1 could substantially reduce agency and public concern regarding impacts or the potential for impacts. Table 2.3-3 lists the mitigations and provides a brief comparison of the DEIS Alternative C with the Modified Alternative C.

Table 2.3-3. Comparison of DEIS Alternative C With FEIS Modified Alternative C

Mitigation	*DEIS Alternative C*	*FEIS Modified Alternative C*	*Result of Mitigation*
1. Commercial and General Aviation Aircraft Operations			
1a: ATCAA Cap	No	Yes	Avoids some impacts to commercial, business, charter, and other aircraft utilizing high-altitude routing
1b: MOA Boundary Changes for IFR Procedures	No	Yes	Avoids impacts to IFR procedures at Billings and Miles City, MT, Dickinson, ND and Hulett, Gillette, and Sheridan, MT
1c: PR-1 Eight Segments	No	Yes	Provides for general aviation (GA) flight by having airspace segments which can be made separately available for training
1d: Aerial access to private and public use land	No	Yes	Accommodates instrument arrivals/departures with minimum delay and for terminal VFR and IFR operations
1e: Raising the Floor of PR-4 MOA and Gap C MOA	Not Applicable	Not Applicable	Modified Alternative C does not include PR-4 or Gap C MOAs
1f: Reduced B-1 Flight Operations	No	Yes	Reduces frequency of low-level startle and noise effects in PR-1 and PR-3 Low MOAs
1g: Gap Boundary Adjustment	Yes	Yes	Changes made to widen Gap airspaces to support civil aviation use of the established airways
1h: Additional Airspace Boundaries Adjustments	No	Yes	Changes made to airspace boundaries to support civil aviation use of the established airways
1i: Avoid Conflict with V-247	Yes	Yes	Facilitates GA and other flight operations
1j: Information Availability	Yes	Yes	Responds to GA and other aviation concerns about when airspace would no longer be active and allows the public to plan around military operations
1k: Published Times of Use	Yes	Yes	Online times of use facilitate GA and other aviators' knowledge of MOA use
1l: NOTAMs 4 Hours Before Airspace Use Outside Published Times of Use	Yes	Yes	Web availability of information improves GA knowledge and planning
1m: Low and High MOAs	Yes	Yes	Improves controlling agency vectoring of IFR traffic
1n: Advance Notice of Schedule Changes	Yes	Yes	Coordination with controlling agency improves information flow to civil aviation
1o: Recall Communication	No	Yes	Communication to recall training aircraft supports IFR departures and arrivals to airports under airspaces
1p: Emergency Flight and Fire-Fighting operations procedures	Yes	Yes	Communication to control training aircraft for safe deconfliction of operations

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Table 2.3-3. Comparison of DEIS Alternative C With FEIS Modified Alternative C

Mitigation	*DEIS Alternative C*	*FEIS Modified Alternative C*	*Result of Mitigation*
1q: Public Airport Posters and Pamphlets	Yes	Yes	Provides the public with useful information about military training aircraft
1r: LFE Notification	Yes	Yes	30 day advance notification supports civil aviation scheduling
1s: Early Release of Information to ATC	No	Yes	Air Traffic Control (ATC) can provide nearly real-time deactivation information to civil aircraft; provides rapid information regarding airspace deactivation for civilian flight decisions
1t: NOTAM for Actual MOA Activation During Published Times of Use	No	Yes	Increases availability of airspace for GA and others by providing extraordinary notification in scheduling
2. Tribal Reservation Land			
2a: Raising MOA Floor Over Reservations Under PR-4	Not Applicable	Not Applicable	Modified Alternative C does not include PR-4 MOAs over Standing Rock or Cheyenne River Reservations
2b: Establishing Avoidance Area Over Northern Cheyenne Reservation	No	Yes	Avoids low altitude overflight over Northern Cheyenne Reservation
2c. Advance LFE Notice to Tribes	No	Yes	30 day advance notification supports tribal understanding and reduces concern from greater activity
2d: Supersonic Flights only during LFEs	Yes	Yes	Reduces supersonic flights to LFEs only and provides advance publication of LFEs to reduce noise concerns
2e: Supersonic Flight Avoidance Over Little Bighorn Battlefield National Monument, Montana	No	Yes	Reduces potential for sonic boom effect over Little Bighorn Battlefield National Monument under the airspace during LFEs
2f: Seasonal Avoidance Areas	Yes	Yes	Establishes process to identify reasonable, seasonal avoidance areas to reduce potential overflight noise impacts
2g: Avoidance of Ceremonies	Yes	Yes	Avoids low-level overflight and reduces potential for noise impacts during tribal ceremonies
2h: Continuing Government-to-Government communication	Yes	Yes	Establishes a process for identifying sensitive locations at specific times to be avoided by low-level overflights
3. Cultural and Historic Areas			
3a: Programmatic Agreement	No	Yes	Identifies sensitive cultural and historic areas and provides a resolution process to address potential PRTC-related adverse effects on historic properties
3b: Avoidance Schedule for Little Bighorn Battlefield National Monument	No	Yes	Avoids low altitude from 1 hour before opening to 1 hour after closing and at other times by agreement
3c: Altitude Over Specific Locations	Yes	Yes	Avoids adverse effects to specific locations under Gateway West ATCAA
3d: Flight Patterns Over Sensitive Areas (such as the Tongue River valley)	No	Yes	Addresses sensitive areas for scheduling of flight training

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Table 2.3-3. Comparison of DEIS Alternative C With FEIS Modified Alternative C

Mitigation	*DEIS Alternative C*	*FEIS Modified Alternative C*	*Result of Mitigation*
3e: Supersonic Flight Avoidance Over Little Bighorn Battlefield National Monument in PR-1C	No	Yes	Reduces potential for impacts to Little Bighorn Battlefield National Monument
4. Communities and Ranching Operations			
4a: Avoidance areas for Communities, and Other Locations	Yes	Yes	Reduces low-level overflight of established communities and other locations
4b: Identifies Seasonal Avoidance Areas for Ranching	Yes	Yes	Ranching coordination to identify temporary avoidance areas reduces potential impacts during ranch operations
4c: Reduction in B-1 Flight Operation	No	Yes	Reduces low-level overflight over communities and ranches under PR-1, PR-3, and PR-4
4d: Temporary or Seasonal Avoidance Areas	Yes	Yes	Continued coordination results in avoidance of low-altitude impacts to identified seasonal activities
4e: Raising Floor of PR-4 and Gap C	Not Applicable	Not Applicable	Modified Alternative C does not include PR-4 and Gap C MOAs
5. Other Mitigations			
5a: Advance LFE Notification	Yes	Yes	Provides advance planning to reduce impact during the LFEs, not to exceed 10 days per year
5b: Avoidance of Frequency Interference	Yes	Yes	Avoids potential for impacts for known construction or mining blasting
5c: Deconfliction Notification	Yes	Yes	Avoids impacts to planned special events/cultural events under proposed airspace
5d: Inquiries and/or Complaints	Yes	Yes	Addresses concerns about public access for potential damage claims
5e: Communication Procedure for Safety Deconfliction	Yes	Yes	Avoids impacts to firefighting or emergency flight through deconfliction procedures
5f: Chaff Deployed to Avoid Airport Approach Radars	Yes	Yes	Ensures that no chaff cloud interferes with ATC
5g: Only Evaluated Chaff Deployed During Training	Yes	Yes	Avoids use of non-approved chaff; other chaff types would require separate environmental analysis
5h: Flare Release Altitude Not Below 2,000 Feet AGL	Yes	Yes	Reduces risk of flare deployment; flares burn out in approximately 500 feet
5i: Flare Release Discontinued in a MOA When Fire Danger is Rated Extreme	Yes	Yes	Reduces any fire risk
5j: Cooperate With Local Fire Agencies	Yes	Yes	Supports mutual aid response to wildland fires
5k: Provide Education Information, including on Chaff and Flares Use, to Local Fire Departments Underlying the Airspace	Yes	Yes	Provides for education and understanding of chaff and flare deployment, residual materials and dud flares

2.3.5 *MITIGATION MANAGEMENT OVER TIME*

Throughout the planning process to develop the proposed PRTC, it has become apparent that there may be various uncertainties concerning the significance and scope of environmental impacts until the operations can be experienced over time. In response, and within certain parameters, the Air Force may develop an adaptive management program as part of its overarching mitigation and monitoring program[1]. In doing so, the Air Force would follow the President's Council on Environmental Quality mitigation and monitoring guidance[2], and other legal and generally accepted practices.

New knowledge and information gained through experience can be incorporated into management options and recommendations to appropriate decision makers. Many of the mitigation measures listed in Section 2.3.1 incorporate continuing communication, consultation, and feedback to adapt PRTC operations to the needs of the public, agencies, and tribes as well as training aircrews. This EIS identifies and describes the affected environment and assesses the potential environmental impacts resulting from implementation of the proposed PRTC. The analysis identifies specific mitigation measures to prevent or minimize environmental impacts, if required. Air Force Environmental Impact Analysis Process (EIAP) regulations require the action proponent to prepare a mitigation plan and forward it to Headquarters (HQ), United States (U.S.) Air Force for review within 90 days of the signing of the Record of Decision (ROD). Among other things, the mitigation plan must specifically identify each mitigation measure, how the measures will be executed, and who will fund and implement the mitigations.

Requiring the detailed mitigation plan after the signing of the ROD enables the mitigation plan to be tailored precisely to the decision that is made. In the analysis of anticipated impacts in the EIS, the Air Force has done its best to accurately predict potential impacts and anticipate future conditions. However, given the nature of the alternatives analyzed and public, agency, and tribal interest, new information may become available, or the effectiveness of mitigation measures may be different than expected.

Adaptive management techniques are well suited to such circumstances. Since the adaptive management approach is being adopted as part of the implementation for the PRTC, the mitigation plan will have provisions for determining the success of the mitigations, as well as procedures for making necessary adaptations.

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[1] NEPA's Section 101 goals to "protect, restore, and enhance the environment" (40 Code of Federal Regulations [CFR] 1500.1(c)) would be advanced with the development of the mitigation and monitoring program.

[2] "Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact," January 14, 2011

Where the proposed use of adaptations is considered, the Air Force will, before adapting, fully consider whether or not the adaptation triggers the need for additional analysis under the National Environmental Policy Act (NEPA) and the EIAP. For example, the Air Force could supplement this EIS or prepare a new NEPA analysis, as necessary. Thus, the post-ROD mitigation plan will include an adaptive management program incorporating, for example, the following kinds of adaptive management approaches.

- Identifying the type of monitoring for the action and each mitigation
- Delineating how the monitoring will be executed
- Identifying who will fund and oversee its implementation
- Establishing the process and responsibilities for identifying and making changes to the action or mitigations to influence beneficial results or avoid/reduce adverse ones

2.4 BACKGROUND FOR THE PROPOSED ACTION

2.4.1 *BASES*

Ellsworth AFB covers approximately 5,400 acres of rolling plains about 12 miles east of Rapid City, South Dakota. It was originally established as an Army Air Corps Base in 1942 and served as a training base for various bomber and fighter aircraft during and after World War II. Since its transfer to the Air Force in 1947, Ellsworth AFB has been the home of the 28th Bomb Wing (28 BW) and a succession of bomber aircraft, including B-29s, B-52s, and the current complement of B-1s.

Ellsworth AFB's 28 BW supports 24 primary mission aircraft inventory B-1s divided into two squadrons of 12 aircraft each. B-1s from Ellsworth AFB have been deployed and heavily involved in combat missions. Multiple new missions have evolved during these deployments, particularly Close Air Support and Time-Sensitive Targeting.

Minot AFB covers approximately 5,000 acres of land in the north central part of North Dakota and is located 13 miles north of the city of Minot. Minot AFB was activated in 1957 in response to the Cold War need for northern tier defenses. Starting as an Air Defense Command Base with F-106 interceptor aircraft and tankers, Minot AFB quickly evolved into a home for B-52 bomber aircraft by the early 1960s. Currently, Minot AFB supports the 5 BW with two squadrons of B-52 bombers.

2.4.2 *EXISTING TRAINING AIRSPACE*

The existing Powder River military training airspace consists of two MOAs, four ATCAA units, the Belle Fourche Electronic Scoring Site (ESS), and associated electronic threat emitter and simulated target locations (see Section 2.4). Figure 1-3 presents the existing Powder River airspace, including associated MOAs and ATCAAs.

Portions of the training airspace that now constitute the Powder River airspace have been used for military aircraft training since World War II. The Powder River airspace lies about 70 NM northwest of Ellsworth AFB and about 200 NM southwest of Minot AFB and serves as the primary training airspace for the B-1s from Ellsworth AFB and the preferred training airspace for B-52s from Minot AFB. The existing Powder River airspace, including associated MOAs and ATCAAs (Figure 2-1), overlies an area of 10,235 square NM in portions of South Dakota, Wyoming, and Montana. Linked to the Belle Fourche ESS, the Powder River airspace has provided simulated electronic combat and simulated weapons release since the mid-1980s. The Belle Fourche current electronic threats and associated sites are presented in Figure 2-2. The Air Force created the Powder River MOAs in 1987 to permit dissimilar training with fighter intercepts of bombers training for Cold War era low-level penetration missions.

Aviation and Airspace Use Terminology

Above ground level (AGL): *Altitude expressed in feet measured above the ground surface.*

Mean sea level (MSL): *Altitude expressed in feet measured above average (mean) sea level.*

Flight level (FL): *Manner in which altitudes at 18,000 feet MSL and above are expressed, as measured by a standard altimeter setting of 29.92.*

Visual flight rules (VFR): *A standard set of rules that all pilots, both civilian and military, must follow when not operating under instrument flight rules and in visual meteorological conditions (conditions with sufficient conditions to maintain visual separation from terrain and aircraft). These rules require that pilots remain clear of clouds and avoid other aircraft.*

Instrument flight rules (IFR): *A standard set of rules that all pilots, civilian and military, must follow when operating under flight conditions that are more stringent than visual flight rules. These conditions include operating an aircraft in clouds, operating above certain altitudes prescribed by FAA regulations, and operating in some locations such as major civilian airports. Air traffic control (ATC) agencies ensure separation of all aircraft operating under IFR.*

Source: FAA Pilot/Controller Glossary 2010

Primary current users of the Powder River airspace consist of B-1s from the 28 BW, Ellsworth AFB, and B-52s from the 5th Bomb Wing (5 BW), Minot AFB. Transient (occasional) users of the training areas include: B-1s and B-52s from other bases; B-2s from the 509th Bomb Wing, Whiteman AFB, Missouri; RC-135s from the 55th Wing, Offutt AFB, Nebraska; and various fighters, tankers, and other aircraft from regional bases.

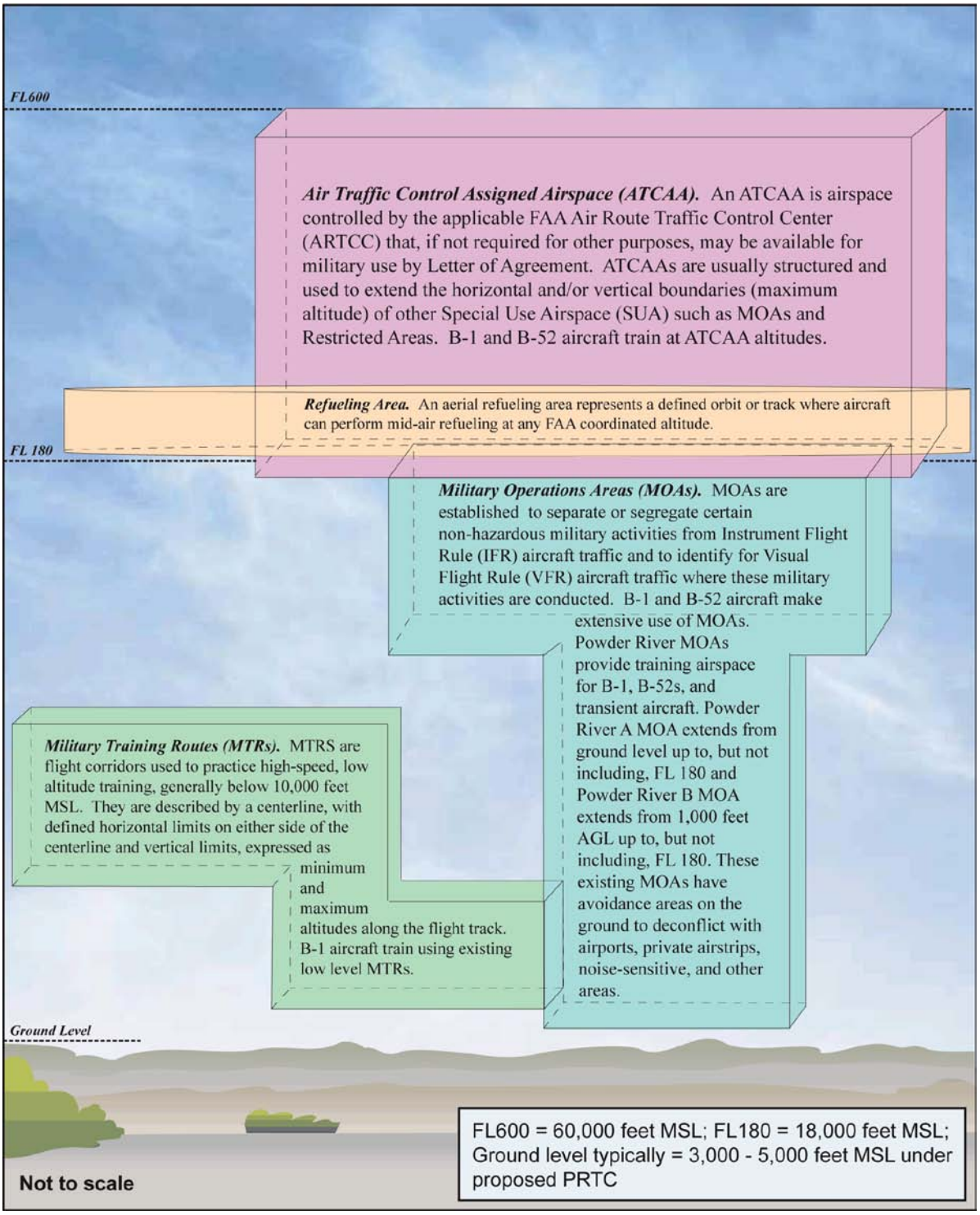

Figure 2-1. Explanation of Types of Training Airspace

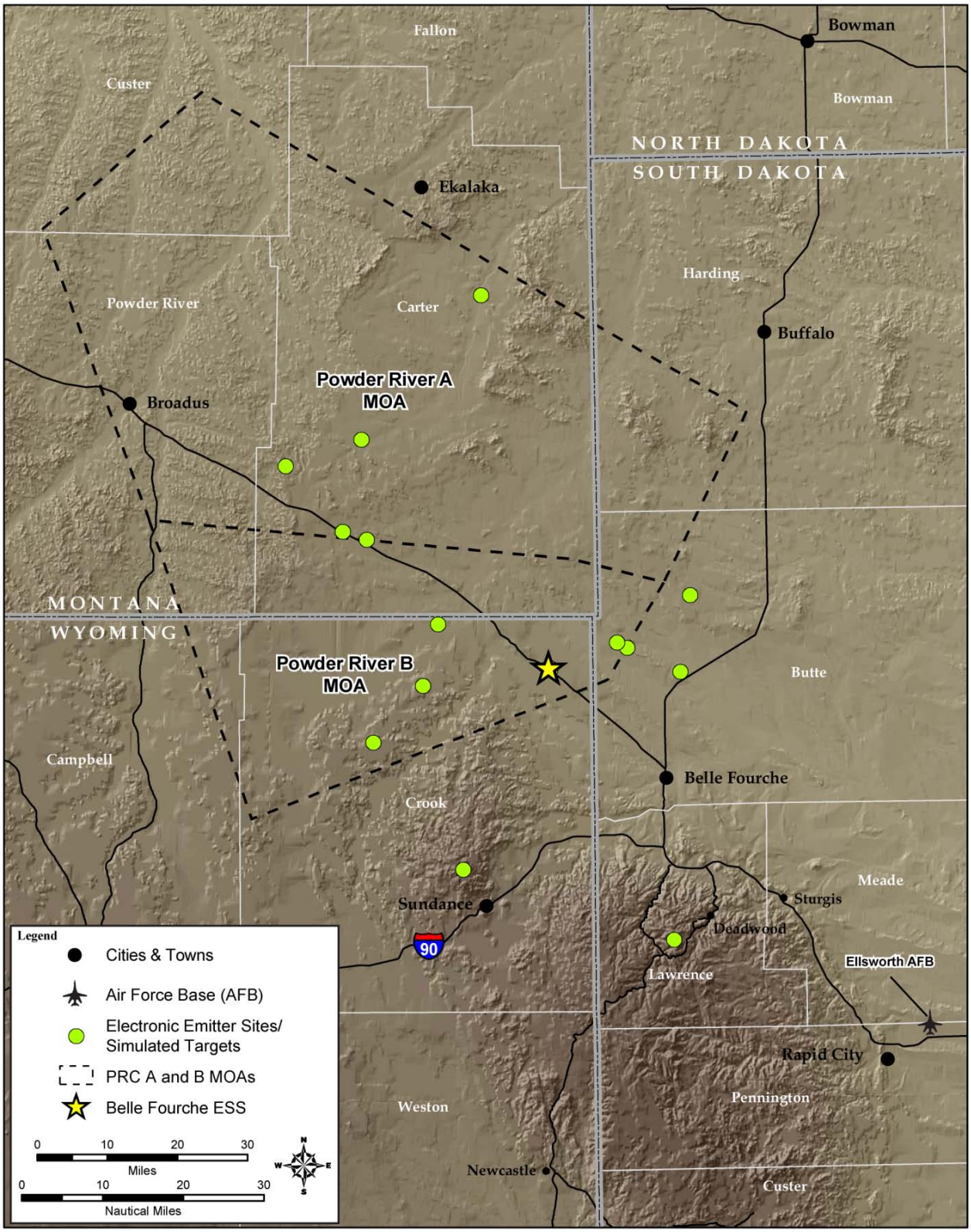

Figure 2-2. Powder River MOAs, Belle Fourche Electronic Threats, and Associated Sites

2.4.3 *OVERVIEW OF THE MODIFIED ALTERNATIVE A*

The current Powder River airspace is essentially used up by one or two B-1 aircraft training together with new technologies, sensors, and weapon systems. The Modified Alternative A would build from the existing airspace and associated existing electronic capabilities to fulfill the purpose and need defined in Chapter 1.0. The Modified Alternative A would modify and add to the existing Powder River airspace to permit four to eight B-1s to be efficiently launched and realistically trained in local, high quality airspace. The DEIS evaluated three alternatives, Alternatives A, B, and C, which could fulfill training requirements and the No-Action Alternative which would not fulfill training requirements.

This FEIS evaluates the Modified Alternative A, Modified Alternatives B and C, and the No-Action Alternative. The Modified Alternative A was developed by the Air Force and FAA in response to issues and concerns raised by the public, tribes, and agencies during review of the DEIS and consultation under Section 106 of the National Historic Preservation Act (NHPA), as well as part of the Government-to-Government consultation. The Modified Alternative A would expand the current Powder River MOA into four separate Low and High MOA complexes for day-to-day training (Table 2.4-1). During annual LFEs, which would occur not more than 10 days per year, these MOA complexes would be connected by the Gap A, Gap B, and Gap C MOAs/ATCAAs (Table 2.4-2). Each MOA would have overlying ATCAAs, which would extend from FL180 to either FL230 or FL260.

Table 2.4-1. Proposed MOA/ATCAAs

MOA/ATCAA	*Description*
Powder River 1 MOA/ATCAA (PR-1)	Consists of PR-1A, PR-1B, PR-1C, and PR-1D MOAs, each of which would be stratified vertically into a Low MOA, a High MOA, and an ATCAA.*
Powder River 2 MOA/ATCAA (PR-2)	Essentially the existing Powder River airspace which would become the PR-2 MOAs, and would continue to be stratified vertically into a Low MOA, a High MOA, and an ATCAA*
Powder River 3 MOA/ATCAA (PR-3)	Consists of the PR-3 MOAs, which would be stratified vertically into a Low MOA, a High MOA, and an ATCAA*
Powder River 4 MOA/ATCAA (PR-4)	Consists of the PR-4 High MOA and an ATCAA*
Gateway West ATCAA	Modified and expanded to become the Gateway West ATCAA

*Note: For the purposes of the definitions above:
Low MOA = altitudes from 500 feet AGL up to, but not including 12,000 feet MSL
High MOA = altitudes from 12,000 feet MSL up to, but not including 18,000 feet MSL
ATCAA = altitudes from 18,000 feet MSL up to 26,000 feet MSL or 23,000 ft MSL

Table 2.4-2. Additional Airspace Proposed for Use Not to Exceed 10 Days/Year

MOA/ATCAA	*Description*
Gap A MOA/ATCAA	Separate PR-1 and PR-2, would consist of a Low MOA, a High MOA, and an ATCAA*
Gap B MOA/ATCAA	Separate PR-2 and PR-3, would consist of a Low MOA, a High MOA, and an ATCAA*
Gap C MOA/ATCAA	Separate PR-3 and PR-4, would consist of a High MOA and an ATCAA*
Gateway East ATCAA	Modified and expanded to become the Gateway East ATCAA for use during LFEs, not to exceed 10 days per year

*Note: For the purposes of the definitions above:
Low MOA = altitudes from 500 feet AGL up to, but not including 12,000 feet MSL
High MOA = altitudes from 12,000 feet MSL up to, but not including 18,000 feet MSL
ATCAA = altitudes from 18,000 feet MSL up to 26,000 feet MSL

The Modified Alternative A would restructure and reconfigure the existing Powder River MOAs and associated ATCAAs, establish three additional MOA/ATCAA combinations, include Gateway West, and include Gap MOAs/ATCAAs and Gateway East, which could be used once per quarter for 1 to 3 days, not to exceed 10 days per year, to link up and create a versatile, realistic training complex for approximately 20 aircraft of various types to train as the comprehensive team they must be in combat.

The proposed PRTC ATCAA airspace is capped at either FL230 or FL260, depending on the timing of the airspace activation. While a high altitude (above FL260) training requirement continues to be valid, especially for the B-52s and during LFEs, high altitude military aircraft training would impact other NAS stakeholders. DoD and Air Force consultation with the FAA determined it to be in the best interest and efficiency of the NAS to mitigate potential impacts by no longer incorporating high altitude training in the PRTC proposal.

The current Letter of Agreement between Ellsworth AFB and FAA has Powder River ATCAA defined as FL180 to FL260 inclusive and the Crossbow ATCAA as FL270 to FL450 inclusive. Although this appears to create a 1,000 foot break, the FAA manages the airspace to not produce a gap between the ATCAAs. For the purpose of this EIS, and to make clear that the airspaces are continuous, this EIS describes the airspace ATCAA from FL180 to, but not including FL260.

2.5 DESCRIPTION OF THE MODIFIED ALTERNATIVE A

The Modified Alternative A is the Alternative A from the DEIS modified by adding the mitigation measures listed and described in Section 2.3.1. The Modified Alternative A would expand and enhance the existing Powder River airspace to become PRTC. The enhanced airspace would provide realistic, integrated B-1 bomber training close to Ellsworth AFB to maximize training in local airspace and minimize long-distance commute time to remote training assets (see Section 2.10). PRTC would also support continued B-52 training for aircraft from Minot AFB. B-1 and B-52 aircrew training dictates the airspace structure and number and type of airspace operations that would occur within the proposed PRTC airspace units. Transient aircraft and others who have used the Powder River airspace would continue to use this enhanced PRTC airspace. The Modified Alternative A would include the mitigations listed in Section 2.3.1 as well as the common elements described in Section 2.7.6.

Victor Airways are essentially highways in the sky from 1,200 feet AGL to FL180 in Class E airspace. Many powered aircraft follow these routes. The routes connect radio navigation beacons called "very high frequency omni-directional range" or VOR stations that radiate a signal in all directions. These stations are usually located at or near airfields. The width of these airways depends on the distance from the navigational aids. There are separation distances for aircraft flying within the Victor Airway (internal separation) and separation distances for aircraft outside the airway (external separation).

2.5.1 *AIRSPACE STRUCTURE*

The Modified Alternative A would modify the existing Powder River MOAs/ATCAA complex with three additional MOAs/ATCAA combinations, and establish Gap MOAs/ATCAAs to link the airspace for not more than 10 days per year. The proposed PRTC includes changes and expansion of the Powder River MOAs and ATCAAs as depicted on Figure 1-2.

Table 2.5-1 and Table 2.5-2 present a description of airspace use associated with each of the alternatives, including the Modified Alternative A. The tables include the proposed MOAs (Table 2.5-1) and ATCAAs (Table 2.5-2), their designated altitudes, time and daily hours of use, and expected days per year when the airspace would be scheduled.

Table 2.5-1. MOA Description for Modified Alternatives

MOA	Modified Alternative			No Action	Designated Altitudes	Time of Use	Expected Daily Use	Estimated Days/ Year	Controlling Agency
	A	B	C						
PR-1A Low	X		X		500 feet AGL up to, but not including, 12,000 feet MSL	By NOTAM 2 hours in advance, Monday-Thursday 0730-1200 L and 1800-2330 L; Friday 0730-1200 L; Other times by NOTAM 4 hours in advance	3 hours/day	240	Salt Lake City ARTCC
PR-1A High[2]	X		X		12,000 feet MSL up to, but not including, FL180	By NOTAM 4 hours in advance (Large Force Exercise only)		10	Salt Lake City ARTCC
PR-1B Low	X		X		500 feet AGL up to, but not including, FL180	By NOTAM 2 hours in advance, Monday-Thursday 0730-1200 L and 1800-2330 L; Friday 0730-1200 L; Other times by NOTAM 4 hours in advance	3 hours/day	240	Salt Lake City ARTCC
PR-1B High	X		X		12,000 feet MSL up to, but not including, FL180	By NOTAM 2 hours in advance, Monday-Thursday 0730-1200 L and 1800-2330 L; Friday 0730-1200 L; Other times by NOTAM 4 hours in advance	3 hours/day	240	Salt Lake City ARTCC
PR-1C Low	X		X		500 feet AGL up to, but not including, 12,000 feet MSL	By NOTAM 2 hours in advance, Monday-Thursday 0730-1200 L and 1800-2330 L; Friday 0730-1200 L; Other times by NOTAM 4 hours in advance	3 hours/day	240	Salt Lake City ARTCC
PR-1C High[2]	X		X		12,000 feet MSL up to, but not including, FL180	By NOTAM 4 hours in advance (Large Force Exercise only)		10	Salt Lake City ARTCC
PR-1D Low	X		X		500 feet AGL up to, but not including, 12,000 feet MSL	By NOTAM 2 hours in advance, Monday-Thursday 0730-1200 L and 1800-2330 L; Friday 0730-1200 L; Other times by NOTAM 4 hours in advance	3 hours/day	240	Salt Lake City ARTCC
PR-1D High	X		X		12,000 feet MSL up to, but not including, FL180	By NOTAM 2 hours in advance, Monday-Thursday 0730-1200 L and 1800-2330 L; Friday 0730-1200 L; Other times by NOTAM 4 hours in advance	3 hours/day	240	Salt Lake City ARTCC

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Table 2.5-1. MOA Description for Modified Alternatives

MOA	Modified Alternative			No Action	Designated Altitudes	Time of Use	Expected Daily Use	Estimated Days/ Year	Controlling Agency
	A	B	C						
PR-2 Low	X	X	X	X[1]	500 feet AGL up to, but not including, 12,000 feet MSL	By NOTAM 2 hours in advance, Monday-Thursday 0730-1200 L and 1800-2330 L; Friday 0730-1200 L; Other times by NOTAM 4 hours in advance	6 hours/day	240	Denver ARTCC
PR-2 High	X	X	X	X[1]	12,000 feet MSL up to, but not including, FL180	By NOTAM 2 hours in advance, Monday-Thursday 0730-1200 L and 1800-2330 L; Friday 0730-1200 L; Other times by NOTAM 4 hours in advance	6 hours/day	240	Denver ARTCC
PR-3 Low	X	X	X		500 feet AGL up to, but not including, 12,000 feet MSL	By NOTAM 2 hours in advance, Monday-Thursday 0730-1200 L and 1800-2330 L; Friday 0730-1200 L; Other times by NOTAM 4 hours in advance	3 hours/day	240	Salt Lake City ARTCC
PR-3 High	X	X	X		12,000 feet MSL up to, but not including, FL180	By NOTAM 2 hours in advance, Monday-Thursday 0730-1200 L and 1800-2330 L; Friday 0730-1200 L; Other times by NOTAM4 hours in advance	3 hours/day	240	Salt Lake City ARTCC
PR-4 Low		X			500 feet AGL up to, but not including, 12,000 feet MSL	By NOTAM 2 hours in advance Monday-Thursday 0730-1200 L and, 1800-2330 L; Friday 0730-1200 L; Other times by NOTAM 4 hours in advance	3 hours/day	240	Minneapolis ARTCC
PR-4 High	X	X			12,000 feet MSL up to, but not including, FL180	By NOTAM 2 hours in advance, Monday-Thursday 0730-1200 L and 1800-2330 L; Friday 0730-1200 L; Other times by NOTAM 4 hours in advance	3 hours/day	240	Minneapolis ARTCC
Gap A Low[2]	X		X		500 feet AGL up to, but not including, 12,000 feet MSL	By NOTAM 4 hours in advance (Large Force Exercise only)		10	Denver ARTCC
Gap A High[2]	X		X		12,000 feet MSL up to, but not including, FL180	By NOTAM 4 hours in advance (Large Force Exercise only)		10	Denver ARTCC

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Table 2.5-1. MOA Description for Modified Alternatives

MOA	Modified Alternative			No Action	Designated Altitudes	Time of Use	Expected Daily Use	Estimated Days/ Year	Controlling Agency
	A	B	C						
Gap B Low[2]	X	X	X		500 feet AGL up to, but not including, 12,000 feet MSL	By NOTAM 4 hours in advance (Large Force Exercise only)		10	Salt Lake City ARTCC
Gap B High[2]	X	X	X		12,000 feet MSL up to, but not including, FL180	By NOTAM 4 hours in advance (Large Force Exercise only)		10	Salt Lake City ARTCC
Gap C Low[2]		X			500 feet AGL up to, but not including, 12,000 feet MSL	By NOTAM 4 hours in advance (Large Force Exercise only)		10	Minneapolis ARTCC
Gap C High[2]	X	X			12,000 feet MSL up to, but not including, FL180	By NOTAM 4 hours in advance (Large Force Exercise only)		10	Minneapolis ARTCC

L = Local

1. The existing Powder River A/B MOAs extend over much of the same area considered for PR-2.
2. Large Force Exercises only 1 to 3 days/quarter, not to exceed 10 days per year

Table 2.5-2. ATCAA Description for Modified Alternatives

ATCAA	Modified Alternative			No Action	Designated Altitudes	Time of Use	Expected Daily Use	Estimated Days/Year	Controlling Agency
	A	B	C						
PR-1A[2]	X	X	X		FL180 to FL260	As coordinated (Large Force Exercise only)		10	--
PR-1B	X	X	X		FL180 to FL260	FL230 and below: Monday-Thursday 0730-1200 L and 1800-2330 L; Friday 0730-1200 L, other times as coordinated; Above FL230: As coordinated (Large Force Exercise only)	3 hours/day	240	--
PR-1C[2]	X	X	X		FL180 to FL260	As coordinated (Large Force Exercise only)		10	
PR-1D	X	X	X		FL180 to FL260	FL230 and below: Monday-Thursday 0730-1200 L and 1800-2330 L; Friday 0730-1200 L, other times as coordinated; Above FL230: As coordinated (Large Force Exercise only)	3 hours/day	240	--
PR-2	X	X	X	X[1]	FL180 to FL260	Monday-Thursday 0730-1200 L and 1800-2330 L; Friday 0730-1200 L; other times as coordinated	7 hours/day	240	--
PR-3	X	X	X		FL180 to FL260	Monday-Thursday 0730-1200 L and 1800-2330 L; Friday 0730-1200 L; other times as coordinated	4 hours/day	240	--
PR-4	X	X	X		FL180 to FL260	Monday-Thursday 0730-1200 L and 1800-2330 L; Friday 0730-1200 L; other times as coordinated	4 hours/day	240	--
Gateway West	X	X	X		FL180 to FL260	Monday-Thursday 0730-1200 L and 1800-2330 L; Friday 0730-1200 L; other times as coordinated	3 hours/day	240	--
Gateway East [2]	X	X	X		FL180 to FL260	As coordinated (Large Force Exercise Only)		10	--
Gap A[2]	X	X	X		FL180 to FL260	As coordinated (Large Force Exercise Only)		10	--
Gap B[2]	X	X	X		FL180 to FL260	As coordinated (Large Force Exercise Only)		10	--
Gap C[2]	X	X	X		FL180 to FL260	As coordinated (Large Force Exercise Only)		10	--

L = Local

1. The Powder River ATCAA extends over much of the same area considered for PR-2.
2. Large force exercises only 1 to 3 days/quarter, not to exceed 10 days/year.

Modified Alternative B is described in Section 2.6 and Modified Alternative C is described in Section 2.7. Table 2.5-3 presents the estimated areas under the airspace for the No-Action Alternative and the action alternatives. Table 2.9-1 in Section 2.9 presents the area in square miles under the existing Powder River airspace. The above FL180 ATCAA area overflown during LFEs would be the same for the three action alternatives.

The Gap MOA/ATCAAs follow existing Victor Airways (V-254, V-120, V-491) and would be proposed for activation and use for not more 10 days per year for LFEs consisting of approximately 20 training aircraft.

Table 2.5-3. Surface Area Overflown by Proposed PRTC Modified Alternative

Surface Area Measurements for Day-to-Day (DtD) and Large Force Exercise (LFE) Training	*Modified Alternative A*	*Modified Alternative B*	*Modified Alternative C*	*No Action*
DtD ATCAA Acres (FL 180 – FL260)	17,823,159	17,823,159	17,823,159	9,030,400
DtD MOA High Acres (12,000 ft MSL – FL180)	15,337,980	11,513,491	11,989,386	3,756,160
DtD MOA Low Acres (500 ft AGL – 12,000 ft MSL)	11,512,127	11,513,491	11,512,127	3,756,160
LFE (inc DtD) ATCAA Acres (FL180 – FL260)	21,762,250	21,762,250	21,762,250	N/A
LFE (inc DtD) MOA High Acres (12,000 ft MSL – FL180)	17,458,490	13,364,001	14,078,895	N/A
LFE (inc DtD) MOA Low Acres (500 ft AGL – 12,000 ft MSL)	13,632,636	13,634,001	13,632,636	N/A
DtD ATCAA Sq Statute Mi (FL180 – FL260)	27,849	27,849	27,849	14,110
DtD MOA High Sq Statute Mi (12,000 ft MSL – FL180)	23,966	17,990	17,988	5,869
DtD MOA Low Sq Statute Mi (500 ft AGL – 12,000 ft MSL)	18,685	17,990	18,685	5,869
LFE (inc DtD) ATCAA Sq Statute Mi (FL180 – FL260)	34,004	34,004	34,004	N/A
LFE (inc DtD) MOA High Sq Statute Mi (12,000 ft MSL – FL180)	27,279	21,303	21,303	N/A
LFE M (inc DtD) OA Low Sq Statute Mi (500 ft AGL – 12,000 ft MSL)	21,301	21,303	21,301	N/A
DtD ATCAA Sq Nautical Mi (FL180 – FL260)	19,937	19,937	19,937	10,655
DtD MOA High Sq Nautical Mi (12,000 ft MSL – FL180)	18,097	13,584	14,109	4,432
DtD MOA Low Sq Nautical Mi (500 ft AGL-12,000 ft MSL)	13,583	13,584	13,583	4,432
LFE (inc DtD) ATCAA Sq Nautical Mi (FL180 – FL260)	25,677	25,677	25,677	N/A
LFE (inc DtD) MOA High Sq Nautical Mi (12,000 ft MSL – FL180)	20,599	16,086	16,611	N/A
LFE (inc DtD) MOA Low Sq Nautical Mi (500 ft AGL – 12,000 ft MSL)	16,085	16,086	16,085	N/A

ATCAA = Air Traffic Control Assigned Airspace; DtD = Day-to-Day; LFE = Large Force Exercises; MOA = Military Operations Area

2.5.2 *AIRSPACE OPERATIONS*

Under the Modified Alternative A, the primary users of the enhanced PRTC would be B-1s from Ellsworth AFB and B-52s from Minot AFB. Other users would be bombers and tankers from other bases and transient fighters. The increased size and availability of local training airspace would allow an increase in the number of sorties available to meet aircrew training needs for both B-1 and B-52 aircraft. Total flight operations would not be expected to exceed those analyzed and published in the *Ellsworth AFB Air Installation Compatible Use Zone (AICUZ) Study* (Air Force 2008). The Modified Alternative A would increase local training sorties from the current B-1 use of Powder River airspace from 46 percent of training sorties and B-52 use of Powder River airspace from 31 percent of training sorties to 85 percent local training sorties for each.

The remaining training sorties would continue in remote areas such as Utah Test and Training Range (UTTR), Nevada Test and Training Range (NTTR), and Mountain Home Range Complex (MHRC), which would permit higher altitude training and aircrews to continue to conduct actual ordnance delivery training in locations where inert or live bombs can be deployed. There would be no live or inert ordnance proposed for use in PRTC. Table 2.5-4 presents the baseline number of sorties to local and remote training areas compared with proposed sorties under the Modified Alternative A. The table demonstrates the proportional increase in local training time. As indicated in Section 2.10, the PRTC would substantially reduce low-value transit or commute time and increase realistic combat training time.

Table 2.5-4. Annual Sortie Comparison Between Baseline and Modified Alternative A

Sortie	*Baseline*				*Modified Alternative A*				*Change*		*Total B-1 and B-52*
	B-1	*%*	*B-52*	*%*	*B-1*	*%*	*B-52*	*%*	*B-1*	*B-52*	
Local	1,000	46%	300	31%	2,160	85%	808	85%	+1,160	+508	+1,668
Remote	1,160	54%	650	69%	380	15%	142	15%	-780	-508	-1,288

Currently, B-1s operate within all airspace units associated with the existing Powder River airspace, while most B-52 Powder River airspace operations occur within the Crossbow ATCAA with occasional use of Powder River MOAs. Under the Modified Alternative A, B-52s would operate primarily within all ATCAA airspace with occasional sorties in the new MOAs. B-1 use would be spread throughout the PRTC airspace. B-1s and B-52s historically have trained for the low-level penetration mission on Instrument Routes (IRs) that traverse the area leading to the Belle Fourche electronic range. Three IRs, IR-473, IR-485, and IR-492, are intermittently used by training aircraft (see Section 3.1.3.3). Low-level navigation on IRs is expected to continue at its current level of intermittent activity. Secondary users, such as tankers, would conduct aerial refueling in ATCAAs as needed and scheduled with the FAA. Transient aircraft training is included in the proposed PRTC airspace use.

Table 2.5-5 presents baseline and projected sortie operations in MOA and ATCAA airspace. All B-1 and B-52 sortie operations training in the MOAs would also train in the overlying ATCAAs during the same mission. Some training missions would occur only in the ATCAAs.

Table 2.5-5. Modified Alternative A MOA and ATCAA Annual Training Hours Comparison

	Aircraft Hours in Airspace				
	B-1	***B-52***[1]	***Transient***[2]	***Tankers***[3]	***Total***
Baseline Annual Hours					
MOA	250	0	10	0	260
ATCAA[4]	675	300	14	0	989
Projected Modified Alternative A Annual Hours					
MOA	509	58	44	0	611
ATCAA	1,740	258	121	152	2,271
Changes					
MOA	259	58	34	0	351
ATCAA	1,065	-42	107	152	1,282

Notes: 1. B-52s use existing MOAs infrequently (see Table 2.5-1).
2. Includes F-16, F-15, and F-22 fighter aircraft and other similar type aircraft (see Appendix B).
3. Tankers use existing ATCAAs infrequently (see Table 2.5-2) and could use proposed MOAs infrequently (see Table 2.5-1).
4. Baseline ATCAA includes B-52 training in Crossbow which is not part of PRTC airspace.

Aircraft capabilities and missions are constantly changing to reflect real world combat experiences and expected missions. Section 2.10 explains required aircrew training. Table 2.5-6 presents the total estimated annual training activity for each airspace unit for each type of aircraft for weekday day-to-day training.

2.5.3 *LARGE FORCE EXERCISES*

The Modified Alternative A would support LFEs for mission training in simulated combat engagements as described in Section 2.10. For the purpose of this EIS, an LFE consists of a scheduled and announced once quarterly, 1- to 3-day training exercise with approximately 20 aircraft of various types participating. LFEs would be scheduled to not exceed a total of 10 days per year. Airspace would be activated an estimated 4 hours per LFE day. During an LFE, MOAs, ATCAAs, the corridors designated as Gap A, B, C MOAs/ATCAAs, Gateway East ATCAA, and Gateway West ATCAA could be activated in any number of configurations to accommodate the realistic training. The projected LFE time and altitude distributions are included in the aircraft by airspace distribution in Table 2.5-7.

2.5.4 *MODIFIED ALTERNATIVE A COMBINED AIRSPACE USE*

Table 2.5-8 combines the annual day-to-day training and the not more than 10 days per year of LFE training to present a projected total airspace usage under the Modified Alternative A and details the estimated time and altitude distribution for all training aircraft. Times and altitude distributions are presented in estimated hours over an average year and represent a best estimate of training activity based upon the day-to-day and LFE training requirements presented in Chapter 1.0. As capabilities and threats change and aircrews receive new training missions, the distribution of annual hours would be expected to vary.

Table 2.5-6. Modified Alternative A Day-to-Day (DtD) Time and Altitude Distribution by Aircraft Type

ALT Modified A (DtD Ops) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 -4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*
Powder River 1A MOA/ATCAA	B-1	2.55	5.73	2.55	1.20	0.00	0.00
	B-52	0.00	0.35	0.06	0.01	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.02	0.02	0.00	0.00	0.00	0.00
Powder River 1B MOA/ATCAA	B-1	4.07	9.16	4.07	1.91	1.11	66.81
	B-52	0.00	0.57	0.10	0.01	0.03	2.60
	Tanker	0.00	0.00	0.00	0.00	0.00	2.97
	Transient	0.04	0.04	0.00	0.00	0.16	0.57
Powder River 1C MOA/ATCAA	B-1	1.06	2.40	1.06	1.06	0.00	0.00
	B-52	0.00	0.15	0.03	0.01	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.01	0.01	0.00	0.00	0.00	0.00
Powder River 1D MOA/ATCAA	B-1	8.86	19.94	8.86	4.09	3.02	180.95
	B-52	0.00	1.23	0.22	0.03	0.08	7.03
	Tanker	0.00	0.00	0.00	0.00	0.00	8.03
	Transient	0.09	0.09	0.00	0.00	0.42	1.53
Powder River 2 MOA/ATCAA	B-1	34.06	76.64	34.06	17.03	8.52	510.94
	B-52	0.00	13.80	2.42	0.35	0.69	57.75
	Tanker	0.00	0.00	0.00	0.00	0.00	1.00
	Transient	0.16	0.16	0.00	0.00	0.58	2.10
Powder River 3 MOA/ATCAA	B-1	16.52	37.17	16.52	8.26	4.13	247.77
	B-52	0.00	2.30	0.40	0.06	0.12	9.63
	Tanker	0.00	0.00	0.00	0.00	0.00	1.00
	Transient	0.16	0.16	0.00	0.00	0.58	2.10

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Table 2.5-6. Modified Alternative A Day-to-Day (DtD) Time and Altitude Distribution by Aircraft Type

ALT Modified A (DtD Ops) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 -4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*
Powder River 4 MOA/ATCAA	B-1	0.00	0.00	0.00	0.00	82.59	247.77
	B-52	0.00	0.00	0.00	0.00	17.25	57.75
	Tanker	0.00	0.00	0.00	0.00	0.00	11.00
	Transient	0.00	0.00	0.00	0.00	0.90	2.10
Gap A MOA/ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	0.00
Gap B MOA/ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	0.00
Gap C MOA/ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	0.00
Gateway East ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	0.00
Gateway West ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	168.75
	B-52	0.00	0.00	0.00	0.00	0.00	75.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	1.00

Table 2.5-7. Modified Alternative A Large Force Exercise (LFE) Time and Altitude Distribution by Aircraft Type

ALT Modified A (LFE ONLY) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 -4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*	*Time @ Altitude Above FL260 - FL370 HR/YR*	*Time @ Altitude Above FL370 - FL600 HR/YR*
Powder River 1A MOA/ATCAA	B-1	0.57	1.28	0.57	0.28	0.14	8.53	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	1.32	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	7.37	0.00	0.00
	Transient	0.23	0.23	0.00	0.00	0.82	2.99	0.00	0.00
Powder River 1B MOA/ATCAA	B-1	0.91	2.04	0.91	0.45	0.23	13.62	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	2.11	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	11.78	0.00	0.00
	Transient	0.37	0.37	0.00	0.00	1.31	4.77	0.00	0.00
Powder River 1C MOA/ATCAA	B-1	0.51	1.14	0.51	0.25	0.13	7.59	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	1.18	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	6.56	0.00	0.00
	Transient	0.20	0.20	0.00	0.00	0.73	2.66	0.00	0.00
Powder River 1D MOA/ATCAA	B-1	2.46	5.53	2.46	1.23	0.61	36.90	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	5.73	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	31.89	0.00	0.00
	Transient	1.00	1.00	0.00	0.00	3.54	12.91	0.00	0.00
Powder River 2 MOA/ATCAA	B-1	4.92	11.07	4.92	2.46	1.23	73.80	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	11.15	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	4.58	0.00	0.00
	Transient	1.99	1.99	0.00	0.00	7.08	25.83	0.00	0.00
Powder River 3 MOA/ATCAA	B-1	2.94	6.62	2.94	1.47	0.74	44.16	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	6.67	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	2.74	0.00	0.00
	Transient	1.19	1.19	0.00	0.00	4.24	15.46	0.00	0.00

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Table 2.5-7. Modified Alternative A Large Force Exercise (LFE) Time and Altitude Distribution by Aircraft Type

ALT Modified A (LFE ONLY) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 -4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*	*Time @ Altitude Above FL260 - FL370 HR/YR*	*Time @ Altitude Above FL370 - FL600 HR/YR*
Powder River 4 MOA/ATCAA	B-1	0.00	0.00	0.00	0.00	18.81	56.43	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	8.53	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	57.60	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	8.47	19.75	0.00	0.00
Gap A MOA/ATCAA	B-1	0.65	1.46	0.65	0.32	0.16	9.72	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	1.47	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00
	Transient	0.26	0.26	0.00	0.00	0.93	3.40	0.00	0.00
Gap B MOA/ATCAA	B-1	0.88	1.98	0.88	0.44	0.22	13.23	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.82	0.00	0.00
	Transient	0.36	0.36	0.00	0.00	1.27	4.63	0.00	0.00
Gap C MOA/ATCAA	B-1	0.00	0.00	000	0.00	2.28	6.83	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	1.03	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.42	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	1.01	2.38	0.00	0.00
Gateway East ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	14.81	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	2.94	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	1.21	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	5.56	0.00	0.00
Gateway West ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	29.63	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	5.88	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	2.42	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	11.11	0.00	0.00

Table 2.5-8. Modified Alternative A Day-to-Day (DtD) and Large Force Exercise (LFE) Time and Altitude Distribution by Aircraft Type

ALT Modified A (DtD + LFEs) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 -4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*	*Time @ Altitude Above FL260 - FL370 HR/YR*	*Time @ Altitude Above FL370 - FL600 HR/YR*
Powder River 1A MOA/ATCAA	B-1	3.12	7.01	3.12	1.48	0.14	8.53	0.00	0.00
	B-52	0.00	0.35	0.06	0.01	0.00	1.32	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	7.37	0.00	0.00
	Transient	0.26	0.26	0.00	0.00	0.82	2.99	0.00	0.00
Powder River 1B MOA/ATCAA	B-1	4.98	11.20	4.98	2.37	1.34	80.44	0.00	0.00
	B-52	0.00	0.57	0.10	0.01	0.03	4.71	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	14.74	0.00	0.00
	Transient	0.41	0.41	0.00	0.00	1.46	5.33	0.00	0.00
Powder River 1C MOA/ATCAA	B-1	1.57	3.53	1.57	1.32	0.13	7.59	0.00	0.00
	B-52	0.00	0.15	0.03	0.01	0.00	1.18	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	6.56	0.00	0.00
	Transient	0.22	0.22	0.00	0.00	0.73	2.66	0.00	0.00
Powder River 1D MOA/ATCAA	B-1	11.32	25.48	11.32	5.32	3.63	217.85	0.00	0.00
	B-52	0.00	1.23	0.22	0.03	0.08	12.75	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	39.93	0.00	0.00
	Transient	1.08	1.08	0.00	0.00	3.96	14.45	0.00	0.00
Powder River 2 MOA/ATCAA	B-1	38.98	87.71	38.98	19.49	9.75	584.74	0.00	0.00
	B-52	0.00	13.80	2.42	0.35	0.69	68.90	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	5.58	0.00	0.00
	Transient	2.15	2.15	0.00	0.00	7.66	27.93	0.00	0.00
Powder River 3 MOA/ATCAA	B-1	19.46	43.79	19.46	9.73	4.87	291.93	0.00	0.00
	B-52	0.00	2.30	0.40	0.06	0.12	16.30	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	3.74	0.00	0.00
	Transient	1.35	1.35	0.00	0.00	4.82	17.56	0.00	0.00
Powder River 4 MOA/ATCAA	B-1	0.00	0.00	0.00	0.00	101.40	304.20	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	17.25	66.28	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	68.60	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	9.37	21.85	0.00	0.00

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Table 2.5-8. Modified Alternative A Day-to-Day (DtD) and Large Force Exercise (LFE) Time and Altitude Distribution by Aircraft Type

ALT Modified A (DtD + LFEs) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 -4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*	*Time @ Altitude Above FL260 - FL370 HR/YR*	*Time @ Altitude Above FL370 - FL600 HR/YR*
Gap A MOA/ATCAA	B-1	0.65	1.46	0.65	0.32	0.16	9.72	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	1.47	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00
	Transient	0.26	0.26	0.00	0.00	0.93	3.40	0.00	0.00
Gap B MOA/ATCAA	B-1	0.88	1.98	0.88	0.44	0.22	13.23	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.82	0.00	0.00
	Transient	0.36	0.36	0.00	0.00	1.27	4.63	0.00	0.00
Gap C MOA/ATCAA	B-1	0.00	0.00	0.00	0.00	2.28	6.83	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	1.03	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.42	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	1.01	2.38	0.00	0.00
Gateway East ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	14.81	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	2.94	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	1.21	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	5.56	0.00	0.00
Gateway West ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	198.38	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	80.88	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	2.42	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	12.11	0.00	0.00

2.5.5 *SUPERSONIC ACTIVITY*

Only during the LFEs (not to exceed 10 days per year) B-1 bombers and transient fighters would conduct realistic training that would involve supersonic flights within the PRTC airspace. Supersonic flights could occur during air combat, air-to-air engagements, defensive maneuvers, and other tactics during the LFE. Table 2.8-1 provides an estimate of aircraft types and estimated time above supersonic speeds. All B-1 supersonic activities would occur above 20,000 feet MSL; transient fighter supersonic activity would be above 10,000 feet AGL. B-1s would fly supersonic for about 30 seconds during 60 sorties, or approximately 30 minutes per year, and fighters would engage in an estimated 48 minutes of supersonic flight per year during the not more than 10 days of LFEs annually with an estimated 5 percent between 10,000 feet AGL and FL180 and 95 percent from FL180 to FL260. Supersonic activity would generally be experienced toward the center of the LFE airspace over the proposed PR-2, PR-3, and Gap B MOAs/ATCAAs as aircraft use supersonic capabilities in engagements.

2.5.6 *DEFENSIVE COUNTERMEASURES*

Section 2.8, *Elements Common to All Action Alternatives*, explains the requirement for use of chaff and flares to provide realistic training when faced with combat threats. Under Modified Alternative A, an annual estimate of approximately 24,508 chaff bundles and 2,450 flares would be deployed during all normal or day-to-day and LFE training. This is an overall estimated 26 percent reduction in chaff and flare use when compared to the DEIS Alternative A (which had 33,000 chaff bundles and 3,300 flares). These changes are a result of changes in airspace availability for B-52 training operations. Different aircraft types employ specific types of chaff and flares in quantities reflective of their missions. Chaff and flare use would adhere to the restrictions described in Section 2.3. Table 2.5-9 estimates Modified Alternative A annual numbers of chaff bundles and flares by airspace based on time spent in the airspace. Chaff and flare residual materials would be as described in Section 2.8.5.3.

Table 2.5-9. Modified Alternative A Estimated Annual Chaff and Flare Use by Airspace

Airspace	*Chaff*	*Flares*
PR-1A/B/C/D MOAs/ATCAAs	4,048	405
PR-2 MOA/ATCAA	8,097	810
PR-3 MOA/ATCAA	3,672	367
PR-4 MOA/ATCAA	4,928	493
Gap A MOA/ATCAA	161	16
Gap B MOA/ATCAA	219	22
Gap C MOA/ATCAA	113	11
Gateway East ATCAA	205	20
Gateway West ATCAA	3,065	306
Totals	**24,508**	**2,450**

2.5.7 *GROUND-BASED TRAINING ASSETS*

The existing electronic range complex consists of the Belle Fourche ESS and numerous emitter and/or simulated threat sites underlying existing MOA and ATCAA airspace (see Section 2.4.2). These sites provide training opportunities within the existing Powder River airspace and would continue to support training in the proposed PRTC.

2.6 MODIFIED ALTERNATIVE B

Modified Alternative B expands and enhances the airspace and ground assets based on the existing Powder River airspace. Modified Alternative B would include all the common elements described in Section 2.7.6.

2.6.1 *AIRSPACE STRUCTURE*

Under Modified Alternative B, the Air Force would request the FAA to establish the MOAs, ATCAAs, and Gap MOA ATCAAs defined for the Modified Alternative A, with the exceptions that PR-1A MOA, PR-1B MOA, PR-1C MOA, PR-1D MOA, and the Gap A MOAs would not be established (see Figure 2-3) and PR-4 Low MOA and Gap C Low MOA would be established as in the DEIS Alternative B. Modified Alternative B ATCAAs would be above the MOAs in PR-2, PR-3, PR-4, Gap B, and Gap C as they are for the Modified Alternative A. The PR-1A, PR-1B, PR-1C, and PR-1D ATCAAs and Gap A ATCAA are included in Modified Alternative B.

2.6.2 *AIRSPACE OPERATIONS*

Under Modified Alternative B, the primary users of the airspace would be the B-1s and B-52s as explained in Section 2.10. Table 2.6-1 compares local and remote sorties under baseline or existing conditions and Modified Alternative B. This table demonstrates that Modified Alternative B would increase local airspace training for B-1s from 46 percent of training sorties to 85 percent of training sorties and for B-52s from 31 percent to 85 percent of training sorties.

Table 2.6-1. Annual Sortie Comparison Between Baseline and Modified Alternative B

Sortie	*Existing*				*Modified Alternative B*				*Change*		*Total B-1 and B-52*
	B-1	*%*	*B-52*	*%*	*B-1*	*%*	*B-52*	*%*	*B-1*	*B-52*	
Local	1,000	46%	300	31%	1,940	76%	722	76%	+940	+422	+1,362
Remote	1,160	54%	650	69%	600	24%	228	24%	-560	-422	-982

Under Modified Alternative B, aircrews would use remote training complexes at a higher rate than with the Modified Alternative A. As noted in Section 2.11, the criterion for quality training airspace is 1,000 feet of topography variation over a distance of 10 miles to conduct terrain following training. PR-1 MOAs are the only proposed airspaces with mountainous terrain consisting of 1,000 feet of topographic relief over a 10 NM distance needed for bomber terrain-following tactics. Modified Alternative B would include low-altitude training in PR-4, but PR-4 does not include terrain comparable to the PR-1 MOAs.

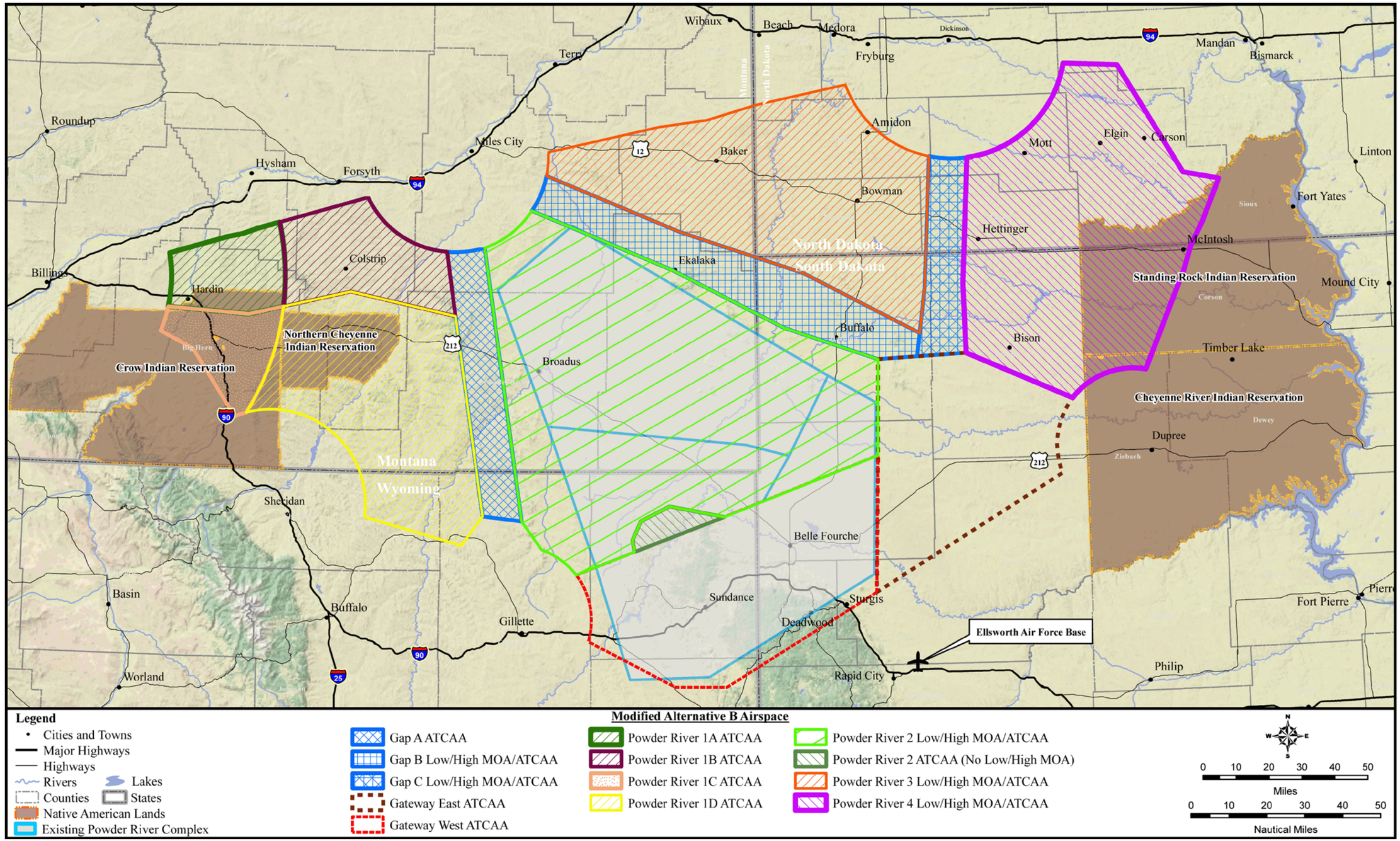

Figure 2-3. Modified Alternative B Airspace

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Under Modified Alternative B, approximately 65 percent of training sorties for the bombers would occur locally in the proposed PRTC. While this would constitute a substantial improvement over baseline conditions, it would be lower than the local training sorties projected with Modified Alternative A.

Table 2.6-2 presents Modified Alternative B estimated and baseline sortie operations in MOA and ATCAA airspaces for all aircraft during normal day-to-day and LFE training.

Table 2.6-2. Modified Alternative B MOA and ATCAA Annual Training Hours Comparison

	Aircraft Hours in Airspace				
	B-1	***B-52[1]***	***Transient[2]***	***Tankers[3]***	***Total***
Baseline Annual Hours					
MOA	250	0	10	0	260
ATCAA[4]	675	300	14	0	989
Projected Modified Alternative B Annual Hours					
MOA	409	64	33	0	506
ATCAA	1,336	250	122	141	1,849
Increase					
MOA	159	64	23	0	246
ATCAA	661	-50	108	141	860

Notes:
1. B-52s use existing MOAs infrequently (see Table 2.5-1).
2. Includes F-16, F-15, and F-22 fighter aircraft and others (see Appendix B).
3. Tankers use existing ATCAAs infrequently (see Table 2.5-2) and could use proposed MOAs infrequently (see Table 2.5-1).
4. Baseline ATCAA includes B-52 training in Crossbow which is not part of PRTC airspace.

The Modified Alternative B day-to-day annual military training hours by aircraft in each airspace is presented in Table 2.6-3. The table reflects Modified Alternative B with no PR-1A/B/C/D MOAs and includes the PR-4 Low MOA. Table 2.6-4 presents the LFE training hours for each altitude and airspace, including the LFE-only airspaces. Table 2.6-5 adds the day-to-day and LFE training hours to present the total estimated hourly training hours by aircraft and Modified Alternative B airspace. Table 2.6-5 is an estimated annual usage, including transients and tankers. Transient fighters would be expected to perform most of their sortie operations during LFEs, and tanker aircraft would support training as needed. Table 2.6-5 represents the total projected PRTC airspace use for Modified Alternative B. As future missions change, hour distributions could also vary.

Table 2.6-3. Modified Alternative B Day-to-Day (DtD) Time and Altitude Distribution by Aircraft Type

ALT B Modified Low+High (DtD Ops) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 -4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*
Powder River 1A ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00
	Tankers	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	0.00
Powder River 1B ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	66.81
	B-52	0.00	0.00	0.00	0.00	0.00	2.60
	Tankers	0.00	0.00	0.00	0.00	0.00	2.97
	Transient	0.00	0.00	0.00	0.00	0.00	0.57
Powder River 1C ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00
	Tankers	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	0.00
Powder River 1D ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	180.95
	B-52	0.00	0.00	0.00	0.00	0.00	7.03
	Tankers	0.00	0.00	0.00	0.00	0.00	8.03
	Transient	0.00	0.00	0.00	0.00	0.00	1.53
Powder River 2 MOA/ATCAA	B-1	34.06	76.64	34.06	17.03	8.52	510.94
	B-52	0.00	13.80	2.42	0.35	0.69	57.75
	Tankers	0.00	0.00	0.00	0.00	0.00	1.00
	Transient	0.16	0.16	0.00	0.00	0.58	2.10
Powder River 3 MOA/ATCAA	B-1	16.52	37.17	16.52	8.26	4.13	247.77
	B-52	0.00	2.30	0.40	0.06	0.12	9.63
	Tankers	0.00	0.00	0.00	0.00	0.00	1.00
	Transient	0.16	0.16	0.00	0.00	0.58	2.10
Powder River 4 MOA/ATCAA	B-1	16.52	37.17	16.52	8.26	4.13	247.77
	B-52	0.00	13.80	2.42	0.35	0.69	57.75
	Tankers	0.00	0.00	0.00	0.00	0.00	11.00
	Transient	0.16	0.16	0.00	0.00	0.58	2.10
Gap A ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00
	Tankers	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	0.00

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Table 2.6-3. Modified Alternative B Day-to-Day (DtD) Time and Altitude Distribution by Aircraft Type

ALT B Modified Low+High (DtD Ops) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 -4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*
Gap B MOA/ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00
	Tankers	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	0.00
Gap C MOA/ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00
	Tankers	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	0.00
Gateway East ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00
	Tankers	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	0.00
Gateway West ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	168.75
	B-52	0.00	0.00	0.00	0.00	0.00	75.00
	Tankers	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	1.00

Table 2.6-4. Modified Alternative B Large Force Exercise (LFE) Time and Altitude Distribution by Aircraft Type

ALT B Modified Low+High (LFE Ops) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 - 4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*
Powder River 1A ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	8.53
	B-52	0.00	0.00	0.00	0.00	0.00	1.32
	Tankers	0.00	0.00	0.00	0.00	0.00	7.37
	Transient	0.00	0.00	0.00	0.00	0.00	2.99
Powder River 1B ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	13.62
	B-52	0.00	0.00	0.00	0.00	0.00	2.11
	Tankers	0.00	0.00	0.00	0.00	0.00	11.78
	Transient	0.00	0.00	0.00	0.00	0.00	4.77
Powder River 1C ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	7.59
	B-52	0.00	0.00	0.00	0.00	0.00	1.18
	Tankers	0.00	0.00	0.00	0.00	0.00	6.56
	Transient	0.00	0.00	0.00	0.00	0.00	2.66
Powder River 1D ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	36.90
	B-52	0.00	0.00	0.00	0.00	0.00	5.73
	Tankers	0.00	0.00	0.00	0.00	0.00	31.89
	Transient	0.00	0.00	0.00	0.00	0.00	12.91
Powder River 2 MOA/ATCAA	B-1	4.92	11.07	4.92	2.46	1.23	73.80
	B-52	0.00	0.00	0.00	0.00	0.00	11.15
	Tankers	0.00	0.00	0.00	0.00	0.00	4.58
	Transient	1.99	1.99	0.00	0.00	7.08	25.83
Powder River 3 MOA/ATCAA	B-1	2.94	6.62	2.94	1.47	0.74	44.16
	B-52	0.00	0.00	0.00	0.00	0.00	6.67
	Tankers	0.00	0.00	0.00	0.00	0.00	2.74
	Transient	1.19	1.19	0.00	0.00	4.24	15.46

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Table 2.6-4. Modified Alternative B Large Force Exercise (LFE) Time and Altitude Distribution by Aircraft Type

ALT B Modified Low+High (LFE Ops) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 - 4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*
Powder River 4 MOA/ATCAA	B-1	3.76	8.46	3.76	1.88	0.94	56.43
	B-52	0.00	0.00	0.00	0.00	0.00	8.53
	Tankers	0.00	0.00	0.00	0.00	0.00	57.60
	Transient	1.74	1.74	0.00	0.00	6.19	22.55
Gap A ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	7.40
	B-52	0.00	0.00	0.00	0.00	0.00	1.47
	Tankers	0.00	0.00	0.00	0.00	0.00	0.60
	Transient	0.00	0.00	0.00	0.00	0.00	2.78
Gap B MOA/ATCAA	B-1	1.01	2.27	1.01	0.50	0.25	15.11
	B-52	0.00	0.00	0.00	0.00	0.00	2.00
	Tankers	0.00	0.00	0.00	0.00	0.00	0.82
	Transient	0.41	0.41	0.00	0.00	1.45	5.29
Gap C MOA/ATCAA	B-1	0.52	1.17	0.52	0.26	0.13	7.79
	B-52	0.00	0.00	0.00	0.00	0.00	1.03
	Tankers	0.00	0.00	0.00	0.00	0.00	0.42
	Transient	0.21	0.21	0.00	0.00	0.75	2.73
Gateway East ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	14.81
	B-52	0.00	0.00	0.00	0.00	0.00	2.94
	Tankers	0.00	0.00	0.00	0.00	0.00	1.21
	Transient	0.00	0.00	0.00	0.00	0.00	5.56
Gateway West ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	29.63
	B-52	0.00	0.00	0.00	0.00	0.00	5.88
	Tankers	0.00	0.00	0.00	0.00	0.00	2.42
	Transient	0.00	0.00	0.00	0.00	0.00	11.11

Table 2.6-5. Modified Alternative B Day-to-Day (DtD) and Large Force Exercise (LFE) Time and Altitude Distribution by Aircraft Type

Modified ALT B Low+High (DtD + LFEs) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 - 4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*
Powder River 1A ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	8.53
	B-52	0.00	0.00	0.00	0.00	0.00	1.32
	Tankers	0.00	0.00	0.00	0.00	0.00	7.37
	Transient	0.00	0.00	0.00	0.00	0.00	2.99
Powder River 1B ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	8.53
	B-52	0.00	0.00	0.00	0.00	0.00	1.32
	Tankers	0.00	0.00	0.00	0.00	0.00	7.37
	Transient	0.00	0.00	0.00	0.00	0.00	2.99
Powder River 1C ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	7.59
	B-52	0.00	0.00	0.00	0.00	0.00	1.18
	Tankers	0.00	0.00	0.00	0.00	0.00	6.56
	Transient	0.00	0.00	0.00	0.00	0.00	2.66
Powder River 1D ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	217.85
	B-52	0.00	0.00	0.00	0.00	0.00	12.76
	Tankers	0.00	0.00	0.00	0.00	0.00	39.92
	Transient	0.00	0.00	0.00	0.00	0.00	14.44
Powder River 2 MOA/ATCAA	B-1	38.98	87.71	38.98	19.49	9.75	584.74
	B-52	0.00	13.80	2.42	0.35	0.69	68.90
	Tankers	0.00	0.00	0.00	0.00	0.00	5.58
	Transient	2.15	2.15	0.00	0.00	7.66	27.93
Powder River 3 MOA/ATCAA	B-1	19.46	43.79	19.46	9.73	4.87	291.93
	B-52	0.00	2.30	0.40	0.06	0.12	16.30
	Tankers	0.00	0.00	0.00	0.00	0.00	3.74
	Transient	1.35	1.35	0.00	0.00	4.82	17.56
Powder River 4 MOA/ATCAA	B-1	20.28	45.63	20.28	10.14	5.07	304.20
	B-52	0.00	13.80	2.42	0.35	0.69	66.28
	Tankers	0.00	0.00	0.00	0.00	0.00	68.60
	Transient	1.90	1.90	0.00	0.00	6.76	24.65

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Table 2.6-5. Modified Alternative B Day-to-Day (DtD) and Large Force Exercise (LFE) Time and Altitude Distribution by Aircraft Type

Modified ALT B Low+High (DtD + LFEs) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 - 4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*
Gap A ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	7.40
	B-52	0.00	0.00	0.00	0.00	0.00	1.47
	Tankers	0.00	0.00	0.00	0.00	0.00	0.60
	Transient	0.00	0.00	0.00	0.00	0.00	2.78
Gap B MOA/ATCAA	B-1	1.01	2.27	1.01	0.50	0.25	15.11
	B-52	0.00	0.00	0.00	0.00	0.00	2.00
	Tankers	0.00	0.00	0.00	0.00	0.00	0.82
	Transient	0.41	0.41	0.00	0.00	1.45	5.29
Gap C MOA/ATCAA	B-1	0.52	1.17	0.52	0.26	0.13	7.79
	B-52	0.00	0.00	0.00	0.00	0.00	1.03
	Tankers	0.00	0.00	0.00	0.00	0.00	0.42
	Transient	0.21	0.21	0.00	0.00	0.75	2.73
Gateway East ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	14.81
	B-52	0.00	0.00	0.00	0.00	0.00	2.94
	Tankers	0.00	0.00	0.00	0.00	0.00	1.21
	Transient	0.00	0.00	0.00	0.00	0.00	5.56
Gateway West ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	198.38
	B-52	0.00	0.00	0.00	0.00	0.00	80.88
	Tankers	0.00	0.00	0.00	0.00	0.00	2.42
	Transient	0.00	0.00	0.00	0.00	0.00	12.11

2.6.3 *LARGE FORCE EXERCISES*

LFEs would form part of Modified Alternative B, occurring with the same frequency and involving similar operations as described under the Modified Alternative A. The patterns of use for LFEs and the distribution of sortie operations would be similar to required training described for Modified Alternative A. The Modified Alternative B stand-off distance and altitude restriction account for the lack of the PR-1 and Gap A MOAs and the addition of the PR-4 Low MOA and Gap C Low MOA. Sortie operations for LFEs would be somewhat less than those described for Modified Alternative A. Table 2.6-4 presents estimated LFE airspace usage. Under Modified Alternative B, LFEs would have reduced training effectiveness, due to the lack of low-level mountainous terrain underneath PR-1 or extended stand-off distances at lower altitudes underneath the PR-1 or Gap A MOAs.

2.6.4 *SUPERSONIC ACTIVITY*

Modified Alternative B supersonic activity would not be expected to discernibly change from the Modified Alternative A because LFE training would be the same as expected for the Modified Alternative A. B-1 supersonic flight would occur above 20,000 feet MSL within the airspace during LFEs as described for the Modified Alternative A. Modified Alternative B would include authorization for transient fighter aircraft to fly supersonic above 10,000 feet AGL during LFEs. Total supersonic activity would be comparable to that described for the Modified Alternative A in Section 2.5. Table 2.8-1 lists the estimated supersonic minutes by aircraft type and altitudes. All B-1 and most fighter supersonic flight would occur in the ATCAAs.

2.6.5 *DEFENSIVE COUNTERMEASURES*

The use of chaff and flares for Modified Alternative B would be proportional to the operations in the respective airspaces. Modified Alternative B would not be expected to result in a substantial reduction in chaff and flare use when compared with Modified Alternative A because aircrews would be required to train realistically with defensive chaff and flares. Table 2.6-6 presents the annual chaff and flare use for normal or day-to-day and LFE training under Modified Alternative B. Chaff and flare use would adhere to the restrictions described in Section 2.7.6. Residual materials and deposition would generally be as described in Section 2.7.6.

Table 2.6-6. Modified Alternative B Estimated Annual Chaff and Flare Use by Airspace

Airspace	*Chaff*	*Flares*
PR-1A/B/C/D ATCAAs	944	94
PR-2 MOA/ATCAA	9,120	911
PR-3 MOA/ATCAA	4,199	420
PR-4 MOA/ATCAA	5,453	544
Gap A ATCAA	111	11
Gap B MOA/ATCAA	270	27
Gap C MOA/ATCAA	139	14
Gateway East ATCAA	222	22
Gateway West ATCAA	3,282	327
Totals	**23,740**	**2,370**

2.6.6 *GROUND-BASED TRAINING ASSETS*

The existing electronic range complex consists of the Belle Fourche ESS and numerous emitter and/or simulated threat sites underlying existing MOA and ATCAA airspace (see Section 2.10). These sites provide training opportunities within the existing Powder River airspace and would continue to support training in the proposed PRTC.

2.7 MODIFIED ALTERNATIVE C

Modified Alternative C would expand and enhance the airspace and ground assets based on the existing Powder River airspace. Modified Alternative C would include all the common elements described in Section 2.7.6.

2.7.1 *AIRSPACE STRUCTURE*

For Modified Alternative C, the Air Force would request the FAA to establish all the MOAs, ATCAAs, and Gap MOA ATCAAs defined for the Modified Alternative A, with the exception that the PR-4 and the Gap C MOAs would not be included in Modified Alternative C. The PR-4 ATCAAs and the Gap C ATCAAs would be included in Modified Alternative C. Figure 2-4 includes the MOA/ATCAA details of Modified Alternative C.

2.7.2 *AIRSPACE OPERATIONS*

Under Modified Alternative C, the primary users of the airspace would be the B-1s and B-52s. Table 2.7-1 compares the local annual sorties under PRTC Modified Alternative C with the baseline, or existing, Powder River airspace sorties. Modified Alternative C would be comparable to Modified Alternative B, and aircrews would use remote training complexes at a higher rate than under the Modified Alternative A. Approximately 70 to 80 percent of training would occur locally within PRTC Modified Alternative C. While this would constitute a substantial improvement over Powder River airspace baseline conditions, local training would be less than under the Modified Alternative A and similar to Modified Alternative B except over a different geographic area. The inclusion of PR-1A, PR-1B, PR-1C, and PR-1D MOAs in Modified

Alternative C would support quality low-level training to meet siting criteria for mountainous terrain-following training as noted in Section 2.11.

Table 2.7-1. Annual Sortie Comparison Between Baseline and Modified Alternative C

Sortie	*Existing*				*Modified Alternative C*				*Change*		*Total B-1 and B-52*
	B-1	*%*	*B-52*	*%*	*B-1*	*%*	*B-52*	*%*	*B-1*	*B-52*	
Local	1,000	46%	300	31%	1,940	76%	722	76%	+940	+422	+1,362
Remote	1,160	54%	650	69%	600	24%	228	24%	-560	-422	-982

B-1s would be the primary users of the MOAs, while B-1s and B-52s would share the ATCAAs. Table 2.7-2 provides the Modified Alternative C estimated and baseline sortie operations in the MOA and ATCAA airspaces for all aircraft during daily and LFE training.

Table 2.7-2. Modified Alternative C MOA and ATCAA Annual Training Hours Comparison

	AIRCRAFT HOURS IN AIRSPACE				
	B-1	*B-52*[1]	*Transient*[2]	*Tankers*[3]	*Total*
Baseline Annual Hours					
MOA	250	0	10	0	260
ATCAA[4]	675	300	14	0	989
Projected Modified Alternative C Annual Hours					
MOA	424	61	34	0	519
ATCAA	1,294	202	127	220	1,843
Increase					
MOA	174	61	24	0	259
ATCAA	619	-98	113	220	854

Notes:
1. B-52s use existing MOAs infrequently (see Table 2.5-1).
2. Includes F-16, F-15, and F-22 fighter aircraft and others (see Appendix B).
3. Tankers use existing ATCAAs infrequently (see Table 2.5-2) and could use proposed MOAs infrequently (see Table 2.5-1).
4. Baseline ATCAA includes B-52 training in Crossbow which is not part of PRTC airspace.

Modified Alternative C annual day-to-day training activity estimated for each aircraft for each altitude within each airspace is presented in Table 2.7-3. This is the Modified Alternative C estimated annual usage for B-1s, B-52s, transients, and tankers. Transient fighters would be expected to perform most of their sortie operations during LFEs, and tanker aircraft would support training as needed. Table 2.7-4 presents the Modified Alternative C training hours for an LFE. Table 2.7-5 combines Table 2.7-3 and Table 2.7-4 to produce the total Modified Alternative C expected training hours by aircraft, airspace, and altitude. Table 2.7-6 represents the estimated total airspace use under Modified Alternative C. Real-world experience and expected missions will change, and estimated aircraft training hour distribution would be expected to vary accordingly.

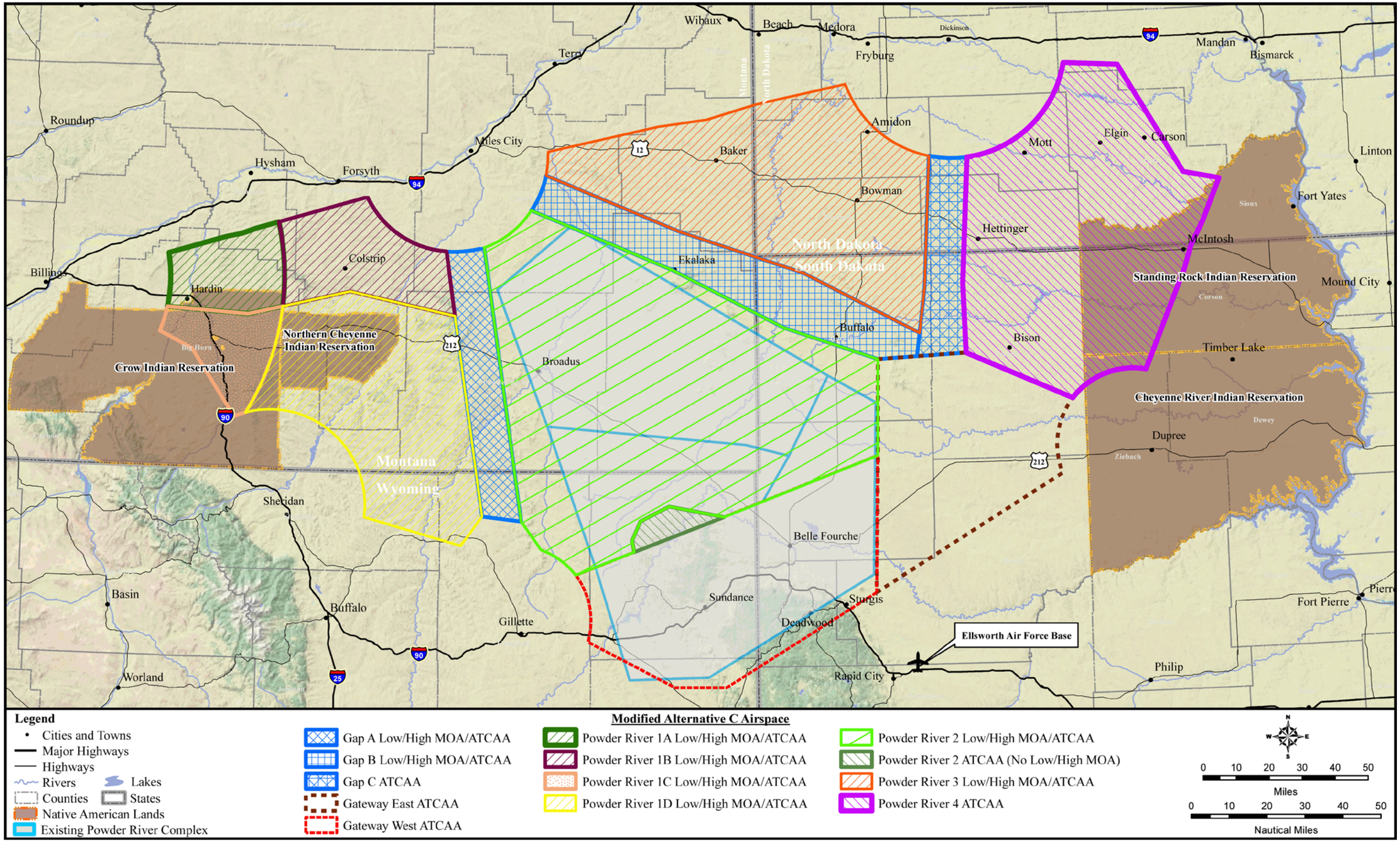

Figure 2-4. Modified Alternative C Airspace

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Table 2.7-3. Modified Alternative C Day-to-Day (DtD) Operations Time and Altitude Distribution by Aircraft Type

Modified ALT C (DtD Ops) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 -4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*
Powder River 1A MOA/ATCAA	B-1	2.55	5.73	2.55	1.20	0.00	0.00
	B-52	0.00	0.35	0.06	0.00	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.02	0.02	0.00	0.00	0.00	0.00
Powder River 1B MOA/ATCAA	B-1	4.07	9.16	4.07	1.91	1.11	66.81
	B-52	0.00	0.57	0.10	0.01	0.03	2.60
	Tanker	0.00	0.00	0.00	0.00	0.00	2.97
	Transient	0.04	0.04	0.00	0.00	0.16	0.57
Powder River 1C MOA/ATCAA	B-1	1.06	2.40	1.06	1.06	0.00	0.00
	B-52	0.00	0.15	0.03	0.01	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.01	0.01	0.00	0.00	0.00	0.00
Powder River 1D MOA/ATCAA	B-1	8.86	19.94	8.86	4.09	3.02	180.95
	B-52	0.00	1.23	0.22	0.03	0.08	7.03
	Tanker	0.00	0.00	0.00	0.00	0.00	8.03
	Transient	0.09	0.09	0.00	0.00	0.42	1.53
Powder River 2 MOA/ATCAA	B-1	34.06	76.64	34.06	17.03	8.52	510.94
	B-52	0.00	13.80	2.42	0.35	0.69	57.75
	Tankers	0.00	0.00	0.00	0.00	0.00	1.00
	Transient	0.11	0.11	0.00	0.00	0.38	1.40
Powder River 3 MOA/ATCAA	B-1	16.52	37.17	16.52	8.26	4.13	247.77
	B-52	0.00	2.30	0.40	0.06	0.12	9.63
	Tankers	0.00	0.00	0.00	0.00	0.00	1.00
	Transient	0.16	0.16	0.00	0.00	0.58	2.10
Powder River 4 ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	247.77
	B-52	0.00	0.00	0.00	0.00	0.00	57.75
	Tankers	0.00	0.00	0.00	0.00	0.00	11.00
	Transient	0.00	0.00	0.00	0.00	0.00	2.10
Gap A MOA/ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00
	Tankers	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	0.00

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Table 2.7-3. Modified Alternative C Day-to-Day (DtD) Operations Time and Altitude Distribution by Aircraft Type

Modified ALT C (DtD Ops) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 -4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*
Gap B MOA/ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00
	Tankers	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	0.00
Gap C ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00
	Tankers	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	0.00
Gateway East ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00
	Tankers	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	0.00
Gateway West ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	168.75
	B-52	0.00	0.00	0.00	0.00	0.00	75.00
	Tankers	0.00	0.00	0.00	0.00	0.00	0.00
	Transient	0.00	0.00	0.00	0.00	0.00	1.00

Table 2.7-4. Modified Alternative C Large Force Exercise (LFE) Time and Altitude Distribution by Aircraft Type

Modified ALT C (LFE ONLY) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 - 4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*
Powder River 1A MOA/ATCAA	B-1	0.57	1.28	0.57	0.28	0.14	8.53
	B-52	0.00	0.00	0.00	0.00	0.00	1.32
	Tanker	0.00	0.00	0.00	0.00	0.00	7.37
	Transient	0.23	0.23	0.00	0.00	0.82	2.99
Powder River 1B MOA/ATCAA	B-1	0.91	2.04	0.91	0.45	0.23	13.62
	B-52	0.00	0.00	0.00	0.00	0.00	2.11
	Tanker	0.00	0.00	0.00	0.00	0.00	11.78
	Transient	0.37	0.37	0.00	0.00	1.31	4.77
Powder River 1C MOA/ATCAA	B-1	0.51	1.14	0.51	0.25	0.13	7.59
	B-52	0.00	0.00	0.00	0.00	0.00	1.18
	Tanker	0.00	0.00	0.00	0.00	0.00	6.56
	Transient	0.20	0.20	0.00	0.00	0.73	2.66
Powder River 1D MOA/ATCAA	B-1	2.46	5.53	2.46	1.23	0.61	36.90
	B-52	0.00	0.00	0.00	0.00	0.00	5.73
	Tanker	0.00	0.00	0.00	0.00	0.00	31.89
	Transient	1.00	1.00	0.00	0.00	3.54	12.91
Powder River 2 MOA/ATCAA	B-1	4.92	11.07	4.92	2.46	1.23	73.80
	B-52	0.00	0.00	0.00	0.00	0.00	11.15
	Tankers	0.00	0.00	0.00	0.00	0.00	4.58
	Transient	1.99	1.99	0.00	0.00	7.08	25.83
Powder River 3 MOA/ATCAA	B-1	2.94	6.62	2.94	1.47	0.74	44.16
	B-52	0.00	0.00	0.00	0.00	0.00	6.67
	Tankers	0.00	0.00	0.00	0.00	0.00	2.74
	Transient	1.19	1.19	0.00	0.00	4.24	15.46
Powder River 4 ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	75.24
	B-52	0.00	0.00	0.00	0.00	0.00	8.53
	Tankers	0.00	0.00	0.00	0.00	0.00	57.60
	Transient	0.00	0.00	0.00	0.00	0.00	28.22
Gap A MOA/ATCAA	B-1	0.63	1.42	0.63	0.32	0.16	9.45
	B-52	0.00	0.00	0.00	0.00	0.00	1.47
	Tankers	0.00	0.00	0.00	0.00	0.00	0.60
	Transient	0.26	0.26	0.00	0.00	0.93	3.40

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Table 2.7-4. Modified Alternative C Large Force Exercise (LFE) Time and Altitude Distribution by Aircraft Type

Modified ALT C (LFE ONLY) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 - 4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*
Gap B MOA/ATCAA	B-1	0.88	1.98	0.88	0.44	0.22	13.23
	B-52	0.00	0.00	0.00	0.00	0.00	2.00
	Tankers	0.00	0.00	0.00	0.00	0.00	0.82
	Transient	0.36	0.36	0.00	0.00	1.27	4.63
Gap C ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	9.10
	B-52	0.00	0.00	0.00	0.00	0.00	1.03
	Tankers	0.00	0.00	0.00	0.00	0.00	0.42
	Transient	0.00	0.00	0.00	0.00	0.00	3.40
Gateway East ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	14.81
	B-52	0.00	0.00	0.00	0.00	0.00	2.94
	Tankers	0.00	0.00	0.00	0.00	0.00	1.21
	Transient	0.00	0.00	0.00	0.00	0.00	5.56
Gateway West ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	29.63
	B-52	0.00	0.00	0.00	0.00	0.00	5.88
	Tankers	0.00	0.00	0.00	0.00	0.00	2.42
	Transient	0.00	0.00	0.00	0.00	0.00	11.11

Table 2.7-5. Modified Alternative C Day-to-Day (DtD) and Large Force Exercises (LFE) Time and Altitude Distribution

Modified ALT C (DtD + LFEs) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 - 4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*
Powder River 1A MOA/ATCAA	B-1	3.12	7.01	3.12	1.48	0.14	8.53
	B-52	0.00	0.35	0.06	0.00	0.00	1.32
	Tanker	0.00	0.00	0.00	0.00	0.00	7.37
	Transient	0.26	0.26	0.00	0.00	0.82	2.99
Powder River 1B MOA/ATCAA	B-1	4.98	11.20	4.98	2.37	1.34	80.44
	B-52	0.00	0.57	0.10	0.01	0.03	4.71
	Tanker	0.00	0.00	0.00	0.00	0.00	14.74
	Transient	0.41	0.41	0.00	0.00	1.46	5.33
Powder River 1C MOA/ATCAA	B-1	1.57	3.53	1.57	1.32	0.13	7.59
	B-52	0.00	0.15	0.03	0.01	0.00	1.18
	Tanker	0.00	0.00	0.00	0.00	0.00	6.56
	Transient	0.22	0.22	0.00	0.00	0.73	2.66
Powder River 1D MOA/ATCAA	B-1	11.32	25.48	11.32	5.32	3.63	217.85
	B-52	0.00	1.23	0.22	0.03	0.08	12.75
	Tanker	0.00	0.00	0.00	0.00	0.00	39.93
	Transient	1.08	1.08	0.00	0.00	3.96	14.45
Powder River 2 MOA/ATCAA	B-1	38.98	87.71	38.98	19.49	9.75	584.74
	B-52	0.00	13.80	2.42	0.35	0.69	68.90
	Tankers	0.00	0.00	0.00	0.00	0.00	5.58
	Transient	2.10	2.10	0.00	0.00	7.47	27.23
Powder River 3 MOA/ATCAA	B-1	19.46	43.79	19.46	9.73	4.87	291.93
	B-52	0.00	2.30	0.40	0.06	0.12	16.30
	Tankers	0.00	0.00	0.00	0.00	0.00	3.74
	Transient	1.35	1.35	0.00	0.00	4.82	17.56
Powder River 4 MOA/ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	323.01
	B-52	0.00	0.00	0.00	0.00	0.00	66.28
	Tankers	0.00	0.00	0.00	0.00	0.00	68.60
	Transient	0.00	0.00	0.00	0.00	0.00	30.32
Gap A MOA/ATCAA	B-1	0.63	1.42	0.63	0.32	0.16	9.45
	B-52	0.00	0.00	0.00	0.00	0.00	1.47
	Tankers	0.00	0.00	0.00	0.00	0.00	0.60
	Transient	0.26	0.26	0.00	0.00	0.93	3.40

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Table 2.7-5. Modified Alternative C Day-to-Day (DtD) and Large Force Exercises (LFE) Time and Altitude Distribution

Modified ALT C (DtD + LFEs) Airspace Unit	*Aircraft*	*Time @ Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1000 - 1999 AGL HR/YR*	*Time @ Altitude 2000 - 4999 AGL HR/YR*	*Time @ Altitude 5,000 AGL - 11999 MSL HR/YR*	*Time @ Altitude 12000 - 17999 MSL HR/YR*	*Time @ Altitude FL180 - FL260 HR/YR*
Gap B MOA/ATCAA	B-1	0.88	1.98	0.88	0.44	0.22	13.23
	B-52	0.00	0.00	0.00	0.00	0.00	2.00
	Tankers	0.00	0.00	0.00	0.00	0.00	0.82
	Transient	0.36	0.36	0.00	0.00	1.27	4.63
Gap C ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	9.10
	B-52	0.00	0.00	0.00	0.00	0.00	1.03
	Tankers	0.00	0.00	0.00	0.00	0.00	0.42
	Transient	0.00	0.00	0.00	0.00	0.00	3.40
Gateway East ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	14.81
	B-52	0.00	0.00	0.00	0.00	0.00	2.94
	Tankers	0.00	0.00	0.00	0.00	0.00	1.21
	Transient	0.00	0.00	0.00	0.00	0.00	5.56
Gateway West ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	198.38
	B-52	0.00	0.00	0.00	0.00	0.00	80.88
	Tankers	0.00	0.00	0.00	0.00	0.00	2.42
	Transient	0.00	0.00	0.00	0.00	0.00	12.11

2.7.3 *LARGE FORCE EXERCISES*

LFEs are RAP requirements that are critical for aircrew training but are difficult to accomplish due to lack of opportunities. LFEs will consist of at least 10 aircraft operating in the assigned airspace. Under Modified Alternative C, the LFEs (not to exceed 10 days per year) would occur with the same frequency and involve similar operations as described for the Modified Alternative A. LFEs would distribute sortie operations similar to the description for Modified Alternative A with stand-off distances and altitude restrictions to account for the lack of PR-4 MOA and Gap C MOA airspace. Adjustments to account for the different airspace would somewhat increase traffic in the available airspace. Table 2.7-4 presents the annual estimated LFE training by aircraft type. Under Modified Alternative C, LFEs would have somewhat higher-quality training than under Modified Alternative B, because the PR-1MOAs overfly a diversified geographic area suitable for B-1 bomber terrain following tactics.

2.7.4 *SUPERSONIC ACTIVITY*

Modified Alternative C would include B-1 supersonic flight above 20,000 feet MSL during LFEs as described for the Modified Alternative A. Although there would be a reduced total amount of day-to-day training, the LFE training and LFE events would be the same as the Modified Alternative A. Transient fighter aircraft would operate at supersonic speeds above 10,000 feet AGL during LFEs. Total supersonic activity would match that defined for the Modified Alternative A (refer to Section 2.7.6). Table 2.8-1 lists the estimated supersonic minutes by aircraft type and altitudes during the LFEs, which would not exceed 10 days per year. Transient fighters would fly an estimated 100 supersonic events during LFEs. All the B-1 and most of the fighter supersonic activity would occur in the ATCAAs above FL180.

2.7.5 *DEFENSIVE COUNTERMEASURES*

The use of chaff and flares for Modified Alternative C would be proportional to the operations in the respective airspaces. Modified Alternative C would include essentially the same amount of chaff and flare use as the Modified Alternative A as aircrews train for defensive maneuvers. Modified Alternative C total projected chaff and flare use is presented in Table 2.7-6 and Table 2.8-2. Table 2.7-6 gives the total estimated chaff and flare use by airspace for both normal or day-to-day and LFE training. Chaff and flare residual materials would be as described in Section 2.8.5.3. Restrictions on chaff and flare use would be as described in Section 2.3.

Table 2.7-6. Modified Alternative C Estimated Annual Chaff and Flare Use by Airspace

Airspace	*Chaff*	*Flares*
PR-1A/B/C/D MOAs/ATCAAs	4,555	456
PR-2 MOA/ATCAA	9,014	901
PR-3 MOA/ATCAA	4,148	415
PR-4 ATCAA	1,011	101
Gap A MOA/ATCAA	171	17
Gap B MOA/ATCAA	237	24
Gap C ATCAA	122	12
Gateway East ATCAA	219	22
Gateway West ATCAA	3,256	326
Total	**22,733**	**2,274**

2.7.6 *GROUND-BASED TRAINING ASSETS*

The existing electronic range complex consists of the Belle Fourche ESS and numerous emitter and/or simulated threat sites underlying existing MOA and ATCAA airspace. These sites provide training opportunities within the existing Powder River airspace and would continue to support training in the proposed PR-2 MOA/ATCAA.

2.8 ELEMENTS COMMON TO ALL ACTION ALTERNATIVES

The elements common to the Modified Alternative A, Modified Alternative B, and Modified Alternative C, the three action alternatives are the establishment of new airspaces, training operations within the airspace, LFEs, supersonic flights during LFEs, defensive countermeasures, and ground-based training assets. Should a decision be made to proceed with one of the action alternatives, the Air Force estimates FAA establishment and charting of the airspace after the ROD on this EIS is signed.

2.8.1 *AIRSPACE STRUCTURE*

Each of the three action alternatives includes proposed changes to existing airspace. The Air Force has proposed airspace modifications and has the responsibility under NEPA for analyzing the potential environmental consequences of each alternative. The FAA is a cooperating agency in the NEPA analysis and is responsible for evaluating, processing, and charting airspace changes. FAA Order 7400.2K (online at www.faa.gov), presents the FAA's procedures for processing airspace changes. Each action alternative includes four categories of changes to airspace structure.

- **Establishment:** This category of change refers to instances where the FAA would establish new MOA or ATCAA airspace. MOAs are established through FAA nonrulemaking action. ATCAAs are established through Letters of Agreement (LOAs) with the FAA. Each of the three action alternatives includes the proposed establishment of new airspace, such as MOAs and ATCAAs not overlapping with the existing Powder River A/B MOAs.

- **Modification:** This category applies to existing airspace that would be incorporated into and/or re-designated as part of a proposed MOA/ATCAA. The proposed PRTC is built around and incorporates most of the existing Powder River airspace.
- **Expansion:** This category applies to existing airspace units that would be increased in volume and incorporated into and/or re-designated as part of a proposed MOA/ATCAA. The existing PR-A and PR-B MOAs would be somewhat expanded and renamed the PR-2 MOA.
- **Elimination:** This category applies to the portion of the Black Hills ATCAA not subsumed into the Gateway ATCAA. This portion would be eliminated and would no longer comprise an ATCAA. The existing PR-A MOA floor would be raised from surface to 500 feet AGL. Airspace below 500 feet AGL would be eliminated as a part of the MOA.

All three action alternatives share several features. The proposed PRTC MOA and ATCAA boundaries would avoid most civil aviation Victor Airways by at least 5 NM internal and 4 NM external separation. The MOA/ATCAA boundaries would avoid major Victor Airway intersections by more than 20 NM (see Section 3.1.3.4.1, Victor Airways). PRTC ATCAAs above all MOAs would use airspace from FL180 to FL230 (or FL260). The Gateway West ATCAAs would be regularly scheduled. ATCAAs for LFEs, including Gateway East, would be scheduled by NOTAM. The estimated LFE use would be 4 hours per day, approximately 1 to 3 days in any one quarter, not to exceed 10 days per year. These MOA/ATCAAs would be activated by the FAA to support LFEs and scheduled to avoid high-use periods by civil aviation to the extent possible.

Figure 2-5 shows the proposed PRTC airspace with communities, reservations, highways, and other points of interest. Each individual alternative, described in Sections 2.5 through 2.7, would be composed of all or portions of the MOA/ATCAAs shown on Figure 2-5. Depending upon the modified alternative, the proposed PR-1, PR-2, PR-3, and PR-4, as well as the proposed Gap MOAs have Low MOAs from 500 feet AGL to, but not including, 12,000 feet MSL, and High MOAs from 12,000 feet MSL to, but not including, FL180. Under Modified Alternatives A and C, PR-4 would not have a Low MOA. Under Modified Alternative B, PR-4 would have both Low and High MOAs. Operations within the proposed PRTC MOA airspaces would be scheduled by Ellsworth AFB and coordinated with the FAA to reduce conflict and ensure safe use by military and civil aircraft.

Each action alternative supports aerial refueling. Aerial refueling involves the act of receiving fuel efficiently and safely while in flight. Almost every aircraft in the Air Force inventory is aerial refueling capable. To optimize fuel and flight time, aerial refueling takes place as close to combat as possible, given enemy air defense threats. For training, the Air Force performs refueling operations within designated aerial refueling areas (also known as “tracks” or “anchors”) or within FAA-approved airspace. Designated aerial refueling tracks/anchors are described within Department of Defense (DoD) Area Planning documents and have established coordinates and altitudes for which the Air Force has coordinated with the FAA. During public meetings, maps were displayed showing notional locations where aerial refueling could be planned for quarterly LFEs. No specific aerial refueling tracks/anchors are proposed to be established as part of PRTC, and those notional locations are not included in this EIS. Refueling

can occur anywhere such activity is approved by ATC. For the PRTC action alternatives, the Air Force proposes to perform refueling as needed and approved by the ATC.

The geographic area encompassed by this airspace proposal lies within the controlling region of three FAA ARTCCs as described in Section 3.1.3. The FAA is a cooperating agency in this EIS, and data for this EIS have been provided by the Salt Lake City ARTCC, Denver ARTCC, and Minneapolis ARTCC.

2.8.2 *AIRSPACE OPERATIONS*

Increased numbers, frequency, and variety of sortie operations would occur under all of the alternatives in proposed airspaces outside the existing Powder River training airspace.

A sortie operation comprises the use of one airspace unit, a MOA or ATCAA, by one aircraft. Each action alternative would have a variation of operations, depending upon the airspace units in that alternative. Specific details about flight operations are included in Sections 2.5 through 2.7. Normal day-to-day training operations would involve training aircraft operating in an individual MOA/ATCAA for approximately 2 hours, with approximately 15 to 20 minutes of training activity below 2,000 feet AGL for those missions that require low-altitude training. Each action alternative would involve use of the airspace for sortie operations by B-1s and B-52s.

2.8.3 *LARGE FORCE EXERCISES (NOT TO EXCEED 10 DAYS PER YEAR)*

Realistic, stressful, and challenging operational training is the primary means to ensure readiness and prepare the Air Force to apply personnel and assets to meet national policies. Training consists of a careful progression of activities and threat complexity, including a balance of programs directed at individuals, crews, and larger organizational units through performance assessments. Whether an individual-level mission activity, a two-ship mission, or a larger LFE, realistic training is critical to maintaining military proficiency. LFEs are essential to modern combat training and provide B-1 and B-52 aircrews the opportunity to practice training as part of a combined force with different aircraft as is common in combat.

An LFE is a highly sophisticated training exercise that simulates battlefield scenarios and requires enough airspace to provide assembly, transition, ingress, egress, and maneuver areas. Such training exercises employ a full range of combat tactics, equipment, and personnel. Combat tactics are both offensive and defensive in nature and include flying at supersonic speed, use of defensive chaff and flares with restrictions, and simulated launching of weapons. At supersonic speeds, the time frame during which aircrews are exposed to enemy threats is minimal and crew reaction times, which may have been seconds, become tenths of seconds.

Today a multi-force strike mission could involve combat aircraft of various types. The weapons and sensors employed today by potential adversaries include a wide range of dispersed, camouflaged, and hardened radar- and visual-directed anti-aircraft artillery sites, as well as both ground- and air-launched radar-directed and heat-seeking missiles. For a mission to succeed, the Air Force must identify and defeat all these threats by simultaneously employing the entire range of available weapons, aircraft, and sensors. An LFE requires bomber aircrews to develop capabilities that cannot be learned in other training venues.

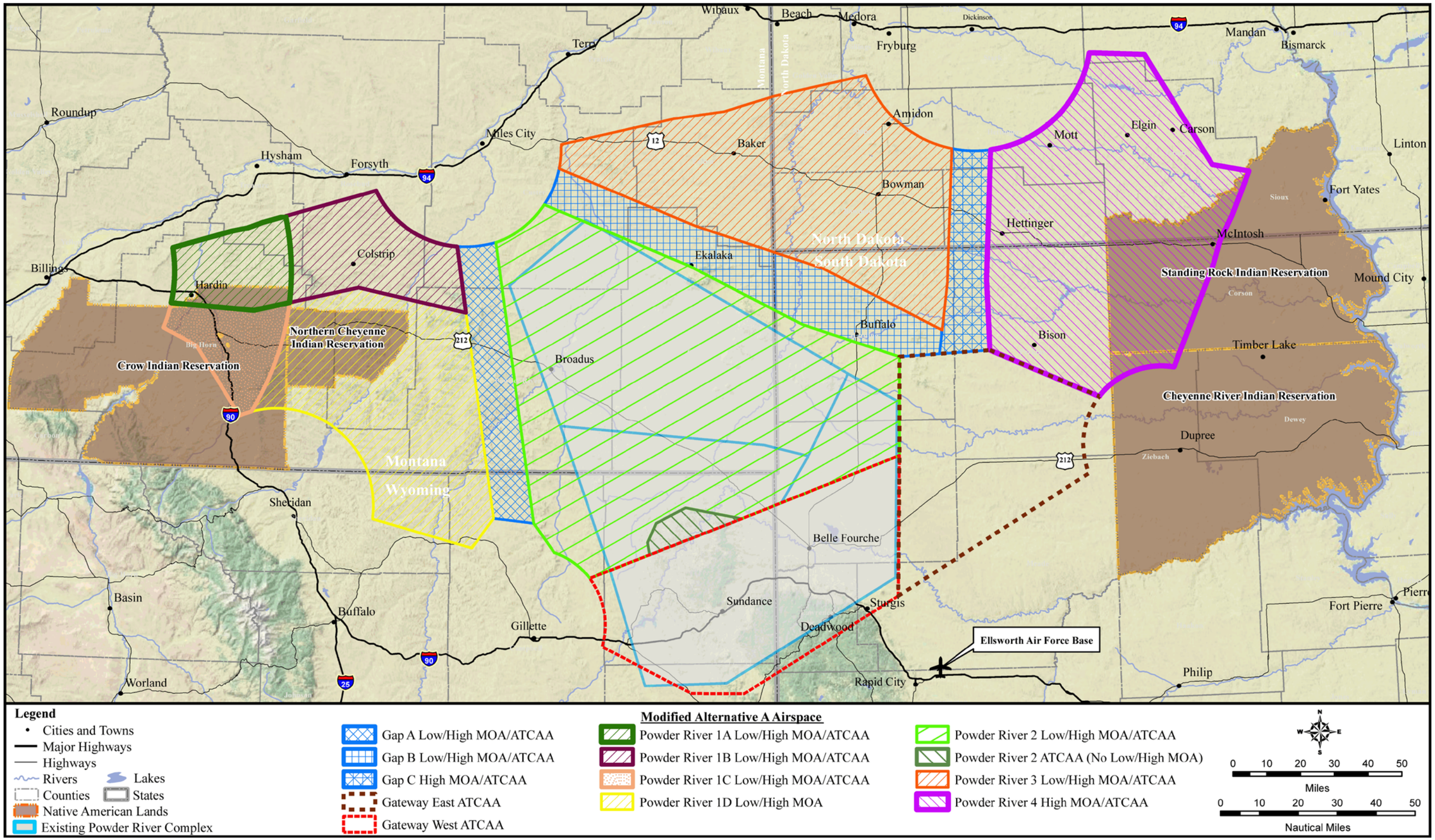

Figure 2-5. Extent of Proposed PRTC Airspace

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New and improved airspace would provide increased opportunities for transient fighters to conduct training, particularly during the proposed 1- to 3-day quarterly LFEs when the bombers could train with red air (opponents) and/or blue air (friendlies). Transient aircraft that could use the proposed PRTC include current fighters such as F-16s, F-15s, F-22s, or other military aircraft authorized to operate in U.S. airspace, such as C-130s (see Appendix B).

The Air Force proposes to conduct LFEs 1 to 3 days once per quarter for a maximum not to exceed 10 days total per year. LFEs would occur in a 4-hour time period per day and could include approximately 20 aircraft of various types training in simulated combat. LFEs would occupy all or substantial portions of the proposed PRTC.

The Air Force would employ the measures described in Section 2.3.1 during both regular training and LFEs to aid with civil aviation deconfliction.

2.8.4 *SUPERSONIC ACTIVITY (ONLY DURING LFES)*

Fighter and B-1 aircraft participating in an LFE would employ supersonic speeds to simulate realistic engagements. The LFEs once per quarter with a maximum duration of 1 to 3 days are the only time supersonic maneuvers would be authorized for training in the proposed PRTC airspace.

The Air Force would authorize supersonic flights within the PRTC airspace only during the days (not to exceed 10 days per year) when LFEs are proposed to be conducted. Supersonic training is not authorized in existing Powder River airspace. The Air Force proposes supersonic flight training in all PRTC airspace units for air combat, air-to-air engagements, and other tactics. The most accurate training environment would have no restriction on speed, and the conduct of any mission would be dictated by mission needs and the aircraft capabilities. Airspace would be used in a variety of ways, as every training mission has unique requirements. The B-1 bomber has supersonic capabilities and would be a source of sonic booms. The fighters would normally train in PRTC airspace during LFEs, although occasional transient fighters could train at other times. Keeping the design of the airspace simple is an important characteristic for airspace utility. Multiple altitude floors within an airspace detract from mission focus as aircrews strive to stay within the bounds. A supersonic floor of 10,000 feet AGL is proposed for all fighters and 20,000 feet MSL is proposed for the B-1.

Table 2.8-1 provides the aircraft types, number of sortie operations, and total estimated time at or above supersonic speeds. While B-1s use supersonic speeds during missions, B-52s cannot fly at supersonic speeds. All B-1 supersonic activities would occur above 20,000 feet MSL. Transient fighter supersonic events would occur above 10,000 feet AGL. The B-1 duration of a supersonic event would average about 30 seconds. Transient fighter activity would vary by aircraft type and training; an F-15 or F-16 might be supersonic for less than 15 seconds, an F-22 could be supersonic for a longer period. Table 2.8-1 presents the total estimated transient fighter supersonic time per year. Supersonic activity would be randomly distributed within the MOA/ATCAAs proportionate to the patterning and distribution of sortie operations by aircraft types.

Table 2.8-1. Estimated Supersonic Time Spent in Airspace (minutes per year)

Aircraft	*Estimated Annual Supersonic Flights*	*MOA (minutes/year)*	*ATCAA (minutes/year)*
		10,000 AGL to 17,999 MSL	*18,000 to 25,999 MSL*
B-1	60	0	15.0
F-16	60	1.4	27.4
F-15	20	0.8	8.8
F-22	10	0	4.8
Other Fighters[1]	10	0.2	4.6

1. Other fighters could include any fighter training in an LFE and are included as transients in airspace use tables in this EIS.

2.8.5 *DEFENSIVE COUNTERMEASURES*

Aircrews use chaff and flares as self-protection defensive countermeasures against radar-directed anti-aircraft artillery and radar-guided and heat-seeking missiles. When aircrews detect threats from these systems, they must respond instantly and instinctively deploy appropriate countermeasures. The PRTC action alternatives would permit defensive countermeasure training with chaff and flares. The current Powder River airspace does not permit this needed training, and aircrews are required to conduct chaff and flare training when they fly to remote range complexes.

The inability of aircrews to regularly train with defensive countermeasures results in the loss of critical response time in combat. The time aircrews take to counter threats can determine their survivability. Aircrews who train without actually deploying chaff and flares do not instinctively respond to a threat targeted at their aircraft. This pause to think becomes more critical with realistic single-ship or two-ship flight training where an aircrew is required to place the aircraft in a vulnerable position to accomplish the mission.

Within the PRTC airspace, chaff and flare training would be proportional to the number of sortie operations conducted by each aircraft type in the specific airspace units. Each alternative presents this specific information. Figure 2-6 depicts the life cycle following release of chaff and flare countermeasures.

2.8.5.1 CHAFF

Modern chaff (known as “angel hair” chaff) is thinner than a fine human hair and normally ranges in length from 0.3 to 1.0 inch. The chaff length determines the frequency range of the radio wave most effectively reflected by that particular fiber. Chaff fibers are cut to varying lengths to make chaff effective against the wide array of enemy radar systems that may be encountered during combat. A bundle of chaff weighs approximately 3.35 ounces and consists of approximately 5.0 to 5.6 million chaff fibers that, when dispensed from an aircraft, form an electronic “cloud” that confuses the radar by providing additional target(s) and temporarily hides the maneuvering aircraft from radar tracking.

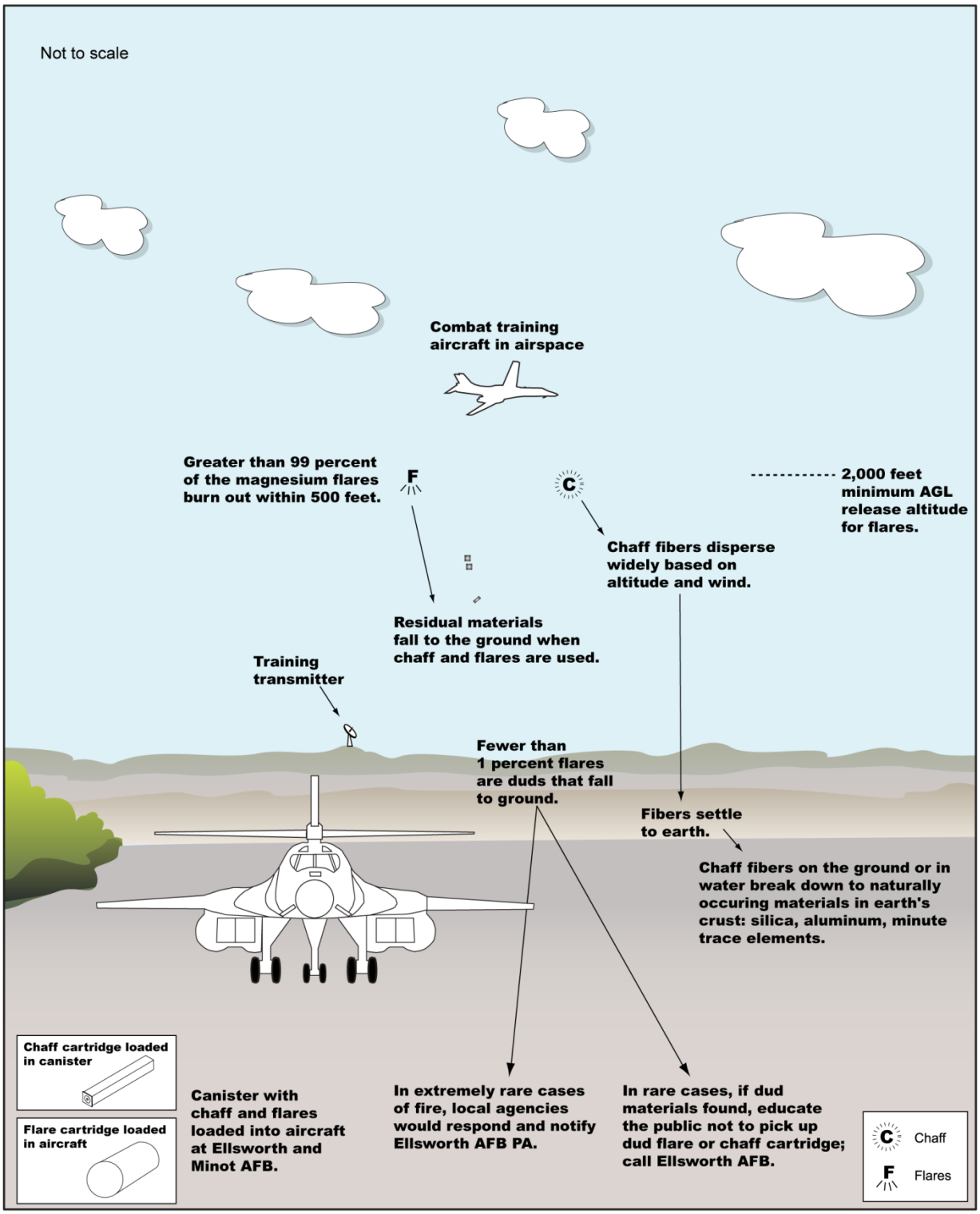


Figure 2-6. The Life Cycle of Dispensing Chaff and Flares

During public meetings, participants were surprised to learn that dispersed individual chaff strands are almost invisible to the eye. Modern chaff is not like the aluminum strand chaff used from World War II through the Vietnam War. Chaff is made as small and light as possible so that it will disperse quickly and remain in the air long enough to confuse enemy radar. The chaff proposed for use in the PRTC airspace contains fibers configured to reduce interference with radars operated by the FAA throughout the National Airspace System. New FAA radars are sensitive enough to detect chaff so communication of when and where aircraft are training with chaff permits the FAA to identify and differentiate chaff from natural events.

Table 2.8-2 provides the estimated bundles of chaff and flares projected to be used annually by proposed PRTC airspace. Flare use is discussed in Section 2.8.5.2. The annual chaff and flare usage includes normal training and LFEs. An estimated 15 percent of the chaff and flares in Table 2.8-2 would be deployed by transients and 85 percent by B-1 or B-52 training aircraft.

Table 2.8-2. Projected Annual Chaff and Flare Use by Airspace Unit

Airspace Unit	*Modified Alternative A*[1]		*Modified Alternative B*[2]		*Modified Alternative C*[3]	
	Chaff	*Flares*	*Chaff*	*Flares*	*Chaff*	*Flares*
PR-1A/B/C/D MOAs/ATCAAs	4,048	405	944	94	4,555	456
PR-2 MOA/ATCAAs	8,097	810	9,120	911	9,014	901
PR-3 MOA/ATCAAs	3,672	367	4,199	420	4,148	415
PR-4 MOA/ATCAAs	4,928	493	5,453	544	1,011	101
Gap A MOAs/ATCAAs	161	16	111	11	171	17
Gap B MOAs/ATCAAs	219	22	270	27	237	24
Gap C MOAs/ATCAAs	113	11	139	14	122	12
Gateway East ATCAAs	205	20	222	22	219	22
Gateway West ATCAAs	3,065	306	3,282	327	3,256	326
Total	24,508	2,450	23,740	2,370	22,733	2,274

1. PR-4 Low MOA and Gap C Low MOA are not part of Modified Alternative A.
2. PR-1A/B/C/D MOA and Gap A MOA are not part of Modified Alternative B.
3. PR-4 MOA and Gap C MOA are not part of Modified Alternative C.

Dispersed chaff briefly reflects radar signals and forms an image on a radar screen. The aircrew must act together to detect a radar threat, deploy chaff, and maneuver the aircraft to escape the threat when the aircraft is masked by the chaff cloud. Chaff itself is not explosive; however, it is ejected from the aircraft pyrotechnically using a small explosive charge that is part of the ejection system. The chaff dispenser remains in the aircraft. Each individual chaff fiber has a silica core, is coated with aluminum, and then is coated with an animal fat material so that it does not clump together. As explained in Appendix C, silica and aluminum are the most common elements of the earth's crust. Two 1-inch-square by 1/8-inch-thick pieces of plastic and a felt spacer are ejected with the chaff. On rare occasions, deployed chaff may not wholly separate and may fall to earth as a clump of fibers (refer to Appendix C for more detailed information on chaff).

Under the action alternatives, chaff use would adhere to the following management practices:

- The chaff cloud can be detected by improved FAA radars, so to ensure that no chaff cloud interferes with ATC, chaff would not be deployed within 60 NM of airport approach radars.
- Chaff comparable to that described in this EIS, or equivalent, could be used for training. Any other chaff types would require separate environmental analysis.

2.8.5.2 FLARES

Defensive flares are not explosive; they are magnesium pellets that, when ignited, burn for a short period (approximately 5 seconds) at approximately 1,202 degrees Fahrenheit (°F). B-1 flares are ejected upward and drop behind the aircraft. Other aircraft flares are ejected to the rear and downward. Flares burn out after falling approximately 500 feet (see Appendix D). The burn temperature is hotter than the exhaust of an aircraft engine and, therefore, attracts and decoys heat-seeking weapons and sensors targeted on the aircraft.

Table 2.8-2 includes estimated total defensive flare usage by B-1 and B-52 aircraft during normal training and all aircraft during LFEs. The magnesium flare used by B-1 aircraft is wrapped with aluminum-filament reinforced tape and inserted into an aluminum case that is closed with a felt spacer and a plastic end cap. The base of the case has a pyrotechnic impulse cartridge that is activated electrically to produce hot gases that push one 3-inch-diameter by 1/4-inch-thick plastic cap and the flare material out of the flare dispenser mounted in the aircraft. The flare ignites as it is ejected from the dispenser. Each deployed flare results in the deposition on the ground of a 3-inch-diameter end cap, a similarly sized plastic piston, up to four felt spacers, a plastic safe and initiation device approximately 1/2 inch by 1/2 inch by 2 inches, and a piece of aluminum coated wrapping material (similar to dried duct tape) that could measure up to approximately 5 inches by 20 inches, for a total of up to eight pieces of residual material per flare. Flares from transient aircraft, such as fighters, can produce up to six similar pieces of residual materials. On extremely rare occasions, a flare may not ignite and could fall to the earth as a dud flare (refer to Appendix D for more information about flares).

Use of flares within the PRTC would incorporate the following practices:

- Flare release altitude for this proposal would not be below 2,000 feet AGL (flares burn out by the time they fall approximately 500 feet).
- When the 28 BW Operations Office determines fire danger to be very high or extreme (via the National Fire Danger Rating System), flare use will be temporarily suspended in the affected PRTC airspace unit. Furthermore, flare use in the PRTC ATCAAs will be discontinued when the National Fire Danger Rating System fire rating is Extreme. The Air Force will select an appropriate and representative U.S. Forest Service station (or stations) underlying or adjacent to the proposed airspace from which to retrieve fire ratings. This method will allow the Air Force to suspend flare use in individual MOAs or ATCAAs as conditions warrant.

- The Air Force will view National Fire Danger Rating System ratings each day prior to operations in which flare use is planned, and it will notify aircrew of any restrictions. Personnel will also reference the National Weather Service Red Flag Warning system during risk management and decision-making; however, no suspensions of activities based on this warning system are mandated.
- The Air Force would continue to cooperate with local fire agencies for mutual aid response to wildland fires.
- The Air Force would work with local fire departments underlying the airspace to educate them on flare deployment and use. This education would include distributing flyers to fire departments describing chaff and flare deployments, residual materials, and dud flares.

The extremely rare case of a dud flare falling to the ground could constitute a safety risk. Range clean-up activities at existing ranges in Utah and Arizona have resulted in an estimated on-the-ground dud rate of 0.01 percent of flares deployed. Based on Table 2.8-2, an estimated average of one dud flare per three years would fall to the surface somewhere under the proposed airspace. Although the risk of combustion of such a dud is low, it could be ignited by a hot fire or by friction from a strike with something like a power saw or a bullet. On a military range, a dud flare is treated as unexploded ordnance.

The Air Force would establish and maintain a procedure whereby chaff or flare materials found on public or private property can be identified for safety risk and removed to ensure safety. Air Force personnel will cooperate with local agencies for mutual aid response to fires and develop an education program for fire departments beneath the airspace to include information on chaff and flare deployments and residual materials. The basic rule for the public to follow if encountering a dud flare is to identify its location, do not touch it or experiment with it, and notify a local safety authority of its location. The authority, in turn, will notify Ellsworth AFB, which has the personnel and facilities to handle dud flares should they be encountered. Any damage claim against the Air Force would start by contacting the Ellsworth AFB Public Affairs Office with as many details about the damage, time, and aircraft as possible.

2.8.5.3 CHAFF AND FLARE RESIDUAL MATERIALS

Each deployed bundle of chaff results in two 1-inch by 1-inch pieces of plastic and a felt spacer for bombers, for a total of four pieces of residual materials plus the deployed chaff. The F-22 chaff bundles have six 1/2-inch by 1-inch pieces (four plastic, two felt) and up to six pieces of 2-inch by 3-inch pieces of parchment paper, for a total of 12 pieces of residual materials per fighter chaff bundle. Each deployed flare results in a 3-inch diameter end cap, a similarly sized plastic piston, up to four felt spacers, a 1/2-inch by 1/2-inch by 2-inch plastic safe and initiation device, and a piece of aluminum-coated wrapping material up to 5 inches by 20 inches in size, for a total of eight pieces of residual materials per bomber flare. Fighter flares result in five pieces of residual materials of similar shape to bomber flares.

Section 2.8.5.1 explains that each chaff bundle contains approximately 3.35 ounces of chaff. From Table 2.8-2, there would be up to an estimated 24,508 bundles of chaff released annually in defensive training. The total proposed PRTC area overflown (from 3) is approximately 34,000 square miles. The volume of chaff particles per acre would be approximately (3.35 x 24,508)/(34,000 x 640) = 0.00377 ounces per acre per year, or approximately 0.107 grams of chaff per acre.

The 24,508 chaff bundles are estimated to produce approximately (0.85 x 24,508 x 4) + (0.15 x 24,508 x 12) = 127,442 pieces of chaff plastic, felt, or paper residual materials. Flares would result in up to approximately (0.85 x 2,450 x 8) + (0.15 x 2,450 x 5) = 18,498 pieces of flare plastic or wrapping materials. The total annual distribution of chaff and flare residual materials would be approximately (127,442 + 18,498)/(34,000 x 640) = 0.00671 pieces per acre. This is an average of one piece per approximately 149 acres per year under the proposed PRTC. This is an average, as chaff and flare usage would vary by airspace unit (see Table 2.8-2).

Winds at the deployment altitude of chaff and flares and through which chaff and flare residual materials travel to the ground would affect the drift and ultimate deposition of residual materials. In actual practice, winds at one altitude could blow light chaff fibers out of the airspace and winds at another altitude could blow them back into the airspace. For purposes of this evaluation, all chaff and flare residual materials are assumed to fall to the ground under the training airspace.

2.8.6 *GROUND-BASED TRAINING ASSETS*

A realistic training environment requires both an array of simulated threats, as well as a means to determine how well aircrews respond to and defeat those threats while simulating on-target ordnance delivery. These assets must also be linked to reflect the kinds of situations aircrews might encounter in actual combat. The existing electronic range complex consists of the Belle Fourche ESS and numerous emitter and/or simulated threat sites underlying existing MOA and ATCAA airspace. These sites provide training opportunities within the existing Powder River airspace and would continue to support training in the proposed PRTC.

Should a decision be made to pursue additional emitter and/or simulated target sites under PRTC, the Air Force would undertake NEPA analysis tiered to this EIS. The Air Force would also conduct the required real estate and NHPA process for all sites. Ellsworth AFB formerly performed a Minuteman Intercontinental Ballistic Missile mission that included a number of 15-acre remote sites dispersed under the area of the proposed PRTC airspace. Such sites would be expected to receive initial consideration as possible threat emitter or simulated target locations. The construction of additional emitter and/or simulated target sites is considered a potential cumulative action and is discussed in Chapter 5.0.

2.9 NO-ACTION ALTERNATIVE

The No-Action Alternative would not create the PRTC or expand training airspace. The No-Action Alternative represents continued use of the existing Powder River airspace for training at baseline levels. Figure 2-1 includes the existing Powder River airspace. Use of remote complexes, depicted in Figure 1-1, for training would continue to expend a substantial number of flying hours. Combat readiness would be impaired, and training with system upgrades would not be accommodated.

Baseline conditions for the bases and the airspace can differ depending on deployments to combat areas. Deployments take away aircraft and reduce use of the airspace. Over the past several years, one squadron of B-1s from Ellsworth AFB has been deployed regularly in the Overseas Contingency Operation. When aircrews prepare to deploy, they have an increase in their required level of flight activity and training. When aircrews return from deployments, they must re-qualify and become mission capable in new tactics, aircraft upgrades, threats, sensor or other activities not available in foreign airspace, or activities prohibited in combat zones. These training requirements increase sorties and training from Ellsworth AFB and Minot AFB.

All Ellsworth AFB-based and Minot AFB-based squadrons are assumed to be training, to the extent possible, in Powder River airspace as the baseline for this EIS. This approach ensures that analysis of the impacts from the No-Action Alternative Consistently examines the full potential B-1 operations and is not affected by temporary changes, such as a decrease in training with deployment or an increase in training, such as that resulting from Dyess AFB B-1s relocating to Ellsworth AFB during extended runway work at Dyess AFB in 2008.

2.9.1 *AIRSPACE STRUCTURE*

The existing Powder River airspace includes Powder River A and B MOAs. Powder River A extends from the surface up to, but not including, FL180 (refer to Figure 2-1). Powder River B MOA has a floor of 1,000 feet AGL and a ceiling up to, but not including, FL180. For the purpose of this EIS, the Powder River airspace includes four ATCAAs: Powder River, Gateway, Crossbow, and Black Hills. As noted in Section 2.4.2, Crossbow is not considered a part of the Powder River airspace. Extending from FL180 up to FL260, the Powder River ATCAA directly overlies the Powder River MOAs. The Gateway ATCAA provides airspace from FL180 up to FL260 and extends about 40 NM southeast from the Powder River ATCAA. The Crossbow ATCAA extends from FL270 up to FL450. The horizontal footprint conforms to the Powder River and Gateway ATCAAs and the airspace is managed to not have a 1,000-foot vertical gap between the ceiling of the lower ATCAAs and the floor of the Crossbow ATCAA. With a narrow vertical extent (18,000 to 20,000 feet MSL), the Black Hills ATCAA partially overlaps within the Gateway ATCAA and extends roughly 80 NM south-southwestward from it. About 25 percent of the 50-NM-wide Black Hills ATCAA coincides with the Gateway ATCAA. Table 2.9-1 presents the estimated square miles under the existing Powder River airspace for the No-Action Alternative.

Table 2.9-1. Surface Overflown by Existing Powder River Airspace (Square Miles), No-Action Alternative

Airspace Type	*Airspace Unit*	*No-Action Alternative*
MOA	Powder River A	4,026.82
	Powder River B	1,828.24
TOTAL MOA		5,855.06
ATCAA	Powder River	5,855.06
	Gateway	3,892.98
	Crossbow[1]	9,748.04
	Black Hills[2]	4,322.66
TOTAL ATCAA[3]		14,070.69

1. Crossbow ATCAA overlies Powder River ATCAA and Gateway ATCAA.
2. Estimate does not double count portion of Black Hills ATCAA within Gateway ATCAA.
3. Total area under the ATCAAs includes Crossbow ATCAA and portion of Black Hills ATCAA not included in the Crossbow ATCAA.

2.9.2 *AIRSPACE OPERATIONS*

Under no-action (or baseline) conditions, B-1s would continue to conduct approximately 1,000 sortie operations in each of the MOAs and the ATCAAs, with the majority occurring between 7 am and 10 pm. Table 2.9-2 presents baseline condition B-1s, B-52s, and other users training in the Powder River airspace. Approximately 24 hours of transient operations occur annually, primarily conducted by F-16s. All current restrictions on flight activities and avoidance areas would remain in place, and the Air Force's policies and procedures for defining such areas would continue to apply. Simulated ordnance delivery training would continue with the use of the Belle Fourche ESS and emitter and target sites (see Figure 2-2).

As Table 2.9-2 presents, B-1s spend an average of 250 hours annually in the MOAs and operate 625 hours in the ATCAAs. The B-52s currently perform nearly all Powder River airspace training in the ATCAAs. F-16s and other transients fly fewer than 4 hours per year below 2,000 feet AGL.

Table 2.9-2. Existing Powder River Airspace Average Annual Baseline Training Hours

Airspace Unit	*Aircraft*[1]	*Time @Altitude 500 - 999 AGL HR/YR*	*Time @ Altitude 1,000 – 1,999 AGL HR/YR*	*Time @ Altitude 2,000 -4,999 AGL HR/YR*	*Time @ Altitude 5,000 – 9,999 AGL HR/YR*	*Time @ Altitude 1,000 – 17,999 AGL HR/YR*	*Time @ Altitude 18,000 – 23,999 AGL HR/YR*	*Time @Altitude 24,000 -60,000 AGL HR/YR*
Powder River A MOA	B-1	25.00	56.25	25.00	12.50	6.25	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	F-16	0.90	0.90	0.00	0.00	3.20	0.00	0.00
Powder River B MOA	B-1	25.00	56.25	25.00	12.50	6.25	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	F-16	0.90	0.90	0.00	0.00	3.20	0.00	0.00
Powder River ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	300.00	75.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	F-16	0.00	0.00	0.00	0.00	0.00	3.00	0.00
Crossbow ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00	300.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	F-16	0.00	0.00	0.00	0.00	0.00	0.00	8.00
Gateway ATCAA	B-1	0.00	0.00	0.00	0.00	0.00	200.00	50.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	F-16	0.00	0.00	0.00	0.00	0.00	3.00	0.00
Total	B-1	50.00	112.50	50.00	25.00	12.50	500.00	125.00
	B-52	0.00	0.00	0.00	0.00	0.00	0.00	300.00
	Tanker	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	F-16	1.80	1.80	0.00	0.00	6.40	6.00	8.00

Note: 1. Assumes no B-1s are deployed and Powder River A/B MOA airspace saturation. B-52 use of altitudes below Crossbow is infrequent but does occur.

2.9.3 *LARGE FORCE EXERCISES*

The existing Powder River airspace cannot support any current LFEs due to aircraft capabilities and airspace size limitations. Occasional existing training includes F-16 and B-1 aircraft training together. Aircrews would continue to expend flying hours commuting to distant training complexes to participate in realistic LFEs. Training and readiness would continue to suffer.

2.9.4 *SUPERSONIC ACTIVITY*

No supersonic activity would occur within the Powder River airspace. Under the No-Action Alternative, aircrews would commute to approved airspace to acquire supersonic training.

2.9.5 *DEFENSIVE COUNTERMEASURES*

No defensive countermeasures can be deployed within the Powder River airspace. Under the No-Action Alternative, aircrews would continue to simulate countermeasure deployment, which does not result in realistic training. Limited opportunities to train with defensive countermeasures would occur when aircrews train in airspace approved for defensive countermeasures.

2.9.6 *GROUND-BASED TRAINING ASSETS*

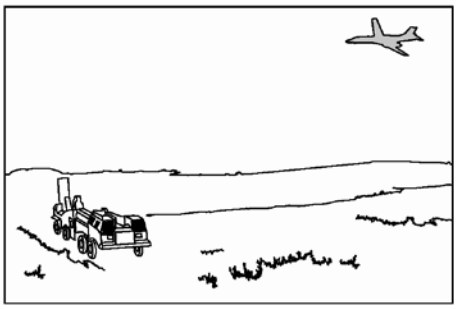
Section 2.4 describes the existing Powder River airspace ground-based assets. These include the Belle Fourche ESS and other locations under or near the Powder River A and B MOAs. These locations would continue to be used for threat emitters, no-drop targets, and/or support facilities.

2.10 BOMBER COMBAT MISSIONS WHICH REQUIRE TRAINING

During the Cold War era, the primary combat mission of B-1 and B-52 bombers was long-range, nuclear attack by penetrating deep into enemy territory at low altitudes below radars. As enemy defensive and offensive capabilities improved, bomber training was made more realistic to keep up with threats. Threat emitters to simulate enemy surface-to-air threats were added at retired Minuteman sites, and the Powder River MOAs were added for fighter interceptors to attack the bombers and to create realistic maneuvering airspace for the bombers.

This training with dissimilar aircraft and tactics enabled aircrews to train as they would fight Cold War-era missions. Ellsworth AFB and associated training airspace provided an array of low-altitude MTRs that merged over ground-based threat simulators and into the Powder River MOA. Ground and air defenses, including fighter aircraft, defended simulated target areas against the bombers on their final bombing runs.

2.10.1 *B-1 AND B-52 MISSIONS*



Close Air Support is a new B-1 mission that requires identification of targets and close coordination with ground forces. Time-Sensitive Targeting is another new mission that requires the B-1 to find, fix, track, identify, and destroy a target.

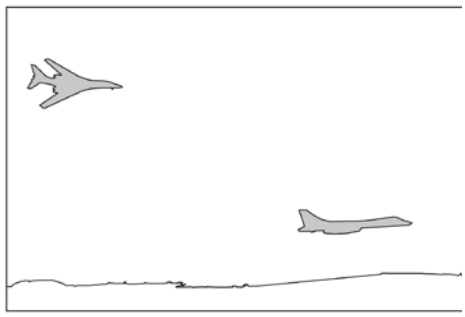
Today, the bombers' primary mission is worldwide, rapid-response and sustained operations with a variety of new sensors and diverse munitions. The training requirements to ensure bomber aircrew readiness have multiplied. Now aircrews must train to be proficient in a vast and growing array of combat missions that employ a diverse array of weapon systems and face increasingly sophisticated threats.

Bombers now have a wide range of responsibilities, and any mission could involve different targets, weapons, defense situations, altitudes, and flight profiles. These missions range from interdiction to Close Air Support to Show of Force. Table 2.10-1 describes today's missions and associated tactics. Tomorrow's missions will involve more sensors and accurate munitions against substantially improved defensive systems.

2.10.2 *ELECTRONIC SCORING SITE AND GROUND-BASED ASSETS*

Aircrews need to train to avoid and, frequently, to suppress ground-based threats. The Belle Fourche ESS provides electronic training with a series of ground-based electronic threat assets, many of them located on former Minuteman Missile sites in South Dakota, Montana, and Wyoming. These threat asset locations are depicted in Figure 2-2. The main ESS is located on Highway 212 in Wyoming, 24 miles northwest of Belle Fourche, SD.

The ESS sites typically consist of a threat emitter that can simulate enemy radar and a visual target, such as a mock-up of surface-to-air missiles or a mobile rocket launcher. Section 2.10.3 describes the interaction of these threat emitters and targets with bomber training missions.



A typical training mission in the Powder River airspace consists of two B-1 aircraft. The ESS threat capabilities, B-1 speeds, and target identification capabilities of the B-1 result in two training aircraft requiring all the current Powder River airspace for a realistic training mission.

These ground-based assets under the airspace provide invaluable training to aircrews as they experience combat conditions. The Belle Fourche ESS provides high-fidelity threat signals to aircrews and maintains the flexibility to meet individual crew training requirements. The ESS threats cannot be met with a realistic immediate response to deploy defensive chaff and flares and rapidly maneuver at supersonic speeds to avoid the threat, because chaff and flares and supersonic flight cannot now be conducted in the Powder River airspace.

2.10.3 *TRAINING FOR THE PRESENT AND FUTURE*

The roles of aircraft in combat have changed and their missions have changed. Changes in missions, shifts in force structure, and new long-range sensor and targeting technologies have affected the use of the Powder River airspace. Deployments, training needs, maintenance capabilities, and aircraft inventory affect sortie operations in the Powder River airspace.

A sortie operation is the use of one training airspace by one aircraft. This means that two B-1s flying in both Powder River A and B MOAs would generate 2 aircraft x 2 airspaces = 4 sortie operations. Annual sortie operations in the Powder River MOAs for the period between Fiscal Years (FY) 1995 and 2004 varied between 675 and 1,888 for Powder River A MOA and 659 and 2,020 for Powder River B MOA. On average, training aircraft conduct slightly more than 2,500 annual sortie operations in the Powder River airspace.

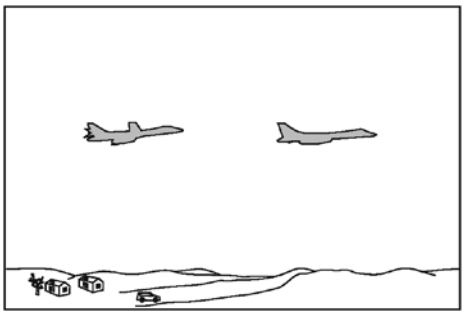
Near continuous deployment of one-half of the B-1 aircraft from Ellsworth AFB to fight the Overseas Contingency Operation in Iraq and Afghanistan has reduced training activity by approximately one-third during the war. Bombers traditionally dominated training flights in the Powder River airspace and accounted for approximately 95 percent of the annual baseline sortie operations. Transient fighter aircraft have accounted for approximately 5 percent of baseline activity. The B-1 is a large aircraft with fighter-like performance. Two B-1 training aircraft typically schedule both Powder River MOAs and "use up" all the MOA airspace in training maneuvers. Use of overlying and associated ATCAAs tended to mirror operations in the MOAs. B-52s conduct most of their current training in ATCAAs above the MOAs. One example of a new mission which requires both independent aircrew training and training with other aircraft is Non-Traditional Intelligence, Surveillance, and Reconnaissance. Non-Traditional Intelligence, Surveillance, and Reconnaissance requires integrated capabilities to collect, possess, exploit, and disseminate accurate and timely information. This information provides the battlespace awareness necessary to plan and conduct operations. Non-Traditional Intelligence, Surveillance, and Reconnaissance is performed by bombers and other aircraft that have new sensor equipment to accomplish this role. This role can be conducted by bombers orbiting a battlefield area. The processed sensor information expands the battlespace information traditionally collected by satellites and/or RC-135 information and communications aircraft. In actual combat and in realistic training, a B-1 Non-Traditional Intelligence, Surveillance, and Reconnaissance mission could quickly become a B-1 Time-Sensitive Targeting mission.

The Belle Fourche ESS, as seen from Highway 212, provides high fidelity surface-to-air threat signals as well as a variety of no-drop targets for aircrews training within the Powder River airspace.

Table 2.10-1. Combat Missions for B-1 and B-52 Aircrews

Mission	*Definition*
Interdiction and Airborne Alert Interdiction	Interdiction missions involve air-to-ground ordnance delivery against strategic or tactical targets away from the battlefield. In a traditional interdiction mission, a force package of multiple aircraft proceeds to the target area and each performs a different role (e.g., attack/bombing, anti-missile, air-to-air). Target defenses can be anti-aircraft surface-to-air and/or defending fighter aircraft. Bombers on airborne alert can be directed to a primary target to deploy a variety of weapons.
Close Air Support and On-call Close Air Support	Close Air Support represents a new primary bomber mission where aircraft provide coverage of a predefined areas (or target box) in which allied and enemy ground forces are operating. Through close coordination with ground troops, aircraft strike the opposing forces with air-to-ground ordnance.
Show of Force	For the bombers, a Show of Force mission functions like a Close Air Support operation without employing weapons. By flying a low- or medium-altitude pass over the enemy on the ground, the size of the bomber aircraft, the sound it generates, and the speed of the attack combine to demoralize and disperse the enemy.
Time-Sensitive Targeting	Although similar to Close Air Support, this mission involves no coordination with a ground controller. Rather, bombers fly predetermined orbits for 2 to 4 hours awaiting target information and attack authorization. Target information may come from ground, air, or command level sources. When authorized, the bombers deliver ordnance on the target coordinates.
Counter Sea	Both B-1s and B-52s employ mines on land and sea. Performed from a range of altitudes, this mission resembles interdiction.
Non-Traditional Intelligence, Surveillance, and Reconnaissance	The B-1 and B-52 bombers above a combat or non-combat area can employ new on-board or pod-based sensors to collect critically important intelligence information and communicate that information through an interface with coalition assets. Performed from a range of altitudes, the mission can become Time-Sensitive Targeting to implement ordnance employment or other decisions.

Primary missions for the B-1s and the B-52s have a few differences. The B-1s conduct conventional (non-nuclear) attacks only, whereas the B-52s have responsibility to train for a nuclear attack, conventional strategic attack, and counter air/land. B-1s are the only bomber in the U.S. inventory with low-level terrain following and terrain avoidance capability optimized for 2,000 feet above ground level (AGL) or below. B-52s no longer perform low-altitude attack missions but still must fly at low altitude (1,000 feet AGL) for proficiency training. B-1s can achieve supersonic speeds, and B-52s are subsonic aircraft.



Show of Force constitutes a B-1 flying over an enemy position at high speed to let them know "we are watching." This disorients the enemy and has successfully suppressed enemy fire in areas where both combatants and non-combatants are intermingled.

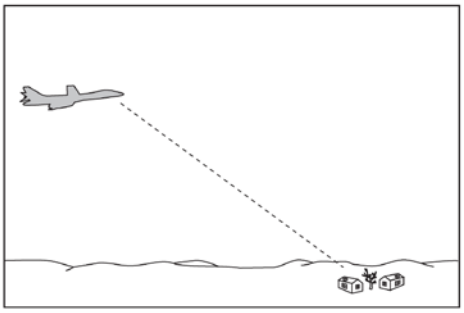
Bomber aircrews must perform all their missions using teamwork to penetrate air defense systems, fly the aircraft into the proper position for sensor or ordnance employment, interface with coalition assets, and maintain the aircraft's geographic position and timing to stay in formation with other aircraft. Table 2.10-2 lists the responsibilities of B-1 and B-52 aircrew and reflects the complexity of interactions among the crew. Difficult decisions must be made in split seconds to determine if a maneuver will move the bomber out of position to accomplish its mission or put the aircraft within range of enemy missiles or guns. Training is

essential for these decisions. Combat, such as is now being waged in Afghanistan, produces an array of threats that often come from unexpected locations. Added challenges include complicated missions occurring at night, under bad weather conditions, in mountainous terrain, or involving complex sensor or data link challenges. To survive combat, aircrews must train as they will fight and simulate these situations to the greatest degree possible. Not only must aircrews within individual aircraft train to work together in a closely coordinated manner, they must also train as part of an LFE typically composed of approximately 20 aircraft of various types, each with a specific mission component and each with a separate chain of command. All of this requires time and access to realistic training airspace assets for quality aircrew training.

Table 2.10-2. Bomber Aircrew Duties

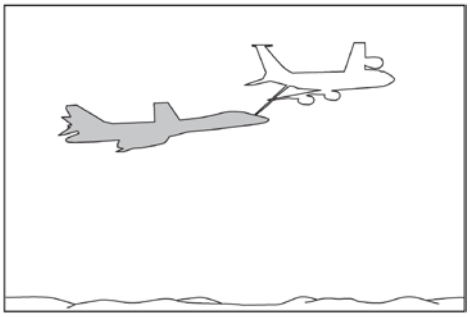
Position	*Duties*
B-1 Crew	
Aircraft Commander	Mission commander: command, control, and crew coordination
Pilot	Assists Aircraft Commander: communications and aircraft control
Weapons System Officer/Offensive	Manages sensors, navigation, and systems
Weapons System Officer/Defensive	Primary for electronic warfare and threat avoidance
B-52 Crew	
Aircraft Commander	Mission commander: command, control, and crew coordination
Pilot	Assists Aircraft Commander: communications and aircraft control
Radar Navigator	Primary for munitions launches, target timing
Navigator	Navigates high level, assists Radar Navigator
Electronic Warfare Officer	Primary for electronic warfare and threat avoidance

When aircrews fly combat missions, they risk their lives. To reduce that risk and increase the chance for a successful mission, bomber aircrews need the most realistic training possible. Recent situations in Iraq and, especially, Afghanistan further expanded the role and expectations for bomber aircraft, especially B-1s and B-52s. Targets in these combat zones can occur anywhere and rarely consist of traditional defenses, industrial sites, or massed enemy troops. Rather, the targets comprise a single structure shielded by dwellings of non-combatants, a single vehicle or small group of vehicles, or a band of insurgents attacking a patrol of allied soldiers. Effective neutralization of such targets requires that the bombers respond immediately to locate, identify, and destroy the target while avoiding damage to friendly forces, civilians, and infrastructure. During the combat mission, precise timing must be coordinated with other aircraft, ground troops, or remotely piloted aircraft systems to provide real-time targeting data, rapid response, and pinpoint accuracy.



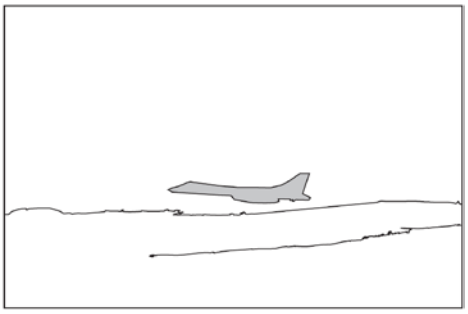
New B-1 capabilities include the optical ability to visually track, identify, and then engage small targets.

B-1 and B-52 combat missions involve a range of additional activities, including aerial refueling, high-altitude flight to the combat theater, the full breadth of command, communication, and control, entry into enemy territory, avoidance of enemy threats, employing sensors, delivering ordnance, and returning safely to base. These activities require a variety of altitudes, depending on the mission. Aircrews must be trained to accomplish the mission with degraded or partial system functionality.



Training includes air-to-air refueling, which is currently performed on air refueling routes around the Powder River airspace and in ATCAAs.

In its simplest terms, combat is about defeating the enemy and preventing harm to U.S. and allied forces. Bombers have deployed to fly combat missions for Operation Southern Watch, Operation Allied Force, Operation Iraqi Freedom, and Operation Enduring Freedom. Bombers are repeatedly in hostile airspace as the aircraft of choice to support allied operations.



The B-1 low-altitude penetration capability is optimized for 2,000 feet AGL and below and needs topographic relief for realistic training.

While bomber aircrews must emphasize missions driven by current conflicts and threats, they also must remain prepared to effectively execute all the missions identified by the President and Secretary of Defense for that type of aircraft. Because conflicts with insurgent forces now dominate current tactics, aircrews cannot ignore the need to be ready for deep interdiction attacks or other formerly traditional combat missions. This requirement means that, at any time, aircrews could be tasked to perform any tactics or maneuvers within the possible breadth of combat missions. Figure 2-7 describes one training example for a representative Time-Sensitive Targeting combat mission within the Powder River airspace. New aircraft capabilities, the airspace size, and lack of available ESS facilities in eastern airspaces on Figure 1-1 limit the amount of local quality training available to Ellsworth and Minot AFBs based aircraft.

The types of bomber missions and tactics vary with changes in world situations, increases in enemy capabilities, and advances in Air Force aircraft and weapons. Air Force personnel must consistently adapt and train to meet the challenge of these changes. Such changes can influence the altitude at which aircraft fly, the types of ordnance used, the tactics used in attacking targets and avoiding threats, and other aspects of combat missions. Aspects of aircrew training can vary with time or deployment cycles as the Air Force responds to such changes. Preparing for these varied missions means that aircrews must have flexibility in training to respond to evolving global situations.

Site MM-9 is typical of the ground targets under the existing Powder River airspace. There is an outer barbed-wire fence and an inner chainlink fence that formerly enclosed an Intercontinental Ballistic Missile silo. The visual target is located to the left of the chainlink fence.

The visual target at MM-9 is a simulated SCUD highly mobile transporter-erector launcher. "SCUD" applies to any of a series of mobile ballistic missiles originally of Soviet design. During training, a B-1 aircrew would spot the SCUD, maneuver to attack it, and deploy simulated weapons to destroy the SCUD launcher. In actual combat, they would seek to attack before the SCUD could launch.

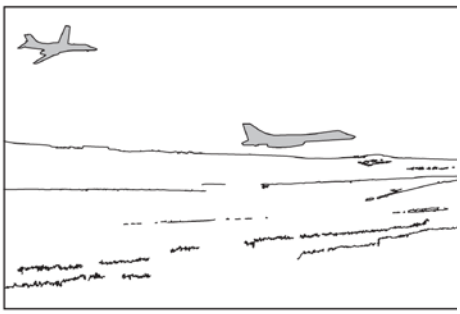
Meanwhile, a few air miles away, the B-1 attacking the SCUD could be threatened itself by the simulated surface-to-air missile launches at Site MM-8. In combat, the aircrew would be required to take evasive actions, deploy countermeasures such as chaff and flares, and/or use weapons to suppress the surface-to-air missile site. Most of these critical defensive reactions have to be simulated in the Powder River airspace.

Figure 2-7. Representative Targets Relating to Mission Combat Training in the Powder River Airspace

2.10.4 *TRAINING REQUIREMENTS AND LIMITATIONS*

2.10.4.1 BOMBER COMBAT ROLES DEFINE TRAINING REQUIREMENTS

Bomber combat missions vary day to day as enemy locations, targets, air defenses, and objectives change. For one mission, a bomber aircrew could be tasked to perform high-altitude bombing of an enemy's fuel depot; the next mission could involve a low-altitude Close Air Support attack on enemy troop concentrations combined with a Time-Sensitive Targeting mission. Every interdiction combat mission involves a number of different aircraft performing a precisely timed and planned sequence of events. Failure by a single aircraft to achieve the necessary timing, coordination, and positioning could jeopardize an entire mission. Each combat mission involves a variety of actions, so aircrews must be fully trained to accomplish a wide variety of tasks. Table 2.10-3 correlates a combat mission to training requirements, demonstrating an example of the substantial number of activities that must be mastered for just one type of mission. By adding in the need for each of the B-1 four, or B-52 five, crew members to be skilled in executing their part in every event, and by multiplying this requirement by the array of missions assigned to the B-1s and B-52s, the demands placed on obtaining sufficient training become enormous.



High- and low-altitude training and training for coordinated attacks by multiple aircraft are typically performed during each training mission.

Table 2.10-3. Correlation of Combat Events and Training Requirements for a Typical Airborne Alert Interdiction Mission

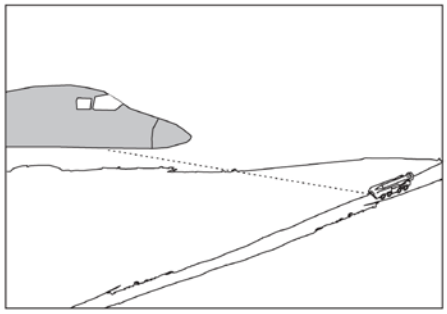
Event Sequence	*Combat Event Descriptions*[1]	*Training Requirements*
Event No. 1	Fly high altitude to combat airspace or to a refueling rendezvous; locate and join tanker aircraft; refuel and fly to airborne alert location	Navigation and communication In-flight rendezvous with tanker aircraft Aerial refueling along established track Flight management and formation flying
Event No. 2	Enter combat airspace; coordinate with command and control (e.g., Airborne Warning and Control Systems); receive direction; join other aircraft in strike package conducting mission	High- and/or low-altitude navigation Defensive tactics against airborne and ground threats -Aircraft maneuvering -Terrain following/terrain avoidance -Navigate and downlink systems management -Electronic countermeasures employment -Defensive countermeasures employment -Course deviations (lateral and vertical) -Airspeed changes -Communication Flight management and formation flying
Event No. 3	Fly to initial point of attack; avoid ground-based threats; attack target and deliver ordnance (i.e., bombs or missiles) or simulate delivery of ordnance	Defensive tactics against airborne and ground threats -Aircraft maneuvering -Terrain following/terrain avoidance -Electronic countermeasures employment -Defensive countermeasures employment -Course deviations -Navigation and system management -Sensor employment -Airspeed changes -Communication -Ordnance delivery -High-/low-altitude delivery (actual or simulated) Flight management and formation flying
Event No. 4	Avoid ground- or air-based threats; exit target area; reestablish airborne alert station or rejoin returning strike package	Navigation and communication Defensive tactics against airborne and ground threats -Aircraft maneuvering -Airspeed changes -Terrain following/terrain avoidance -Electronic countermeasures employment -Defensive countermeasures employment -Mission assessment and reporting -Course deviations Flight management and formation flying
Event No. 5	Exit combat airspace and return to base	Navigation and communication In-flight rendezvous with tanker aircraft Aerial refueling along established track Flight management and formation flying

1. Assumes a takeoff and landing as part of the overall mission.

2.10.4.2 AIRCREW TRAINING REQUIREMENTS

Section 2.10.1 describes the complex missions of the B-1 or B-52 bomber. The aircraft and weapons systems require coordination among multiple crew members and can only successfully accomplish a mission when all members of the crew are working together. Extensive integrated aircrew training requires the team to perform the events and activities in

sequence and with the speed and pace of combat. Technologically advanced flight simulators are used to train crews to work together and to cope with various flight assignments and challenges. These flight simulators are applied to the extent possible to support actual flight training. Simulators help with training, but they cannot reproduce all the experiences of actual in-flight training. Integrated, realistic training requires a combination of airspace and ground-based assets that are linked and arranged to provide a sequence of events which replicate combat. The Air Force training structure is a multi-level process to achieve combat readiness. Training addresses each aircrew's roles and actions for every aspect of every mission described in Section 2.10.1. Training demands correct reactions and team interactions in split seconds, particularly when aircrews have limited response time to address targets. Aircrews must train to a "zero fault" standard to avoid endangering neutral or friendly elements and to protect their aircraft and themselves.



Mission Qualification Training and Ready Aircrew Program training for laser targeting is a new requirement for B-1 aircrews.

Realistic, integrated team training ensures that bomber aircrews possess the skills and readiness for combat. This training 1) mirrors combat events, 2) links a realistic sequence of training activities into a cohesive mission, and 3) hones aircrew teamwork. Each training sortie (whether an individual aircraft, two aircraft, or part of a larger exercise) requires realistic, linked, and sequenced activities that equate to combat events.

The bomber aircrews from Ellsworth AFB and Minot AFB need to train as they will fight to ensure readiness for the full range of combat missions. All training to fulfill these goals derives from directives, training syllabi, and well-established programs. For the B-1s and B-52s, these training regimes as outlined in Air Force Instruction (AFI) 11-2B-1, *B-1 Aircrew Training,* December 2006, and AFI 11-2B-52, *B-52 Aircrew Training*, November 2006 include:

- **Mission Qualification Training.** Mission Qualification Training is designed to attain basic mission readiness status so crews meet the requirements to support combat taskings. The Mission Qualification Training syllabi for the base squadrons detail this information and requirements.
- **Ready Aircrew Program.** The Air Force established the Ready Aircrew Program to ensure that aircrews maintain combat mission readiness proficiency for all combat mission taskings. Ready Aircrew Program requirements can lag behind mission realities due to the rapid pace of mission changes. The Ready Aircrew Program Tasking Message, 11-2B-1 Volume 1, defines these requirements.
- **Weapons Instructor Course.** For B-1s and B-52s, the Weapons Instructor Course comprises a 6-month course created to develop advanced instructors for the combat air forces. This course requires advanced levels of integration with other aircraft and assets, as well as advanced maneuvering and tactics that require extensive airspace. Syllabi for the B-1 and B-52 Weapons Instructor Course programs present the specific training requirements.

- **Other Requirements.** The Mission Qualification Training, Ready Aircrew Program, and Weapons Instructor Course programs generate other training requirements including the use of defensive countermeasures (chaff and flares), conducting supersonic flight (B-1s only), employing advanced technology sensors, targeting systems, and performing actual munitions delivery employing both inert and live ordnance. The PRTC does not propose a live or inert range.

Table 2.10-4 lists some of the training events required under Mission Qualification Training and Ready Aircrew Program for B-1 aircrews. These events must be accomplished regularly for each aircrew to maintain combat-ready status. Some events need to occur on each sortie, while the aircrews may need to perform other events a few times per quarter or year. Nevertheless, each event needs to be undertaken consistent with a host of standards (e.g., speed, altitude, angle, duration, time of day). Failure to demonstrate minimum proficiency prior to currency date results in de-certification. Such a loss of combat-ready status prevents a highly trained individual from applying the training in the nation's interests.

Table 2.10-4. Ready Aircrew Program and Mission Qualification Training Mission Events

Event	*In Powder River airspace*				*In Proposed PRTC*			
	Actual for 1-2 Aircraft	*Simulated for 1-2 Aircraft*	*Actual for 4-8 Aircraft*	*Simulated for 4-8 Aircraft*	*Actual for 1-2 Aircraft*	*Simulated for 1-2 Aircraft*	*Actual for 4-8 Aircraft*	*Simulated for 4-8 Aircraft*
Weapon Delivery (no drop)	X				X		X	
High-Altitude Weapon Delivery (no drop)	X				X		X	
Low-Altitude Weapon Delivery (no drop)	X				X		X	
Formation Weapon Delivery (no drop)	X				X		X	
Unguided Ground Moving Target Indicator Weapon Delivery	X				X		X	
Guided Ground Moving Target Indicator Weapon Delivery (no drop)	X				X		X	
Unguided Mini-munitions/Radar Targeting	X				X		X	
Guided Mini-munitions/Radar Targeting	X				X		X	
Target Reassignment Exercise	X				X		X	
Time-Sensitive Targeting	X				X		X	
Close Air Support Targeting Exercise With Ground Forward Air Controller/Forward Air Controller Airborne	X				X		X	
Actual Weapons Release		X				X		X
High-Altitude Actual Weapon Release		X				X		X
Conventional Rotary Launcher (CRL) Heavy-Weight Actual Weapon Release		X				X		X
Actual Full-Scale Weapons Delivery		X				X		X
Simultaneous Guided/Unguided Weapon Delivery		X				X		X

continued on next page…

Table 2.10-4. Ready Aircrew Program and Mission Qualification Training Mission Events

Event	*In Powder River airspace*				*In Proposed PRTC*			
	Actual for 1-2 Aircraft	*Simulated for 1-2 Aircraft*	*Actual for 4-8 Aircraft*	*Simulated for 4-8 Aircraft*	*Actual for 1-2 Aircraft*	*Simulated for 1-2 Aircraft*	*Actual for 4-8 Aircraft*	*Simulated for 4-8 Aircraft*
Joint Direct Attack Munitions High-Altitude Bomb Run	X				X		X	
WCMD High-Altitude Weapon Delivery (no drop)	X				X		X	
Joint Air-To-Surface Standoff Missile Delivery	X				X		X	
Actual Joint Direct Attack Munitions Release		X				X		X
Guided Full Bay Weapon Delivery		X				X		X
Guided Multiple Bay Weapon Delivery		X				X		X
Guided Multiple Target Weapon Delivery		X				X		X
Guided Weapon Reassignment	X				X		X	
Threat Activity	X				X		X	
Electronic Combat (A/S)	X				X		X	
Electronic Combat (A/A)	X				X		X	
Formation EA	X				X		X	
Supersonic Flight During LFE					X		X	
Flare Event					X		X	
Chaff Event					X		X	
Dissimilar Aircraft Tactics		X			X		X	
Terrain Following		X			X		X	
Visual Contour		X			X		X	
Terrain Following Night/Instrument Meteorological Conditions (IMC)		***X***			***X***		***X***	
Terrain Following Mountainous		***X***			***X***		***X***	
Low-Altitude Navigation	***X***				***X***		***X***	
Low-Altitude Stream Formation	***X***				***X***		***X***	
Secure Voice	***X***				***X***		***X***	
In-flight Secure Voice System Loading	***X***				***X***		***X***	
Secure Voice Satellite Communications	***X***				***X***		***X***	
Digital Communications Improvement (DCI)	***X***				***X***		***X***	
Have Quick Radio	***X***				***X***		***X***	
SAE/BLOS	***X***				***X***		***X***	
Anchor Refueling	***X***				***X***		***X***	
Night Vision Goggle (NVG) Aided Rendezvous	***X***				***X***		***X***	

2.10.4.3 SUPERSONIC TRAINING

Aircrew training must be realistic to be effective. A B-1 bomber aircrew is called upon to use the supersonic capability of their aircraft in a combat situation to defeat an enemy threat or in a defensive manner to avoid destruction. During an LFE, threat aircraft can achieve supersonic speeds, and B-1 maneuvers could also achieve supersonic speeds. Supersonic speeds compress

an engagement, affect aircraft handling characteristics, and drastically shorten reaction times. Supersonic speed is one part of aggregate maneuvers that may be employed in combat. Training at supersonic speed must be practiced by the aircrew as a whole to ensure they can adequately perform this realistic and challenging response required in combat. It is not enough for a crew to "feel" they can effectively execute the maneuvers; they must "demonstrate" supersonic maneuvers and be evaluated on the maneuvers. Aircrews must demonstrate the proper execution of supersonic maneuvers, such as reaction to threats, to be evaluated. Their performance and evaluation of that performance establishes a minimum standard required before an aircrew is allowed to proceed into a combat environment.

Bomber aircrews need to train for combat conditions, where both blue (friendly) and red (enemy) aircraft can be occupying the same airspace. Bomber aircrews need to practice reacting to engagements with fighter aircraft attacking at supersonic speeds at least down to 20,000 feet MSL. Without B-1 supersonic training, and using only subsonic engagements, a maneuver is a completely different event; a life or death engagement is a rapid chain of events, and a small difference at one key point can have a dramatic effect on the overall outcome. The capability to train during an LFE at realistic supersonic speeds can make the training experience relevant and of use for combat. Training to react realistically, utilizing supersonic speeds, increases the chances of aircrew survival in real combat. The supersonic LFE floor for B-1 aircraft would be 20,000 feet MSL. Fighters training with or against bombers need supersonic flight to simulate missile engagements. Fighters, such as F-16s, do not orbit/hold above FL300. In practice they hold much lower, from 10,000 to 20,000 feet MSL. The minimum supersonic altitude becomes critical when they transition from hold/orbit to engagement. If an F-16 is scrambled from its orbit to engage a hostile aircraft, either bomber or other fighter, the fighter needs to quickly attain altitude and speed. The LFE floor for supersonic fighter maneuvers would be 10,000 feet AGL. In combat, the fighter uses supersonic speed to achieve optimum engagement altitude and speed. The fighter needs to be able to efficiently and quickly accelerate from lower altitudes.

2.10.4.4 Representative Bomber Flight Training Day

Section 2.10.4.1 describes the combat mission required for bombers, and Section 2.10.4.2 describes the training needed for aircrews to be equipped for combat. Section 2.10.4.4 puts the training requirements in the overall context of the bomber mission and describes a representative bomber flight training day. Multiple scheduling considerations must be accommodated to fly one bomber training sortie. This example assumes no aircrew illness, weather delays, or aircraft mechanical cancellations.

The scheduling of flight crew, aircraft, and training airspace requires many planning hours by many people, days, weeks, or even months before the flight. All of these factors influence the need for the proposed PRTC.

Ellsworth AFB and Minot AFB both establish a long-term scheduling plan to allocate aircraft, support, and aircrews termed the "annual contract." The annual contract is the first step to plan aircraft availability, aircraft maintenance, and aircrew training. Each base develops the manpower, the base's flying window, airfield operations, and other scheduling factors

(e.g., holidays). The Monthly Operations Plan is derived from and refines the annual contract to include numbers of sorties per day. The Monthly Operations Plan schedules the month's contracted sorties around overall wing commitments for that month. The weekly flying schedule breaks down the Monthly Operations Plan and compiles daily flying schedules that specifically assign aircrew names, aircraft tail numbers, aircraft configurations, takeoff and landing times, missions, and other elements.

The base develops the flow of a bomber's training day within the context of the scheduling process by coordinating multiple crew members, differences in aircraft modifications, and maintenance availability.

Scheduling an Aircrew. All aircrews do not have the same training or experience levels.

The first input to scheduling is aircrew proficiency training. The B-1 requires four crew members. The aircraft commander is a pilot. Pilots can be qualified as Evaluators, Instructors, Mission Ready, or Non-Mission Ready. Pilots can fly the aircraft unsupervised from either the right or left seat based on their qualifications. The Defensive Systems Officers and Offensive Systems Officers both function as Weapon Systems Officers; each must achieve qualification levels similar to Pilots: Evaluators, Instructors, Mission Ready, and Non-Mission Ready. The Weapon System Officers train to fly as both Offensive Systems Officers and Defensive Systems Officers, and although there are training events that can be accomplished from either seat position, there are also events that are seat position specific.

Each crew member must perform specific training requirements, depending on their position and qualification level, that drive the training events scheduled for each sortie. Commonly, each time a B-1 or B-52 takes off in a training flight, it consists of a unique crew. Even if the aircrew flies together repeatedly (which is rare in training), the requirements for individual crew members differ with each flight. Existing Powder River airspace assets cannot provide sufficient flexibility to accommodate the vast array of aircrew training requirements. Remote range complexes limit the capability to meet required training since so much flight time is absorbed in low-value commuting or transit time. Lack of consistent accessibility to remote ranges constrains the training aircrews can perform on any given day.

Scheduling an Aircraft. All B-1s and B-52s are not scheduled the same.

Aircraft modifications constrain the ability to schedule and fulfill training requirements. Like most aircraft, the B-1 continues to be upgraded with new hardware and software, with many of these modifications conducted during the past decade. Major modifications involve a long, incremental process to update the entire fleet. Some Ellsworth AFB aircraft available for training have updated modifications, and some await modifications. Aircrew training mirrors this incremental upgrade process by having some aircrew qualified in the new system, while others are still being trained and remain proficient on the old system. Combat theater commanders know about the upgrades and want aircraft and aircrews trained to be combat ready with the upgraded capabilities. If insufficient aircrews are qualified in the modified aircraft, achievement of combat objectives becomes difficult.

Balancing aircrew and aircraft upgrades is just the beginning of the scheduling process. Aircraft availability due to maintenance requirements is another factor, and even more so during an

upgrade. For instance, theater commanders may request deployment of an updated aircraft, which means only aircrew qualified in a modified aircraft can be deployed. Additionally, corresponding aircrew training would have to be accomplished in an updated aircraft, limiting which aircraft on station they have available to fly. If all the modified aircraft require maintenance, training cannot be accomplished. Routine maintenance of the aircraft requires many man-hours, and flight safety is first priority. Inspections also keep aircraft out of the training schedule and limit availability.

Scheduling a Training Airspace and a Range. All airspaces and ranges do not provide the same training.

The missions, the individual and collective aircrew training requirements, the aircraft capabilities with upgrades, and the availability of maintenance capabilities define the requirements for a training airspace. The scheduler reviews all the factors above and seeks out an airspace and range that could accommodate the required training. Any shortfall in one airspace requires that an additional mission or missions be scheduled to achieve aircrew proficiency. The scheduler takes into consideration the airspace and range capabilities in the airspaces identified on Figure 1-1. Is the airspace large enough to accommodate B-1 performance capabilities? Are there altitude restrictions that would preclude low-level training below 2,000 feet AGL? Are these simulated threats to create realistic training scenarios? Is there a capability for visual targets? Will the aircrew be able to practice real defensive maneuvers, such as deploying chaff and flares or accelerating to supersonic speeds? Are there ranges where inert or live munitions could be deployed? Are there dissimilar aircraft to train against or with as there would be in combat?

Additionally, other questions must be answered regarding range condition, weather, target types, etc. Once all of these questions are answered and airspace and range are identified, other scheduling considerations include: Who has priority? When can the aircrew train? Typically there is a narrow scheduling window on highly desired and highly used ranges, such as NTTR or UTTR, that could be accomplished for realistic bomber training. The scheduler obtains or negotiates the required range window and everything is finally set, until there is a 30-minute delay due to a minor aircraft malfunction or developing weather. Resolving these problems delays the crew beyond their limited scheduled range time. Then the mission planning and scheduling starts all over again.

Executing a Training Mission. This section assumes all the aircrew, airframe, and airspace scheduling requirements described in Sections 2.10.4.1, 2.10.4.2, and 2.10.4.3 are met and the mission can be executed. The mission actually requires 2 days.

Day 1 – Aircrew Mission Planning: After the squadron implements the monthly and weekly scheduling process, the aircrew scheduled to fly must mission plan the scheduled events. Mission planning begins in the morning with a squadron briefing that includes intelligence/threats, emergency procedures, and operations notes. Then crew mission planning begins. The designated mission lead conducts detailed briefings on the training mission, airspace, and aircraft load. The crew researches air defenses, studies campaign operations, analyzes targets, and develops a plan to mitigate threats while achieving mission objectives. Each aircrew plans to accomplish the maximum training events needed and possible within the

scheduled parameters. Mission planning concludes with a series of detailed briefings, including a briefing of avoidance areas. These briefings are required for every military user of the existing Powder River MOAs and include directions to avoid low-level overflight of ranches and residences ("Powder River Training Complex Briefing Guide," 14 February 2011). Once mission planning is complete, the crew begins a mandatory 12-hour crew rest period, which includes the opportunity for at least 8 hours of uninterrupted rest prior to flight.

Day 2 – Bomber Sortie: The actual flight period begins with the aircrew arriving at the squadron approximately 4 hours prior to scheduled takeoff. For a daytime mission, this generally occurs around 5:00 AM. At the squadron, the crew checks out life support equipment, receives a weather briefing, reads NOTAMs, reviews and signs off the Flight Crew Information File and Operations Notes, and files a flight plan. The aircrew then proceeds to the aircraft and accomplish pre-flight checklist items. Engine start, taxi, and take-off ensue, with winter operations extending this period for snow removal and/or aircraft de-icing activities.

After take-off, at 9:00 AM in our example, the flight proceeds to the scheduled airspace. During the time in the airspace, the aircrew executes the pre-planned profile designed to accomplish the maximum amount of training required by the aircrew. To replicate real combat conditions, the aircrew is often assigned new and unplanned tasks to test the aircrew's ability to adapt to mission changes and real-time developments. Typical training includes navigation, threat identification and reactions, combat maneuvering, aerial refueling, and simulated bombing, at both high and low altitude. New training elements include laser targeting, detailed target identification and tracking, and the recent combat requirement for networked and multi-spectral sensor targeting. Training can be accomplished as a single aircraft or as a formation of two aircraft. If two aircraft are scheduled to train together and one aircraft experiences ground-related aircraft maintenance or aircrew delays, then formation training elements can be negatively affected. Each bomber sortie has unique requirements that determine the amount of time in the planned airspace that will be needed to accomplish desired aircrew training. This description of the scheduling, planning, and executing of a training mission demonstrates the myriad of factors that must be considered to accomplish one aircrew training sortie.

The existing Powder River airspace poses limitations on executing such a training mission for more than one to two aircraft at a time. The existing Powder River airspace is too small to alleviate the problems, and use of the more distant complexes affects scheduling and training quality. The proposed PRTC is designed to meet as many training requirements as possible so that each sortie could accomplish the maximum possible aircrew training events for B-1 squadrons based at Ellsworth AFB and B-52 squadrons based at Minot AFB.

2.10.5 *LIMITATIONS AND CONSTRAINTS OF CURRENT TRAINING OPPORTUNITIES*

B-1s from Ellsworth AFB and B-52s from Minot AFB conduct training at Powder River airspace and at remote ranges and airspace throughout the west and portions of the Midwest (refer to Figure 1-1). Several limitations affect training for bombers from Ellsworth AFB and Minot AFB. The size and capabilities of the existing Powder River airspace prevent it from providing adequate training airspace for today's modified aircraft and new missions. These limitations

drive the requirements for expanded local airspace capabilities. As a result of these limitations and constraints, current aircrew training requirements at Ellsworth AFB and Minot AFB are not being met in a timely or efficient manner. The limitations are discussed in this section.

2.10.5.1 SIZE OF THE EXISTING POWDER RIVER AIRSPACE

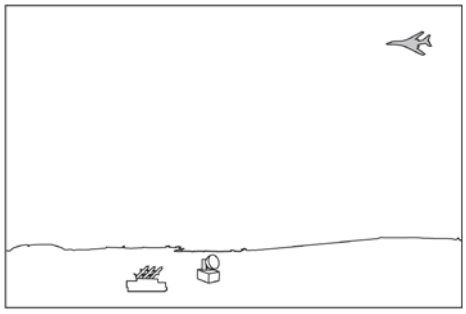
The size of the existing Powder River airspace (maximum 85 by 50 NM) constrains the amount and nature of training activities conducted with sensors and electronic capabilities. A mission of one or two bombers training to accomplish the range of mission requirements (see Section 2.10.4.1) effectively uses up the Powder River airspaces. Ellsworth AFB has a requirement to allow up to four missions of one to two aircraft each to launch and train at the same time. As a result, training activities that must occur at remote ranges use up aircrew and airframe training time with inefficient and unrealistic commuting. Recent conflicts and worldwide operations, along with improvements in aircraft, munitions sensors, and tactics, have increased the need for larger airspace and more realistic training within that airspace. New aircraft capabilities include the ability to address targets at distances in excess of 100 NM. Next generation surface-to-air missiles currently being marketed have a combat radius of 100 NM or more and can threaten all but the stealthiest aircraft.

The horizontal dimensions of the existing Powder River airspace prohibit adequate and realistic distance separation of multiple aircraft in the same airspace in order to support typical adversarial airborne engagements. The airspace is neither large enough for current radar system technology nor sufficient in size to allow the training aircrew to react appropriately.

The existing Powder River airspace can support limited training for one mission of up to two B-1 aircraft because:

- Sensor distances have increased and “enemy” air-to-air and ground-to-air tracking capabilities exceed the dimensions of the Powder River airspace.
- Air-to-ground capabilities with new smart weapons involve distances that cannot be simulated in the existing Powder River airspace.
- Training activities of different aircrews cannot occur simultaneously, and different formations cannot be segmented within the confines of the Powder River airspace.
- Maneuver (supersonic) and defensive (chaff and flare) training cannot be accomplished to realistically train aircrews to instantaneously react to threats.
- Dissimilar aircraft training with current threat and targeting capabilities cannot be accomplished within the Powder River airspace dimensions.

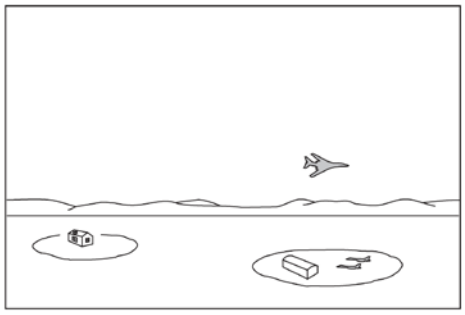
2.10.5.2 TRAINING RESTRICTIONS WITHIN THE POWDER RIVER AIRSPACE



The inability to train with chaff and flares to neutralize threats and the inability to use supersonic speeds to escape opposing threats and/or during dissimilar aircraft training are serious restrictions to realistic training within the Powder River airspace.

The current operating procedures for the Powder River airspace preclude the use of defensive countermeasures (chaff and flares) for all aircraft and prohibit supersonic flight by all aircraft. Increasingly complex surface-to-air threats require near-instantaneous aircrew response to a threat by immediately deploying countermeasures. The ability to use B-1 supersonic flight as a defensive tactic and the ability to respond to supersonic attacks by fighters are essential to modern combat. Supersonic flight for the B-1s forms an integral combat tactic, particularly when egressing from a target, avoiding ground threats, and escaping enemy aircraft during LFE dissimilar aircraft training.

Chaff and flare deployment represent necessary combat operations that bomber aircrews cannot perform in the local airspace. Chaff creates a brief electronic cloud of fibers thinner than a human hair to confuse enemy radar. Flares create a heat source to decoy heat-seeking missiles away from the aircraft. These countermeasures defend aircraft against enemy threats and are extensively used in combat. Training to employ these countermeasures in an effective and timely manner is essential for aircrews conducting almost any mission.



Numerous low-altitude avoidance areas require training aircraft to weave between the avoidance areas and/or climb over the areas while remaining 2,000 feet AGL and below.

2.10.5.3 AVOIDANCE AREAS WITHIN THE POWDER RIVER AIRSPACE

Ellsworth AFB has established avoidance areas under the Powder River MOAs to reduce noise and overflights above communities, ranches, or other noise-sensitive locations. The number and location of noise avoidance areas limit defensive reaction maneuvering in low-altitude training and create patterns that constrain diversity in some training. Avoidance areas force more training to higher altitudes. Avoidance areas establish and produce redundant training with reduced training quality. Avoidance areas would be designated for the proposed PRTC expanded airspace in accordance with the base's ongoing efforts to be a "good neighbor." Increased available airspace with different avoidance areas create the realistic, varied situations needed for quality training.

2.10.5.4 LIMITATIONS ON SORTIE GENERATION

The current capability of the aircraft maintenance programs to generate sorties is limited by several factors. First, Air Force budget and personnel reductions have eliminated 200 aircraft maintenance personnel and decreased the average skill level of the maintenance personnel at Ellsworth AFB. Second, the longer an aircraft is flying, the more time is needed to perform mandated maintenance. In the long run, multiple 5-hour sorties will force 50-hour, 100-hour, and later inspections and maintenance more frequently than the same number of 3-hour sorties. This means that long commutes to remote ranges for training requires extended maintenance time and reduces the number of aircraft available for training on a daily basis.

For aircraft sortie generation planning purposes, maintenance of a B-1 requires a minimum of 3.25 hours to prepare an aircraft after a morning sortie for an afternoon/evening sortie, assuming engines are shut off and restarted and no weapons loading is required. With training weapons loaded, that time increases to a minimum of 5 hours. These minimum maintenance hours are frequently exceeded to ensure a safe aircraft. The current airfield duty day is 17.5 hours, opening at 7 AM and closing at 12:30 AM.

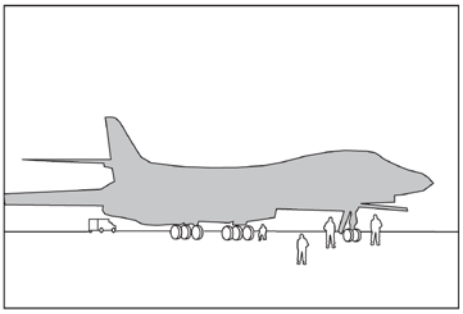
Maintenance requirements and aircraft turnaround time is a major factor in generating training sorties. As described in Section 2.10.4, a crew, aircraft, and airspace all are needed to achieve a successful training mission. When an aircraft returns from one training mission, a second crew can use that aircraft to train after maintenance is performed.

Several elements combine to make local airspace crucial to reduce maintenance time and enable more required training sorties.

- When the aircraft lands and the engines are shut down, there is mandatory maintenance that takes 3.25 hours.
- If the engines are not shut down, there can be an Engine Running Crew Change (ERCC), and the aircraft can quickly be launched with a new crew for another training mission in local airspace. Ellsworth AFB currently schedules approximately 25 percent ERCCs

More local training airspace would permit a B-1 to land, keep engines running, exchange crew, take off with a lighter fuel load, and accomplish multiple training events with the new aircrew. If maintenance problems required an engine shutdown, the aircraft could still be maintained and be available for a local training mission within the 3.25 hour window. Adequate local airspace would improve training and reduce the ripple effect on aircrews that are unable to access an aircraft for training missions.

Certain elements can reduce the access to aircraft for an ERCC.



B-1 ERCCs are crew changes with the engines running. The ERCCs are required to accomplish maintenance with available personnel and train for in-theater missions.

- When equipment problems delay or cancel the first mission, the follow-on mission cannot occur and the ripple effect impacts the entire training plan.
- The complexity of the aircraft systems means that small mechanical problems can occur and the risk of cancellation of a follow-on ERCC sortie is higher than a stand-alone mission.
- If pre-flight checklist performance is needed to exercise full aircrew training, an engine shut-down and an engine start would be required for the full pre-flight checklist.

The additional training airspace permits the matching of aircrew that need training in specific qualification levels to appropriately upgraded aircraft and to fly those upgraded aircraft the training time needed in local airspace. The upgraded aircraft can quickly be available for other crewmembers needing the training. Adequate local training airspace substantially reduces conflicts with the entire training program and schedule.

2.10.5.5 FLYING HOUR LIMITATIONS

The amount of time for training is based on flying hours, with annual Air Force flying hours determined through the federal budgeting process. Available flying hours require aircrews to accomplish efficient, realistic training for each mission. Traveling longer distances to obtain required training only available in remote training airspace or departing the local area due to operational or scheduling conflicts with other aircraft decreases the time available to engage in realistic combat training. The efficiency of combat training depends upon three related factors: 1) the time required to depart from a base, conduct a sortie that includes all the integrated training activities needed for a specific mission, and return to base; 2) the distance and flight time to and among the training assets (airspace and ranges) needed for that mission; and 3) the quality and quantity of the training accomplished. The longer the commute or transit time, the less time can be used for quality training. Transit or commute time provides limited training value.

Currently, aircrews from Ellsworth and Minot AFBs must fly a substantial portion (54 and 69 percent, respectively) of their training sorties at remote ranges and airspace like NTTR, UTTR, and MHRC (see Figure 1-1). The focus of quality training is on airspaces in Figure 1-1 that provide airspace altitudes, defensive countermeasures, supersonic maneuvers, threat emitters, and other realistic capabilities to meet B-1 and B-52 aircrew training requirements. Table 2.10-5 defines distances and approximate flight times (one-way) to the Powder River airspace and to remote training areas. A remote round-trip training mission expends more than twice as many flying hours as a local mission. For example, a B-1 flight to NTTR would expend 3.5 (2 x 1.75 hours) hours just to fly to the training complex and return to Ellsworth AFB.

Table 2.10-5. Flight Distances (NM) and Transit Times (HR) to the Powder River Airspace and Remote Ranges/Airspace

	From Ellsworth AFB		*From Minot AFB*	
Range/Airspace	***One-Way Distance (NM)***	***Time (HR)***	***One-Way Distance (NM)***	***Time (HR)***
Powder River Airspace	57	0.2	200	0.75
UTTR, Utah	484	1.25	675	2.00
NTTR, Nevada	614	1.75	825	2.60
MHRC, Idaho	535	1.5	765	2.25

Table 2.10-6 compares the actual B-1 aircrew training time at local and remote ranges. Examination of average sortie duration in Table 2.10-6 demonstrates the problem with a high proportion of use of quality remote training areas. For example, the average sortie duration for the B-1s from Ellsworth AFB to the Powder River airspace at 3.2 hours effectively achieves the same amount of mission training as the 5.1-hour average sortie duration to the remote training airspace. Aircrews expend a higher proportion of limited training hours in transit time to the remote complexes than to the local Powder River airspace. When B-1 aircrews must fly 54 percent of their sorties to remote locations, the amount of commute, or transit, time consumes between 2.5 and 3.5 times the number of flying hours required to have the same amount of training at the Powder River airspace. Similar factors apply to B-52 sorties out of Minot AFB, with training time at the remote complexes amounting to less than 50 percent of the average sortie duration. Combine this with the complexities of new weapons systems, increased aircrew training requirements, limited airframe availability, and remote range scheduling and it is clear that specific aircrew training and actual total training time would be greatly benefitted by quality local training airspace.

Table 2.10-6. Comparison of Bomber Transit Time and Training Time for Powder River Airspace and Remote Ranges/Airspace

Range/Airspace	***Aircraft/Base***	***Average Sortie Duration (HR)***	***Transit Time (HR)***	***Training Time (HR)***	***Percent Training Time[1]***
Powder River Airspace	B-1/Ellsworth	3.2	1.0	2.2	68%
	B-52/Minot	5.7	1.5	4.2	74%
UTTR, Utah	B-1/Ellsworth[2]	5.1	2.5	2.6	51%
	B-52/Minot	7.5	4.0	3.5	47%
NTTR, Nevada	B-1/Ellsworth[2]	5.1	3.5	1.6	31%
	B-52/Minot	7.9	5.2	2.7	34%
MHRC, Idaho	B-1/Ellsworth[2]	5.1	3.0	2.1	41%
	B-52/Minot	7.7	4.5	3.2	42%

1. Assumes no refueling.
2. Ellsworth used a remote range average sortie duration of 5.1.

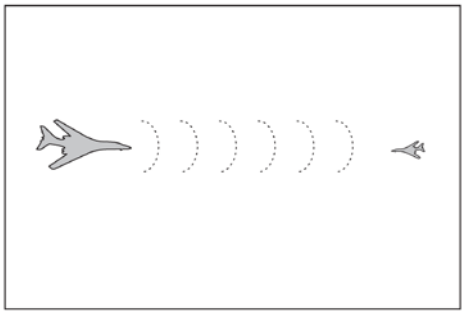
2.10.5.6 LIMITS ON ACCESSIBILITY/AVAILABILITY

Remote complexes give priority for aircraft from nearby bases and not to transients such as the B-1s and B-52s. The size and training restrictions of the existing Powder River airspace force 54 percent of the B-1 sorties and 69 percent of B-52 sorties to remote training locations to

accomplish required training defined in the Mission Qualification Training, Ready Aircrew Program, and Weapons Instructor Course. Scheduling time at these complexes proves problematic and lacks flexibility to accommodate contingencies such as aircraft delays. A delay in launch of a B-1 at Ellsworth AFB or a B-52 at Minot AFB or a weather delay en route may miss the training window at a remote range and not have access to any quality training for that mission. These limits on accessibility further reduce the ability of the B-1s and B-52s to achieve readiness requirements.

2.10.5.7 ELECTRONIC ATTACK ASSETS

The Belle Fourche ESS and the associated sites for threat emitters were established to meet Cold War era training requirements. The electronic attack assets of the Powder River airspace lack realism and flexibility for current and future conflicts. The emitter sites are located mostly along old Strategic Air Command MTRs near the Powder River airspace and in its southern limits (see Figure 2-2). The threat emitters do not present the newest systems nor can they pose realistic threats to more than one to two aircraft training for the new B-1 or B-52 missions. In real conflicts, an enemy relocates threats to destroy U.S. aircraft. The existing threat emitters offer limited flexibility to relocate as changing threats or to reflect realistic combat conditions. The existing electronic attack assets provide for some needed training and are being upgraded, but airspace distances limit maneuver options and drive training scenarios that become repetitive. The resulting aircrew familiarity and habituation does not provide realistic combat challenges. In combat, mobile threats regularly change locations to challenge and defeat aircrews. With expanded airspace the electronic attack assets could be addressed from greater, more realistic distances and aircrews could address the threats from different locations.



New B-1 capabilities include the ability to identify potential threats and targets at substantially greater distances than previously. This capability effectively reduces the number of aircraft which can train in the existing Powder River airspace.

2.10.5.8 TARGET AND ORDNANCE DELIVERY CONSTRAINTS

The Powder River airspace includes several simulated targets, although none provide Close Air Support capabilities or urban mockups required for today's missions. Close Air Support training often needs to occur in an urban setting and a mock-up of an urban setting is frequently constructed with shipping containers for simulated training. No portion of the Powder River airspace permits live or inert munitions delivery. The proposed PRTC does not include live or inert weapons delivery and aircrews would continue to fly to remote ranges to accomplish required weapons delivery training.

2.10.5.9 EFFECTS OF TECHNOLOGY UPGRADES

As described in Section 2.10.4, all aircrews, all bombers, and all training airspaces are not equal. The B-1s and B-52s have received, are undergoing, or will receive multiple technology upgrades

that increase targeting effectiveness, communications and coordination, and functionality in large force operations. The upgrades include new guided munitions, laser targeting capability, direct satellite communication and data download, and new radar. Each of these incremental changes expands the training requirements and increases the size of the training airspace needed to accomplish the requirements. These upgrades affect airframe availability, sortie generation, and the ability of individual aircrew to meet qualifications. For example, the Sniper Advanced Targeting Pod currently being used by the B-1 fleet is in extremely limited supply. For B-1 aircrew training with the Sniper Pod sensors, clear view of the ground is required. With only a limited amount of airspace to conduct training, as is the case within current Powder River A/B airspace, weather can often times not be avoided and training is degraded. This limitation also occurs with all other upgrades. Access to bombers with the needed technology upgrades is substantially improved if those aircraft are training locally and not expending hours commuting to remote ranges.

2.10.5.10 Summary of Limitations and Constraints

This suite of limitations and constraints, described in Section 2.10.5, make it difficult for B-1s from Ellsworth AFB and B-52s from Minot AFB to maintain aircrew readiness for combat. Since these bombers play an essential role in national defense and Overseas Contingency Operation execution, there is a need to rectify the limitations. The Air Force needs to add to and reconfigure local airspace to accommodate the training requirements. Establishing the proposed PRTC would fulfill this need and reduce almost all of these limitations and constraints.

2.11 Alternative Identification Process

The alternative identification process specified needed criteria and applied those criteria to currently available training assets. Chapter 1.0 presents a summary of current training airspace assets in Figure 1-1. Locally available Powder River airspace imposes numerous limitations on the Air Force's ability to support realistic training for bomber aircrews as explained in Section 2.10.5. One to two bombers training to use the current sensors and technologies the aircrews face in real world conflicts effectively use up the existing Powder River airspace. The existing Powder River airspace does not provide practical training for realistic coordination and deconfliction situations, provides no opportunities for training with defensive countermeasures or supersonic flight, and results in excessive commuting to non-local training as bomber aircrews fly to remote complexes to achieve a majority of their training requirements. The single mission structure and limited mission task training of the Powder River airspace cannot provide the sequenced and diverse training needed by combat aircrews.

The Air Force developed criteria to address training deficiencies and limitations and define a set of reasonable alternatives that could support required training. The Air Force determined that a reasonable alternative should meet the following criteria. The sections in parentheses identify where, in this EIS, each criterion is addressed.

- Utilize existing training airspace and ground-based assets to the extent possible while meeting training requirements (AFI 13-201) (Section 2.10.5);

- Provide airspace of sufficient size and volume to support the concurrent training needs of multiple B-1s and B-52s (Section 1.4);
- Maximize training time and sortie generation capability for diverse new missions through the use of finite flying hours and access for the B-1s and B-52s (Section2.10.4);
- Provide connected airspace, (a maximum of once per quarter), to support realistic LFE training with approximately 20 aircraft of various aircraft types (Section 2.10.4);
- Avoid or limit, to the extent possible, potential conflicts with civilian air traffic (Section 2.3); and
- Avoid or limit, to the extent possible, safety and environmental concerns (Section 2.3).

2.11.1 *Explanation of Alternative Identification Criteria*

2.11.1.1 Existing Military Airspace

Airspace comprises a valuable and finite national resource that is the responsibility of the Federal Aviation Administration (FAA). The FAA seeks to balance the different needs of airspace users. The Air Force seeks to use existing military airspace to the extent possible to meet the purpose and need. The Air Force evaluated the size, structure, and location of existing MOAs, ATCAAs, and MTRs to maximize their utility.

2.11.1.2 Airspace Size and Volume

The airspace must be of adequate size and volume to allow bomber aircrews to conduct a full range of tactics and maneuvers while employing almost all capabilities of the aircraft except actual munitions delivery. Any candidate airspace must have the capability to simultaneously support three to four two-ship training missions incorporating the full suite of B-1 and B-52 missions. To meet the defined needs, the horizontal and vertical extent of the airspace must allow for realistic engagement distances with hostile threats, especially with regard to new targeting and sensor identification technology. Each airspace unit for the three to four two-ship training missions would need to measure approximately 75 by 75 NM and have the ability for airspace from 500 feet AGL regularly to FL260.

The B-1 has a requirement to exercise terrain following radar capabilities. It would be highly desirable for the airspace to include the capability for mountainous terrain following training. Mountainous terrain following requires that an aircrew employ B-1 mountainous terrain following capabilities over terrain that varies more than 1,000 feet in elevation within 10 NM (AFI 11-2B-1V1).

2.11.1.3 Maximize Training Time and Sortie Generation

Effective and efficient training requires aircrews to expend flying time performing realistic training with the upgraded B-1 and B-52 aircraft on real world missions described in Section 2.10.1. Local airspace increases the proportion of training time per sortie, maintains realistic training with a lower average sortie duration, reduces transit time, maximizes upgraded aircraft utilization, and provides for the myriad of new mission training now required of aircrews. The

airspace must avoid lost training missions at remote training complexes due to scheduling priorities of these training complexes. All training missions must also be accomplished within an average of 240 flying days per year.

Sortie generation and sortie effectiveness are critical elements in readiness. Factors that influence sortie generation include maintenance, crew qualifications, and aircraft modifications. Restrictive range schedules reduce the effectiveness of sorties and preclude a base's ability to respond to contingencies. Sortie effectiveness is reduced because:

- Range schedule inflexibility requires the aircrew to be ready with a mission, the needed airframe be readied, and the airspace to be available. Inflexible training airspace schedules require a set launch time and eliminate the ability of maintenance operations to perform steps to ready an aircraft in advance for a mission at a later time. Heavily used high quality remote ranges have inflexible schedules.
- Weather changes often dictate real-time mission changes. A restricted and fixed time for training in airspace hundreds of miles away results in the loss of dozens of sorties per year and impacts aircrew readiness.
- Flexible scheduling is needed to meet real world training requirements. Remedial mission accomplishment is required if a student fails a mission. Developments in a war zone may require a squadron to perform their training mid-week. Equipment failures occur, emergencies beneath the airspace may preclude training, and sickness or family emergencies may result in personnel mission shifts. Sortie generation and training need flexibility to respond to such contingencies.
- There is a limited number of B-1s and an even more limited number of B-1s with continually updated weapons and sensor systems needed for the specific training described in Chapter 1.0. Using these airframes to commute to distant ranges with restricted schedules makes them unavailable for realistic training to meet wartime requirements.

The proposed military training airspace must be near enough to allow flexibility in launching sorties and be scheduled for the bombers that need it. The proposed airspace needs to permit multiple daily sorties of mission capable aircraft to address both realistic combat scenarios and limitations on maintenance capabilities.

2.11.1.4 PROVIDE FOR CONNECTIVE AIRSPACE

In combat conditions, a bomber does not operate alone or only with one other bomber. A bomber aircrew is one element in a composite whole during an LFE that includes different types of aircraft with sensors and weapon systems. An F-16 may be performing ground attack to support a coalition ground force and be running short of fuel while simultaneously a B-1 may be vectored to continue the attack. Meanwhile, an F-15 or F-22 flying top cover may have to defend the bomber from enemy fighters and a B-52 may be suppressing enemy defenses. Opposing surface-to-air and air-to-air threats, at speeds including supersonic, require rapid defensive response training, sometimes at supersonic speeds. Training as a single force is the only way such integrated communications and choreography can be accomplished. With

today's and tomorrow's sensors and weapon capabilities, such LFEs require extensive airspace. The training airspace needs the provision to combine, a maximum of once per quarter, smaller airspace units into an overall training airspace with the capability to support an LFE of approximately 20 aircraft of various aircraft types.

2.11.1.5 REDUCE OR LIMIT CONFLICTS WITH CIVIL AVIATION

The U.S. government has exclusive sovereignty over the nation's airspace (49 U.S.C. Sec. 40103(a)(1)). The FAA plans, manages, and controls the structure and use of airspace to make it as useful as possible for all types of aircraft. The Air Force, in working with the FAA, recognized that proposed airspace should limit or reduce the potential for conflicts with the structure and use of the airspace system by civil aviation. Avoidance of conflicts with airports, jet routes, federal airways, and other airspace units represents a priority for identifying a viable alternative.

2.11.1.6 LIMIT SAFETY AND ENVIRONMENTAL CONFLICTS

As conscientious users of the National Airspace System and good neighbors, the Air Force considers safety and environmental factors in any proposal. Provisions need to be in place to identify certain locations as flight avoidance or noise sensitive areas. Some examples of potential areas include civilian airports, populated areas, power plants, recreation areas, and Native American cultural sites. Flight activity also needs to allow for seasonal, altitude, and location avoidance, such as for specific outdoor activities, emergencies such as firefighting and life flights, and certain wildlife species during specific times of the year. Training aircrews would be briefed to avoid these areas as applicable. Avoidance procedures reduce the potential for safety or environmental impacts. The airspace needs to offer multiple segments to allow training in one area while applying avoidance restrictions in another.

2.11.2 *APPLICATION OF CRITERIA TO DEVELOP THE ALTERNATIVES*

The criteria described in Section 2.11.1 were applied to define alternatives that could meet training requirements. The selection criteria were applied to identify the location and configuration of required training airspace.

2.11.2.1 EXISTING MILITARY AIRSPACE

The Air Force seeks to use existing military airspace to the extent possible. Existing military airspace presented in Figure 1-1 was reviewed to determine what existing airspace could be the focal point for expanded airspace to meet the purpose and need for bomber training with new technologies, sensors, and missions. The western ranges at MHRC, UTTR, and NTTR are existing ranges with all training capabilities needed for bombers. These ranges are distant and require extensive commute time. Northern and eastern MOAs including the Lake Andes MOA, the Tiger and Devils Lake MOAs, and the Hays MOA do not provide training capabilities for current bomber systems and generally do not have low-level training capabilities with the dimensions needed for high-speed bomber training.

The need to maximize sortie generation, the need for training time with new weapon systems, and the need to combine bomber aircrew, airframe, expanded mission training all identified the existing Powder River MOAs and ATCAAs as a focal point for any proposed action or

alternatives. The current Powder River airspace MOAs and ATCAAs comprise the only existing airspace managed and controlled by Ellsworth AFB where both B-1 and B-52 bombers receive priority access. Situated between the two bases, 57 NM northwest of Ellsworth AFB and 200 NM southwest of Minot AFB, the Powder River airspace permits ready access for training. The Powder River airspace best meets the requirement for existing airspace that could be used as a focal point for airspace modifications to meet the purpose and need.

2.11.2.2 AIRSPACE SIZE AND VOLUME

Airspace configuration defines the size and volume of the airspace. Infrastructure under the airspace needed to support realistic training missions is also included in this criterion. Configuration consists of four attributes: structure, horizontal size, vertical size, and shape. Each of these attributes must adhere to the criteria and support fulfillment of the purpose and need.

- **Structure**: The airspace must include the capacity to link a MOA and overlying ATCAA. Alone, neither a MOA nor an ATCAA would provide the vertical extent needed for training. MOAs extend to but not including FL180 and ATCAAs extend from FL180 and above. B-1s and, especially B-52s, use higher altitudes extensively in combat and training. Linking the MOAs and ATCAAs vertically permits continuous maneuvering and promotes realism. Ellsworth AFB has a history of working closely with ARTCCs to schedule and use the Powder River MOA/ATCAA combinations needed for a specific training mission. Based on the need for training three to four bomber formations, the airspace structure needs to include three to four sets of MOAs and ATCAAs. Individual MOAs and ATCAAs could be used to increase training opportunities and flexibility. Horizontal linkage of MOAs and ATCAAs for an LFE not more than 10 days per year for 1 to 3 days per quarter expands the training area size to accommodate more complex training activities with various aircraft types. To accomplish this linkage, the structure would need bridges or Gap MOAs and ATCAAs. Linking selective airspace segments would allow the Air Force to work with ARTCCs to configure the airspace for mission training requirements while reducing impacts to non-military users. Linking multiple airspaces or the entire airspace would permit aircrews to conduct LFE engagements of approximately 20 aircraft of various types training together in simulated combat and at realistic distances for new aircraft sensors.
- **Horizontal Size**: Each MOA and ATCAA needs to offer sufficient size to accommodate a minimum of two B-1s conducting training simultaneously. As a large aircraft with advanced long range multi-spectral sensors and supersonic capabilities, the B-1 requires a large maneuvering area. Although each of the PR-1, PR-2, PR-3, and PR-4 MOA/ATCAA combinations need not be exactly the same size, each should measure approximately 75 NM for both its length and width. Existing radars and targeting equipment in fighters and bombers allow detection of aircraft at distances in excess of 100 NM. Proposed LFEs use long-range air-to-air activities and need a combined airspace of approximately 150 by 300 NM.

- **Vertical Size**: B-1s and B-52s must conduct missions that transit and operate at altitudes from below 2,000 feet AGL to altitudes up to, but not including FL260. B-1 training is primarily below FL260. Low-altitude terrain following and avoidance is an important B-1 mission. The B-1 terrain following and terrain avoidance system performs optimally at 500 to 2,000 feet AGL. The B-52s train primarily at high altitudes (above 20,000 feet MSL). Aircraft that could participate in a maximum of once per quarter LFE training would use altitudes within the PRTC as coordinated or by NOTAM.
- **Shape**: The shape of the airspace reflects both operational requirements and avoidance of conflicts with civil aviation. Individually and collectively, the MOAs/ATCAAs must be configured to permit the repertoire of maneuvers performed by the bombers. They need not be uniform in shape, but should provide for both offensive and defensive maneuvering and multi-aircraft engagements. In addition, the Air Force considered potential conflicts with major airports and airspace used for civil aviation in order to define the shape of the airspace.

AFI-11-2B-1 Volume 1 and AFI 11-2B-52 Volume 1 give training information for Mission Commander Sortie, Composite Force Training, Joint Force Training (B-1), Composite Force Training, and Joint/Composite Training Sortie (B-52). These instructions form the basis for the LFE requirement. LFE training a maximum of once per quarter could only be accomplished in airspace sized for today's sensors that have the capability to acquire targets at distances in excess of 100 miles.

Infrastructure includes ground-based assets to replicate threats and create a realistic training environment. As noted in Section 2.4.2, Powder River airspace contains a substantial investment in threat emitters and no-drop targets to replicate real-world conditions. Distant western ranges are in high demand because they have the airspace size, volume, and infrastructure attributes. Eastern airspaces do not include the attributes or infrastructure needed for bomber real-world training. The proposed expansion of Powder River airspace to become PRTC would achieve the airspace attributes, use existing infrastructure, allow for new and redistributed infrastructure assets, and create varied threat scenarios to challenge training aircrews.

2.11.2.3 MAXIMIZE TRAINING TIME AND SORTIE GENERATION

Existing airspace meeting the needs of the bombers must minimize the flying hours expended for low-value commute or transit time. Figure 1-1 describes other ranges and existing MOAs within the general region of Ellsworth and Minot AFBs. Western ranges are 484 to 614 NM from Ellsworth AFB and 675 to 825 NM from Minot AFB (Table 2.10-5). The distance to these ranges maximizes commute time rather than training time. The Hays MOA in northern Montana is approximately 380 NM from Ellsworth AFB and 280 NM from Minot AFB. The Montana Air National Guard (MT ANG) controls, schedules, and uses the Hays MOA. MT ANG aircraft receive scheduling priority. Other MOAs in the region include the Devil's Lake MOAs and Tiger MOAs in North Dakota. The Devil's Lake and Tiger MOAs are 225 to 275 NM from Ellsworth AFB and 40 NM from Minot AFB. These MOAs do not have airspace volume or infrastructure to

maximize training times for B-1 aircrews. B-52 aircrews can, and do, receive a limited level of training in these airspaces without realistic threats.

The Powder River airspace is located between Ellsworth AFB and Minot AFB (see Figure 1-1). Expanding the Powder River airspace would reduce transit time to realistic training locations for both bomber bases. As noted in Section 2.10.5.5, 68 percent of an average B-1 sortie to the Powder River airspace consists of training time. Sorties to more remote complexes (e.g., UTTR) achieve 51 percent or less mission training time because the longer sorties (5.1 v. 3.2 hours) require extensive commuting. No existing airspace occurs within a distance that would permit reduction of commute time. Powder River airspace would serve as a suitable anchor for the proposed PRTC due to its proximity to the bases. Expanding Powder River airspace would maximize training and allow more sorties to conduct training locally, with an average sortie duration of 3.2 hours instead of 5.1 hours (see Section 2.10.5.5).

Maximizing sortie generation and ERCC can only be accomplished with local airspace. The further the bombers fly, the less they have the capability to "turn" sorties. Distance limits all the factors that would permit increased sortie generation. The Powder River airspace is the only airspace as a focal point that would maximize training time and sortie generation.

2.11.2.4 PROVIDE FOR CONNECTED AIRSPACE

Proposed airspace improvements need to have the ability to perform realistic training with LFEs. The western ranges provide such capabilities and are heavily scheduled for such exercises as Red Flag at NTTR and for testing weapon systems such as the Joint Direct Attack Munition at UTTR or missiles at White Sands Missile Range. The northern and eastern MOAs lack existing infrastructure and volume for current training and do not have the ability for connected airspace, which would permit realistic LFE training.

Powder River airspace can be transformed into the PRTC with the ability to incorporate Gap MOA/ATCAAs to connect the airspace units, with FAA scheduling, to provide for LFEs of 1 to 3 days quarterly, totaling not more than 10 days per year. The LFE would be announced by NOTAM and the estimate of expected LFE use would be 4 hours per LFE day. The local airspace LFE would permit realistic training for approximately 20 aircraft of various types operating at speeds up to, and including, supersonic flight. The local rapid turn-around of B-1 and B-52 aircraft would provide the needed real-world training for aircrews before they entered combat.

2.11.2.5 REDUCE OR LIMIT CONFLICTS WITH CIVIL AVIATION

Proposed airspace improvements need to reduce or limit conflicts with civil aviation. The Air Force and FAA worked to develop the mitigations described in Section 2.3.1, which are directly designed to reduce or limit potential conflicts with civil aviation.

2.11.2.6 REDUCE OR LIMIT SAFETY OR ENVIRONMENTAL CONFLICTS

With any airspace proposal, the Air Force would identify certain noise sensitive and safety-related locations as permanent or seasonal avoidance areas. Airports are avoided by specified altitudes for safety, and altitude limitations on seasonal overflight of migratory areas are done to avoid safety and environmental conflicts. The Air Force would establish temporary or seasonal avoidance areas and/or adopt other measures identified in consultation with affected

tribes to reduce intrusive impacts. The programmatic agreement (Appendix N) includes provisions for identifying sensitive tribal activities. The Programmatic Agreement also identifies a process on the appropriate ways to avoid, minimize, or mitigate adverse effects to historic properties, religious ceremonies, and events important to the tribes (Stipulation II A.). It also allows for the identification of new properties of religious and cultural significance to the tribes. Safety also includes making training airspace available for emergencies. In cases of emergency, such as firefighting, air ambulance, law enforcement, or in-flight emergencies in an active MOA, the Air Force would immediately respond to Air Traffic Control (ATC) direction and relocate bomber aircraft to another airspace away from the emergency, and the MOA would be deactivated to allow IFR emergency and related arrivals and departures from an airport under the MOA. In extreme cases, the Air Force would cancel a training mission and return to base to support ATC emergency requirements.

Avoidance areas and emergency procedures would apply to any airspace considered for expanded training. The availability of nearby or adjacent airspace elements where a training mission could be directed would serve to protect safety and permit completion of the aircrew training mission. Existing northern and eastern MOAs do not have the ability to expand and would require that the training mission be cancelled. The proposed PRTC would allow for emergencies and provide flexible airspace to achieve training objectives.

Ground and general aviation safety would apply to any airspace. During public meetings, public and agency concerns were expressed about potential safety and environmental conflicts. Such conflicts could include the startle effect of low-level B-1 training and sonic booms. B-1 or B-52 training at altitudes 2,000 feet AGL and below could result in startle effects. Additionally, sonic booms from B-1 supersonic flight above 20,000 feet MSL and fighter supersonic flights above 10,000 feet AGL, both limited to a maximum of 10 days per year of LFEs, could also result in startle effects upon residents or visitors to the areas under a training airspace. The Air Force training requires airspace use 2,000 feet AGL and below as noted in Section 2.3.1. A B-1 could train 2,000 feet AGL and below approximately 15 to 20 minutes during any individual training sortie, and that low-level training could occur anywhere within an active MOA. The Air Force includes in the Proposed Action and action alternatives the requirement for notification to the appropriate ATC whenever the military aircraft enter or exit the MOA. Notification that the military aircraft have completed low-level training would allow ATC to inactivate MOA altitude segments and direct IFR traffic through the altitude segment even if military aircraft are still utilizing other MOA altitude segments. This would permit civil aircraft pilots or others with access to ATC information to be able to learn the active or inactive status of a MOA.

Safety includes airspace stand-off distances around airports and federal (Victor) airways. Public airports or airports for public use under any airspace alternative would be avoided by a 3 NM radius with an altitude of 1,500 feet AGL. Private airfields would be avoided by a 1 NM radius with an altitude of 1,000 feet AGL. The avoidance areas would be mapped on FAA aeronautical charts and noted in pilot briefings. The proposed PRTC has Gap MOAs and ATCAAs that would be activated for LFEs a maximum of 1 to 3 days once per quarter, not to exceed 10 days per year. The proposed Gap MOAs/ATCAAs have been adjusted in dimensions at FAA's request to reflect communication capabilities in the region. The Gap MOAs/ATCAAs are proposed to provide for Victor Airway corridors for civil aviation during normal military training. The Air

Force has revised the PRTC aeronautical proposal to address FAA's concerns and reduce the potential for conflicts at Billings, Bismarck, and Dickinson airports.

2.11.2.7 SUMMARY APPLICATION OF SELECTION CRITERIA

The Powder River airspace and surrounding area represent the only location with existing airspace that meets the need for the proposal and the selection criteria. Table 2.11-1 summarizes the application of these selection criteria to locations in Section 2.11.2 and includes the alternatives considered but not carried forward from Section 2.11.3 below. As noted in Section 2.11.2, the existing Powder River airspace can support only one formation of aircraft (one to two B-1 aircraft with new technologies) at any given time. The proposed PRTC would provide up to four appropriately-sized airspace blocks that could support four formations of training aircraft. PRTC would provide airspace of sufficient size and volume, allow for use by the bombers, maximize training time, have LFE capability, reduce the potential for conflict with civil aviation, and include steps to limit safety and environmental conflicts. The proposed PRTC, with management and mitigations, would meet the selection criteria identified.

Table 2.11-1. Summary of Application of Alternative Selection Criteria

Selection Criteria							
Alternative Considered	***Existing Airspace***	***Size and Volume***	***Training Time and Sortie Generation***	***Provides for LFE***	***Reduces Civil Air Conflicts***	***Reduces Safety or Environmental Conflicts***	***Carried Forward for Analysis***
Powder River airspace expanded to PRTC Modified Alternative A (described in FEIS Section 2.5)	Yes	Meets most realistic training requirements for 4 to 8 aircraft; provides topography for training	Yes	Yes	Reduces conflict with airspace capped at FL260, MOA boundaries reduced, MOAs segmented for IFR arrival or departure, NOTAM announcement of airspace activation, early low training and airspace release, improved communication of airspace activation and status	Establishes avoidance areas or a protocol for avoiding historic properties including those identified by affected tribes; improvements in communication of when training could be expected and when aircraft exit low MOAs reduce safety concerns; future avoidance areas in 4 MOA complexes would allow flexibility for avoidance	Yes
Powder River airspace expanded to PRTC Modified Alternative B (described in FEIS Section 2.6)	Yes	Meets some requirements with limited terrain following	Yes with some flexibility	Yes	Reduces conflict with airspace capped at FL260, MOA boundaries reduced, MOAs segmented for IFR arrival or departure, NOTAM announcement of airspace activation, early low training and airspace release, improved communication of airspace activation and status	Establishes avoidance areas or a protocol for avoiding historic properties including those identified by affected tribes; improvements in communication of when training could be expected and when aircraft exit low MOAs reduce safety concerns; future avoidance areas in 3 MOAs would allow flexibility for avoidance	Yes

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Table 2.11-1. Summary of Application of Alternative Selection Criteria

Selection Criteria							
Alternative Considered	***Existing Airspace***	***Size and Volume***	***Training Time and Sortie Generation***	***Provides for LFE***	***Reduces Civil Air Conflicts***	***Reduces Safety or Environmental Conflicts***	***Carried Forward for Analysis***
Powder River airspace expanded to PRTC Modified Alternative C (described in FEIS Section 2.7)	Yes	Meets many requirements, provides terrain following	Yes with some flexibility	Yes	Reduces conflict with airspace capped at FL260, MOA boundaries reduced, MOAs segmented for IFR arrival or departure, NOTAM announcement of airspace activation, early low training and airspace release, improved communication of airspace activation and status	Establishes avoidance areas or a protocol for avoiding historic properties including those identified by affected tribes; improvements in communication of when training could be expected and when aircraft exit low MOAs reduce safety concerns. Future avoidance areas in 3 MOAs would allow flexibility for avoidance	Yes
Powder River airspace expanded to PR-1A/B/C/D MOAs and ATCAAs, PR-2 MOA and ATCAA, and Gap A MOA and ATCAA	Yes	Does not meet size or volume for three to four two-ship training; provides topography for terrain following training	Limited flexibility for realistic training	No, does not provide realistic LFE training distances with current weapon systems	Some: Schedules activation in 2 MOAs	Establishes avoidance areas in 2 MOAs, limited flexibility for avoidance areas	No: Limited size and volume, does not meet training purpose and need, limited flexibility for impact avoidance
Powder River airspace expanded with additional PR-3 MOAs and ATCAAs	Yes	Does not meet size and volume for three to four two-ship training	Limited flexibility for realistic training	No, does not provide realistic LFE training distances with current weapon systems	Some: Schedules activation in 2 MOAs	Establishes avoidance areas in 2 MOAs, limited flexibility for avoidance	No: Limited size and volume, does not meet training purpose and need
MHRC	Yes	Yes, limited topography for terrain following training	No	Schedule and access constraints	Yes	Yes	No: Requires extensive commute; inadequate training time
UTTR	Yes	Yes	No	Schedule and access constraints	Yes	Yes	No: Requires extensive commute; inadequate training time
NTTR	Yes	Yes	No	Schedule and access constraints	Yes	Yes	No: Requires extensive commute; inadequate training time

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Table 2.11-1. Summary of Application of Alternative Selection Criteria

Selection Criteria							
Alternative Considered	***Existing Airspace***	***Size and Volume***	***Training Time and Sortie Generation***	***Provides for LFE***	***Reduces Civil Air Conflicts***	***Reduces Safety or Environmental Conflicts***	***Carried Forward for Analysis***
Lake Andes MOA	Yes	No	No	No	Some	Some	No: Inadequate volume
Tiger/Devils Lake MOAs	Yes	No	No	No	Some	Some	No: Inadequate volume; distant
Hays MOA	Yes	No	No	No	Some	Some	No: Inadequate volume; distant
PRTC with Bombing Range	No[1]	Yes	Yes	Yes	Some	No	No: Specific training can use existing ranges
Increase Funding for Commuting	Yes	Yes	No	Schedule and access constraints	Yes	Yes	No: Requires extensive commute; inadequate training time
Expand Simulation	Yes	No	No	No	Yes	Yes	No: Does not provided required training
Relocate Aircraft	Some: Capacity limited	Some: Capacity limited	Some: Capacity limited	Some: Capacity limited	Yes	Yes	No: Does not meet purpose and need
B-1 and fighter supersonic to 10,000 feet AGL	Yes	Yes	Yes	Yes	Some	No: B-1 size creates excessive overpressure from supersonic flight at 10,000 feet AGL	No: Creates excessive overpressure
All PRTC MOAs Designated Low and High	Yes	No; does not permit needed maneuvers unless MOAs scheduled together	Yes	Yes	PR-1A, PR-3, PR-4 and Gap Low and High MOAs avoid some conflicts	Reduces some potential conflicts unless MOAs scheduled together	Partially: All MOAs designated Low and High does not meet training operational requirements; PR-1A, PR-3, PR-4, and Gap Low and High MOAs carried forward

1. No Restricted Area for a bombing range

2.11.3 *ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD*

Application of the alternative identification methodology resulted in the screening of potential alternatives and a focus on the Powder River airspace. Additional potential alternatives, including concepts raised during scoping, were evaluated but did not meet the fundamental purpose and need or were otherwise determined to not be reasonable alternatives. The following describes application of the selection criteria and why each of these concepts was not carried forward for detailed analysis in this EIS.

2.11.3.1 ESTABLISHMENT OF AN INERT OR LIVE BOMBING RANGE IN CONJUNCTION WITH A PRTC PROPOSAL

The B-1 and B-52 combat missions include deployment of a wide variety of live munitions. Aircrews and ground personnel need training to be proficient for wartime engagements. Live munitions require substantial range areas to provide for Air Force and public safety. Inert munitions that do not carry an explosive charge, but may contain a shotgun shell-sized marking device, provide for some level of ordnance delivery training, but safety footprints are also large for inert munitions. Existing ranges can support a limited number of missions for training and munitions delivery. The sophistication of highly accurate, and therefore expensive, munitions is increasing the use of simulated weapons deployment for mission training. Limited access to existing ranges for munitions delivery is possible, and the increased cost of sophisticated new weapons is increasing the use of electronic ranges. There are potential long-term environmental consequences of a bombing range, and the cost of obtaining and maintaining a new range make this alternative problematic. An inert or live bombing range in conjunction with the PRTC was a Modified Alternative considered but not carried forward in this EIS.

2.11.3.2 INCREASE FUNDING FOR COMMUTING

Increased funding for more commuting flight hours would not permit aircrews to train for all the complex missions required for modern warfighting. Long average sortie durations would use extensive aircrew and airframe time without contributing to training with sophisticated weapons and sensors. Additional funding cannot compensate for limited upgraded airframe availability. Longer duration flights would increase aircraft maintenance and associated costs. Maintenance activities are phased according to hours of use and type of airframe. Longer average sortie durations would require phased maintenance more frequently relative to the combat training time achieved during the sorties. Aircrew availability decreases with longer average sortie durations and sortie generation decreases. The alternative of increased funding to support more aircrew commute time with increased airframe use and increased maintenance was considered but not carried forward in this EIS.

2.11.3.3 EXPANDED USE OF SIMULATORS

Simulators have improved over the years and represent a valuable training aid. To the maximum extent possible, B-1 crews will continue to receive training on sophisticated simulators. Even the best simulators lack the realism of actual flying and aircrews do not receive the same physical training challenges in simulators as those that occur in actual flight. Simulators cannot replicate the problems and teamwork associated with real world flying with

other aircraft. Aircrew combat mission readiness status requires many tasks, including maneuvers, low-altitude flight, and defensive tactics, to be performed in actual flight. Using simulators excludes other parts of the Air Force team essential in completing actual missions, such as maintenance, supply, and real-time weather analysis. Expanded use of simulators does not produce the type of training needed to meet the purpose and need. Expanding the use of simulators in place of the proposed PRTC was an alternative considered but not carried forward for further analysis.

2.11.3.4 RELOCATE AIRCRAFT

Commenters asked whether it would be possible to relocate the bombers from Ellsworth and Minot AFBs to other bases nearer to assets that have capacity to meet all training needs. As explained in Chapter 1.0, training airspace limits the potential for quality training at other bases, and those bases with excellent airspace face capacity limits. Adding aircraft from Ellsworth AFB and/or Minot AFB to these bases would exceed the capacity of the local training airspace and exceed the existing base support infrastructure. This would result in reduced training capabilities for all aircraft using the airspace. On August 26, 2005, the nine-member Base Realignment and Closure (BRAC) commission voted 8-1 to retain Ellsworth AFB and, thereby, continue to base and train B-1 bombers. The summary of the Chairman was that there would be no savings from moving the B-1 from one very good base to another very good, essentially equal base (Defense Base Closure and Realignment Commission Final Deliberations, August 2005).

2.11.3.5 SUPERSONIC FLIGHT AT LOWER ALTITUDE OR DURING REGULAR TRAINING IN CONJUNCTION WITH A PRTC MODIFIED ALTERNATIVE

During public presentations, the Air Force considered supersonic flight for all aircraft, including B-1s, down to an altitude of 10,000 feet AGL during day-to-day and LFE training activity. Comments during the EIS process, as well as during the Government-to-Government and Section 106 NHPA consultations, expressed concern that this aspect of the PRTC proposal could impact activities under the airspace with very high sonic boom overpressure. In addition, the public expressed concern that a sonic boom at any time could be disruptive to the region. As a result, the Air Force examined the effects of supersonic B-1 flight and those of transient fighter flights that could intermittently use the airspace.

The sonic boom overpressures presented in Figure 2-8 provide a general picture of overpressures resulting from B-1 supersonic flight and includes representative fighter aircraft that could train during a quarterly LFE. Actual overpressure would vary based on maneuvers (climb/descent, turns, acceleration/deceleration) and specific weather conditions (winds, vertical temperature/pressure profile). As the overpressures increase, the potential for damage and other impacts also grows. Table 2.8-1 presents the estimated supersonic flights in minutes per year during LFEs.

As a result of comments and additional review, the PRTC proposal was changed to only schedule supersonic training during LFEs of 1 to 3 days quarterly, totaling not more than 10 days per year. During LFEs, the proposed minimum altitude for B-1 supersonic flight has been raised from the 10,000 feet AGL presented at the scoping meetings to 20,000 feet MSL.

Fighters could conduct supersonic training down to 10,000 feet AGL only during LFEs. B-1 supersonic flight to an altitude of 10,000 feet AGL and supersonic training at any time was a modified alternative considered but not carried forward for further analysis in this EIS.

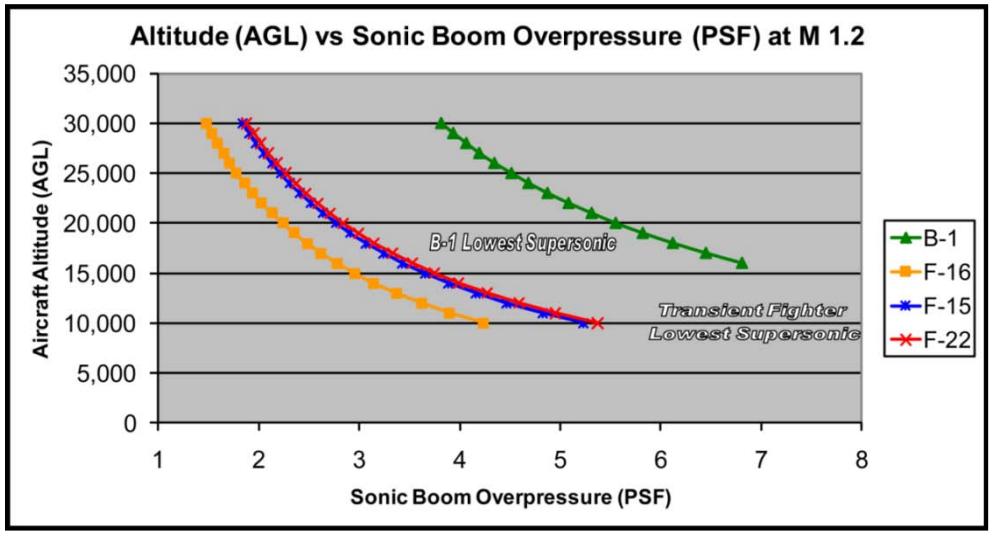

Figure 2-8. Altitude vs. Sonic Boom Overpressure

2.11.3.6 Powder River Airspace Expanded with Additional PR-1A/B/C/D and Gap A MOAs and ATCAAs

This alternative would include the following elements (as illustrated and described in Figure 1-2): (1) expanding and modifying the existing Powder River A/B MOAs and the Crossbow and Powder River ATCAAs into the PR-2 MOA and associated ATCAAs; (2) establishing new PR- MOA complex and associated ATCAAs to the west of the PR-2 MOA and ATCAAs; and (3) establishing the Gap A MOAs and ATCAAs. This would be an extension of existing airspace into an area that would provide topography for terrain following training. The expanded airspace would improve distances for existing B-1 weapon capabilities, but it would not be of sufficient size to permit realistic LFE training. There would be a reduced impact to civil aviation compared to the proposed PRTC airspace (see Figure 1-2). Under this alternative, the additional training airspace would be concentrated in areas overlying populated portions of the Northern Cheyenne and Crow Reservations. The PR-1A/B/C/D MOAs in combination with the PR-2 MOA would not provide airspace flexibility to adequately avoid seasonal noise-sensitive locations under the airspaces. The addition of the PR-1A/B/C/D, and Gap A MOAs and ATCAAs would not meet the purpose and need for three to four simultaneous training flights, would not provide for realistic distance or LFE training, and would not have adequate training airspace to mitigate impacts by avoidance.

2.11.3.7 Powder River Airspace Expanded with Additional PR-3 and Gap B MOAs and ATCAAs

This alternative would include the following elements (as illustrated and described in Figure 1-2): (1) expanding and modifying the existing Powder River A/B MOAs and the Crossbow and Powder River ATCAAs into the PR-2 MOA and ATCAAs; (2) establishing new PR-3

MOAs and ATCAAs to the north of the PR-2 MOA and ATCAAs; and (3) establishing the Gap B MOAs and ATCAAs. This alternative would not provide extensive topography for terrain following training. The addition of the PR-3 MOAs would provide some additional distances for existing B-1 weapon capabilities but would not be of sufficient size to permit realistic LFE training. The PR-3 MOAs/ATCAAs would have some benefit to B-52 access, although ATCAAs in this area are heavily used by commercial carriers. There would be a reduced impact to civil aviation compared to the proposed PRTC airspace (see Figure 1-2). Training would be concentrated in areas overlying ranching and agricultural activities, and the additional PR-3 MOAs would not provide flexibility to adequately avoid seasonal noise-sensitive locations within the airspace by scheduling other airspaces. The addition of the PR-3 and Gap B MOAs and ATCAAs would not meet the purpose and need for three to four simultaneous training flights, would not provide for realistic distance or LFE training, and would not provide adequate training airspace to mitigate impacts by avoidance.

2.11.3.8 DEVELOP/ESTABLISH A NEW AIRSPACE COMPLEX

Establishment of a new airspace complex would require locating a suitable area with attributes as described in Section 2.10.4. Ground-based electronic combat training facilities are critical to this proposed action and the only existing facilities in the local area are within the Powder River airspace, Belle Fourche ESS. No other areas in the vicinity of Ellsworth AFB or Minot AFB present the combat training facilities necessary to establish a new airspace complex. Relocating the existing Belle Fourche ESS is not feasible or desirable. Extended ranges for threats and for addressing threats require training aircraft to address the threats from greater distances. Enemy forces have developed capabilities to threaten targets from greater distances and varied locations. Expanding airspace in conjunction with existing capabilities efficiently uses and builds upon existing infrastructure. Additionally, AFI 13-201 encourages the use of existing suitable airspace in lieu of establishing new airspace. Developing or establishing a separate new airspace complex was a Modified Alternative considered but not carried forward.

2.11.3.9 UTILIZATION OF OTHER EXISTING AIRSPACE COMPLEXES

In accordance with AFI 13-201, *Airspace Management*, paragraph 1.2.3.6, Headquarters Air Combat Command (ACC) has validated the justification for additional airspace capability to support Ellsworth AFB. All existing Special Use Airspace (SUA) in the vicinity of Ellsworth AFB and Minot AFB was reviewed and determined to be unsuitable for this proposed action prior to selecting the Powder River airspace as the best location. Existing military airspace presented in Figure 1-1 and Table 2.11-1 were reviewed to determine what existing airspace could be the focal point for expanded airspace to meet the purpose and need for bomber training with new technologies, sensors, and missions. The Lake Andes MOA, the Tiger and Devils Lake MOAs, and the Hays MOA were considered but do not provide training capabilities for current bomber systems and generally do not have low-level training capabilities with the dimensions needed for high-speed bomber training. Therefore, these MOAs were not carried forward for further consideration.

2.11.4 *OVERVIEW OF THE PROPOSED PRTC*

The proposed PRTC action would provide airspace and ground assets to conduct local realistic training for Ellsworth and Minot AFBs. This EIS evaluates three alternatives that could fulfill the purpose and need defined in Chapter 1.0 and the No-Action Alternative, which would not fulfill training requirements. The Modified Alternative A best meets the purpose and need by providing five combinations of MOA/ATCAA airspaces with improved training capability. Modified Alternatives B and C do not provide the same level of low-altitude training capability with each providing three combinations of MOA/ATCAA airspaces rather than the five under the Modified Alternative A. Modified Alternative C does not provide the training capability of the Modified Alternative A but is superior to Modified Alternative B because Modified Alternative C includes PR-1A, PR-1B, PR-1C, and PR-1D MOAs. PR-1B and PR-1D are the only proposed airspaces containing 1,000 feet terrain elevation variations within 10 NM to meet B-1 terrain following training requirements (see Section 2.10.4).

The proposed PRTC action would expand the current Powder River MOA into four MOA complexes for day-to-day training (Table 2.11-2). Additional MOAs/ATCAAs (Table 2.11-3), would be used to link the airspace for not more than 10 days of LFEs per year. Each MOA would have overlying ATCAAs, which would extend from FL180 to FL260.

Table 2.11-2. MOA/ATCAA Complexes

MOA/ATCAA	*Description*
Powder River 1 MOA/ATCAA complex (PR-1)	Consists of PR-1A, PR-1B, PR-1C, and PR-1D MOAs, each of which would be stratified vertically into a Low MOA, a High MOA, and an ATCAA.*
Powder River 2 MOA/ATCAA complex (PR-2)	Consists of the PR-2 MOAs, which would be stratified vertically into a Low MOA, a High MOA, and an ATCAA*
Powder River 3 MOA/ATCAA complex (PR-3)	Consists of the PR-3 MOAs, which would be stratified vertically into a Low MOA, a High MOA, and an ATCAA*
Powder River 4 MOA/ATCAA complex (PR-4)	Consists of the PR-4 MOA, which would be stratified vertically into a Low MOA[1], a High MOA, and an ATCAA*
Gateway West ATCAA	Modified and expanded from existing Gateway ATCAA

Notes: 1. Only with Modified Alternative B
* For the purposes of the definitions above:
Low MOA = altitudes from 500 feet AGL up to, but not including 12,000 feet MSL
High MOA = altitudes from 12,000 feet MSL up to, but not including 18,000 feet MSL
ATCAA = altitudes from 18,000 feet MSL up to 26,000 feet MSL

Table 2.11-3. Large Force Exercise Additional MOA/ATCAA Complexes

MOA/ATCAA	*Description*
Gap A MOA/ATCAA	Separate PR-1 and PR-2, would consist of a Low MOA, a High MOA, and an ATCAA*
Gap B MOA/ATCAA	Separate PR-2 and PR-3, would consist of a Low MOA, a High MOA, and an ATCAA*
Gap C MOA/ATCAA	Separate PR-3 and PR-4, would consist of a Low MOA[1], a High MOA, and an ATCAA*
Gateway East ATCAA	Modified and expanded from existing Gateway ATCAA *

Notes: 1. Gap C Low MOA only with Modified Alternative B.
* For the purposes of the definitions above:
Low MOA = altitudes from 500 feet AGL up to, but not including 12,000 feet MSL
High MOA = altitudes from 12,000 feet MSL up to, but not including 18,000 feet MSL
ATCAA = altitudes from 18,000 feet MSL up to 26,000 feet MSL

The current Powder River airspace is essentially used up by one or two B-1 aircraft training together with new technologies, sensors, and weapon systems. The Proposed Action would modify and add to the existing Powder River airspace to establish the PRTC with improved training opportunities. The PRTC would permit four to eight B-1s to be efficiently launched and trained in local, high quality airspace. The Proposed Action would restructure and reconfigure the existing Powder River MOAs and associated ATCAAs, establish up to three additional MOA/ATCAA combinations, and include Gap MOAs and ATCAAs, which could be used a maximum of once per quarter for 1 to 3 days, not to exceed 10 days per year, to link up to five MOA/ATCAA airspaces to create a versatile, realistic training complex for LFEs. LFEs would permit approximately 20 aircraft of various types to train as the comprehensive team they must be in combat.

Proposed changes to the airspace would permit increased training flights dispersed throughout the MOAs and ATCAAs. PRTC would allow for almost a full range of required combat training missions, including LFEs with various aircraft types. The proposed PRTC would also support use of defensive countermeasure (chaff and flares) above 2,000 feet AGL and, during LFEs, supersonic flight above 20,000 feet MSL for B-1s and above 10,000 feet AGL for fighter aircraft. Fighter aircraft training up to, and including supersonic speeds, would train with the bombers during LFEs.

The proposed PRTC action does not allow multiple aircraft types to conduct unrestricted air-to-air and air-to-ground engagements that require altitudes above FL260. While a high altitude (above FL260) requirement is still valid, after DoD/Air Force consultation with the FAA and other NAS stakeholders, it was determined to be in the best interest and efficiency of the NAS to no longer incorporate this high altitude requirement in the current proposal. High altitude activities would be accomplished by utilizing limited, off-station training opportunities.

2.11.5 *PREFERRED ALTERNATIVE*

The Air Force considers the Modified Alternative A to be the preferred alternative. The Modified Alternative A best meets the purpose and need by providing combinations of MOA/ATCAA airspaces with the most improved training capability. Modified Alternatives B and C do not provide the same level of low-altitude training capability with each providing fewer MOA/ATCAA airspaces than the Modified Alternative A. Modified Alternative C does not provide the training capability of the Modified Alternative A but is superior to Modified Alternative B because Modified Alternative C includes PR-1A, PR-1B, PR-1C, and PR-1D MOAs. PR-1A, PR-1B, PR-1C, and PR-1D are the only proposed airspaces containing the minimum 1,000 feet terrain elevation variations within 10 NM needed to meet B-1 terrain following training requirements (see Section 2.7.6).

The Powder River airspace currently provides B-1s with 46 percent of required training sorties and B-52s with 31 percent of required training sorties. The Air Force estimates that the Modified Alternative A as proposed, best meets the purpose and need described in Chapter 1.0 and would provide for approximately 85 percent of aircrew training sortie requirements. The Modified Alternative A would increase training efficiency and expend finite flying hours on high quality training with new capabilities and missions rather than low-value commuting to remote

locations. PRTC would have an altitude cap and would not include any air-to-ground inert or live ordnance range. This means both the B-1s and B-52s would continue to fly to remote training locations such as NTTR, UTTR, and the MHRC to complete approximately 15 to 25 percent of their required training sorties.

Modified Alternative B meets many of the identified needs and provides approximately 60 to 65 percent of B-1 and B-52 training sortie requirements locally with some reduced quality B-1 training when compared with the Modified Alternative A. Modified Alternative C provides approximately 70 to 75 percent B-1 and B-52 required training sorties locally with some higher quality training for B-1 aircrews than Modified Alternative B because training topography is included under PR-1A/B/C/D. The No-Action Alternative retains the structure and use of the existing Powder River airspace. Bombers from Ellsworth AFB and Minot AFB would continue to search for new ways to obtain combat mission capability.

2.12 PUBLIC AND AGENCY INVOLVEMENT

2.12.1 *PUBLIC INVOLVEMENT*

The Air Force initiated early public and agency involvement in the environmental analysis of the proposed PRTC. The Air Force published newspaper advertisements, sent out press releases, and distributed Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) letters. These announcements solicited public and agency input on the proposal and invited the public and agencies to attend community outreach scoping meetings on the PRTC in Montana, North Dakota, South Dakota, and Wyoming.

2.12.1.1 DRAFT EIS PUBLIC COMMENT PROCESS

The DEIS public review and comment process began with EPA's publication of a Notice of Availability (NOA) for the DEIS in the *Federal Register* on August 20, 2010. In the period between August 15-25, 2010, notices of the 19 public hearings were sent to 31 newspapers in the four states underlying the proposed PRTC: in Montana, *the Big Horn County News, The Independent Press, Miles City Star, The Ekalaka Eagle, Fallon County Times, Billings Gazette,* and *Powder River Examiner*; in North Dakota, *The Bowman County Pioneer, Advertiser, Carson Press, Grant County News, The Dickinson Press, Adams County Record, The Herald, The Bismarck Tribune,* and *The Finder*; in South Dakota, *Butte County Post, Black Hills Pioneer, Nation's Center News, Bison Courier, Lemmon Leader, Lakota Country Times, Rapid City Journal,* and *Meade County Times-Tribune*; and in Wyoming, *The Sheridan Press, The Advertiser, The Gillette News Record,* and *The Sundance Times*. In addition, notices were placed in three Native American publications: *Native Sun News, Original Briefs,* and *Indian Country Today*.

The Air Force distributed the DEIS to individuals who requested one, to libraries and other public repositories, and to agencies on the project mailing list. In addition, the DEIS was posted in PDF format via the publicly-accessible website www.accplanning.org as well as the Ellsworth AFB public website (http://www.ellsworth.af.mil/).

Several methods were used to advertise the availability of the DEIS and provide information concerning the public hearings, including postcards, newspaper display ads, flyers, and letters accompanying the direct mailing of the DEIS. These materials announced the PRTC proposal,

the need for the proposal, the purpose of the public hearings, locations and times of the public hearings (see Table 2.12-1), and listed points of contact for obtaining more information. In August and early September 2010, flyers and postcards announcing the public hearings were distributed to the project mailing list.

Table 2.12-1. Public Hearings

Date	*Location*	*Public and Agency Attendees*	*Elected Officials Present*
South Dakota (SD)			
Tuesday September 14, 2010 6:00-8:00 p.m.	Holiday Inn 505 North 5th Street Rapid City, SD	47	3
Wednesday September 15, 2010 6:00-8:00 p.m.	Community Center (Dakota Room) 1111 National Street Belle Fourche, SD	28	1
Friday September 17, 2010 6:00-8:00 p.m.	Harding County Memorial Recreation Center West Allison Street Buffalo, SD	22	2
Monday September 20, 2010 6:00-8:00 p.m.	Bison School Cafeteria 200 East Carr Street Bison, SD	50	2
North Dakota (ND)			
Tuesday September 21, 2010 6:00-8:00 p.m.	City Hall 99 2nd Street East Dickinson, ND	6	0
Wednesday September 22, 2010 6:00-8:00 p.m.	City Hall Meeting Room 101 1st Street SW Bowman, ND	46	3
Thursday September 23, 2010 6:00-8:00 p.m.	Elgin Community Center 305 North Main Street Elgin, ND	46	1
Tuesday September 28, 2010 6:00-8:00 p.m.	Wachter Middle School 1107 South 7th Street Bismarck, ND	25	2
Montana (MT)			
Tuesday October 12, 2010 6:00-8:00 p.m.	Powder River County District High School 500 North Trautman Avenue Broadus, MT	42	1
Wednesday October 13, 2010 6:00-8:00 p.m.	Baker High School 1015 South Third Street Baker, MT	30	3
Thursday October 14, 2010 6:00-8:00 p.m.	St. Joan of Arc Parish Hall Church Street Ekalaka, MT	33	1
Friday October 15, 2010 1:30-3:30 p.m.	Miles Community College 2715 Dickinson Miles City, MT	15	1
Friday October 15, 2010 6:00-8:00 p.m.	Miles Community College 2715 Dickinson Miles City, MT	16	1
Wednesday October 20, 2010 6:00-8:00 p.m.	Isabel Bills Community Learning Center 520 Poplar Drive Colstrip, MT	4	2

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Table 2.12-1. Public Hearings

Date	*Location*	*Public and Agency Attendees*	*Elected Officials Present*
Friday October 22, 2010 6:00-8:00 p.m.	Hardin Chamber of Commerce 10 East Railroad Street Hardin, MT	11	3
Tuesday October 26, 2010 6:00-8:00 p.m.	Hilton Garden Inn 2465 Grant Road Billings, MT	26	3
Wyoming (WY)			
Thursday September 16, 2010 6:00-8:00 p.m.	Sundance Secondary School 1016 East Cleveland Sundance, WY	8	4
Monday October 18, 2010 6:00-8:00 p.m.	Allen Mickelson Fire Training Center 701 Larch Gillette, WY	20	4
Tuesday October 19, 2010 6:00-8:00 p.m.	Sheridan Senior Center North Entrance, 211 Smith Street Sheridan, WY	14	2
	Total	**489**	**39**

During the comment period, the Air Force held 19 formal public hearings in South Dakota, North Dakota, Montana, and Wyoming during September, October, and December 2010 in towns centrally located in geographic areas potentially affected by the proposal. The Air Force encouraged public and agency representatives to provide verbal and written comments during the public hearings or mail written comments on or before the comment period closing date of November 15, 2010. By request, the comment period was reopened and extended to January 20, 2011, nine weeks beyond the original timeline. The Air Force received a broad variety of verbal and written comments. While all comments submitted were fully considered by the Air Force, only substantive comments were carried forward for further action. Substantive comments are regarded as those comments that challenge the analysis, methodologies, or information in the DEIS as being factually inaccurate or analytically inadequate; that identify impacts not analyzed or develop and evaluate reasonable alternatives or feasible mitigations not considered by the Air Force; or that offer specific information that may have a bearing on the decision, such as differences in interpretations of significance, scientific, or technical conclusions. Nonsubstantive comments, which do not require an Air Force response, are those that express a conclusion, an opinion, or a vote for or against the proposal itself, or some aspect of it; that state a position for or against a particular alternative; or that otherwise state a personal preference or opinion.

As part of the PRTC Government-to-Government consultation, the PRTC team also met in various settings with leaders and members of the four Native American tribes under the proposed airspace during the public comment period (Table 2.12-2). A formal hearing was conducted and information was provided comparable to other public hearings.

Table 2.12-2. Native American Consultations

Date	*Location*	*Public and Agency Attendees*
Monday September 27, 2010 10:30 a.m.-12:00 p.m.	Long Soldier District Building Fort Yates, ND	14
Wednesday October 25, 2010 10:30 a.m-12:00 p.m.	Auditorium Crow Agency, MT	141
Tuesday December 7, 2010 6:00-8:00 p.m.	Northern Cheyenne Capital Building Lame Deer, MT	13
Thursday December 9, 2010 10:00 a.m.-12:30 p.m.	Tribal Administration Building Eagle Butte, ND	27
	Total	**195**

Table 2.12-3 summarizes public comments on the DEIS. The sections where the public comments are primarily addressed are included in Table 2.12-3. In many cases, the comment is addressed in other resource sections in addition to the primary one referenced. For example, the effects of noise on ranching operations are addressed in the reference section as well as under Noise, Safety, and other sections. Environmental Justice addresses potential disproportionate adverse health impacts on minority or low income populations. As the largest minority group in the affected area, and as a group with a high poverty rate, Native American comments are specifically addressed. The reader is encouraged to review the entire EIS and not just the sections referenced in Table 2.12-3.

Table 2.12-3. Review of DEIS Comments

Topic	*Public, Agency, or Tribal Comments*	*Primary EIS Section*
Proposed Action	Details of proposed training	2.11
	Alternatives to action	2.0
	Opposition to "military expansion"	2.3.1
	General opposition to proposal purpose or need	2.4, 2.11
	Support for proposal	2.4
Airspace/Air Traffic	Restriction of airspace	4.1.3.1.3
	Radio/radar coverage and communication issues	3.3.3.1
	MOA navigation and checking for MOA activity	4.10.3.1.2
	General aviation (agricultural operations)	4.10.3.1.2
	GPS-IFR approaches should be included for airports under MOA	4.1.4.1.3
	Avoidance areas	4.9.3
	Air Force jets outside of MOA boundary	4.1.3.1.2
	Air Force "buzzing" livestock, people, buildings	4.1.3.1.2
Noise	Noise pollution	4.2
	General negative impacts from noise	4.2.3
	Disruptive vibrations from sonic booms	4.2.1.4
	Property damage from sonic booms	4.2.1.5
	People (startle effect)	4.2.3
	continued on next page…	

Table 2.12-3. Review of DEIS Comments

Topic	*Public, Agency, or Tribal Comments*	*Primary EIS Section*
	Booms (general fear/annoyance factor)	4.9.3
	Might cause health impacts	4.2.3.5
	Noise effects on domestic animals	4.6.3.1
Safety	Flight safety	4.3.3.1.2
	Impacts from vortices	4.3.3.1.2
	Mid-air collision avoidance	4.1.4.1.3
	Supersonic effects and flight safety	4.3.3.1.2
	Life flight issues (disruption/interference)	4.10.3.1.2
	Fire-fighting planes (disruption/interference)	4.10.3.1.2
	Chaff ingestion by livestock and wildlife	4.6.3.1
	Fire danger—flares	4.3.3.1.3
	Flare fire-energy resource	4.3.3.1.3
	Dud flare safety	4.3.3.1.3
	Air Force response to fires	4.3.3.1.3
Air Quality	General negative effects on air quality	4.4.3.1
	Aircraft emissions effects on human health	4.4.3.1
	Cumulative effects from aircraft emissions and coal	4.4.3.1
	Aircraft emissions (visual impediments)	4.4.3.1
	Cloud formation and sonic booms	4.2.3.10
Physical Sciences (soils, water)	Chaff/flare effects on soil	4.5.3.1
	Chaff/flare effects on water	4.5.3.1
	General chaff litter	4.9.3.1
	Trash/residual materials (falling from aircraft)	4.3.3.1.3
	Who is responsible for cleanup of chaff and “aluminum foil”?	4.3.3.1.3
	Cumulative chaff/flare buildup effects on soil over time	4.5.3.1
	Effects of flare constituents on soils	4.5.3.1
	Effects of fire on soils	4.6.3.1
	Protection of resources against fire, chaff/flare	4.6.3.1
Biological Sciences	Overflight noise effects on wildlife	4.6.3.1
	Wildlife (startle effect)	4.6.3.1
	Overflight noise effects on livestock (cows, sheep, goats, etc.)	4.6.3.1
	Livestock (spooking/stampeding)	4.10.3.1.5
	Calving interference	4.10.3.1.5
	Chaff/flare impacts on livestock	4.6.3.1
	Chaff/flare impacts on wildlife	4.6.3.1
	Chaff/flare impacts on vegetation	4.5.3.1
Cultural and Historic Resources	Conflict with tribal ceremonies	4.7.2.1
	Surveillance of culturally sensitive ceremonies/areas	4.7.2.1
	Impacts to sensitive sites (e.g., Devils Tower, Wind Cave, Bear Butte)	4.7.3.1
	Overflight of tribal lands	4.7.2.1
Land Use	General quality of life (solace, disruption of the landscape)	4.8.2
	Low-level flight impacts on recreation/outdoor activities	4.8.3.1
	Concerns about restrictions to personal land uses	4.9.1
	Overflight effects on tourist activities	4.8.3.1
	Impacts to recreational flying (e.g., skydiving, gliding, parasailing)	4.1.3.1.4

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Table 2.12-3. Review of DEIS Comments

Topic	*Public, Agency, or Tribal Comments*	*Primary EIS Section*
Socioeconomics and Environmental Justice	Energy generation conflicts	4.10.3.1.4
	Hampers development of oil resources	4.10.3.1.4
	Impacts to local oil and gas companies	4.10.3.1.4
	Impacts on wind farms	4.10.3.1.4
	Commercial flight interference	4.1.3.1.3
	General impacts to economy	4.10.3
	Economic impacts to local airports	4.10.3.1.2
	Cost impacts to private pilots (landing fees, fuel, etc.)	4.10.3.1.2
	Loss of visitors to motels/restaurants	4.8.3.1
	Fair compensation for property damages, decreased values, and crop damages	4.3.3.1.3
	Decreased property values	4.10.3.1.1
	General impacts to agriculture	4.10.5.1
	Sonic boom effects on livestock production (milk, calving)	4.10.3.1.5
	Death and loss of livestock due to stampeding	4.3.3.1.3
	Time loss due to spooked and scattered livestock	4.10.3.1.5
	Effects on ranching livelihood	4.8.3.1
	Cause cattle conception/pregnancy rates to decline	4.6.3.1
	Physical/psychological stress to livestock hampers productivity	4.6.3.1
	Weather Modification Flight Interference	4.10.3.1.2
	Indirect economic impacts: effects on agricultural production	4.10.3.1.2
	Indirect economic impacts from flare fire	4.10.3.1.6
	Breach of tribal sovereignty	4.7.2.1
	Hunting seasons interference	4.8.3.1
Hazardous Materials	Aluminum oxide from chaff	4.5.3.1
	Chemical spraying at emitter sites	4.5.3.1

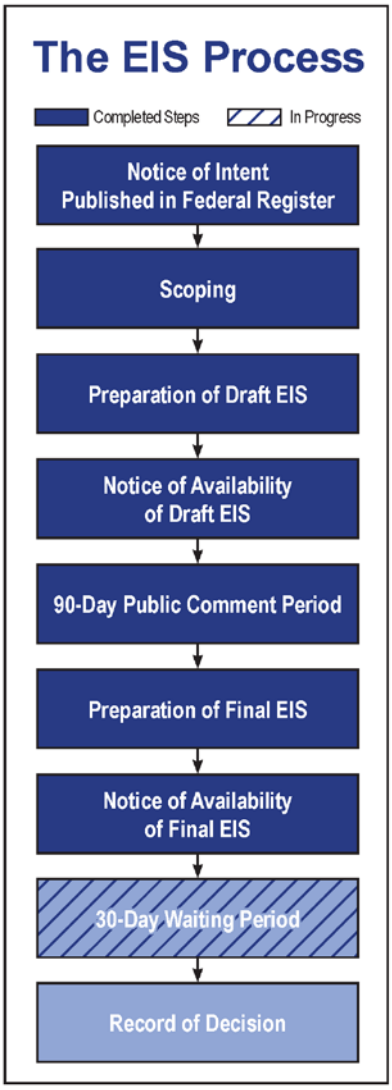
2.12.2 *AIR FORCE AND FAA NEPA/EIAP PROCESS*

This PRTC EIS has been prepared in accordance with NEPA (42 USC 4321-4347), NEPA implementing regulations of the Council of Environmental Quality (CEQ) 40 CFR § 1500-1508), and 32 CFR 989, *et seq*., *Environmental Impact Analysis Process* (formerly known as AFI 32-7061). In addition, this EIS satisfies applicable requirements in the following FAA orders (available online at www.faa.gov): (1) Order 1050.1E, Environmental Impacts: Policies and Procedures (through Change 1); and (2) Order JO 7400.2K Procedures for Handling Airspace Matters (through Change 2). An EIS is prepared as a tool for compiling information about a proposal and providing a full and fair discussion of environmental impacts to the natural and human environment. The Air Force and FAA analyze alternatives to ensure that fully informed decisions are made after review of the comprehensive, multidisciplinary analysis of potential environmental consequences.

Certain FAA Environmental Impact Resource Categories/Subcategories are not analyzed because there is not potential for the Proposed Action to affect them. These include: Coastal Resources, Construction Impacts, and Wild and Scenic Rivers (see Table 2.12-4). The Air Force evaluates resources based on those with a potential to be affected by the Proposed Action and

a summary of the potential impacts is presented in Section 2.13. In addition to the resources identified in Table 2.12-4, the Air Force included an evaluation of Airspace/Air Traffic given the components of the Proposed Action.

2.12.2.1 FEIS AND RECORD OF DECISION (ROD)



The 100 day Public/Agency Review period provided the public and agencies the opportunity to review the DEIS and to provide comments on the analysis. As explained in Section 2.12, the 19 hearings provide direct feedback to the Air Force from the public and agencies. Oral and written comments submitted at public hearings and those received through the mail by the Air Force were given equal consideration in the preparation of the FEIS.

This FEIS addresses comments submitted during the public comment period or presented at public hearings that address matters within the scope of the EIS. All written comments and DEIS hearing transcripts are included in this FEIS (see Appendix G). A Notice of Availability was published in the *Federal Register* to announce availability of the FEIS. The FAA, as a cooperating agency, can adopt the FEIS as the required NEPA documentation to support FAA SUA decisions.

The FEIS NOA publication in the *Federal Register* begins a 30-day waiting period before a ROD is signed. The ROD will identify which action has been selected by the Air Force decision maker and what management actions or mitigation measures would be carried out to reduce, where possible, adverse impacts to the environment. The ROD specifies the entities responsible for implementing mitigations and the source of funds to implement mitigations.

The goal is for this EIS to satisfy the NEPA requirements for both the FAA and the Air Force. The relevant statutes, regulations, and guidelines are presented in Appendix F. The FAA's federal actions are dependent upon the SUA proposal.

2.12.3 *FAA IMPACT ANALYSIS CATEGORIES*

The FAA considers analysis of an array of environmental resources similar to that of the Air Force. Table 2.12-4 lists those resource analysis categories, as identified in FAA Order 1050.1E (2006), and correlates them with the resources discussed in the PRTC EIS.

Table 2.12-4. Impact Analysis Categories Identified in FAA Order 1050.1E (2006)

FAA Impact Analysis Categories	*How Addressed by PRTC EIS Analyses (relevant PRTC EIS sections in parentheses)*	*Comment*
Air Quality	Air Quality (3.4, 4.4)	
Climate	Climate (3.4, 4.4)	Greenhouse Gas Emissions
Coastal Resources	Not Applicable	Project airspace is not over or near coast line. Not Applicable.
Compatible Land Use	Land Use and Recreational Resources (3.8, 4.8)	FAA uses the concept of land-use compatibility as the accepted measure of aircraft noise effect. A significant noise impact would occur if analysis shows that the proposed action will cause noise sensitive areas to experience an increase in noise of day-night average sound level (DNL) 1.5 decibels (dB) or more at or above DNL 65 dB noise exposure when compared to the no action alternative for the same timeframe. The FAA recognizes that there are settings where the 65 DNL standard may not apply. Special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within national parks, national wildlife refuges and historic sites, including traditional cultural properties.
Construction Impacts	Not Applicable	No proposed construction associated with project airspace. Not applicable.
Department of Transportation Act: Sec. 4(f)	Not Applicable	Designation of airspace for military flight operations is not subject to Section 4(f) (49 USC 303 note).[1]
Farmlands	Land Use (3.8, 4.8)	No potential to convert farmland to non-agricultural uses. Not applicable.
Fish, Wildlife, and Plants	Biological Sciences (3.6, 4.6)	
Floodplains	Physical Sciences (3.5, 4.5)	No actions will encroach on any floodplain beneath the project airspace. Not applicable.
Hazardous Materials, Pollution Prevention, and Solid Waste	Safety (3.3, 4.3), Physical Sciences (3.5, 4.5), and Socioeconomics (3.9, 4.9)	No increase in use of hazardous materials or generation of solid waste.
Historical, Architectural, Archeological, and Cultural Resources	Cultural and Historic Resources (3.7, 4.7)	
Light Emissions and Visual Impacts	Land Use and Recreational Resources (3.8, 4.8)	Light Emissions: FAA considers the extent to which any lighting associated with an action will create an annoyance among people in the vicinity or interfere with their normal activities. Visual Impacts: Visual, or aesthetic, impacts are inherently more difficult to define because of the subjectivity involved. Aesthetic impacts deal more broadly with the extent that the development contrasts with the existing environment and whether the jurisdictional agency considers this contrast objectionable. The visual sight of aircraft, aircraft contrails, or aircraft lights at night, particularly at a distance that is not normally intrusive, should not be assumed to constitute an adverse impact.

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Table 2.12-4. Impact Analysis Categories Identified in FAA Order 1050.1E (2006)

FAA Impact Analysis Categories	*How Addressed by PRTC EIS Analyses (relevant PRTC EIS sections in parentheses)*	*Comment*
Natural Resources and Energy Supply	Socioeconomics (3.9, 4.9)	Aircraft would continue to use fuel under all alternatives; no significant impacts.
Noise	Noise (3.2, 4.2)	Day-night average sound levels under the proposed PR-1, PR-3 and PR-4 would change from the existing level of less than 45 decibels (dB) to a calculated range of <45 to 48 dB. A significant noise impact would occur if analysis shows that the proposed action will cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the no action alternative for the same timeframe. For example, an increase from 63.5 dB to 65 dB is considered a significant impact. Special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within national parks, national wildlife refuges and historic sites, including traditional cultural properties.
Secondary (Induced) Impacts	Discussed in each section and in cumulative impacts (5.0)	Induced impacts will normally not be significant except where there are also significant impacts in other categories, especially noise, land use, or direct social impacts.
Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks	Socioeconomics (3.9, 4.9) Safety (3.3, 4.3) Environmental Justice (3.10, 4.10)	Environmental Justice: When FAA determines that a project has significant effects pursuant to the National Environmental Policy Act (NEPA), the potential for disproportionately high and adverse effects pursuant to environmental justice must be analyzed. FAA follows DOT Order 5610.2(a) in analyzing environmental justice. Children's Environmental Health and Safety Risks: Disproportionate health and safety risks to children may represent a significant impact. Socioeconomic Impacts Factors to be considered in determining impact in this category include, but are not limited to, the following: (1) Extensive relocation of residents is required, but sufficient replacement housing is unavailable; (2) Extensive relocation of community businesses, that would create severe economic hardship for the affected communities; (3) Disruptions of local traffic patterns that substantially reduce the levels of service of the roads serving the airport and its surrounding communities; (4) A substantial loss in community tax base.
Water Quality	Physical Sciences (3.5, 4.5)	
Wetlands	Biological Sciences (3.6, 4.6)	No actions would encroach on any wetlands beneath the project airspace.
Wild and Scenic Rivers	Not applicable	No wild and scenic rivers are designated beneath project airspace; no adverse impacts.

Notes: 1. TREATMENT OF MILITARY FLIGHT OPERATIONS, Pub. L. 105–85, div. A, title X, § 1079, Nov. 18, 1997, 111 Stat. 1916, provided that: ''No military flight operation (including a military training flight), or designation of airspace for such an operation, may be treated as a transportation program or project for purposes of section 303(c) of title 49, United States Code.''

Source: FAA Order 1050.1E

In accordance with Air Force and FAA procedures, the EIS and Airspace Proposal are coordinated in terms of airspace parameters, and the EIS includes mitigation measures which match the Airspace Proposal. Consultations have been conducted with other agencies (see Appendix E), and Government-to-Government consultations have been conducted with tribes (see Appendix N).

FAA Order JO 7400.2K explains that, where proposed MOAs extend below 1,200 feet AGL as a result of mission requirements, the Air Force agrees to provide reasonable and timely aerial access to underlying private or public use land. The mitigations described in Section 2.3.1 include such provisions as advance scheduling, information sources, and communication channels. These provisions enable reasonable and timely aerial access to public airports and private airfields beneath the proposed MOAs. Provisions are included to accommodate instrument arrivals/departures with minimum delay and for terminal Visual Flight Rules (VFR) and IFR flight operations. The proposed MOAs exclude the airspace 1,500 feet AGL and below within a 3 NM radius of airports available for public use. Where the MOA floor extends below 1,200 feet AGL over a charted private airport, the Air Force has communication provisions to provide information to the airport operators to determine whether there would be any conflict between MOA activity and airport operations.

2.13 COMPARISON OF ENVIRONMENTAL CONSEQUENCES

Table 2.13-1 summarizes the analysis included in Chapter 4.0, *Environmental Consequences*, and compares the potential environmental consequences of the Modified Alternative A, Modified Alternative B, Modified Alternative C, and the No-Action Alternative.

Table 2.13-1. Summary of Impacts by Resource (Page 1 of 18)

Environmental Resource	*Modified Alternative A*
Airspace/Air Traffic (EIS Section 4.1)	Airspace will be scheduled in advance and NOTAMs will be issued 2 to 4 hours prior to the initiation of military training in the airspace to provide near real-time information to civil aircraft. Section 2.3 lists multiple airspace mitigations designed to reduce effects upon airspace use and users. Mitigations include issuing NOTAMs to announce the activation of scheduled airspace, changing the shape of the proposed airspace to accommodate civil aviation, and restricting training to below FL260. The Air Force would not activate or use PR-1A, 1B, 1C, 1D, or PR-3 Low MOAs for Modified Alternative A or C or PR-3 or PR-4 Low MOAs for Modified Alternative B unless communication to recall training aircraft is in place. Proposed MOAs/ATCAAs have been adjusted to avoid traffic at major airports. MOAs were segmented high and low to support civil traffic. If all the MOAs were activated at one time for military training, the training could impact an estimated 86 civilian aircraft flights daily under the airspace during Monday through Thursday. If all the MOAs were activated Friday morning, there would be approximately 30 civilian aircraft operations impacted. Impacts include an estimated up to 4 hours of ground holds, diversions, or needing to fly VFR see-and-avoid in an active MOA. IFR arrivals and departures to airports within an active MOA would be accomplished by temporarily relocating the training aircraft to another airspace and vectoring the IFR aircraft. MOAs/ATCAAs are adjusted to avoid traffic at major airports. MOA published times of use are on FAA charts, daily scheduling is provided on sites such as http://sua.faa.gov, and NOTAMs would be issued for when a MOA is active. Information by NOTAM about MOA activation and expeditious release of the active MOA are designed to reduce uncertainty and support civil aviation. MOAs would not normally be scheduled from Friday noon through Monday morning to support higher volume weekend civil operations. Civil aircraft could fly VFR using see-and-avoid, weather permitting. Training aircraft will be relocated from an area that needs emergency access, as is currently done in the Powder River airspace, and the MOA would be deactivated to allow IFR emergency and related arrivals and departures from an airport under the MOA. Agricultural applicators with a near gross weight aircraft expressed concerned that low-altitude training could affect operations. Increased information with NOTAM activation/deactivation of MOAs could reduce uncertainty, although aerial applications are driven by meteorological conditions. Coordination and communication on weather modification, aerial mapping, recreational gliding, and skydiving could avoid potential impacts. Daily training below FL230 avoids impacts to most overflying commercial traffic. LFEs would be scheduled at least 30 days in advance for 1 to 3 days quarterly, not to exceed 10 days per year. An LFE day could impact an estimated 78 civil aviation flights for a period of up to 4 hours. Any airspace constraints or communication requirements could be perceived as an impact by existing users of the airspace.

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Table 2.13-1. Summary of Impacts by Resource (Page 2 of 18)

Modified Alternative B	*Modified Alternative C*	*No-Action Alternative*
Airspace/Air Traffic, continued		
Airspace will be scheduled in advance and NOTAMs will be issued 2 to 4 hours prior to the initiation of military training in the airspace to provide near real-time information to civil aircraft. Public airports, private airfields, and civilian aircraft flights below FL180 would be impacted in PR-2, PR-3, PR-4, and associated Gap B and C MOAs (during LFEs) as described for Modified Alternative A. No PR-1 or Gap A MOAs would be established and civil aircraft operations within the Billings-Miles City-Gillette triangle would not be impacted below FL180. If all the MOAs were activated at one time for military training, the training could impact an estimated 107 civilian aircraft flights daily under the airspace during Monday through Thursday. If all the MOAs were activated Friday morning, there would be approximately 36 civilian aircraft operations impacted. Impacts would be a mix of ground delays, re-routing, or having to fly VFR see-and-avoid, weather permitting, in an active MOA. IFR arrivals and departures would be as described for Modified Alternative A. ATCAA effects would be comparable to Modified Alternative A. Modified Alternative B would not include military training overflights below FL180 in the Billings-Miles City-Gillette triangle. LFEs could impact an estimated 88 civil aviation flights as described for Modified Alternative A. Any airspace constraints or communication requirements could be perceived as an impact by existing users of the airspace.	Airspace will be scheduled in advance and NOTAMs will be issued 2 to 4 hours prior to the initiation of military training in the airspace to provide near real-time information to civil aircraft. Public airports, private airfields, and civilian aircraft flights below FL180 would be impacted in PR-1, PR-2, PR-3, and associated Gap A and B MOAs as described for Modified Alternative A. There would be no training below FL180 under PR-4 or Gap C ATCAAs. Civil aircraft operations in the Bismarck-Dickinson-Rapid City triangle would not be impacted below FL180. If all the MOAs were activated at one time for military training, the training could impact an estimated 80 civilian aircraft flights daily under the airspace during Monday through Thursday. If all the MOAs were activated Friday morning, there would be approximately 27 civilian aircraft operations impacted. Impacts would be a mix of delays, re-routing, or having to fly see-and-avoid, weather permitting, in an active MOA. IFR arrivals and departures would be as described for Modified Alternative A. ATCAA effects would be comparable to Modified Alternative A. Modified Alternative C would not include military training flights below FL180 in the Bismarck-Dickinson-Rapid City triangle. LFEs could impact an estimated 74 civil aviation flights as described for Modified Alternative A. Any airspace constraints or communication requirements could be perceived as an impact by existing users of the airspace.	The No-Action Alternative would not change projected baseline conditions with B-1 and B-52 flight training in the Powder River A/B MOAs (essentially all of the proposed PR-2 MOA). Projected operations in the existing Powder River airspace would be expected to be as described for PR-2. An estimated 24 civilian operations would be impacted weekdays by delay, re-routing, or having to fly VFR see-and-avoid in an active MOA. Flight training in Powder River ATCAAs would continue as permitted under existing letters of agreement with the FAA. Powder River airspace would continue to provide limited training to B-1 and B-52 aircrews.

Table 2.13-1. Summary of Impacts by Resource (Page 3 of 18)

Environmental Resource	*Modified Alternative A*
Noise (EIS Section 4.2)	Day-night average sound level (DNL) under the proposed PR-1, PR-3, and PR-4 MOAs would be expected to change from existing less than 45 dB to a calculated <45 to 48 dB range. If such a change were discerned, it could be seen as an annoyance. DNL under existing Powder River A and B MOAs would minimally decline from 49 dB DNL to 47 dB. Noise levels under the existing Gateway ATCAAs would remain below 45 dB DNL. USEPA had identified DNL of 55 dB as the level above which to assess public health and welfare. Increased noise from a sudden low overflight would be noticed and could be perceived as a significant impact by residents under the airspace. Low-altitude overflight of a bomber, defined as 2,000 feet AGL or below to a minimum of 500 feet AGL within 0.25 mile of the flight path, would be expected to occur over 2 to 4 percent of each active MOA each training day, or an average at any given location under a Low MOA in PR-1, PR-2, or PR-3 of 6 to 9 low-level overflights per year (could be more or fewer than average at any specific location). Issuing NOTAMs to announce MOA activation could reduce uncertainty about when a low-altitude flight could occur. While operating at high speeds at 500 feet AGL, B-1 aircraft generate a localized single event onset rate adjusted sound exposure level (SEL_r) of 117 dB. B-52 aircraft generate an SEL_r of 100 dB during overflight at 1,000 feet AGL. Rapid B-1 acceleration and climb with afterburners, performed once per training mission, creates an SEL_r of 133 dB. Sudden onset sounds can be startling to humans and animals and have resulted in damage to penned cattle and fencing. Sudden low-level overflights were identified as an impact by public commenters. The Air Force would extend the Powder River airspace policy of establishing seasonal avoidance areas to reduce potential impacts to ranching, other sensitive areas, and cultural/historic resources. Supersonic flight during LFEs (not to exceed 10 days per year) with B-1s above 20,000 feet MSL and fighters above 10,000 feet AGL could result in an average of one sonic boom per LFE day at any given location on the ground. Most sonic booms are heard as thunder although a boom could result in a local area experiencing an overpressure of 4 psf or greater. Glass, plaster, and other structural elements in good condition normally would not be expected to fail as a result of overpressures, but failure would be possible. Should a sonic boom or low-level overflight occur during a hunting or ranching operation, it could result in a reaction on the part of the animals. Reactions would not be likely to significantly impact the species but could be an annoyance to persons on the ground.

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Table 2.13-1. Summary of Impacts by Resource (Page 4 of 18)

Modified Alternative B	*Modified Alternative C*	*No-Action Alternative*
Noise, continued		
PR-4 low-level overflight impacts would be as described for PR-3 under Modified Alternative A. Sudden onset noise from 6 to 9 low-altitude overflights per year, an average of one sonic boom per LFE day, and startle effects would occur under PR-2, PR-3, and PR-4 MOAs. Low-level overflights would not occur under PR-1 or Gap A ATCAAs. Noise under these areas range from 47 dB DNL to less than 45 dB DNL.	Noise under PR-1, PR-2, PR-3, and associated Gap MOAs and ATCAAs would be as described for Modified Alternative A. Sudden onset noise from 6 to 9 low-altitude overflights per year, an average of one sonic boom per LFE day, and startle effects in these MOAs would be as described under Modified Alternative A. Low-level overflights would not occur under PR-4 or Gap C ATCAAs. Noise under these areas would range from 47 dB DNL to less than 45 dB DNL.	Noise under the existing Powder River airspace would continue at 49 dB DNL as the base returns to the peacetime operational tempo. Low-altitude startle effects would continue to be experienced within Powder River A/B MOAs. Supersonic flight would not be authorized.

Table 2.13-1. Summary of Impacts by Resource (Page 5 of 18)

Environmental Resource	*Modified Alternative A*
Safety (EIS Section 4.3)	The FEIS has proposed airspace altitude caps at FL260, MOA boundaries moved back from major airports, MOAs segmented, Gap MOA boundaries adjusted, and NOTAMs for MOA activation to address public concerns. The Air Force and FAA would continue coordination to enhance the situational awareness of aircraft operators as to whether PRTC low-altitude MOAs (airspace below 12,000 feet MSL) were active. This may include best practices for use of existing data, equipment, and procedures as well as integration of advancements in software and equipment. Capabilities to communicate with and recall training aircraft would be in place prior to activating PR-1A, 1B, 1C, 1D, or PR-3 Low MOAs for Modified Alternative A or C or PR-3 or PR-4 Low MOAs for Modified Alternative B. IFR traffic would incur no undue delay during departure and arrival operations to/from airports beneath PRTC. . General aviation pilots accustomed to flying through the airspace with GPS coordinates could perceive communication requirements as an impact to their transit of the airspace. Class A mishap and bird strikes are expected to be proportional to the amount of training time in the proposed airspace. Having no PR-4 Low MOA would reduce training flights in a migration flyway. Chaff or flare residual materials would not result in a safety impact, although finding a piece of chaff or flare material on the ground could annoy persons. Flare use would be restricted to above 2,000 feet AGL and discontinued in airspace with very high to extreme fire conditions. Flares would not be expected to increase fire risk. There would be little safety risk from an estimated one dud flare falling within the entire airspace every three years. Large aircraft wake vortex of air turbulence at the wing tips could, in rapid maneuvering and unusual meteorological conditions, damage windmills. Atmospheric conditions and winds such as those common to the ROI cause accelerated vortex decay and dissipation. Most wake vortices would not reach ground level. Wake vortices from low-altitude military training aircraft were identified as a safety concern by crop dusters and other small aircraft operators. A light aircraft could experience the effects of a wake vortex in the unlikely event that the aircraft flew through the trail of a low-altitude training military aircraft. Procedures would be established to communicate with known mining operations regarding potential interference with mining radio frequencies to avoid significant impacts from aircraft electronic emissions inadvertently setting off mining or construction explosives. Startle effects from low-altitude overflight or sonic booms during LFEs could impact the safety of recreationists or ranchers. Low-altitude training flights would overfly any given location under a Low MOA an average of 6 to 9 times per year. The number of actual overflights experienced at any given location could be more or fewer than average. An unexpected low-altitude overflight could have safety impacts to a recreationist on a horse or a rancher working penned cattle. Seasonal or temporary avoidance of sensitive locations areas could reduce potential impacts. Communication regarding seasonal ranching operations and seasonal avoidance areas could reduce impacts to ranching or other sensitive activities.
Air Quality (EIS Section 4.4)	B-1 and B-52 low-level overflight in PR-1B and PR-1D would contribute approximately 2.06 tons of PM_{10} per year within the Lame Deer nonattainment area and 1.43 tons of PM_{10} per year within the Sheridan nonattainment area. Emissions would not increase the number of days when the PM_{10} air quality standard is exceeded. Training aircraft would not produce enough emissions to affect air quality or visibility to nearest PSD Class I areas (Wind Caves National Park and Badlands National Park) or the Northern Cheyenne Reservation. Defensive flare emissions are insignificant. National GHG emissions would be the same as the No-Action Alternative with training aircraft flying essentially the same amount of time to achieve lesser quality training in more distant ranges. Modified Alternative A would not be expected to produce emissions that would significantly affect air quality or visibility within the four-state region.

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Table 2.13-1. Summary of Impacts by Resource (Page 6 of 18)

Modified Alternative B	*Modified Alternative C*	*No-Action Alternative*
Safety, continued		
Modified Alternative B includes the same mitigations to improve flight safety and ground safety effects under PR-2, PR-3, PR-4, and associated Gap MOAs and ATCAAs as explained for Modified Alternative A. PR-4 Low MOA would have low-altitude and startle effects as described for Low MOAs under Modified Alternative A. Under the PR-1 and Gap A ATCAAs, there would be no low-altitude startle effects and few environmental impacts other than very infrequent sonic booms and chaff and flare residual materials. There would be no impacts to mining or construction under the PR-1 ATCAAs.	Modified Alternative C includes the same mitigations to improve flight safety and ground safety effects under PR-1, PR-2, PR-3, and associated Gap MOAs and ATCAAs as explained for Modified Alternative A. There would not be low-flying startle or other environmental effects under the PR-4 and Gap C ATCAAs. Few impacts from infrequent sonic booms and chaff and flare residual materials would occur under PR-4 and Gap C ATCAAs.	For the No-Action Alternative, no changes to Powder River airspace would be made. Low-level overflights would continue in the Powder River A/B MOAs, and communication would continue to be required to identify seasonal avoidance areas and reduce impacts from low-level overflight to ranching, recreation, or other activities.
Air Quality, continued		
Modified Alternative B would not be expected to produce emissions that would significantly affect air quality or visibility within the four-state region. Aircraft training would not impact any federal PSD Class I areas. National GHG emissions would not substantially change from the No-Action Alternative, under which B-1 and B-52 aircraft would continue to fly essentially the same amount of time to achieve lesser quality training.	Modified Alternative C would not be expected to produce emissions that would significantly affect air quality or visibility within the four-state region. Potential effects to air quality would be comparable to those described under Modified Alternative A, including low-level overflight in Lame Deer and Sheridan nonattainment areas (PR-1). National GHG emissions would not substantially change from the No-Action Alternative.	There would be no anticipated air quality impacts. Overflights below 3,000 feet AGL would continue within Powder River A/B MOAs.

Table 2.13-1. Summary of Impacts by Resource (Page 7 of 18)

Environmental Resource	*Modified Alternative A*
Physical Sciences (EIS Section 4.5)	No construction or direct impact to water or soils is expected. Chaff particles on the surface would be chemically stable and subject to mechanical degradation. The soils' pH is outside the range necessary to degrade the aluminum coating on chaff particles. Chaff and flare residual materials would be inert and not in sufficient quantities to impact physical resources. No impact to soils or water bodies is expected.
Biological Sciences (EIS Section 4.6)	Loud, sudden noises combined with a visual stimulus produce the most intense reaction by animals. Most species within the areas under the proposed PRTC already occupy comparable environments under the Powder River A/B MOAs where low-level overflights occur. Sound exposure levels (SELs) above 90 dB are associated with a number of behaviors such as retreating from the sound, freezing, or a strong startle response. Animals under the newly proposed PR-1, PR-3, PR-4, and associated Gap MOAs would be expected to be temporarily more sensitive to noise due to lower previous exposure. Animals typically exhibit continually decreasing responses to noise exposure, and this suggests habituation as the noise is not perceived as a threat. Minimal to no effects are expected to threatened, endangered, and other special status species including greater sage-grouse or rare migrants, such as the piping plover, least tern, whooping crane, or yellow-billed cuckoo. Any impact to sensitive species would likely be short-term and unlikely to significantly affect the population. Potential bird aircraft strikes could occur in the PR-2 Low MOA where migratory flyways converge. No change in effects to flyways would be expected under PR-4 High MOA. Migratory bird species involved in bird-aircraft strike would be considered an incidental taking and would be exempt from any permitting requirement. An infrequent special status bird-aircraft strike would not be expected to adversely affect any populations. There is no evidence of chaff and flare residual materials or chaff fibers affecting wildlife or domestic animals through ingestion, inhalation, or direct body contact. The potential for fire as a result of Air Force activity is minimal and is not considered a significant risk to wildlife habitat quality or quantity.

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Table 2.13-1. Summary of Impacts by Resource (Page 8 of 18)

Modified Alternative B	*Modified Alternative C*	*No-Action Alternative*
Physical Sciences, continued		
Modified Alternative B effects on physical resources would be the same as those described for Modified Alternative A.	Modified Alternative C effects on physical resources would be the same as those described under Modified Alternative A.	The No-Action Alternative would not affect physical resources under the Powder River airspace.
Biological Sciences, continued		
Modified Alternative B has same effects as Modified Alternative A with exception that the more environmentally diversified area and higher terrain under the PR-1 and Gap A ATCAAs would not be subject to low-level overflights. This would result in no low-altitude noise impacts to species in those areas. The PR-4 Low MOA would be over migratory flyways, and species under the PR-4 Low MOA would be subject to low-level overflights. Impacts to other areas of proposed low-altitude airspace would be as described for Modified Alternative A. Modified Alternative B biological effects could be somewhat greater than Modified Alternative A due to the eastern PR-4 Low MOA.	Modified Alternative C would be expected to have the same effects as those described for Modified Alternative A. The more-agricultural area under the proposed PR-4 and Gap C ATCAAs would not be subject to low-level overflights. This would result in no expected low-altitude startle impacts or bird-aircraft strikes to species in those areas. No effects to flyways would be anticipated under the PR-4 ATCAA. The more environmentally diversified area under the PR-1 MOAs are included in Modified Alternatives A and C. Modified Alternative C biological effects would be expected to be somewhat less than for Modified Alternative A or Modified Alternative B.	Low-level overflight of the Powder River A/B MOAs would continue. Existing biological conditions would continue.

Table 2.13-1. Summary of Impacts by Resource (Page 9 of 18)

Environmental Resource	*Modified Alternative A*
Cultural and Historic Resources (EIS Section 4.7)	As of spring 2014, there were 241 National Register of Historic Places (NRHP)-listed sites under Modified Alternative A MOA and ATCAA airspace. Impacts to cultural resources at any given location under the Low MOAs could occur from an estimated average of 6 to 9 low-level overflights per year (at or below 2,000 feet AGL and above 500 feet AGL) or from approximately one sonic boom per LFE day (1 to 3 days per quarter, not more than 10 days per year). Sonic booms are normally experienced as distant thunder, though a boom could result in local areas experiencing an overpressure of 4 psf or greater. Infrequent and random sonic booms are not expected to cause structural damage to historic buildings, but bric-a-brac could be vibrated off shelves and structures subject to a focus boom could be impacted. Even infrequent sonic booms at historic landmarks such as Bear Butte NHL, national monuments such as Devils Tower National Monument or the Little Bighorn Battlefield National Monument, or locations such as the Deadwood Historic District could be seen as intrusions. The Little Bighorn Battlefield National Monument would not have overflights below 5,000 feet AGL during operating hours, or from 1 hour before park opening to 1 hour after park closing or other times as coordinated. The change in setting created by increased noise from 6 to 9 low-level overflights per year and even infrequent sonic booms could be seen as an adverse effect upon traditional cultural properties and cultural landscapes. Visual intrusions can include overflights of a tribal ceremony or residual materials from chaff and flares. Amish and Hutterite settlements may be similarly impacted under the proposed PR-1D MOA. During consultations, Native Americans from the four directly impacted reservations explained that low-level overflights and intrusive noise would be detrimental to their cultural practices. No overflights below 12,000 feet MSL would occur over the Standing Rock, Cheyenne River, or Northern Cheyenne Reservations. Noise analysis demonstrated that although increased noise during overflights could affect historic properties and traditional cultural properties, it would be sporadic and temporary, and avoidance measures over sensitive areas would result in no adverse effect to historic properties or traditional cultural properties on these three reservations. Visual analysis documents the infrequency of visual intrusions in the airspace, and the implementation of horizontal and vertical avoidance areas. No adverse effect would be anticipated to historical properties on the Standing Rock, Cheyenne River, or Northern Cheyenne Reservations from noise or visual intrusions. The change in setting on portions of the Crow Reservation created by increased noise and low-level training overflights has the potential to create an adverse effect. Crow Reservation residents would experience noise and startle effects from an estimated annual average of 6 to 9 low-level overflights at or below 2,000 feet AGL and above 500 feet AGL. The noise, startle effects, and uncertainty of low-level overflights at any given location under an activated low MOA are identified as adverse impacts. An average of one sonic boom per day could be experienced at any given location under the airspace during LFEs, 1 to 3 days quarterly, not to exceed 10 days per year. The Air Force would establish a Government-to-Government communication protocol to identify reasonable avoidance areas for specific time periods, provide advance notice of LFEs, adopt other measures identified in Government-to-Government consultation to reduce intrusive impacts, and adhere to provisions stipulated in a Programmatic Agreement (refer to Appendix N). The Air Force has reasonably determined per 36 CFR 800.6(b)(2), in the light of consultations, that modifying the undertaking and adopting mitigations in the Programmatic Agreement would resolve potential adverse effects to historic properties on the Crow tribal lands.

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Table 2.13-1. Summary of Impacts by Resource (Page 10 of 18)

Modified Alternative B	*Modified Alternative C*	*No-Action Alternative*
Cultural and Historic Resources, continued		
Modified Alternative B has 207 NRHP-listed sites under the Modified Alternative B MOAs/ATCAAs, with impacts similar to those described for Modified Alternative A. The exception is that there would be no overflight below FL180 over the Little Bighorn Battlefield National Monument, Deer Medicine Rocks NHL, the Tongue River Cultural Landscape, the Crow Reservation, or the Northern Cheyenne Reservation. Intrusions could occur to sites under the PR-1 ATCAAs from infrequent sonic booms but not from low-level overflights (below 2,000 feet AGL). There would be an estimated one sonic boom experienced at any given location during LFEs that take place 1 to 3 days per quarter, not to exceed 10 days per year. Effects to Devils Tower National Monument, Bear Butte NHL, the Deadwood Historic District, and other historic locations could occur as under Modified Alternative A. Portions of the Standing Rock and Cheyenne River Reservations would be affected by low-altitude overflights and sonic booms, though populations are not concentrated in areas overflown. Mitigations noted for Modified Alternative A would be applied to appropriate airspaces under Modified Alternative B, although additional consultations would likely be necessary to identify further mitigations. Sonic boom impacts to cultural resources would be as described for Modified Alternative A.	Modified Alternative C has 213 NRHP-listed sites under the MOAs and ATCAAs with impacts similar to those described for Modified Alternative A. Impacts from infrequent sonic booms and low-level overflights would generally be comparable to those described for Modified Alternative A, including impacts to the Little Bighorn Battlefield National Monument and traditional cultural properties under the PR-1 MOAs. Portions of the Crow Reservation could experience an average of 6 to 9 low-level overflights (below 2,000 feet AGL) at any given location. Similar to Modified Alternative A, application of mitigations identified in the Programmatic Agreement would resolve potential adverse impacts on the Crow Reservation. Additionally, the Air Force would avoid adverse effects to the Standing Rock, Cheyenne River, and Northern Cheyenne Reservations by establishing avoidance areas up to 12,000 feet MSL over these reservations. Sonic boom impacts to cultural resources would be as described for Modified Alternative A.	There would be no change to overflight of historic properties within the Powder River airspace. PR-A and PR-B MOAs do not overlie Native American reservations.

Table 2.13-1. Summary of Impacts by Resource (Page 11 of 18)

Environmental Resource	*Modified Alternative A*
Land Use (EIS Section 4.8)	Land uses under the existing Powder River airspace have been overflown by a variety of military aircraft for over 20 years. Public concerns during the DEIS review included the effect of sonic booms and low-level overflight on the use of the land. Land uses under existing Powder River airspace within Wyoming, South Dakota, and Montana are comparable to those in other portions of the area proposed for the PRTC airspace. Supersonic training would be scheduled only during LFEs 1 to 3 days per quarter, not to exceed 10 days per year and an estimate of one sonic boom could be experienced at any given location per LFE day (not to exceed 10 days per year). Infrequent sonic booms would not be expected to impact land uses. Approximately 2 to 4 percent of the MOAs would be overflown by an aircraft at 2,000 feet AGL or below and above 500 feet AGL on a daily basis. Low-level overflight in Low MOAs could cause individual annoyance and could result in sleep disturbance or temporarily interfere with personal communication. The random nature of the aircraft overflight could result in any given location under Low MOAs being overflown an average of approximately 6 to 9 times per year (any given location could be overflown more or less frequently). Overflight is not expected to impact overall land use although some individuals could be annoyed. Low-level overflight impacts to communities, ranches, and other land uses could be reduced through communication with Air Force to identify temporary or seasonal avoidance areas. Hunting and other recreational land uses coexist with military training in the existing Powder River airspace. Such land uses may be disturbed by infrequent low-level military flights but overall land use is not expected to be impacted. Military training would generally not be scheduled from Friday noon through Monday morning, and weekend recreation would not be expected to be impacted. Land use for energy development would not be impacted, assuming Air Force electronic emissions are coordinated for mine and construction safety. Chaff or flare residual debris, which consists of plastic pieces or wrapping material, would not be expected to affect land uses but could cause annoyance if found.

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Table 2.13-1. Summary of Impacts by Resource (Page 12 of 18)

Modified Alternative B	*Modified Alternative C*	*No-Action Alternative*
Land Use, continued		
Modified Alternative B land use effects would be comparable to those described for Modified Alternative A. Land uses under the PR-1 and associated Gap A ATCAAs would not be subject to low-level overflight. Low MOA airspace would be subject to low-level overflight an average of approximately 6 to 9 times per year. These events and infrequent supersonic events would not be expected to impact land use, though this could be seen as an annoyance to persons using the land.	Modified Alternative C land use effects would be comparable to those described for Modified Alternative A. Areas under PR-4 and associated Gap C ATCAAs would not be subject to low-level overflight. PR-1, PR-2, and PR-3 Low MOAs would be subject to low-level overflight and intermittent sonic booms as described for Modified Alternative A. Land uses would not be expected to be impacted, though frequent low-level overflights and infrequent supersonic events could be seen as an annoyance to persons using the land.	The No-Action Alternative would not change effects on land use under the existing Powder River airspace.

Table 2.13-1. Summary of Impacts by Resource (Page 13 of 18)

Environmental Resource	*Modified Alternative A*
Socioeconomics (EIS Section 4.9)	Establishing avoidance areas, reduced B-1 operations from those proposed in the DEIS, resizing the MOAs, advanced scheduling, and NOTAMs to activate training airspace are all designed to reduce potential socioeconomic impacts. If all the MOAs were activated at one time for military training, the training could impact an estimated 86 civilian aircraft flights daily under the airspace during Monday through Thursday. If all the MOAs were activated Friday morning, there would be approximately 30 civilian aircraft operations impacted. Impacts could include delay, re-routing, needing to fly VFR in an active MOA, or not being able to transit IFR. IFR arrivals or departures would be given priority in training airspace. Delays of up to 4 hours could be seen as an economic impact at public airports and private airfields under the affected airspace. During LFEs, 1 to 3 days per quarter, not to exceed 10 days per year, the entire airspace would be unavailable for IFR traffic for a period of up to 4 hours per day. LFE civil aviation impacts are estimated to be 78 civilian flights per LFE day. Issuing NOTAMs to announce activation of the MOA airspaces reduces uncertainty for civil aviation. Crop duster aerial applicators unwilling to fly in an active Low MOA could be impacted and affect business decisions and economics. Knowing where and at what altitude a training bomber could fly over an area could reduce uncertainty. Review of assessor procedures and Montana, North Dakota, South Dakota, or Wyoming state laws has shown no requirement for disclosure under a MOA. The existing Powder River MOAs are not considered relevant by assessors in Montana, South Dakota, and Wyoming. No quantifiable property value impacts are anticipated. The proposed PRTC is not expected to impact energy resource development. Time-critical deliveries flying IFR would incur no undue delay during departure and arrival operations to/from airports beneath PRTC. Coordination would be required between mine operators or other blasting operations and the Air Force to ensure that radio frequencies used for mining are not used by Air Force aircraft during training. Modified Alternative A noise level changes in PR-1, PR-3, and PR-4 from a DNL of <45 dB DNL to between <45 dB DNL to 48 dB would not normally be noticeable but could be perceived as an impact, though noise levels would be below the USEPA-identified DNL of 55 dB, which is a noise protective of the public health and welfare. An average of 6 to 9 low-level overflights would be experienced at any given location under a Low MOA. Approximately one sonic boom could be experienced at any given location under the airspace during LFEs, 1 to 3 days per quarter, not to exceed 10 days per year. Sudden noise or visual effects could impact ranching operations, especially when range stock are penned. The public expressed extensive concern about low-level overflight. Low-altitude overflight impacts include uncertainty, startle effects, and noise. The Air Force would continue the process within the Powder River A/B MOAs whereby ranchers have coordinated with the Air Force to identify temporary avoidance areas to reduce the potential for low-altitude aircraft impacts. Sonic booms cannot be directed to avoid a location, although the schedule for LFEs would be published in advance. Chaff and flare impacts would not affect economic activity, although an individual finding a piece of chaff or flare plastic or wrapper residual material could be annoyed. Emergency flight operations such as firefighting and air ambulance would continue under ATC emergency flight procedures. No impact would be expected because the Air Force would expeditiously move training activities outside the required airspace to meet the emergency.

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Table 2.13-1. Summary of Impacts by Resource (Page 14 of 18)

Modified Alternative B	*Modified Alternative C*	*No-Action Alternative*
Socioeconomics, continued		
All mitigations noted for Modified Alternative A would apply to Modified Alternative B. If all the MOAs were activated at one time for military training, the training could impact an estimated 107 civilian aircraft flights daily under the airspace during Monday through Thursday. If all the MOAs were activated Friday morning, there would be approximately 36 civilian aircraft operations impacted. Modified Alternative B low-level impacts would occur under PR-2, PR-3, and PR-4. These impacts would be comparable to those described for Modified Alternative A. Modified Alternative B does not have airspace below FL180 under the PR-1, and Gap A ATCAAs. This means no low-altitude overflights over existing or proposed mining operations in the area. Ranching, tribal, other settlements, and recreational activities in the Billings-Miles City-Gillette triangle are not overflown below FL180. Any given location could experience an average of one sonic boom per LFE day, 1 to 3 days per quarter, not to exceed 10 days per year. During LFEs, there would be an estimated 88 civil operations impacted as described for Modified Alternative A. Impacts to other areas are as described for Modified Alternative A.	All mitigations noted for Modified Alternative A would apply to Modified Alternative C. If all the MOAs were activated at one time for military training, the training could impact an estimated 80 civilian aircraft flights daily under the airspace during Monday through Thursday. If all the MOAs were activated Friday morning, there would be approximately 27 civilian aircraft operations impacted. Modified Alternative C impacts include adverse, low-level effects under PR-1, PR-2, and PR-3 Low MOAs. Modified Alternative C does not have airspace below FL180 under the PR-4 and Gap C ATCAAs. This means that tribal lands, ranching, recreation, and other activities within this area would not experience low-altitude overflights. During LFEs, 1 to 3 days per quarter, not to exceed 10 days per year, an estimated 74 civil operations in MOAs could be expected to be impacted by delays of up to 4 hours. Impacts to other areas are as described for Modified Alternative A.	Under the No-Action Alternative, training would continue as it is now, including low-level overflights in Powder River airspace with an estimated 7 civilian operations impacted daily and no change in socioeconomic effects.

Table 2.13-1. Summary of Impacts by Resource (Page 15 of 18)

Environmental Resource	*Modified Alternative A*
Environmental Justice (EIS Section 4.10)	Native Americans typically account for between 86 and 96 percent of the minority populations within the counties in the area of effect. Under PR-1, the minority and low-income population concentrations are on the Northern Cheyenne Reservation and portions of the Crow Reservation. PR-4 overlies portions of the Standing Rock and Cheyenne River reservations, but does not directly overly major population centers on these reservations. FEIS mitigations exclude overflight below 12,000 feet MSL of the Northern Cheyenne, Standing Rock, and Cheyenne River Reservations. Noise conditions under the four reservations would not exceed 48 dB DNL_{mr}. Within PR-1, there are 12,316 persons, of whom 4,560 are minority, 1,391 live below the poverty level, and 2,788 are children. Nearly all of the minority persons potentially affected by low-level overflights reside on portions of the Crow Reservation. The uncertainty of low-level overflights and the average of 6 to 9 low-level overflights of 2,000 feet AGL within 0.25 mile of the aircraft flight track at any given location under the Low MOAs are identified as adverse impacts to the general human population under the proposed Low MOA airspace. The PR-1A, PR-1C, and PR-1D MOAs overlie portions of the Crow Reservation that have a minority population in excess of 50 percent. If there is an adverse impact not adequately or acceptably mitigated, such as by the proposed mitigations in Section 2.3.1, there would be a potential for a disproportionately high and adverse effect on that population (Air Force 1997b). Traditional cultural properties, battlefield sites, archaeological sites, and landscape areas that have been identified as probable sacred sites are beneath the proposed airspace. Throughout the year, many Native Americans visit these and other sacred sites for spiritual ceremonies, vision quests or other cultural activities. If these ceremonies were to occur during the 10 days per year when a sonic boom could be heard or at a location and time when a low-level overflight would occur, an average of 6 to 9 times per year, there would be a startle effect and the potential to disrupt activities at sacred sites and to disturb participating tribal members. Youth populations potentially impacted by low-level overflights are concentrated on the Crow Reservation under PR-1. Reaction to an estimated 6 to 9 low-level overflights per year or a sonic boom during the 10 days per year of LFEs could temporarily disrupt classrooms but would not be expected to have long-term learning or health effects upon children. The Air Force is continuing Government-to-Government consultations and has committed to coordinating flight schedules and avoidance areas with affected tribes to reduce the potential for effects to identified sacred sites or ceremonies at specific times of year. Advance coordination between the Air Force and the tribes on scheduling LFEs could address potential effects from sonic booms on the larger ceremonies conducted under the airspace. Despite these consultations, there is the potential that small, individual, or unidentified ceremonies could be disturbed. The potential exists for such disturbance to be perceived as an adverse effect to these Native American cultural resources. Modified Alternative A could produce annoyance from visual and audible intrusion and annoyance to persons on the Northern Cheyenne, Standing Rock, or Cheyenne River Reservations. The level of effect would not be expected to have a negative effect on human health or the environment that is significant, unacceptable or above generally accepted norms. The mitigations identified in Section 2.3.1 and the Programmatic Agreement adequately mitigate impacts to less than significant under NEPA and resolve or avoid adverse effects under NHPA. Consequently, Modified Alternative A with the specified mitigations would not result in disproportionately high and adverse impacts within the context of environmental justice.

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Table 2.13-1. Summary of Impacts by Resource (Page 16 of 18)

Modified Alternative B	*Modified Alternative C*	*No-Action Alternative*
Environmental Justice, continued		
The western one-third of the Standing Rock Indian Reservation and the northwest corner of the Cheyenne River Reservation would be located beneath the PR-4 Low MOA. An estimated annual average 6 to 9 low-level overflights at any given location could be experienced under the PR-4 Low MOA. Should this alternative be selected, and without changes to flying protocols, areas overflown on these two reservations would experience a change in the noise and visual setting as described for PR-1 under Modified Alternative A. The minority population under PR-4 is much less than under PR-1. Tribal members of the Cheyenne River Reservation and Standing Rock Reservation who live on the reservations and under the PR-4 Low MOA would be impacted by the uncertainty and actual low-level overflights comparable to the impacts described for the portions of the Crow Reservation under Modified Alternative A. Schools would be considered a compatible land use although infrequent low-level overflights may temporarily disrupt learning. No other health or environmental conditions have been identified that could adversely impact children. Modified Alternative B has no overflight below 18,000 feet MSL (FL180) of the Crow or Northern Cheyenne Reservations, so there would be no anticipated adverse effects to these reservations. The Air Force is continuing Government-to-Government consultations and has committed to coordinating flight schedules with affected tribes to avoid ceremonies at identified sacred sites at specific times of year. Advance coordination between the Air Force and the tribes on scheduling LFEs could address potential effects from sonic booms on the larger ceremonies conducted under the airspace. There is the potential that small or individual ceremonies could be disturbed, and the potential exists for such disturbance to be perceived as an adverse effect to these Native American cultural resources. Under Modified Alternative B there would be adverse effects to low-income and minority populations, as compared to Modified Alternative A or C, where adverse effects would be resolved or avoided under NHPA. Modified Alternative B, though, would not result in disproportionately high human health or environmental effects in the context of environmental justice.	The population on the Crow Reservation under the proposed MOAs would be potentially subject to the uncertainty and an estimated average of 6 to 9 low-level flight operations at any given location annually., The Air Force would continue to work with tribes and agencies to identify and avoid, during specified periods, traditional cultural properties and other cultural sites. Audible or visual intrusion into sacred sites and spiritual ceremonies conducted by Native Americans under the proposed airspace could be perceived as being adversely affected by training overflights at any altitude. Modified Alternative C has no overflight below 18,000 feet MSL (FL180) of the Cheyenne River or Standing Rock Reservations, so there would be no anticipated adverse effects to these reservations. Impacts under the PR-1 MOAs of Modified Alternative C would be effectively the same as those for Modified Alternative A. As discussed under that alternative, the mitigations identified in Section 2.3.1 and committed to in the Programmatic Agreement would resolve or avoid adverse effects under NHPA. Consequently Modified Alternative C with the specified mitigations would not result in disproportionately high and adverse human health and environmental effects in the context of environmental justice.	The Air Force would continue to use the existing Powder River airspace, which does not directly affect Native American reservations or other areas where the populations of concern may be disproportionately represented.

Table 2.13-1. Summary of Impacts by Resource (Page 17 of 18)

Environmental Resource	*Cumulative*
Cumulative (EIS Section 5.0)	Cumulative effects analysis considers the potential incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency or person undertakes any such action. Potential cumulative projects in the region of influence include plans and permits to develop mineral reserves, including oil, gas, and coal reserves, and transportation of excavated resources. Other cumulative projects include the recent beddown of an additional B-52 squadron at Minot AFB, airspace actions in North Dakota and Utah, and potential addition of threat emitters and simulated targets to add realism to aircrew training. **Airspace, Noise, and Safety** The additional B-52 squadron has been included throughout the EIS as a baseline condition. Cumulative potential effects upon other airspace users or potential users have been included throughout this EIS, including impacts to airspace access and impacts to time-sensitive deliveries as a result of delays in transiting an active MOA IFR. Training aircraft would be relocated from the airspace segment to accommodate IFR arrivals and departures to airports under the airspace. Delays up to 4 hours or re-routing could affect time-sensitive deliveries to existing or proposed mining, transportation projects, industrial development, or agricultural operations. Limited communication and radar coverage, which impact safe civil aircraft operations and airports, would continue below 12,000 feet MSL in much of the proposed airspace. The B-1 or B-52 would randomly overfly at levels of 2,000 feet AGL or below approximately 2 to 4 percent of each low-level MOA during any training workday. This low overflight and potential startle effect is not expected to significantly alter or cumulatively affect any development plan or resources within the region. Infrequent sonic booms during LFEs not expected to interfere or cumulatively affect other ongoing or proposed activities. Aircraft training overflight noise is expected to be random and would not cumulatively interact with construction sites. Coordination and communication with mining or other blasting related activities, such as new rail lines, would be required for safety to avoid significant cumulative impacts. No cumulative effects to noise or safety from PRTC would be expected in conjunction with other projects in the region of influence. **Physical Sciences and Air Quality** Mineral excavation and transportation line construction could potentially impact large amounts of soil and water resources and could contribute to air quality impacts. Separate environmental analyses, prepared for the projects, will document impacts and mitigations. Potential construction of emitter sites would not be expected to have an impact on soils, water, or air quality resources. No threat emitters are proposed as part of PRTC and any threat emitters on 15-acre sites would be subject to environmental review. Siting criteria would include being near power for electricity to run the threat emitters, so no air quality effects from generators would be anticipated. Aircraft overflights do not produce an amount of emissions that could contribute to cumulative air quality impacts or result in discernible contributions to present or future nonattainment areas. No cumulative effects are anticipated to physical resources or air quality as a result of the proposed PRTC.

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Table 2.13-1. Summary of Impacts by Resource (Page 18 of 18)

Environmental Resource	*Cumulative*
Cumulative (EIS Section 5.0) (continued)	**Natural and Cultural Resources** Mineral excavation and transportation line construction could impact natural and cultural resources. Construction and other ground-disturbing projects could impact tribal lands and cultural resources. Separate environmental documentation would assess direct and indirect impacts of these projects. Cultural resources on tribal lands experiencing construction or other ground-disturbing effects could be impacted directly as a result of other projects in the region of influence. Some cumulative effects could occur from infrequent low-level overflights in conjunction with extensive planned mineral operations on tribal lands. Potential construction of emitter sites would not be expected to have a cumulative impact in conjunction with large scale mining projects based on the relatively small size of the emitter sites and the need for sites to be on an open rise where they could project out as far as possible. Emitters would be located to avoid environmentally sensitive areas and would not be expected to cumulatively contribute to disturbance of natural or cultural resources. **Land Use, Socioeconomics, and Environmental Justice** Substantial construction projects in the region of influence would alter employment patterns in areas of mineral development or transportation projects. Construction projects and additional large-scale mining would contribute to regional employment while changing the nature of the economy. Agreements regarding construction and operation jobs for tribal members could improve economic opportunities for minority and low-income populations. Temporary avoidance areas would be established over construction sites where tall cranes or helicopters would be used in the construction. Permanent avoidance areas would be mapped for tall structures such as smokestacks or wind generation machines. Cumulative impacts from overflight in conjunction with mining operations would not be anticipated. Low-level overflight and associated hunting and other recreation continue throughout the area overlain by the existing Powder River A/B MOAs. The fact that recreation occurs in areas of current low-level overflights suggests that the actual military aircraft overflight impacts could be less than the uncertainty of an average of 6 to 9 low-level overflights per year. For all environmental resources except civilian air operations and cultural resources to which impacts would occur, the establishment of the PRTC in combination with any other ongoing activity by federal or other agencies or enterprises would not be expected to cumulatively impact environmental resources.

3.0 AFFECTED ENVIRONMENT

This chapter describes the baseline or existing condition within the geographic areas potentially affected by the modified alternatives described in Chapter 2.0.

The National Environmental Policy Act (NEPA) requires that the analysis address those locations and the components of the environment potentially affected by the Proposed Action or alternatives. Locations and environmental resources with no potential to be affected need not be analyzed. Public and agency comments during the Environmental Impact Statement (EIS) process were used to focus the analysis on potentially affected environmental resources. Environmental consequences are addressed in Chapter 4.0. Cumulative effects associated with other federal and regional actions are described in Chapter 5.0.

The expected geographic area of potential impacts is known as the region of influence (ROI). The ROI for this project is defined for each environmental resource as the outermost boundary of potential environmental consequences. The ROI generally is focused on the four-state region underlying the proposed airspace. For some resources, such as airspace, air quality, and socioeconomics, the ROI extends beyond the four-state area directly under the proposed airspace.

3.1 AIRSPACE/AIR TRAFFIC

3.1.1 *DEFINITION OF THE RESOURCE*

Airspace management and Air Traffic Control (ATC) consist of the direction, control, and coordination of flight operations in the "navigable airspace" that overlies the geopolitical borders of the United States (U.S.) and its territories. Navigable airspace consists of airspace above the minimum altitudes of flight prescribed by regulations under United States Code (USC) Title 49, Subtitle VII, Part A, and includes airspace needed to ensure safety in the takeoff and landing of aircraft (49 USC § 40102). The U.S. government has exclusive sovereignty over all airspace extending from the surface to above 60,000 feet mean sea level (MSL) (49 USC 40103(a)(1)). The ROI for airspace has direct and indirect components. The direct ROI is the Powder River Training Complex (PRTC) airspace proposed for training activities and the airports under the proposed PRTC. The indirect ROI consists of airports on the periphery of the proposed PRTC, as well as more distant aviation facilities which could be affected by changes in flight patterns resulting from the proposed PRTC.

Several small public airports and private airfields are located under the proposed airspace with larger airports on the periphery of the airspace. Air travel can be the most practical means of transport for remote areas in southeastern Montana, the western Dakotas, and northeastern Wyoming. Emergency transport operations use the air space for the medical evacuation of patients to regional medical centers from remote areas. Rapid delivery of machinery parts and personnel can be critical during harvesting periods or other industrial operations. During public hearings and comments submitted on the Draft EIS (DEIS), participants indicated that ranchers and farmers use private aircraft for access, crop-dusting, and general property surveillance. Often these pilots fly without local or regional radio contact and much of the area in which they fly has limited radio or radar tracking.

3.1.2 *REGULATORY SETTING*

Congress has charged the Federal Aviation Administration (FAA) with the responsibility to develop plans and policy for the use of the navigable airspace and to assign by regulation or order, the use of the airspace necessary to ensure the safety of aircraft and its efficient use (49 USC § 40103(b)). Special Use Airspace (SUA) identified by the FAA for military and other governmental activities is charted and published by the National Aeronautical Charting Office in accordance with FAA Order 7400.2K and other applicable regulations and orders. Airspace management considers how airspace is designated, used, and administered to best accommodate the individual and common needs of military, commercial, and general aviation. The FAA considers multiple, and sometimes competing, demands for aviation airspace in relation to airport operations, federal airways, jet routes, military flight training activities, and other special needs to determine how the National Airspace System can best be structured to address all user requirements.

The United States Air Force (Air Force) requests airspace from the FAA and schedules and uses airspace in accordance with processes and procedures detailed in Air Force Instruction (AFI) 13-201 *Air Force Airspace Management*. AFI 13-201 implements Air Force Planning Document 13-2, *Air Traffic Control, Airspace, Airfield, and Range Management*, and Department of Defense (DoD) Directive 5030.19, *DoD Responsibilities on Federal Aviation and National Airspace System Matters*. AFI 13-201 addresses the development and processing of SUA, and covers aeronautical matters governing the efficient planning, acquisition, use, and management of airspace required to support Air Force flight operations (Air Force 2001). Ellsworth Air Force Base (AFB) schedules the Powder River A and B Military Operations Areas (MOAs) and would schedule the proposed PRTC MOAs. Air Traffic Control Assigned Airspace (ATCAA) is controlled by Air Route Traffic Control Centers (ARTCC) and may be released for military use when requested.

3.1.3 *EXISTING CONDITIONS*

The alternatives presented in Chapter 2.0 describe the establishment of new MOAs and ATCAAs and modification to existing MOAs and ATCAAs. This section explains the national airspace structure and the management of that structure.

3.1.3.1 AIRSPACE CATEGORIES

FAA defines two categories of airspace or airspace areas, regulatory and non-regulatory. Within these two categories, there are four types of airspace, Controlled, Special Use, Other, and Uncontrolled airspace (Class G). Controlled airspace is airspace of defined dimensions within which ATC service is provided to Instrument Flight Rules (IFR) flights and to Visual Flight Rules (VFR) flights in accordance with the airspace classification (FAA 2010).

Controlled airspace is categorized into five separate classes: Classes A through E. Class F airspace is not used in the U.S. The airspace classes are shown graphically in Figure 3.1-1. Classes A through E identify airspace that is controlled, airspace supporting airport operations, and designated airways affording en route transit from place-to-place. The classes also dictate pilot qualification requirements, rules of flight that must be followed, and the type of equipment necessary to operate within that airspace.

Class A airspace, generally, is that airspace from 18,000 feet MSL up to, and including, Flight Level (FL) 600. FL600 is equal to approximately 60,000 feet MSL. Flight Levels are MSL altitudes based on the

use of a directed barometric altimeter setting, and are expressed in hundreds-of-feet. The proposed PRTC ATCAAs where B-1, B-52, transient fighters, and Large Force Exercise (LFE) training could occur are in Class A airspace.

Class B airspace, generally, is that airspace from the surface to 10,000 feet MSL around the nation's busiest airports. The actual configuration of Class B airspace is individually tailored and consists of a surface area and two or more layers, and is designed to contain all published instrument procedures (FAA 2010). There is no Class B airspace in the direct ROI. Uncontrolled airspace is designated Class G airspace.

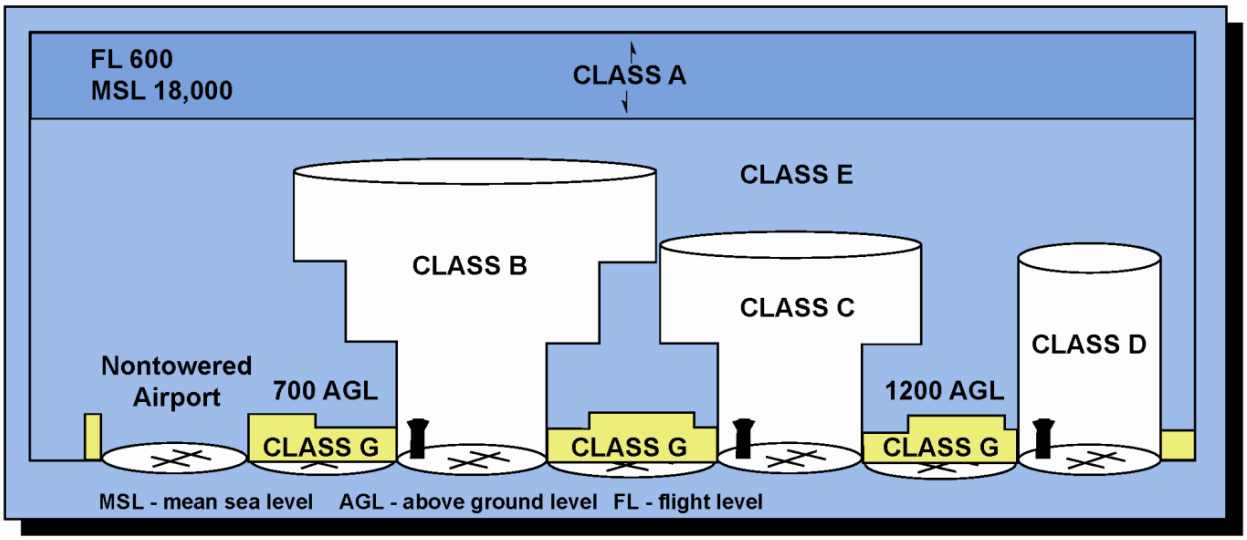

Figure 3.1-1. Controlled/Uncontrolled Airspace Schematic

Source: United States Department of Transportation/FAA 2003

Class C airspace, generally, is that airspace from the surface to 4,000 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower, are serviced by a radar approach control, and that have a certain number of IFR operations or passenger enplanements. Although the actual configuration of Class C airspace is individually tailored, it usually consists of a surface area with a 5 nautical mile (NM) radius, and an outer circle with a 10 NM radius that extends from 1,200 feet to 4,000 feet above the airport elevation (FAA 2010). Billings is within Class C airspace.

Class D airspace, generally, is that airspace from the surface to 2,500 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower. The configuration of each Class D airspace area is individually tailored and when instrument procedures are published, the airspace will normally be designed to contain the procedures. Arrival extensions for instrument approach procedures may be designated as Class D or Class E airspace (FAA 2010). Bismarck, Gillette, Ellsworth AFB, Rapid City, and Minot AFB have Class D airspace.

Class E airspace is controlled airspace that is not Class A, B, C, or D. There are areas where Class E airspace begins at either the surface or 700 feet AGL that are used to transition to/from the terminal or en route environment (around non-towered airports). These areas are designated by VFR sectional charts. In most areas of the U.S., Class E airspace extends from 1,200 feet AGL up to, but not including, 18,000 feet MSL, the lower limit of Class A airspace. No ATC clearance or radio communication is required for VFR flight in Class E airspace. VFR visibility requirements below 10,000 feet MSL are 3

statute miles visibility and cloud clearance of 500 feet below, 1,000 feet above, and 2,000 horizontal. Above 10,000 feet MSL the requirement is 5 statute miles visibility, and cloud clearance of 1,000 feet below, 1,000 feet above, and 1 mile laterally (FAA 2003). Most airspace in the ROI below FL180 is Class E. There are seven types of Class E airspace, as described below.

- **Surface Area Designated for an Airport.** When so designated, the airspace will be configured to contain all instrument procedures.
- **Extension to a Surface Area.** These are Class E airspace areas that serve as extensions to Class B, C, and D surface areas designated for an airport. This airspace provides controlled airspace to contain standard instrument approach procedures without imposing a communications requirement on pilots operating under VFR.
- **Airspace Used for Transition.** These are Class E airspace areas beginning at either 700 or 1,200 feet AGL used to transition to/from the terminal or en route environment.
- **En Route Domestic Airspace Areas.** These areas are Class E airspace areas that extend upward from a specified altitude to provide controlled airspace where there is a requirement for IFR en route ATC services, but where the Federal Airway system is inadequate.
- **Federal Airways.** Federal Airways (Victor Airways) are Class E airspace areas, and, unless otherwise specified, extend upward from 1,200 feet to, but not including, 18,000 feet MSL. The proposed Gap MOAs are along Victor Airways within the ROI.
- **Other.** Unless designated at a lower altitude, Class E airspace begins at 14,500 feet MSL to, but not including, 18,000 feet MSL overlying: a) the 48 contiguous states, including the waters within 12 miles from the coast of the 48 contiguous states; b) the District of Columbia; c) Alaska, including the waters within 12 miles from the coast of Alaska, and that airspace above FL600; d) excluding the Alaska peninsula west of 160°00'00" west longitude, and the airspace below 1,500 feet above the surface of the earth unless specifically so designated.
- **Offshore/Control Airspace Areas.** This includes airspace areas beyond 12 NM from the coast of the U.S., wherein air traffic control services are provided (FAA 2010). There are no offshore/control airspace areas in the proposed airspace changes.

Airspace that has not been designated as Class A, B, C, D, or E airspace is Uncontrolled Airspace (Class G) (FAA 2010). Class "G" airspace generally underlies Class E airspace with vertical limits up to 700 feet AGL, 1,200 feet AGL, or 14,500 feet AGL, whichever applies. Cloud clearance and visibility requirements differ by altitude and day versus night.

Most of the airspace directly affected by the proposed PRTC consists of Class E. As noted above, some airports in the ROI include Class D airspace.

3.1.3.2 SPECIAL ACTIVITY AIRSPACE

Special Activity Airspace (SAA), a term that includes Airspace for Special Use, SUA, and others (i.e., Temporary Flight Restrictions [TFRs]), is any airspace with defined dimensions within the National Airspace System wherein limitations may be imposed upon aircraft operations. This airspace may be prohibited areas, restricted areas, MOAs, ATCAAs, and any other designated airspace areas.

Airspace for Special Use includes Military Training Routes (MTRs) (Instrument Routes [IR]/Visual Routes [VR]), ATCAA, aerial refueling track/anchors, slow routes, and low-altitude tactical navigation areas.

MTRs, IRs, ATCAAs, and aerial refueling tracks are within the ROI. Establishment of new ATCAAs and changes to existing ATCAAs are part of the proposed airspace changes to support B-1 and B-52 training.

SUA is defined airspace wherein activities must be confined because of their nature, or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. The types of SUA are Prohibited Areas, Restricted Areas, MOAs, Warning Areas, Alert Areas, Controlled Firing Areas, and National Security Areas. MOAs are SUAs in the ROI. Establishment of new MOAs and changes to existing MOAs are part of the proposed airspace changes to support B-1 and B-52 training.

3.1.3.2.1 *MILITARY OPERATIONS AREAS*

MOAs are established to separate or segregate certain non-hazardous military activities from IFR aircraft traffic and to identify VFR aircraft traffic where these military activities are conducted (see Figure 2-2). Ellsworth AFB manages existing Powder River A and B MOAs, and is proposing new MOAs as part of the PRTC. MOAs are SUA of defined vertical and lateral limits established outside Class A airspace to separate and segregate certain non-hazardous military activities from IFR traffic and to identify for VFR traffic where these activities are conducted (FAA 2010). MOAs are considered "joint use" airspace. Non-participating aircraft operating under VFR are permitted to enter a MOA, even when the MOA is active for military use. Aircraft operating under IFR must remain clear of an active MOA unless approved by the responsible ATC. If an IFR aircraft is approved to transit a MOA that part of the MOA is effectively made not active for military training during the IFR aircraft transit.

Within an active MOA, flight by both participating and VFR non-participating aircraft is conducted under the "see-and-avoid" concept, which stipulates that "when weather conditions permit, pilots operating VFR are required to observe and maneuver to avoid other aircraft. Right-of-way rules are contained in Code of Federal Regulations (14 CFR) Part 91" (FAA 2010). The responsible ATC provides separation service for aircraft operating under IFR and MOA participants. The see-and-avoid procedures mean that if a MOA were active during weather with restricted visibility, the general aviation pilot flying VFR could not safely access the MOA airspace and a pilot requesting IFR clearance would not be permitted to access the active MOA. An aircraft flying VFR which encountered weather or other conditions requiring IFR flight would need to declare an in-flight emergency and communicate with the ATC who would communicate with Ellsworth AFB to contact training aircraft and establish a temporary floor in the MOA high enough for the VFR pilot to be safely directed IFR by ATC.

Figure 3.1-2 presents the existing Powder River airspace and the proposed PRTC. The existing Powder River A MOA has a charted altitude from the surface to FL180 and has published times of use. Powder River B MOA has a charted altitude from 1,000 feet AGL to FL180 and is used intermittently (which is announced by NOTAM) (Billings Sectional Aeronautical Chart). When there is a change in the MOA activation, such as a mechanical delay in launch of a B-1 training mission, a new NOTAM is issued 2 hours in advance of the launch. Powder River A and B MOAs exclude airspace below 1,500 feet AGL over the Broadus and Belle Creek public airports and have avoidance areas over Lanning, Laird, and Sky private airfields, as well as over other locations. During DEIS review, some individuals expressed dissatisfaction with the existing Powder River MOAs whereas others noted that training in the existing Powder River MOAs does not significantly impact ranching activities.

3.1.3.2.2 AIR TRAFFIC CONTROL ASSIGNED AIRSPACE

Air Traffic Control Assigned Airspace (ATCAA) is airspace of defined vertical and lateral limits, assigned by Air Traffic Control for the purpose of providing air traffic segregation between the specified activities

being conducted within the assigned airspace and other IFR air traffic (FAA 2010). This airspace, if not required for other purposes, may be made available for military use. ATCAAs are in Class A airspace and are frequently structured and used to extend the horizontal and/or vertical boundaries of MOAs. ATCAAs overlie the Powder River MOAs (conceptually depicted in Figure 2-2) and would be part of the PRTC (see Figure 3.1-2).

The alternatives for the PRTC include establishment of new ATCAA airspace up to FL260 above the MOAs and modification to existing ATCAAs. Figure 3.1-2 also depicts the proposed Gateway West and East ATCAAs which do not propose corresponding MOAs beneath the ATCAAs.

The MOAs and ATCAAs associated with the Powder River airspace are developed, coordinated, used, and managed in accordance with Letters of Agreement between the 28th Bomb Wing (28 BW) and Salt Lake City, and Denver ARTCCs. For the Powder River airspace, the Letter of Agreement defines responsibilities, and outlines procedures for aircraft operations, air traffic control operations, and utilization of airspace for which the 28 BW is the scheduling authority. Such Letters of Agreement are supplementary to the procedures in FAA Orders 7110.65T (Air Traffic Control) and 7610.4N (Special Military Operations). Currently, B-1s operate within all airspace units associated with the existing complex, while B-52 operations occur primarily within the Crossbow ATCAA above the Powder River A/B MOA.

Table 3.1-1 lists existing MOAs and ATCAAs associated with the current Powder River airspace. During review of the proposed PRTC airspace, the FAA explained that high altitude commercial flights traverse the existing ATCAAs were usually above FL260. As a result of review comments on the DEIS, the Air Force and FAA determined that training in airspace above FL260 would no longer be included as part of the proposed PRTC. Figure 3.1-3 indicates the airspace boundaries of the controlling ARTCC overlain on the proposed PRTC.

Table 3.1-1. Existing MOAs and ATCAAs Associated With the Powder River Airspace

	Altitudes		
	Floor	***Ceiling***	***Controlling ARTCC***
Powder River A MOA	Surface	Up to but not including FL180	Salt Lake City
Powder River B MOA	1,000 feet AGL	Up to but not including FL180	Denver
Powder River ATCAA	FL180	FL260 inclusive or as assigned	Denver
Gateway ATCAA	FL180	FL260 inclusive or as assigned	Denver
Crossbow ATCAA	FL270	FL450 inclusive or as assigned	Denver
Black Hills ATCAA	FL200	FL230 inclusive	Denver

Note: FL180 = Flight Level 180 (approximately 18,000 feet MSL)
Source: FAA Order 7400.8S Special Use Airspace, Denver ARTCC/Salt Lake City ARTCC/28BW Letter of Agreement, Subject: Powder River Training Complex and Crossbow ATCAA. December 10, 2006.

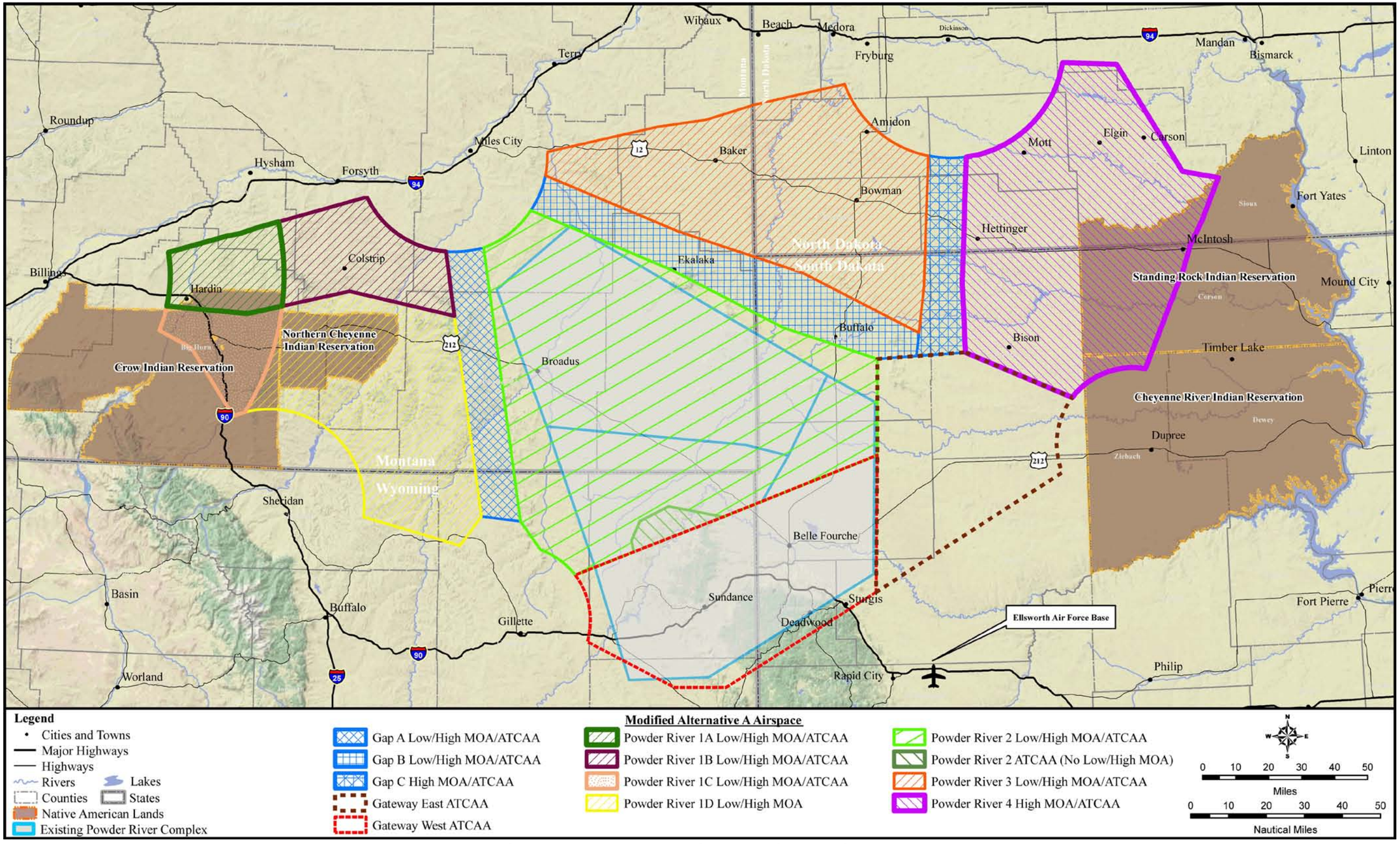

Figure 3.1-2. Current and Proposed PRTC Airspace

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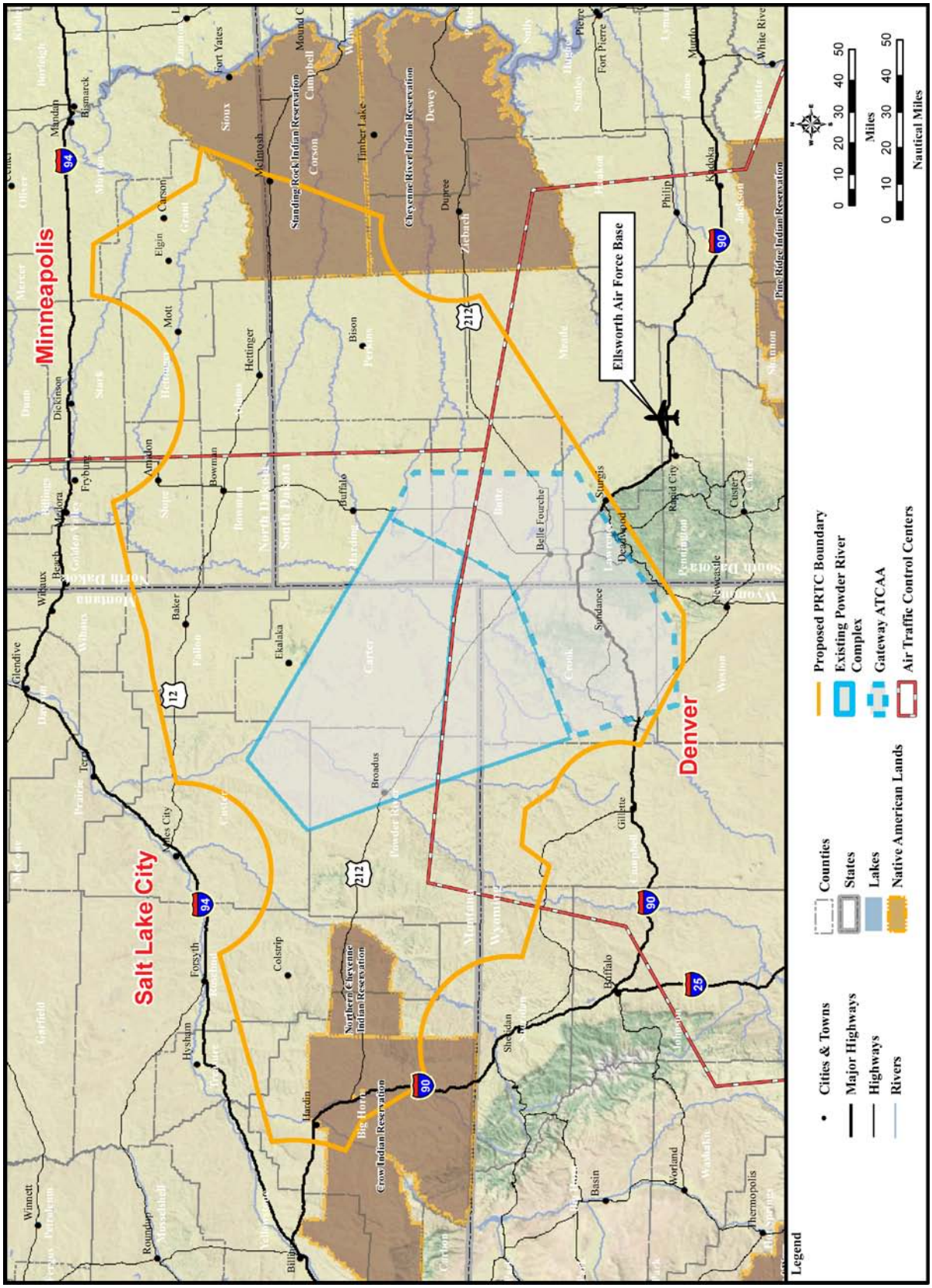

Figure 3.1-3. Controlling ARTCCs and the Proposed PRTC

3.1.3.3 MILITARY TRAINING ROUTES

MTRs are single direction flight corridors developed and used by the DoD and associated Air National Guard (ANG) units to practice high-speed, low-altitude flight, generally below 10,000 feet MSL. Specifically, MTRs are airspace of defined vertical and lateral dimensions established for the conduct of military flight training at airspeeds in excess of 250 knots indicated airspeed (FAA 2004). MTRs are developed in accordance with criteria specified in FAA Order 7610.4 (FAA 2004). They are described by a centerline with defined horizontal limits on either side of the centerline and vertical limits expressed as minimum and maximum altitudes along the flight path. MTRs are identified as VR or IR.

B-52 (pictured here) and B-1 bombers have historically used MTRs in Montana, North Dakota, South Dakota, and Wyoming for low-altitude penetration mission training.

MTRs designated as VR are flown under VFR conditions whereas MTRS designated as IR are flown under IFR conditions. Figure 3.1-4 shows the three IRs which traverse the area and have been used by a variety of aircraft over the years, including B-1 and B-52 aircrews training for their low-level penetration missions. During public hearings, participants under the proposed Powder River 3 (PR-3) and Powder River 4 (PR-4) MOAs noted having experienced low-level B-52 and B-1 overflights on the MTRs. Public comments noted that B-52s were easier to see and avoid than fighters on the IRs. A public concern was expressed that fully loaded crop dusters at 500 feet AGL would be unable to avoid a high speed low-level B-1 and could experience wake vortex impacts. IR-473, IR-485, and IR-492 converge on the Belle Fourche Electronic Scoring Site (ESS) with simulated threats and targets. These IRs were extensively used for low-altitude Cold War era penetration training. The PRTC proposal does not involve any changes to the structure or use of MTRs.

Aviation and Airspace Use Terminology

Above Ground Level (AGL): *Altitude expressed in feet measured above the ground surface.*

Mean Sea Level (MSL): *Altitude expressed in feet measured above average (mean) sea level.*

Flight Level (FL): *Manner in which altitudes at 18,000 feet MSL and above are expressed, as measured by a standard altimeter setting of 29.92.*

Visual Flight Rules (VFR): *A standard set of rules that all pilots, both civilian and military, must follow when not operating under instrument flight rules and in visual meteorological conditions. These rules require that pilots remain clear of clouds and avoid other aircraft.*

Instrument Flight Rules (IFR): *A standard set of rules that all pilots, civilian and military, must follow when operating under flight conditions that are more stringent than visual flight rules. These conditions include operating an aircraft in clouds, operating above certain altitudes prescribed by Federal Aviation Administration (FAA) regulations, and operating in some locations such as major civilian airports. Air Traffic Control (ATC) agencies ensure separation of all aircraft operating under IFR.*

Source: FAA 2004

3.1.3.4 CIVIL AIRSPACE USAGE

Civil aircraft consist primarily of commercial aircraft and general aviation. Civil aircraft operations can occur anywhere within the airspace described in Section 3.1.3.1 if and when permitted. Civilian aircraft often fly VFR using topographic or highway features and/or using Global Positioning System (GPS) for direct routing. There are also specified routes and areas which have been identified to facilitate air transportation and airspace management. This section describes these routes and areas.

Table 3.1-2 presents the airspace usage by aircraft flying IFR for representative days in 2012. This table is an update of the information presented in DEIS Section 3.1.1.6.

Table 3.1-2 includes the total and daily average of flights during the proposed morning and afternoon/evening MOA scheduling periods. The proposed PRTC schedule would normally include morning and afternoon training on Monday through Thursday and morning training on Friday. The average traffic from Table 3.1-2 is used in Chapter 4 for assessment of airspace impacts.

Table 3.1-2. FAA MOA/ATCAA Traffic Counts[1]

Airspace	*Altitudes*	*During Proposed PRTC Activation Hours*			
		0730-1200	*Average/day*	*1800-2330*	*Average/day*
11/10-11/12/12 (3 days)					
PR-1A Low	500 AGL-12,000 MSL	0	0.00	0	0.00
PR-1A High	12,000 MSL-FL180	3	1.00	7	2.33
PR-1A ATCAA	FL180-FL260	3	1.00	5	1.67
PR-1B Low	500 AGL-12,000 MSL	0	0.00	0	0.00
PR-1B High	12,000 MSL-FL180	0	0.00	1	0.33
PR-1B ATCAA	FL180-FL260	0	0.00	4	1.33
PR-1C Low	500 AGL-12,000 MSL	0	0.00	0	0.00
PR-1C High	12,000 MSL-FL180	1	0.33	3	1.00
PR-1C ATCAA	FL180-FL260	3	1.00	6	2.00
PR-1D Low	500 AGL-12,000 MSL	0	0.00	0	0.00
PR-1D High	12,000 MSL-FL180	0	0.00	0	0.00
PR-1D ATCAA	FL180-FL260	4	1.33	7	2.33
PR-2 Low	500 AGL-12,000 MSL	0	0.00	2	0.67
PR-2 High	12,000 MSL-FL180	1	0.33	6	2.00
PR-2 ATCAA	FL180-FL260	16	5.33	23	7.67
PR-3 Low	500 AGL-12,000 MSL	4	1.33	4	1.33
PR-3 High	12,000 MSL-FL180	5	1.67	4	1.33
PR-3 ATCAA	FL180-FL260	9	3.00	5	1.67
PR-4 Low	500 AGL-12,000 MSL	5	1.67	4	1.33
PR-4 High	12,000 MSL-FL180	16	5.33	11	3.67
PR-4 ATCAA	FL180-FL260	19	6.33	5	1.67
Gateway W	FL180-FL260	5	1.67	14	4.67
Gateway E	FL180-FL260	10	3.33	27	9.00
Gap A Low	500 AGL-12,000 MSL	0	0.00	0	0.00
Gap A High	12,000 MSL-FL180	0	0.00	1	0.33
Gap A ATCAA	FL180-FL260	1	0.33	6	2.00
Gap B Low	500 AGL-12,000 MSL	1	0.33	2	0.67
Gap B High	12,000 MSL-FL180	2	0.67	3	1.00
Gap B ATCAA	FL180-FL260	10	3.33	11	3.67
Gap C Low	500 AGL-12,000 MSL	1	0.33	4	1.33
Gap C High	12,000 MSL-FL180	3	1.00	4	1.33
Gap C ATCAA	FL180-FL260	6	2.00	4	1.33

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Table 3.1-2. FAA MOA/ATCAA Traffic Counts[1]

Airspace	*Altitudes*	*During Proposed PRTC Activation Hours*			
		0730-1200	*Average/day*	*1800-2330*	*Average/day*
5/29-6/5/12 (8 days)					
PR-1A Low	500 AGL-12,000 MSL	1	0.13	3	0.38
PR-1A High	12,000 MSL-FL180	9	1.13	11	1.38
PR-1A ATCAA	FL180-FL260	9	1.13	11	1.38
PR-1B Low	500 AGL-12,000 MSL	1	0.13	0	0.00
PR-1B High	12,000 MSL-FL180	0	0.00	2	0.25
PR-1B ATCAA	FL180-FL260	9	1.13	6	0.75
PR-1C Low	500 AGL-12,000 MSL	0	0.00	0	0.00
PR-1C High	12,000 MSL-FL180	6	0.75	0	0.00
PR-1C ATCAA	FL180-FL260	10	1.25	1	0.13
PR-1D Low	500 AGL-12,000 MSL	2	0.25	1	0.13
PR-1D High	12,000 MSL-FL180	4	0.50	4	0.50
PR-1D ATCAA	FL180-FL260	14	1.75	3	0.38
PR-2 Low	500 AGL-12,000 MSL	11	1.38	1	0.13
PR-2 High	12,000 MSL-FL180	14	1.75	6	0.75
PR-2 ATCAA	FL180-FL260	32	4.00	17	2.13
PR-3 Low	500 AGL-12,000 MSL	14	1.75	7	0.88
PR-3 High	12,000 MSL-FL180	12	1.50	14	1.75
PR-3 ATCAA	FL180-FL260	20	2.50	12	1.50
PR-4 Low	500 AGL-12,000 MSL	24	3.00	4	0.50
PR-4 High	12,000 MSL-FL180	28	3.50	22	2.75
PR-4 ATCAA	FL180-FL260	32	4.00	20	2.50
Gateway W	FL180-FL260 (2009)	13	1.63	37	4.63
Gateway E	FL180-FL260 (2009)	25	3.13	71	8.88
Gap A Low	500 AGL-12,000 MSL	4	0.50	2	0.25
Gap A High	12,000 MSL-FL180	6	0.75	3	0.38
Gap A ATCAA	FL180-FL260	14	1.75	8	1.00
Gap B Low	500 AGL-12,000 MSL	6	0.75	0	0.00
Gap B High	12,000 MSL-FL180	11	1.38	3	0.38
Gap B ATCAA	FL180-FL260	37	4.63	20	2.50
Gap C Low	500 AGL-12,000 MSL	5	0.63	11	1.38
Gap C High	12,000 MSL-FL180	12	1.50	11	1.38
Gap C ATCAA	FL180-FL260	18	2.25	12	1.50

1. Traffic counts include IFR arrivals and departures to airports under the airspace as well as transiting IFR aircraft.

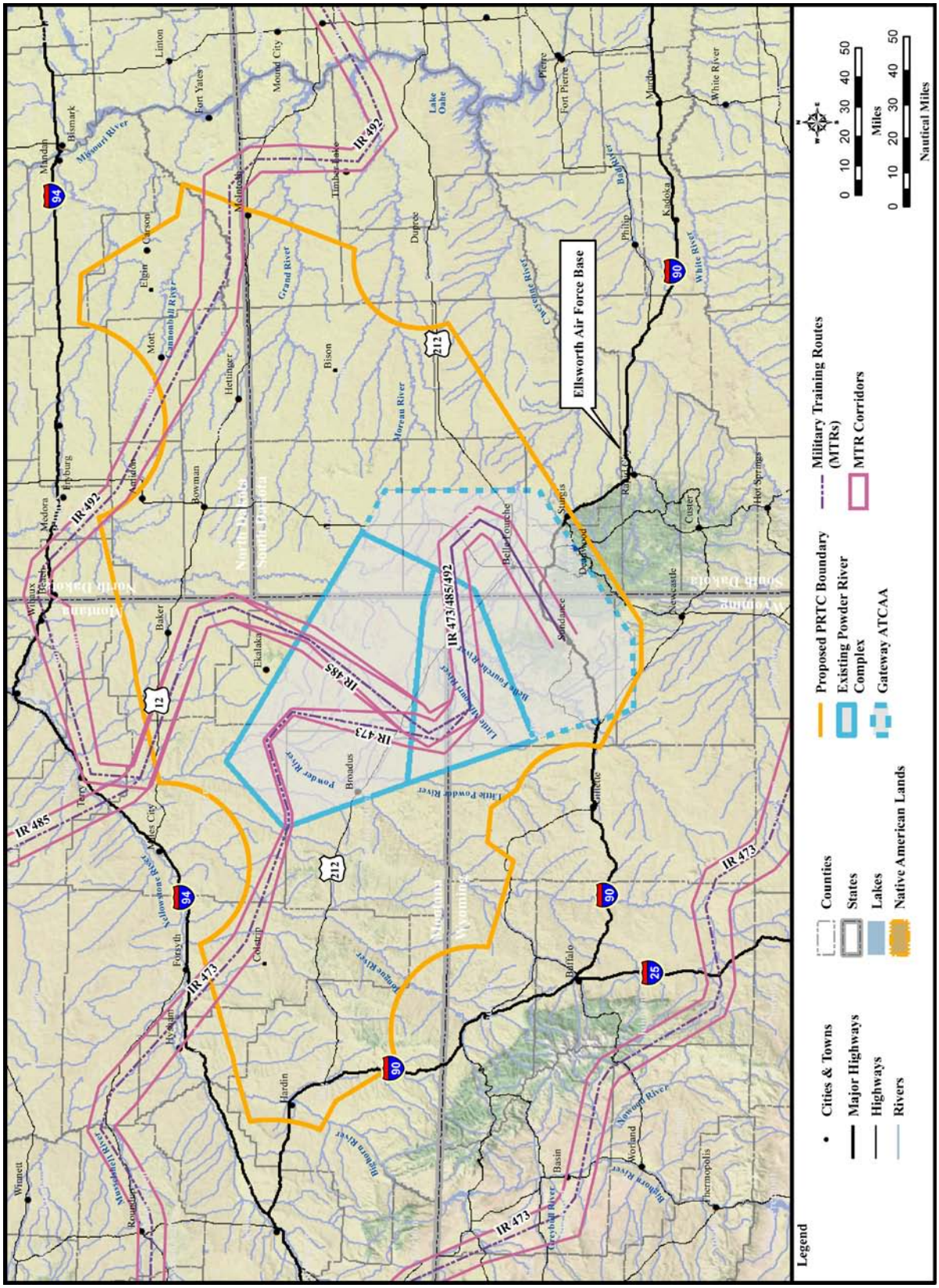


Figure 3.1-4. MTRs in the Vicinity of the Proposed PRTC

3.1.3.4.1 *VICTOR AIRWAYS*

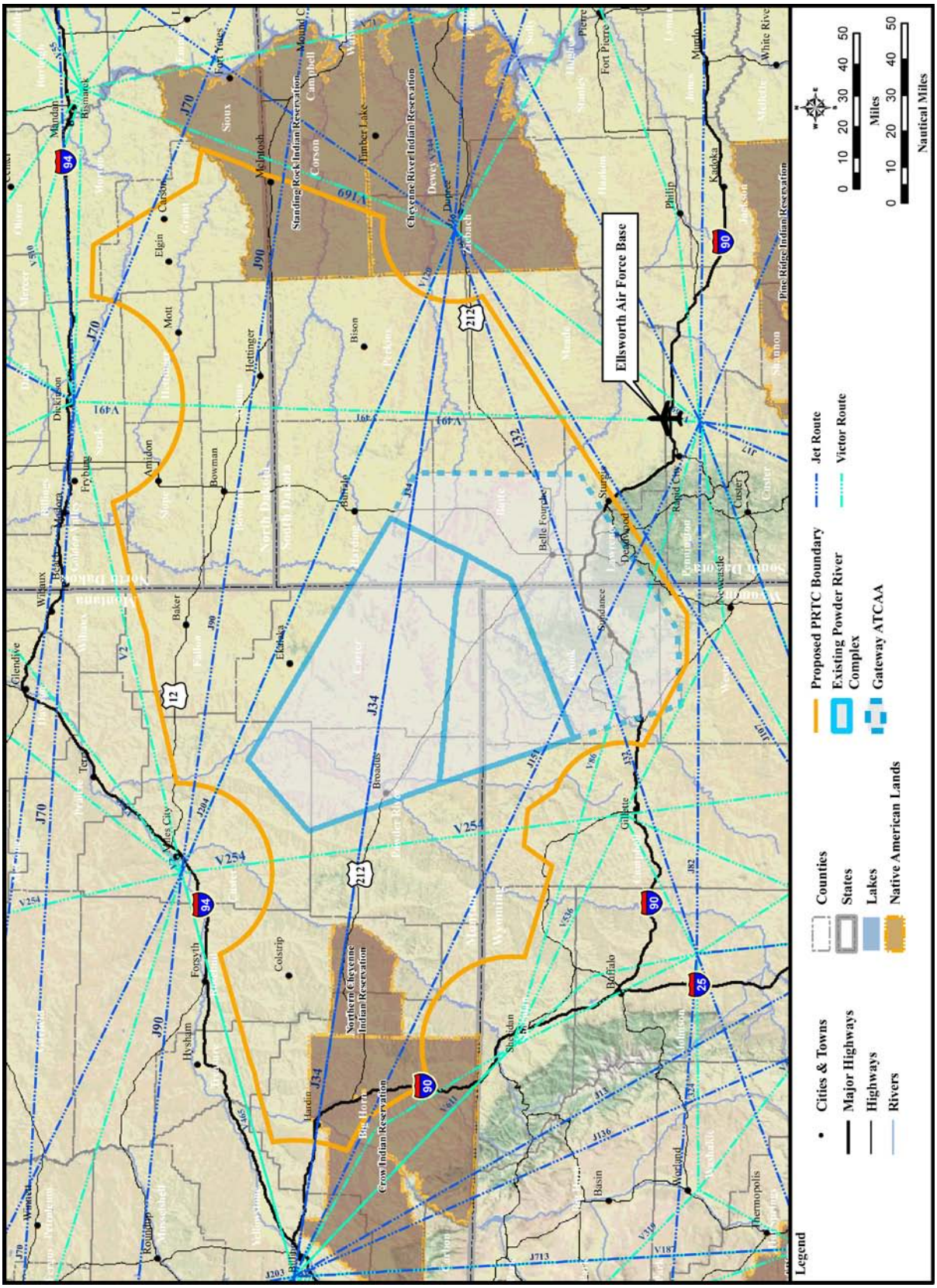
Victor Airways are "highways in the sky" and are used by aircraft to transit between navigational aids. Victor Airways are designated on aeronautical charts with the letter "V" (hence Victor). Victor Airways, sometimes referred to as Victor Routes, are Class E airspace extending typically from 1,200 feet AGL to FL180. The width of the victor corridor depends on the distance from the navigational aids (such as VHF omnidirectional radio ranges [VORs]). When VORs are less than 102NM from each other, the Victor airway extends 4NM on either side of the center line (8NM total width). When VORs are more than 102NM from each other, the width of the airway in the middle increases. The width of the airway beyond 51NM from a navigational aid (navaid) is 4.5 degrees on either side of the center line between the two navaids (at 51NM from a navaid, 4.5 degrees from the centerline of a radial is equivalent to 4NM). The maximum width of the airway is at the middle point between the two navaids. This is when 4.5 degrees from the center radial results in a maximum distance for both navaids. Victor Airways and Jet Routes are presented on Figure 3.1-5.

The PRTC MOAs are designed to avoid most Victor Airways during day-to-day training operations. Three Victor Airways are coincident with the proposed Gap MOAs. The proposed Gap MOAs have a shape to reflect the navaid capabilities along the Victor Routes. The Gap MOAs are proposed for use during LFEs for 1 to 3 days a maximum of once per quarter for a total of not more than 10 days per year. The three Victor Airway/Gap MOA routes and Victor Airway adjacent to the proposed PRTC are:

- V-254, between Gillette, Wyoming (WY) and Miles City, Montana (MT), is the proposed Gap A MOA, which would be scheduled not more than 10 days per year. V-254 has en route obstacles which reach 4,800 feet MSL. V-254 has a traffic count of approximately three flights per day (Table 3.1-2).
- V-491, between Dickinson, North Dakota (ND) and Rapid City, South Dakota (SD), is the proposed Gap C MOA, which would be scheduled not more than 10 days per year. V-491 has en route obstacles which reach 3,700 feet MSL. V-491 has a traffic count of approximately four flights per day (Table 3.1-2).
- V-120, between Miles City, MT and Dupree, SD, is the proposed Gap B MOA, which would be scheduled not more than 10 days per year. V-120 has a minimum en route altitude of 9,000 feet MSL. V-120 is a primary route running from Minneapolis westward and is utilized by pilots seeking to fly below Class A airspace; the route has a lower minimum en route altitude across the northern Rockies (personal communication, Payne 2008). V-120 has a traffic count of approximately three flights per day (Table 3.1-2).
- V-247, between Sheridan, WY and Billings, MT. The proposed PR-1C and PR-1D MOAs were adjusted to avoid V-247. V-247 has en route obstacles that reach 9,600 feet MSL.
- V-86, between Billings, MT and Rapid City, SD, traverses the southern border of the proposed PR-1B MOA and crosses under the Gateway West ATCAA. V-86 has en route obstacles that reach 4,500 feet MSL.

One explanation for the relatively low Victor Route traffic counts could be the limited radar coverage, and, in some cases, limited radio coverage in portions of the ROI. Civil pilots in the region typically use direct routing with GPS instead of flying on Victor Routes.

As previously indicated, the proposed PRTC was laid out to avoid as many Victor Routes as possible. This places additional Victor segments outside the proposed PRTC. These segments include V-465 between Billings and Miles City, V-2 between Miles City and Dickinson, V-169 between Bismarck and Rapid City, V-536 between Gillette and Sheridan, and V86-611 between Sheridan and Billings.


Ellsworth Air Force Base
Legend
Cities & Towns
Major Highways
Highways
Rivers
Counties
States
Lakes
Native American Lands
Proposed PRTC Boundary
Existing Powder River Complex
Gateway ATCAA
Jet Route
Victor Route
Miles
Nautical Miles
Standing Rock Indian Reservation
Cheyenne River Indian Reservation
Pine Ridge Indian Reservation
Northern Cheyenne Indian Reservation
Crow Indian Reservation
Belle Fourche
Sundance
Broadus
Gillette
Buffalo
Sheridan
Hyshim
Forsyth
Colstrip
Miles City
Glendive
Baker
Ekalaka
Bowman
Amidon
Mott
Hettinger
Bison
Timber Lake
Mobridge
Fort Yates
Fort Pierre
Pierre
Murdo
Kadoka
Rapid City
Custer
Deadwood
Spearfish
Newcastle
Wheatland
Douglas
Casper
Basin
Worland
Thermopolis
Lovell
Billings
Roundup
Wolf Point
Williston
Dickinson
Bismarck
Mandan
Elgin
Carson
Melvin
Sioux
Campbell
Corson
Dewey
Harding
Perkins
Meade
Stanley
Jackson
Washabaugh
Big Horn
Sheridan
Johnson
Natrona
Converse
Niobrara
Weston
Crook
Campbell
Harding
Butte
Lawrence
Pennington
Custer
Fall River
Oglala Lakota
Shannon
Jones
Haakon
Jackson
Mellette
White River
Todd
Tripp
Gregory
Lyman
Stanley
Jones
Haakon
Meade
Pennington
Custer
Fall River
Oglala Lakota
Shann

3.1.3.4.2 *JET ROUTES*

Jet routes are designated highways in Class A airspace for high altitude traffic above FL180. These routes are used by commercial aviation operators that fly under IFR control by the three FAA ARTCC centers (Minneapolis, Salt Lake City, or Denver). Figure 3.1-3 demonstrates the three ARTCC areas as they relate to the proposed PRTC. While the minimum en route altitude for many of these commercial routes is FL180, the majority of flight activity on these routes is at altitudes above FL260 and up to FL450. The PRTC proposal does not include military training above FL260.

3.1.3.4.3 *AIRPORTS AND AIRFIELDS*

Multiple public airports and private airfields are located under the proposed PRTC. Figure 3.1-6 presents the public airports. Table 3.1-3 lists the public airports and based aircraft under or near each of the proposed PRTC MOAs as of February 2010. Table 3.1-4 provides comparable information for the identified private airfields under or near each of the proposed PRTC MOAs. Table 3.1-5 summarizes the number of public airports and private airfields associated with, and those under, the proposed PRTC MOAs and associated Gap MOAs. Table 3.1-6 provides reported operation information for public airports under or near each proposed PRTC MOA. Table 3.1-6 includes the rounded up estimated daily 2014 operations for airports under the proposed MOAs and the average estimated daily operations during the time the proposed PRTC MOAs would be scheduled. Table 3.1-7 presents data for private airfields with estimated annual operations based on extrapolations from public airport operations per based aircraft. Annual operations for private airfields under the proposed airspace are estimated by calculating the reported total based aircraft on public airports under the proposed airspace, calculating the reported annual operations for the public airports, and dividing the annual operations by the number of based aircraft. This produces an annual estimate of 440 operations per private airfield based aircraft used in the DEIS and is used in this Final EIS (FEIS). The estimated private airfield annual operations in Table 3.1-7 are the regions annual average operations per based aircraft at public airports multiplied by the number of based aircraft reported at the private airfield. Table 3.1-7 includes comparable daily operations for airfields and potentially impacted daily operations during proposed PRTC scheduling.

Three public airports underlie the proposed PR-1A/B/C/D MOA airspace: Fairgrounds, Colstrip, and the St. Labre, MT. Colstrip has controlled airspace above 700 feet AGL associated with its operation. Table 3.1-8 presents the instrument approaches for Colstrip Airport during the first four months of 2009. These data demonstrate that a typical month would average one to two instrument flights per day into Colstrip Airport. Private airfields under the airspace are shown in Table 3.1-4 with their total estimated annual operations shown in Table 3.1-7.

Table 3.1-9 sums the estimated existing daily flight operations in the proposed PRTC MOAs. Table 3.1-9 details the average daily traffic under any proposed airspace and the average daily traffic potentially affected by MOA scheduling in the Powder River 1A (PR-1A), 1B, 1C, and 1D MOAs.

Two public airports underlie the existing Powder River A/B MOAs and the proposed Powder River 2 (PR-2) MOAs: Broadus and Belle Creek Airports in Montana. Several private airfields also underlie the PR-2 MOA: Laird Ranch, Castleberry, Sikorski Ranch, and Lanning Ranch Airports in Montana and Camp Crook and Sky Ranch in South Dakota. There is no controlled airspace associated with any of these public or private operations. Aeronautical charts reflect that the floor of the MOA is restricted to 1,500 feet AGL in the vicinity of Public Use Airports (listed in the FAA Airport Facilities Directory). Private airports will not have the 1,500-foot exclusions listed on FAA charts.

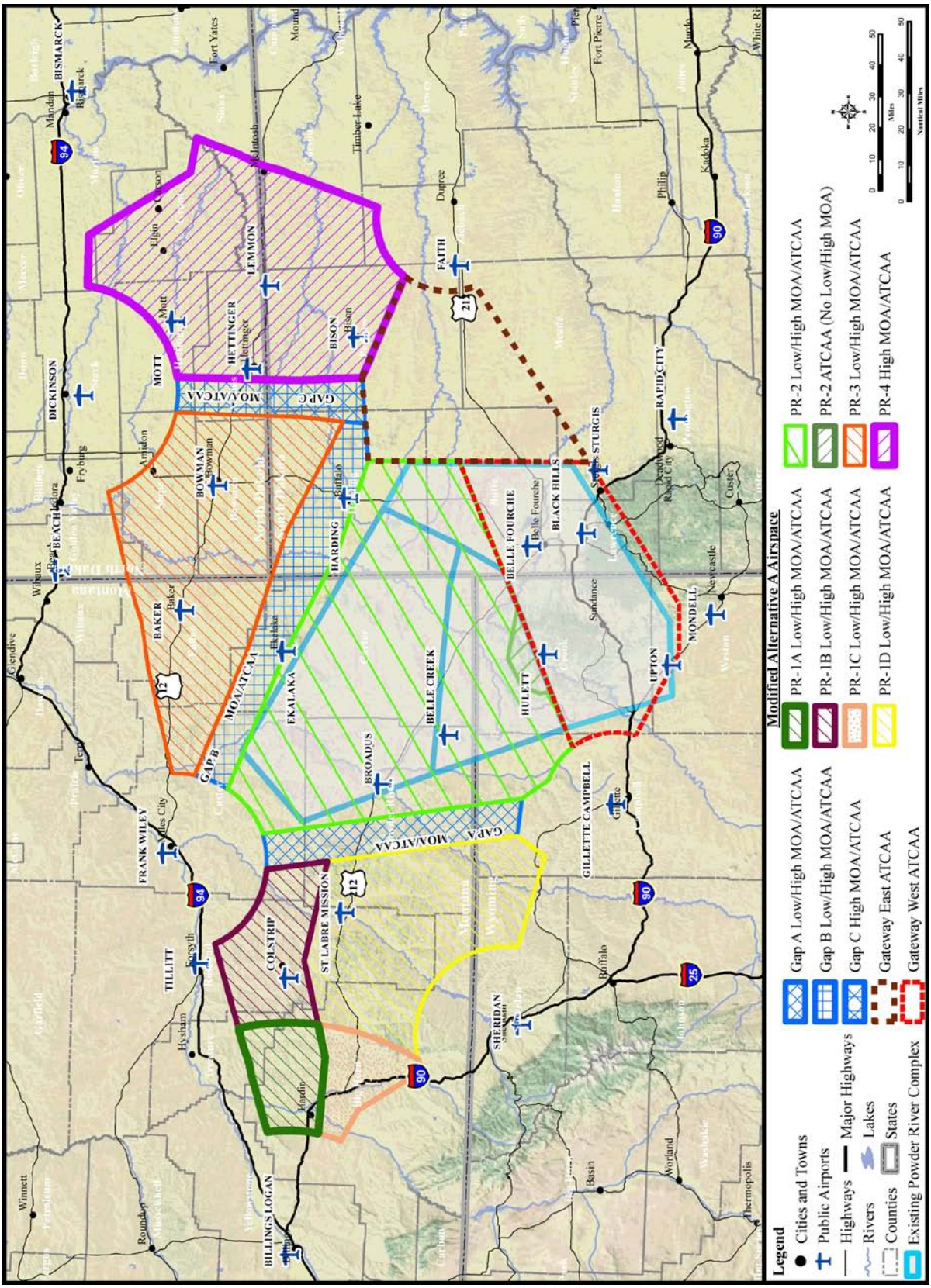


Figure 3.1-6. Public Airports Under and Near the Proposed PRTC Airspace

Table 3.1-3. Public Airports and Based Aircraft

Location[1]	Airport (Proposed MOA)	State	Airport Designation	Elevation	Tower	Fixed Base Operator	Total Based Aircraft[2]	Aircraft Type					
								Single Engine	Multi Engine	Jet	Helicopter	Military	Glider/ Ultralight
Proposed PR-1A, PR-1B[3], PR-1C, or PR-1D MOAs Associated Public Airports and Based Aircraft													
N	Billings (1A)	MT	BIL	3,652	Yes	Yes	167	91	59	11	6	0	0
U	Colstrip (1A)	MT	M46	3,428	No	No	11	11	0	0	0	0	0
N	Fort Smith (1A)	MT	5U7	3,242	No	No	0	0	0	0	0	0	0
U	Hardin(1A)	MT	F02	2,911	No	No	7	7	0	0	0	0	0
N	Sheridan (1B)	WY	SHR	4,021	No	Yes	98	69	21	2	4	0	2
N	Tillitt Field (1A)	MT	1S3	2,729	No	Yes	24	24	0	0	0	0	0
Total Under and Near Proposed PR-1A/B/C/D MOAs							307	202	80	13	10	0	2
Total Under Proposed PR-1A/B/C/D MOAs							18	18	0	0	0	0	0
Proposed PR-2 MOA Associated Public Airports and Based Aircraft													
U	Belle Creek[4]	MT	3V7	3,678	No	No	NR	3	0	0	0	0	1
U	Broadus	MT	00F	3,282	No	No	1	1	0	0	0	0	0
N	Gillette	WY	GCC	4,364	Yes	Yes	52	45	6	1	0	0	0
Total Under and Near Proposed PR-2 MOA							53	46	6	1	0	0	0
Total Under Proposed PR-2 MOA							1	1	0	0	0	0	0
Proposed PR-3[5] MOA Associated Public Airports and Based Aircraft													
U	Baker	MT	BHK	2,981	No	Yes	25	21	2	0	2	0	0
N	Beach	ND	20U	2,756	No	No	8	8	0	0	0	0	0
U	Bowman	ND	BPP	2,958	No	Yes	16	14	2	0	0	0	0
U	Ekalaka[6]	MT	97M	3,503	No	No	3	3	0	0	0	0	0
U	Harding-Buffalo	SD	9D2	2,891	No	No	5	5	0	0	0	0	0
N	Miles City	MT	MLS	2,630	No	No	20	18	2	0	0	0	0
Total Under and Near Proposed PR-3 MOA							77	69	6	0	2	0	0
Total Under Proposed PR-3 MOA							49	43	4	0	2	0	0

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Table 3.1-3. Public Airports and Based Aircraft

Location[1]	Airport (Proposed MOA)	State	Airport Designation	Elevation	Tower	Fixed Base Operator	Total Based Aircraft[2]	Aircraft Type					
								Single Engine	Multi Engine	Jet	Helicopter	Military	Glider/ Ultralight
Proposed PR-4[6] MOA Associated Public Airports and Based Aircraft													
N	Bismarck	ND	BIS	1,661	Yes	Yes	93	48	20	8	2	15	0
U	Bison	SD	6V5	2,791	No	No	10	10	0	0	0	0	0
N	Dickinson	ND	DIK	2,592	No	Yes	21	18	2	1	0	0	0
U	Elgin[4]	ND	Y71	2,355	No	No	2	0	0	0	0	0	0
N	Faith	SD	D07	2,584	No	Yes	7	7	0	0	0	0	0
N	Glen Ullin	ND	D57	2,091	No	No	7	6	0	0	0	0	1
U	Hettinger	ND	HEI	2,706	No	Yes	23	22	1	0	0	0	0
U	Lemmon	SD	LEM	2,573	No	Yes	12	12	0	0	0	0	0
N	Mandan	ND	Y19	1,944	No	Yes	79	75	3	0	1	0	0
U	McIntosh[7]	SD	8D6	2,251	No	No	0	0	0	0	0	0	0
U	Mott	ND	3P3	2,413	No	No	9	8	0	0	1	0	0
Total Under and Near Proposed PR-4 MOA							263	206	26	9	4	15	1
Total Under Proposed PR-4 MOA							56	52	1	0	1	0	0
Proposed Gateway East and West ATCAAs Associated Public Airports and Based Aircraft													
U	Belle Fourche	SD	EFC	3,191	No	Yes	29	24	1	0	0	0	4
U	Black Hills	SD	SPF	3,933	No	Yes	72	65	4	0	0	0	3
U	Hulett	WY	W43	4,264	No	No	2	2	0	0	0	0	0
N	Newcastle	WY	ECS	4,176	No	No	8	7	0	0	0	0	1
N	Rapid City	SD	RAP	3,204	Yes	Yes	111	70	31	8	1	0	1
U	Sturgis	SD	49B	3,255	No	Yes	25	23	2	0	0	0	0
U	Upton[8]	WY	83V	4,290	No	No	0	0	0	0	0	0	0
Total Under and Near Proposed Gateway ATCAA							247	191	38	8	1	0	9
Total Under Proposed Gateway ATCAA							128	114	7	0	0	0	7

Notes: 1. U = Under; N = Near
2. NR = none reported.
3. Proposed PR-1B includes Gap A data.
4. No data available as of 2/6/2014 from fltplan.com; source material from skyvector.com as of 6 February 2014
5. Proposed PR-3 includes Gap B data.
6. Proposed PR-4 includes Gap C data
7. No data available as of 2/6/2014 from fltplan.com; source material from skyvector.com as of 7 March 2013
8. No data available as of 2/6/2014 from fltplan.com; source material from skyvector.com as of 6 February 2014

Source: Source material (2014) from fltplan.com

Table 3.1-4. Private Airfields and Based Aircraft

Location[1]	Airfield	State	Designation	Elevation	Tower	Fixed Base Operator	Total Based Aircraft[2]	Aircraft Type					
								Single Engine	Multi Engine	Jet	Helicopter	Military	Glider/ Ultralight
Proposed PR-1A, PR-1B, PR-1C, or PR-1D MOAs[3] Associated Private Airfield and Based Aircraft													
N	Ruff (Custer) (1A)	MT	MT34	2,740	No	No	1	1	0	0	0	0	0
U	St. Labre (Ashland) (1B)	MT	3U4	2,909	No	No	NR	0	0	0	0	0	0
N	Xingu (Dayton) (1B)	WY	99WY	4,340	No	No	NR	0	0	0	0	0	0
Total Under and Near Proposed PR-1A/B/C/D MOAs							1	1	0	0	0	0	0
Total Under Proposed PR-1A/B/C/D MOAs							NR	0	0	0	0	0	0
Proposed PR-2 MOA Associated Private Airfield and Based Aircraft													
U	Lanning (Alzada)	MT	MT50	3,995	No	No	1	1	0	0	0	0	0
U	Laird Ranch (Ekalaka)	MT	MT05	3,462	No	No	3	2	1	0	0	0	0
U	Sky Ranch (Camp Crook)	SD	SD33	3,200	No	No	3	2	1	0	0	0	0
N	Madsen (Gillette)	WY	WY65	4,500	No	No	3	3	0	0	0	0	0
Total Under and Near Proposed PR-2 MOA							10	8	2	0	0	0	0
Total Under Proposed PR-2 MOA							7	5	2	0	0	0	0
Proposed PR-3 MOA[4] Associated Private Airfield and Based Aircraft													
N	Boyd (Golva)	ND	0NA9	2,750	No	No	1	1	0	0	0	0	0
U	Castleberry (Ekalaka)	MT	MT45	3,373	No	No	1	1	0	0	0	0	0
U	Dilse (Scranton)	ND	NA98	2,878	No	No	3	2	0	0	0	0	1
U	Hagen (Reeder)	ND	14ND	2,810	No	No	1	1	0	0	0	0	0
N	Hollstein (Wilbaux)[6]	MT	MT20	2,778	No	No	NR	0	0	0	0	0	0
U	Sikorski Ranch (Ekalaka)	MT	MT74	3,330	No	No	2	2	0	0	0	0	0
N	Sunday Creek (Miles City)	MT	MT29	2,490	No	Yes	6	6	0	0	0	0	0
U	Swenson (Belfield)	ND	ND29	2,900	No	No	1	1	0	0	0	0	0
U	Tennant Ranch (Camp Crook)	SD	SD76	3,090	No	No	1	1	0	0	0	0	0
Total Under and Near Proposed PR-3 MOA							16	15	0	0	0	0	1
Total Under Proposed PR-3 MOA							9	8	0	0	0	0	1

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Table 3.1-4. Private Airfields and Based Aircraft

Location[1]	Airfield	State	Designation	Elevation	Tower	Fixed Base Operator	Total Based Aircraft[2]	Aircraft Type					
								Single Engine	Multi Engine	Jet	Helicopter	Military	Glider/ Ultralight
Proposed PR-4 MOA[5] Associated Private Airfield and Based Aircraft													
N	Chase (Hebron)	ND	6NA5	2,140	No	No	3	3	0	0	0	0	0
U	Dorsey (Glad Valley)	SD	1SD0	2,350	No	No	2	2	0	0	0	0	0
N	Fitterer (Glen Ullin)[6]	ND	06ND	2,180	No	No	NR	0	0	0	0	0	0
N	Jurgens[6]	ND	75ND	2,370	No	No	NR	0	0	0	0	0	0
U	VIG Limousin (Faith)	SD	1SD4	2,552	No	No	1	1	0	0	0	0	0
Total Under and Near Proposed PR-4 MOA							6	6	0	0	0	0	0
Total Under Proposed PR-4 MOA							3	3	0	0	0	0	0
Proposed East and West Gateway ATCAAs Associated Private Airfield and Based Aircraft													
U	Barber (Enning)	SD	SD98	2,655	No	No	1	1	0	0	0	0	0
U	Bruch Airfield (Sturgis)	SD	SD35	2,980	No	No	1	1	0	0	0	0	0
U	Bruch Ranch (Sturgis)	SD	SD24	3,070	No	No	3	1	0	0	0	0	2
U	Ipy Ranch (Hulett)	WY	WY14	3,960	No	No	1	1	0	0	0	0	0
U	Keyhole (Moorcroft)	WY	01WY	4,250	No	No	1	1	0	0	0	0	0
N	Paradise Valley (Nemo)	SD	2SD0	4,500	No	No	3	3	0	0	0	0	0
U	Running Colors (Rapid City)	SD	3SD6	2,920	No	No	1	1	0	0	0	0	0
U	Taylor Field (Sundance)	WY	WY55	4,950	No	No	1	1	0	0	0	0	0
U	VIG (Opal)	SD	SD72	2,600	No	No	2	2	0	0	0	0	0
Total Under and Near Proposed Gateway ATCAA							14	12	0	0	0	0	2
Total Under Proposed Gateway ATCAA							11	9	0	0	0	0	2

Notes: 1. U = Under; N = Near
2. NR = None reported
3. Proposed PR-1B includes Gap A
4. Proposed PR-3 includes Gap B
5. Proposed PR-4 includes Gap C
6. Source material from skyvector.com; FAA information effective 7 March 2013

Source: Source material from airnav.com FAA information effective 11 Feb 2010 unless otherwise noted

Table 3.1-5. Summary of Public Airports, Private Airfields, and Based Aircraft

Proposed Airspace	*Total Airports and Airfields*	*Total Based Aircraft*	*Aircraft Type*					
			Single Engine	*Multi Engine*	*Jet*	*Helicopter*	*Military*	*Glider/ Ultralight*
PR-1A, PR-1B, PR-1C, and PR-1D MOA/ATCAA[1]								
Public Airport Totals Under and Near PR-1A	6	307	202	80	13	10	0	2
Public Airport Totals Under PR-1 Complex	2	18	18	0	0	0	0	0
Private Airfield Totals Under and Near PR-1 Complex	3	1	1	0	0	0	0	0
Private Airfield Totals Under PR-1 Complex	1	0	0	0	0	0	0	0
PR-2 MOA/ATCAA								
Public Airport Totals Under and Near PR-2	3	53	46	6	1	0	0	0
Public Airport Totals Under PR-2	2	1	1	0	0	0	0	0
Private Airfield Totals Under and Near PR-2	2	4	4	0	0	0	0	0
Private Airfield Totals Under PR-2	1	1	1	0	0	0	0	0
PR-3 MOA/ATCAA[2]								
Public Airport Totals Under and Near PR-3	6	77	69	6	0	2	0	0
Public Airport Totals Under PR-3	4	49	43	4	0	2	0	0
Private Airfield Totals Under and Near PR-3	11	22	19	2	0	0	0	1
Private Airfield Totals Under PR-3	8	15	12	2	0	0	0	1
PR-4 MOA/ATCAA[3]								
Public Airport Totals Under and Near PR-4	11	263	206	26	9	4	15	1
Public Airport Totals Under PR-4	6	56	52	1	0	1	0	0
Private Airfield Totals Under and Near PR-4	5	6	6	0	0	0	0	0
Private Airfield Totals Under PR-4	2	3	3	0	0	0	0	0
Proposed Gateway ATCAAs (included in Modified Alternatives A, B, C)								
Public Airport Totals Under and Near Proposed Gateway ATCAAs	7	247	191	38	8	1	0	9
Public Airport Totals Under Proposed Gateway ATCAAs	5	128	114	7	0	0	0	7
Private Airfield Totals Under and Near Proposed Gateway ATCAAs	9	14	12	0	0	0	0	2
Private Airfield Totals Under Proposed Gateway ATCAAs	8	11	9	0	0	0	0	2

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Table 3.1-5. Summary of Public Airports, Private Airfields, and Based Aircraft

Proposed Airspace	*Total Airports and Airfields*	*Total Based Aircraft*	*Aircraft Type*					
			Single Engine	*Multi Engine*	*Jet*	*Helicopter*	*Military*	*Glider/ Ultralight*
Totals								
Total Airports, Airfields, and Based Aircraft Under and Near the Proposed MOA/ATCAA Airspace	47	733	553	120	23	16	15	4
Total Airports, Airfields, and Based Aircraft Under the Proposed MOA/ATCAAs	26	143	130	7	0	3	0	1
Total Airports, Airfields, and Based Aircraft Under and Near Gateway ATCAAs	16	261	203	38	8	1	0	11
Total Airports, Airfields, and Based Aircraft Under Gateway ATCAAs	13	139	123	7	0	0	0	9
Total Airports, Airfields, and Based Aircraft Under and Near the Proposed Airspace	63	994	756	158	31	17	15	15
Total Airports, Airfields, and Based Aircraft Under Proposed Airspace	39	282	253	14	0	3	0	10

Notes: 1. PR-1A includes Gap A.
2. PR-3 includes Gap B.
3. PR-4 includes Gap C.

Source: From Tables 3.1-3 and 3.1-4

Table 3.1-6. Public Airports and Estimated Annual Operations Associated With the Proposed PRTC

Location[1]	*Airport*	*Total Annual Operations*[6] *(2010)*	*Total Annual Operations*[7] *(2014)*	*Estimated Daily Operations of Airports Under PRTC*[8] *MOAs (2014)*	*Daily Operations* Under MOAs Potentially Affected*[9] *(2014)*
PR-1 MOA/ATCAA[2]					
N	Billings	92,319	86,505	0	0
U	Colstrip	5,750	3,233	9	6
N	Fort Smith	31,000	3,076	0	0
U	Hardin	6,600	5,579	16	10
N	Tillitt Field	9,170	8,030	0	0
N	Sheridan	41,832	36,865	0	0
	Totals Under MOAs	**158,771**	**143,289**	**25**	**16**
PR-2					
U	Belle Creek[3]	550	550	2	2
U	Broadus	5,350	5,371	16	10
N	Gillette	22,218	19,345	0	0
	Totals Under MOAs	**28,118**	**25,266**	**18**	**12**
PR-3 MOA/ATCAA[4]					
U	Baker	7,000	7,039	20	12
N	Beach	1,170	1,147	0	0
U	Bowman	4,140	4,849	14	9
U(Gap B)	Ekalaka	2,028	2,555	7	5
U(Gap B)	Harding-Buffalo	2,300	888	3	2
N	Miles City	11,200	11,315	0	0
	Totals Under MOAs	**27,838**	**27,793**	**44**	**28**
PR-4 MOA/ATCAA[5]					
N	Bismarck	46,472	50,370	0	0
U	Bison	5,500	2,920	8	5
N	Dickinson	8,673	10,585	0	0
U	Elgin	160	210	1	1
N	Faith	2,700	1,356	0	0
N	Glen Ullin	860	864	0	0
U	Hettinger	4,450	4,849	14	9

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Table 3.1-6. Public Airports and Estimated Annual Operations Associated With the Proposed PRTC

Location[1]	*Airport*	*Total Annual Operations*[6] *(2010)*	*Total Annual Operations*[7] *(2014)*	*Estimated Daily Operations of Airports Under PRTC*[8] *MOAs (2014)*	*Daily Operations* Under MOAs Potentially Affected*[9] *(2014)*
U	Lemmon	12,500	5,579	16	10
N	Mandan	24,740	24,820	0	0
U	McIntosh	70	70	1	1
U	Mott	1,690	1,877	6	4
Totals Under MOAs		**107,815**	**103,500**	**46**	**30**
Proposed Gateway ATCAAs					
U	Belle Fourche	12,112	4,954	14	0
U	Black Hills	27,600	13,870	38	0
U	Hulett	400	2,816	8	0
N	Newcastle	4,500	2,555	0	0
N	Rapid City	40,896	39,785	0	0
U	Sturgis	23,000	12,775	35	0
U	Upton	8	50	1	0
Totals Under MOAs		**108,516**	**76,805**	**NA**[10]	**NA**[10]
Grand Totals Under MOA Airspace		**431,058**	**376,653**	**133**	**86**
Modified Alternative A Total[11]				**87**	**56**
Modified Alternative B Total[12]				**108**	**70**
Modified Alternative C Total				**87**	**56**

Notes:
1. N = Near; U = Under
2. PR-1 Includes Gap A data.
3. Database effective date: 02 July 2009 from fltplan.com
4. PR-3 includes Gap B data.
5. PR-4 includes Gap C data.
6. Based on the most recent available information as of 2010; FAA information effective dates vary.
7. Based on most recent available information as of January 30, 2014; FAA information effective dates vary. FAA information for each airport was the most current information available from airnav.com for the two annual periods shown in this table.
8. Reported annual operations divided by 365.
9. Sixty percent of daily operations.
10. NA – Not under MOA airspace.
11. Modified Alternative A does not include PR-4 Low MOA.
12. Modified Alternative B includes PR-4 Low MOA.

* Estimated portion of average daily traffic that occurs during the time the overlying MOA is scheduled.

Table 3.1-7. Private Airfields and Estimated Annual Operations Associated With the Proposed PRTC

Location[1]	*Airport*	*Total Annual Operations*[2,3] *(2010)*	*Total Annual Operations*[2,4] *(2014)*	*Estimated Daily Operations of Airfields Under PRTC MOAs*[6] *(2014)*	*Daily Operations Under MOAs Potentially Affected*[7]
PR-1 MOA/ATCAA[2]					
N	Ruff (Custer) (1A)	440	440	0	0
U	St. Labre[3] (Ashland) (1B)	600	600	2	2
N	Xingu (Dayton) (1B)	440	440	0	0
	Totals Under PR-1 MOAs	**1,440**	**1,440**	**2**	**2**
PR-2					
U	Laird Ranch (Ekalaka)	1,320	1,320	4	3
U	Lanning (Alzada)	440	440	2	2
N	Madsen (Gillette)	1,320	1,320		
U	Sky Ranch (Camp Crook)	1,320	1,320	4	3
	Totals Under PR-2 MOAs	**1,760**	**1,760**	**2**	**2**
PR-3 MOA/ATCAA					
N	Boyd (Golva)	440	440	0	0
U	Castleberry (Ekalaka)	440	440	2	2
U	Dilse (Scranton)	1,320	1,320	4	3
U	Hagen (Reeder)	440	440	2	2
N	Hollstein (Wilbaux)	880	880		
U	Sikorski Ranch (Ekalaka)	880	880	3	2
N	Sunday Creek (Miles City)	2,640	2,640		
U	Swenson (Belfield)	440	440	2	2
U	Tennant Ranch (Camp Crook)	440	440	2	2
	Totals Under PR-3 MOAs	**10,560**	**7,920**	**23**	**19**
PR-4 MOA/ATCAA					
N	Chase (Hebron)	1,320	1,320		
U	Dorsey (Glad Valley)	880	880	3	2
N	Fitterer (Glen Ullin)	440	NR[5]		
N	Jurgens (Taylor)	440	NR[5]		
U	VIG Limousin (Faith)	440	440	2	2
	Totals Under PR-4 MOAs	**3,520**	**2,640**	**5**	**4**
Gateway ATCAAs					
U	Barber (Enning)	440	440	2	
U	Bruch Airfield (Sturgis)	440	440	2	
U	Bruch Ranch (Sturgis)	1,320	1,320	4	
U	Ipy Ranch (Hulett)	440	440	2	
U	Keyhole (Moorcroft)	1,612	1,612	5	
N	Paradise Valley (Nemo)	1320	1320		
U	Running Colors (Rapid City)	440	440	2	
U	Taylor Field (Sundance)	440	440	2	
U	VIG (Opal)	880	880	3	

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Table 3.1-7. Private Airfields and Estimated Annual Operations Associated With the Proposed PRTC

Location[1]	*Airport*	*Total Annual Operations*[2,3] *(2010)*	*Total Annual Operations*[2,4] *(2014)*	*Estimated Daily Operations of Airfields Under PRTC MOAs*[6] *(2014)*	*Daily Operations Under MOAs Potentially Affected*[7]
Totals Under Gateway ATCAAs				22	0
Grand Totals Under MOA Airspace				32	27
Modified Alternative A Total[8]				27	23
Modified Alternative B Total[9]				30	25
Modified Alternative C Total				27	23

Notes: 1. N = Near; U = Under
2. Estimated based on average of 440 annual operations per based aircraft reported at public airports under the proposed airspace.
3. Based on most recent available information as of 2010; FAA information effective dates vary
4. Based on most recent available information as of January 30, 2014; FAA information effective dates vary
5. NR = None Reported
6. Estimated annual operations divided by 365
7. Sixty percent of daily operations rounded up
8. Modified Alternative A does not include PR-4 Low MOA.
9. Modified Alternative B includes PR-4 Low MOA.

Source material: FAA information effective 29 January 2013 from airnav.com

Table 3.1-8. Instrument Approaches Into Colstrip Airport

	Commercial	*Air Taxi*	*General Aviation*	*Military*	*Total Monthly*
April 2009	0	35	5	2	42
March 2009	0	14	2	2	18
February 2009	0	16	4	1	21
January 2009	0	25	5	4	34

Table 3.1-9 sums the estimated existing daily flight operations in the proposed PRTC MOAs. Average daily traffic within the proposed PR-2 MOA from 500 feet AGL to 17,999 feet MSL during the proposed PRTC schedule is approximately 18 flights. The proposed PR-3 MOA overlies two public airports with associated controlled airspace above 700 feet AGL: Baker, MT and Bowman, ND. Four private airfields underlie the proposed PR-3 MOA: Dilse, Folske, McGee, and Swenson, ND. Average daily traffic count transiting the proposed PR-3 MOA from 500 feet AGL to 17,999 feet MSL is estimated to be 46 flights (Table 3.1-9). There are two public airports beneath the proposed PR-4 MOA with controlled airspace above 700 feet AGL: Lemmon and Hettinger, ND. Smaller public airports which underlie the airspace include Bison and McIntosh, SD; and Mott and Elgin, ND. Average flight traffic count in the proposed MOA from 500 feet AGL to 17,999 feet MSL is approximately 41 (Table 3.1-9). The proposed Gap B MOA overlies the Ekalaka, MT and Harding County, SD public airports. The proposed Gap C MOA overlies the two private airfields of Carr, SD, and Hagen, ND. Airports under the Gap MOAs would not be overflown except during the not more than 10 days per year of LFEs.

Public airports and private airfields under the proposed PRTC generally support small communities, ranches, agricultural applications, medical services, cloud seeding (where permitted), oil and gas exploration, and recreation, including hunting. The larger regional airports outside the proposed PRTC

include regularly scheduled airline service at Billings, MT; Bismarck, ND; and Rapid City, SD. Other airports on the periphery of the proposed PRTC have had intermittent commercial flight services.

Public airports and private airfields under and near to the proposed MOAs had approximately 723 based aircraft reported in February 2010 (see Tables 3.1-3 and 3.1-4). Of these based aircraft, 153 were reported at public airports or private airfields under the proposed PRTC MOAs. There were 5 reported aircraft based at public airports under the existing Powder River A or B MOAs (Table 3.1-3).

Glider operations occur infrequently at the Belle Fourche, SD airport, but no soaring club or organized group utilizes the airport. The Black Hills Soaring Club previously operated out of the airport on a regular basis, but has recently moved operations south to the Hot Springs airport. Gliders prefer to fly in Class E airspace. Techniques for seeing and avoiding other aircraft are a required practice, especially when joining, soaring, and ridge soaring. Gliders that are not transponder equipped generally monitor applicable frequencies to allow others to know of their location and intentions while in-flight. Sky diving operations occur infrequently at a few of the small airports under the proposed airspace; no organized groups maintain a club or regularly schedule sky diving events.

The Broadus Airport is on the edge of the existing Powder River A MOA.

3.1.3.5 OTHER CIVIL OPERATIONS

Commercial and general aviation throughout the ROI is diversified. Flight activities include airline operations, cargo, aerial agricultural application, air charter, flight instruction, air ambulance, flying doctors, recreational flying, law enforcement, wildlife aerial surveillance, predator control, aerial photographic mapping, fire surveillance, fire suppression, and tourism.

This section identifies representative users of the airspace in the area potentially affected by the Proposed Action or any alternative. These examples are not all-inclusive but demonstrate the level and diversity of flight activity in southeastern Montana, southwestern North Dakota, northwestern South Dakota, and northeastern Wyoming.

3.1.3.5.1 *COMMERCIAL CARRIERS IN THE ROI*

The PRTC proposal does not include airspace above FL260. Section 3.1.3.3.3 summarizes airport activities. This section describes the activity of commercial carriers within the ROI. The PRTC proposal does not include airspace above FL260, so overflying commercial traffic would not be affected. There are no public airports with scheduled commercial flights under the proposed PRTC airspace.

Other Commerce

Regional air cargo service is provided by United Parcel Service and Federal Express. Typical cargo is time sensitive and related to mechanical parts, medical supplies, or legal documents.

Utility companies have aviation departments which fly power line and pipeline patrols monthly to quarterly at low altitudes below 6,000 feet MSL (approximately 2,000 feet AGL). Contractor and engineering firms and states perform aerial county mapping at low altitudes. Weather modification flights, such as those in North Dakota, have to rapidly respond to appropriate meteorological conditions to fulfill rainfall enhancement contracts. Fixed Base Operators are businesses on airports which provide one or more aeronautical services. These services can be aircraft maintenance, flight instruction, aerial surveillance, aircraft fuel sales, aerial photo, aircraft rental, flight information, and other related

services. Fixed Base Operators are listed by airport under each proposed PRTC MOA in Tables 3.1-3 and 3.1-4. Aircraft based at airports in the ROI which do not have Fixed Base Operators typically transit to Fixed Base Operator airports for routine service.

Air taxi and air charter services operate throughout the ROI. Air taxi firms provide charters for businesses, hunters, fishermen, medical staff and others. Most charter aircraft are twin-engine propeller or medium business jet aircraft with GPS and very high frequency omnidirectional radio range/instrument landing system (ILS) navigational equipment. These aircraft usually operate IFR and are included in Table 3.1-2. Regular air taxi services include student transport contracts with, for example, the North Dakota School for Deaf, to take students to and from home for weekends. Transient charter companies use regional airports for fuel stops and other servicing.

3.1.3.5.2 *AGRICULTURE, GAME MANAGEMENT, AND RECREATION*

Farm operation flights typically use VFR and fly direct routes and altitudes for efficiency. Agricultural flight activities with aircraft and helicopters support farming operations with aerial application of herbicide, insecticide, fungicide, and other crop protection. An estimated 40 aerial application private and commercial firms are located on both public airports and private airfields within the ROI. Aerial application firms operate aircraft within the ROI with an estimated annual total of 10,000 annual aircraft operations. The trade area for spraying is typically 80 to 100 miles from the spraying aircraft base location. Applicator flights are below 500 feet AGL. Applications typically fly 500 feet AGL during transit although weather conditions could require transit flights up to 2,000 feet AGL. Public commenters during the DEIS process expressed concerns that application aircraft flying to fields are low to the ground, at very near gross weight, and have little ability to maneuver or adjust to a random flight or wake turbulence of a large military aircraft.

State Game and Fish and U.S. Fish and Wildlife Service (USFWS) flight operations include aerial surveillance, wetland surveys, predator control, and game counting patrols for operations. Activities such as wetland surveys can only be conducted at specified weather and at altitudes to ensure year-to-year consistency of survey data. Most game management flights are in the 1,000 to 3,000 feet AGL range; although cross country flights and aerial surveillance can occur day or night to 10,000 feet MSL. Digital aerial photography of cities, towns, and highways are often flown at established altitudes at or above 2,000 feet AGL or 6,000 feet MSL.

Pleasure flying, proficiency training, and agriculture-related flights occur throughout the ROI. Farmers and ranchers conduct aerial observation of farms, cattle, fences, and predator control at altitudes below 3,000 feet AGL. Recreational hunting is a substantial regional industry and essentially constitutes a "cash crop" for ranchers, local service industries, and aircraft operating out of private airfields and public airports. Flight transport of hunters before and during hunting season is a regionally important economic activity.

3.1.3.5.3 *EMERGENCY AND RELATED SERVICES*

Air ambulance and life flight services support rural health care facilities throughout the ROI. Most ROI hospitals have access to airfields to support air emergency transport of critical patients. Ground ambulances can connect with air ambulances at rural airports and transfer critical patients to regional medical facilities. Air ambulance services in the region can be fixed-wing aircraft or helicopters.

Hospitals which are part of the regional air ambulance service are normally connected to airports with GPS or IFR approach procedures. Medical services include flights to transport medical personnel between urban and rural hospitals. Flying doctors provide rural health care to small towns in portions of the ROI. Medical specialists fly from large cities to rural community hospitals usually between 8 a.m. and

6 p.m. Flight operations are scheduled by the day and normally operate on IFR about 10,000 feet MSL, depending on weather conditions. Aircraft are normally in the light, twin-engine class with IFR equipment.

Emergency flight activities also include firefighting. Fires from lightning or other causes can result in potentially damaging range fires. In such situations, aerial spotter aircraft, aerial tankers, and helicopters may be employed to support ground firefighting equipment. Ellsworth AFB and the Montana Bureau of Land Management have a Memorandum of Understanding establishing training TFRs to support firefighting activity (BLM-MOU-MT925-1001 approved 7 October 2009).

3.1.3.6 FAA AIRSPACE USAGE DATA

This section presents FAA data of existing airspace usage within the ROI. DEIS FAA traffic counts are for a representative winter period, December 1 through December 8, 2008, and for a representative spring to summer period, May 5 through May 12, 2009. The FEIS updated these data with representative traffic counts for May 27 through June 5 and November 10 through 12, 2012. The FEIS traffic counts provide recent data with 11 days and daily average flights for each of the potentially affected airspaces. For the purpose of this FEIS, the FAA traffic counts for the proposed PR-2 MOA represent baseline conditions for the Powder River A and B MOAs. Daily flight activity in Class A airspace can be the result of seasonal variation, convection and re-routing, and/or flow control. The data in Table 3.1-2 represents primarily IFR flights in MOAs. VFR flights from public airports and private airfields are not all included in the FAA data. The VFR operations are estimated using reported public airport flight operations. A representative sampling of the FAA recorded flights for the morning and afternoon periods when the PRTC could be scheduled was used to estimate IFR traffic. The FAA operations are listed by altitude segment for the proposed PRTC airspaces. Appendix A includes the existing hourly information published in the DEIS.

The Military training in the airspace is anticipated up to 240 days per year. This means that the assumption of 365 flying days per year for civilian operations overstates the number of annual flying days and also overestimates the number of civilian flight operations during weekdays because it does not account for higher use on weekends and holidays.

Table 3.1-2 presents FAA documented ATCAA traffic by airspace up to FL260. Table 3.1-2 traffic counts for the PR-2 ATCAA represent baseline conditions for the Powder River ATCAA to FL260. FAA traffic counts for the Gateway West and East ATCAA baseline conditions to FL260 are reflected in Table 3.1-2. Baseline or existing condition FAA traffic counts for the Crossbow ATCAA are represented in Table 3.1-2 by flight activity in the proposed PR-2 ATCAA and the proposed modified Gateway ATCAAs.

Table 3.1-9 provides an estimate of combined MOA IFR and VFR traffic by proposed airspace. IFR average daily traffic from the FAA data are rounded up from Table 3.1-2 and all annually reported operations from the public airports are also counted (see Table 3.1-6). Annual operations from private airfields are from Table 3.1-7.

Table 3.1-9 inherently assumes that the flights originating from or traveling to airports or airfields under the proposed airspace are not included in the FAA data. This conservative assumption has the potential to overstate the number of aircraft operations in the respective airspaces. Table 3.1-9 inherently also assumes that FAA data capture the MOA en route traffic. This assumption potentially underestimates the VFR traffic in the airspace. The use of average operations by based aircraft for each private airfield means that operations of some airfields are overestimated and at others are underestimated. The private airfield average is based on reported public airports under the airspace and it is likely that the public operations are reasonably representative.

Table 3.1-9. Estimated Daily Civilian Operations Potentially Affected in the Proposed MOAs

Proposed Low and High MOAs	*Estimated Daily Civilian Flight Operations*			
	FAA IFR[1]	*Public Airports Operations Potentially Affected Under MOAs* [2]	*Private Airfield Operations Potentially Affected Under MOAs* [3]	*Estimated Total Daily Average Civilian Operations*
PR-1A/B/C/D	0	16	2	18
PR-2	4	12	8	24
PR-3	6	21	11	38
PR-4	11	30	4	45
Gap A	2	0	0	2
Gap B	3	7	2	12
Gap C	5	0	0	5

Notes: 1. Data derived from Table 3.1-2, rounded up from summed highest daily average; 6 daily flights in PR-1A and 1C High MOAs not impacted during day-to-day training.
2. Data derived from Table 3.1-6, airports under airspace; annual (365 days) rounded up.
3. Data derived from Table 3.1-7, based on public airport operations per based aircraft; annual (365 days) rounded up.

Table 3.1-10 presents the FAA IFR flight operations by airspace by day during morning and afternoon-evening potential PRTC scheduling. Public comments and FAA hourly data from Table 3.1-10 suggest that "Sunday fliers" are generally out enjoying the country, especially on weekends with nice weather conditions. Table 3.1-10 demonstrates that military training operations on Monday through Thursday and Friday mornings would be expected to affect fewer than the average local flight operations. There is an increased proportion of civilian fliers during weekends or holidays when the proposed PRTC MOAs would typically not be activated for military training. This represents a potential overstatement of the civilian flight operations in a MOA on a typical military training day.

Table 3.1-10. IFR Flight Operations by Day of Week[1]

	Total	*Daily % of Total*	*AM Total*	*AM % of Total*	*PM Total*	*PM % of Total*
29 May-5 June 2012						
Tue	53	0.09	33	0.09	20	0.10
Wed	56	0.10	48	0.13	8	0.04
Thur	38	0.06	31	0.08	7	0.03
Fri	59	0.10	40	0.10	19	0.09
Sat	67	0.11	37	0.10	30	0.15
Sun	141	0.24	92	0.24	49	0.24
Mon	78	0.13	40	0.10	38	0.19
Tue	96	0.16	63	0.16	33	0.16
Total	588	1.00	384	1.00	204	1.00
10 Nov-Nov 2012						
Sat	53	0.22	23	0.20	30	0.23
Sun	115	0.47	66	0.58	49	0.37
Mon	78	0.32	25	0.22	53	0.40
Total	246	1.00	114	1.00	132	1.00

Note: 1. Does not include Gateway ATCAAs

A series of figures from the DEIS are included in Appendix A for informational purposes. These figures are based on data and flight track depictions provided by the FAA that help characterize air traffic flows through the ROI. Existing airspace in the ROI is characterized by lower altitude flights, typically below

FL180 and often below 10,000 feet MSL. These flights are conducted for a variety of activities ranging from chartered just in time delivery of machine parts or personnel to a large mining or ranching operation to weekend pleasure flying in the wide open spaces. Airspace use above FL260 consists of relatively heavily traveled commercial routes connecting coastal and inland airport hubs.

3.2 NOISE

3.2.1 *DEFINITION OF THE RESOURCE*

The definition of noise is simply unwanted sound. Noise is considered to be unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. Noise has the potential to impact several environmental resource areas. This noise section will describe baseline noise conditions and noise effects on human annoyance, health and structures. Noise impacts on biological, land use, socioeconomics, and cultural resources are discussed in separate sections dealing with those environmental resources. The ROI for noise consists of lands beneath current and proposed airspace.

Noise can be of several different types, each of which has its own characteristics. Continuous noise sources include machinery, such as an air-conditioning unit. Transient noise sources are those which move through the environment, either along established paths (e.g., highways or railroads) or randomly (e.g., training in a MOA). Some noise sources are impulsive (e.g., thunder clap or sonic boom). The response of a receptor (e.g., person, animal, or structure) to a noise depends on the characteristics of the noise itself as well as the sensitivity of the receptor at the time the noise is heard.

The physical characteristics of sound include its intensity, frequency, and duration. These characteristics are discussed briefly below, and discussed in more detail in Appendix I:

Intensity – Sound consists of minute pressure waves which travel from the sound source to the ear. These waves can be compared to ripples spreading outward from a stone dropped in still water. Larger waves are interpreted by the ear as more intense sounds. Sound intensities are expressed using the logarithmic unit, the decibel (dB). Using the decibel scale, a sound level that is 3 dB louder than another will be perceived as being noticeably louder while a sound that is 10 dB higher than another will be perceived as twice as loud. A whisper is typically 20 dB or lower while a thunderclap can be 120 dB or louder.

Frequency – The frequency of a sound, as measured with the unit Hertz (Hz) is the number of sound waves that pass a point in a second. A person with healthy hearing can detect sounds ranging from 20 Hz to 15,000 Hz but detects sounds in the middle frequencies of this range most strongly. Sound measurements are refined using "A-weighting" which emphasizes frequencies best heard by the human ear. In this EIS, dB is A-weighted unless otherwise noted. For impulsive sounds (e.g., sonic booms, thunder, or clapping), which have the potential to induce vibrations in objects, the "C-weighting" scale is used. The C-weighting scale does not de-emphasize high and low-frequency sounds to the extent that A-weighting does.

Duration – The duration of a noise event is the time between initially hearing the sound and the sound no longer being heard. From the ground, the sound level of an aircraft flying overhead changes continuously, starting at the ambient (background) level, increasing to a maximum as the aircraft passes closest to the receiver, and then decreasing to ambient as the aircraft flies into the distance.

Noise analysts use several "metrics," which describe complex and variable sets of noise events. These metrics are designed to represent noise in such a way that noise impacts can be predicted. Noise metrics used in this analysis include the following:

- L_{max} (Maximum Sound Level) is the highest sound level measured during an event such as a single aircraft overflight.
- SEL (Sound Exposure Level) accounts for the maximum sound level and the length of time a sound lasts. SEL does not directly represent the sound level heard at any given time. Rather, it provides a measure of the total sound exposure for an entire event. For many types of noise impacts, SEL provides a better measure of intrusiveness of the sound than L_{max}. When military aircraft fly low and fast, the sound can rise from ambient to its maximum very quickly. This rapid onset-rate carries a "surprise" effect that can make noise seem louder than its measured SEL would suggest. The calculation for SEL_r (Onset Rate-Adjusted Sound Exposure Level) has an additional noise penalty programmed into the calculation of up to 11 dB to account for this effect.
- DNL (Day-Night Average Sound Level [mathematically denoted as L_{dn}]) is a noise metric combining the levels and durations of noise events and the number of events over a 24-hour period. DNL also accounts for more intrusive night time noise, adding a 10 dB penalty for sounds after 10 p.m. and before 7 a.m. The FAA has determined that DNL is the appropriate measure to determine the cumulative noise energy exposure of individuals to noise resulting from aviation activities. Depending on the regularity of operations, DNL is computed either as an annual average or for operations representing an average busy day.
- DNL_{mr} (Onset Rate-Adjusted Day-Night Average Sound Level) is the measure used for subsonic aircraft noise in such training airspace as MOAs and MTRs. DNL_{mr} accounts for the surprise effect of aircraft overflights and the sudden onset of the aircraft noise event on humans. The penalty ranges from 0 to 11 dB and is added to the normal SEL based on the altitude and airspeed of an approaching aircraft. DNL_{mr} is computed for the busiest month of the year to account for the variation in the seasonal use of some airspace units. In this EIS, DNL_{mr} was calculated for an even distribution of operations across all months.
- CDNL (C-Weighted Day-Night Average Sound Level) is a day-night average sound level computed for areas subject to impulsive noise such as sonic booms. Areas subjected to supersonic noise are typically also subjected to subsonic noise which is assessed based on the DNL_{mr} metric.
- Peak overpressure, pounds per square foot (psf) is used to characterize the strength of impulsive noise such as sonic booms. A decibel version of this, L_{pk}, is used when relating boom amplitude to human or animal response, although the direct physical pressure is most commonly used when assessing effects on structures.

Please see Appendix I for additional details on noise.

The ROI for the noise assessments includes the area underlying the proposed PRTC that is exposed to noise levels caused by aviation-related noise such as military training.

3.2.2 *REGULATORY SETTING*

The FAA has special expertise and authority in the area of aviation-related noise. See, e.g., 49 USC 47501-47507 (Aviation Safety and Noise Abatement Act of 1979, as amended); 49 USC 44715 (Noise Control Act of 1972). FAA Order 1050.1E Section 14, available online at www.faa.gov, describes policies and procedures for assessing noise impacts of FAA actions, including approval of SUA, that are subject to NEPA. DNL is the FAA's primary metric for establishing the cumulative exposure of individuals to noise resulting from aviation activities. The FAA generally requires the use of specific models for aviation noise analysis. FAA's Office of Environment and Energy has approved the DoD computer models MRNMAP, PC BOOM, and BOOMAP for use in this noise analysis related to SUA.

FAA has defined a significant noise impact as one which would occur if analysis shows that the Proposed Action will cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the No-Action Alternative for the same timeframe. For example, FAA would consider an increase from DNL 63.5 dB to DNL 65 dB a significant impact.

FAA Order 1050.1E also states that special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within national parks, national wildlife refuges and historic sites, including traditional cultural properties. An area is defined by the FAA as noise-sensitive if noise interferes with normal activities associated with the area's use. Examples of noise-sensitive areas include residential, educational, health, and religious structures and sites, and parks, recreation areas (including areas with wilderness characteristics), wildlife refuges, and cultural and historic sites where a quiet setting is a generally recognized feature or attribute.

3.2.3 *EXISTING CONDITIONS*

This section establishes current noise levels and discusses sources of noise with the potential to cause environmental impacts where aircraft dominate noise levels heard on the ground. Noise modeling DNL values are calculated based on military activity in the airspace.

3.2.3.1 SUBSONIC NOISE

Subsonic noise in military airspace has been studied by measurement and analysis of operations and noise in airspaces (Frampton *et al.* 1993; Lucas *et al.* 1995), and by computer modeling of those analyses (Lucas and Calamia 1996). The computer program MR_NMAP (MOA-Range NOISEMAP) was used to calculate subsonic aircraft noise beneath the existing Powder River airspace.

Figure 3.2-1 is a close-up of the Powder River A/B MOAs from Figure A-9 showing the B-1 maneuvers as silver lined loops and curves within the Powder River A/B MOAs. These maneuvering flights can be seen on Figures A-8, A-9, A-10, A-14, A-15, and A-16.

In existing Powder River airspace, flights are typically widely dispersed within the airspace, although not along the airspace edges, and, over the long-term, are randomly located as depicted in Figure 3.2-1. Such non-predetermined or random flights are an important part of training. Military aircrews must learn to be flexible, and cannot become accustomed to particular landmarks, although visual reference points may be used as part of individual training missions. Over a period of time with several training missions, no one location under a training airspace is expected to experience substantially different flight activity from another, as depicted in Figure 3.2-1, locations around the edge of an airspace unit could be overflown less frequently than locations deeper within the airspace. The appropriateness of modeling MOA flight paths and noise as random has been recently affirmed by analysis of specially-collected radar data in Idaho airspace (Bradley *et al*. 2003) and noise monitoring in that same airspace (Fidell *et al*. 2003). As a result of this wide distribution of flights, noise events heard on the ground are sporadic. On some days, no aircraft would be heard, and on other days, one or more aircraft at different altitudes and distances could be heard.

The airspace ROI does not segment the MOAs or ATCAAs to calculate DNL values. For noise analysis, several altitude ranges, with different altitude bands, are used as appropriate for each mission flown (see Table 2.5-8, Table 2.6-5, and Table 2.7-5). An aircraft at low altitude generates high noise levels directly under the flight path, but has a relatively short duration and a relatively narrow ground area affected. A B-1 aircraft at 500 feet AGL may not be heard a mile to the side, particularly if terrain is between the aircraft and the receptor. Estimates of noise levels in this document do not account for effects of terrain on noise propagation. Aircraft at high altitudes generate lower maximum noise levels, but the noise exposure, or noise footprint, is larger than at low levels (Figure 3.2-2). The noise generated by aircraft flying at high altitudes may last for over a minute and may be heard several miles

to either side of the flight path. As noted in Section 3.2.1, the duration of a noise is important in determining its impacts. Table 3.2-1 lists SEL values for several aircraft types at various altitudes.

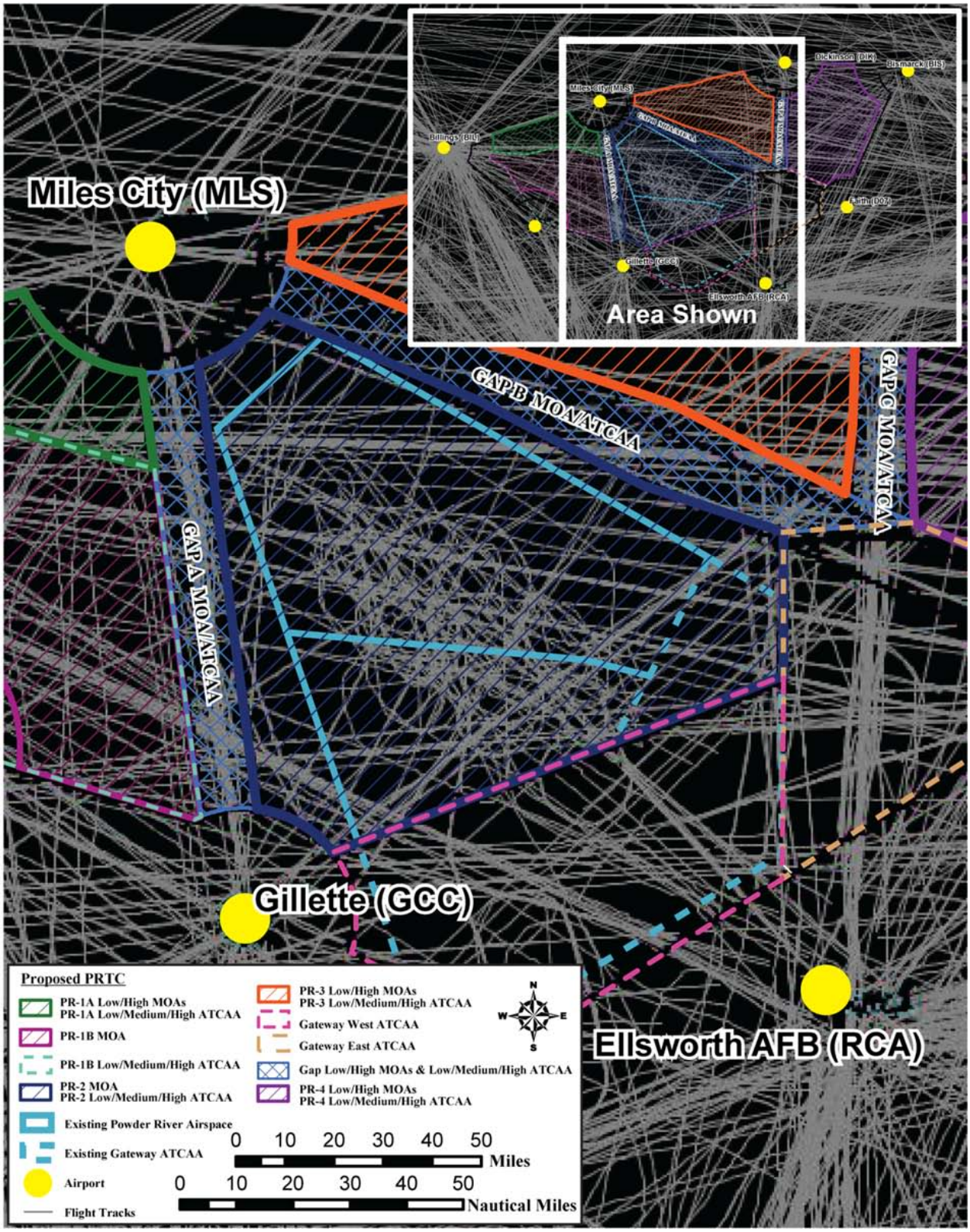

Figure 3.2-1. B-1 Random Flight Paths on Powder River A/B MOAs

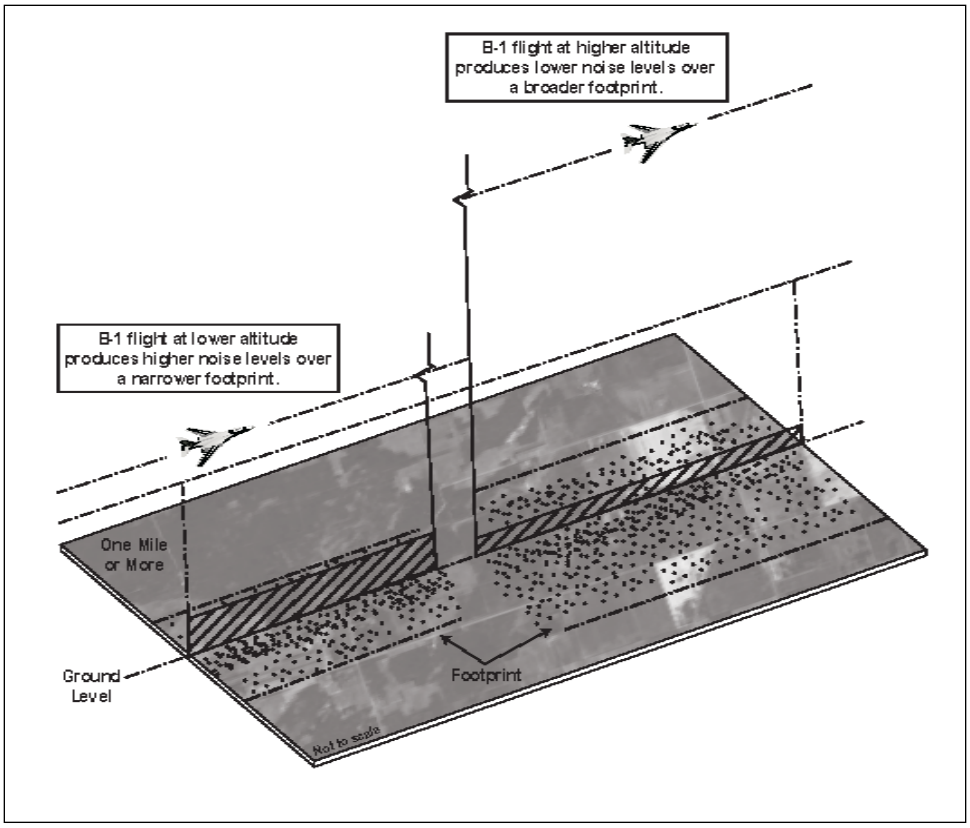

Figure 3.2-2. Depiction of B-1 Noise Footprint at Lower and Higher Flight Paths

Aircraft power settings and airspeeds vary during training missions as the aircrews adjust aircraft configuration to carry out training maneuvers. For example, when a B-1 aircrew encounters a simulated threat, the aircrew may engage in an evasive maneuver, which typically consists of a sharp turn at high power settings followed by a speedy egress from the area. During such maneuvers, the afterburner may be used.

Table 3.2-1 lists separate noise levels for the afterburner power setting because noise levels are much higher than they are without afterburner. Aircrews exercise strict discipline when using the afterburner to conserve fuel and to avoid unintentional supersonic flight.

Afterburners are used during B-1 "fly-ups" procedures which simulates malfunction of the aircraft's automatic terrain following systems and consists of the aircraft climbing very quickly to an altitude at which terrain no longer poses a collision threat. This procedure is carried out once per sortie on average. Known sensitive noise receptors such as people, animals, or structures are avoided where possible, because any such receptors located behind the aircraft when it starts its climb experience high noise and vibration levels.

Table 3.2-1. Representative Onset Rate-Adjusted Sound Exposure Levels (SEL_r) Under the Flight Path for Various Aircraft Types and Flight Altitudes

Aircraft Type	*Airspeed (knots)*	*Power Setting*	*Altitude (Feet AGL)*					
			500	*1,000*	*2,000*	*5,000*	*10,000*	*20,000*
B-1	550	101% RPM	117	107	101	92	82	69
B-1	449	A/B - 97.5% RPM	133	122	115	106	98	89
B-52H	350	4,500 LBS/HR	N/A	100[1]	92	82	68	56
F-16C[2]	450	99% NC	113	104	98	88	80	69
KC-135R	300	65% NF	N/A	88[1]	82	75	64	54
Twin Engine[3]	160	600 LBS	81	75	70	63	53	43
Single-Engine[4]	160	70% RPM	77	72	67	59	53	46

Notes: SEL was calculated under standard acoustic atmospheric conditions (70°F and 59 percent relative humidity)

1. B-52s and KC-135s do not fly lower than 1,000 feet AGL in Powder River MOA airspace.
2. F-16C with F110-GE-100 engine.
3. Cessna 500 "Citation."
4. Single-Engine Fixed-Pitch Propeller-Driven.

NC = Core Engine Fan Speed; RPM = Revolutions Per Minute; LBS/HR = Pounds Per Hour; LBS = Pounds of thrust; A/B = afterburner

Military aircraft are not the only source of sound in the ROI. Noise from military aircraft overflights is assessed on an absolute basis in the context of background or "ambient" noise. Ambient noise levels in metropolitan, urbanized areas typically range from 60 to 70 dB whereas in quiet suburban neighborhoods they range from approximately 45-50 dB DNL (USEPA 1978). The vast majority of the ROI for this proposed action consists of rural areas in which noise levels would be less than 45 dB DNL. For the purpose of this study, a DNL of 'less than 45 dB' was used as the ambient level for determining human annoyance effects. However, levels below 45 dB DNL are not specifically identified because 45 dB DNL represents the level at which social surveys resulted in a finding of less than 1 percent of the population which would be expected to become highly annoyed (Schultz 1978; Finegold et al. 1994).

Noise models were used to calculate aircraft-generated noise levels. Table 3.2-2 shows aircraft-generated noise levels under the MOAs and ATCAAs. The noise levels under the ATCAAs are less than 45 dB DNL. This means that aircraft noise under the ATCAAs would not be expected to quantitatively affect the ambient noise conditions.

DNL_{mr} has been computed for aircraft noise in the areas under each current Powder River airspace unit and is presented in Table 3.2-2. The analysis incorporated operations of the Ellsworth-based B-1 and Minot-based B-52 aircraft, as well as transient fighter aircraft (see Section 2.8.3). The F-16C was the most common type of transient aircraft in the Powder River airspace and was used to represent other transient users of the airspace.

Where aircraft fly at different altitudes, the aircraft noise at ground level is the combination of all the flights above the ground. Table 3.2-2 and Figure 3.2-3 show the calculated total aircraft noise and estimated noise on the ground. For the purposes of noise analysis, it was assumed that B-52 training operations would occasionally occur in the MOAs. The noise levels reported reflect approximately 20 percent of total B-52 operations in the Powder River airspace occurring in MOAs and approximately 80 percent occurring in ATCAAs.

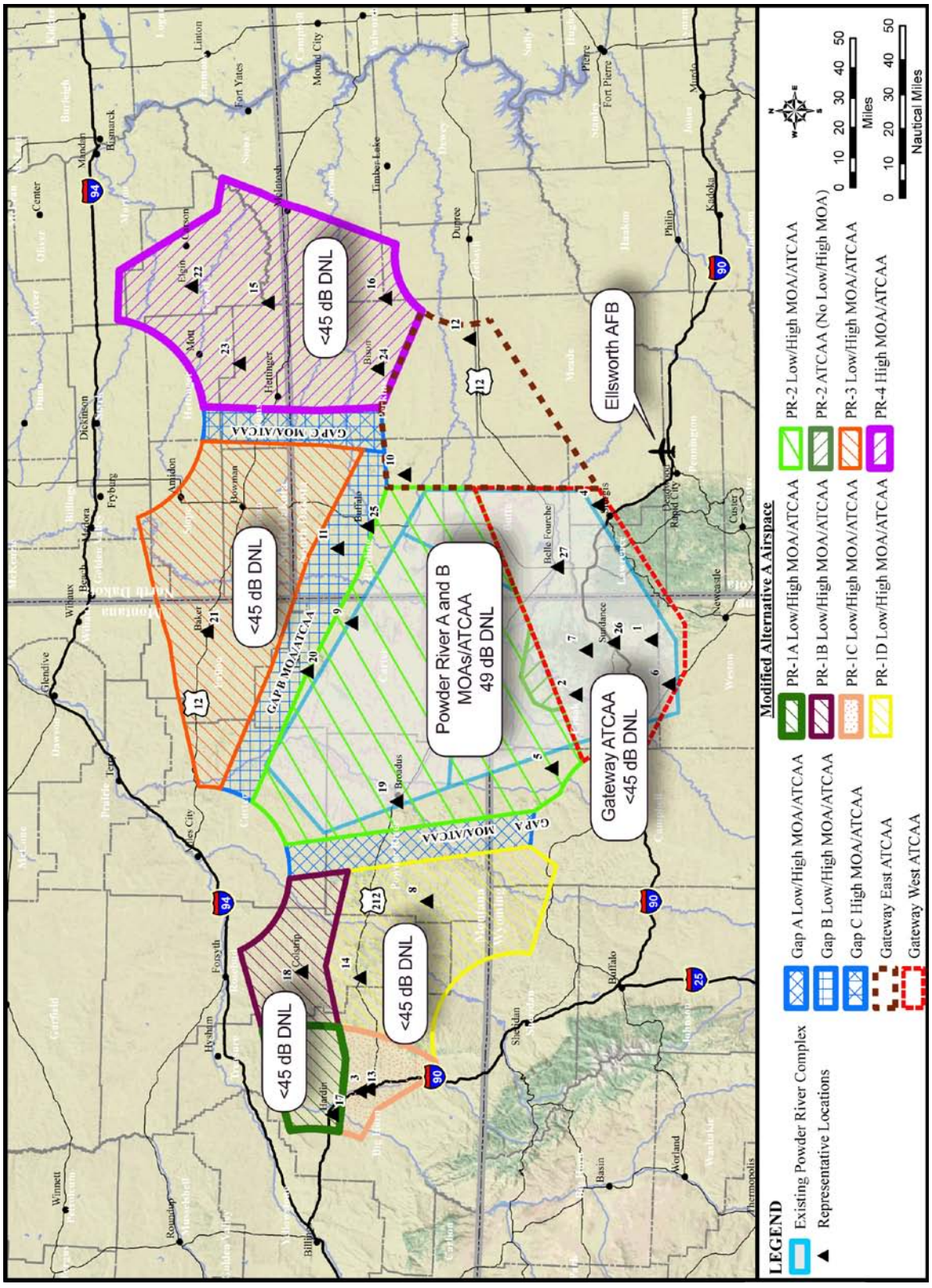

Figure 3.2-3. Estimated Baseline Noise Levels in DNL Under Existing and Proposed Airspace With Representative Locations

Table 3.2-2. Baseline Aircraft Noise Levels Under Existing Airspace

Airspace	*DNL_{mr}*	*Number of Events/Day at a Representative Location Exceeding*		
		SEL 65 dB	*SEL 75 dB*	*SEL 85 dB*
Powder River A MOA	49	0.26	0.12	<0.0
Powder River B MOA	49	0.8	0.23	<0.1
Gateway ATCAA	<45	0.4	0.1	<0.1

Notes: 1. Operations in the ATCAAs do not contribute to the cumulative noise levels on the ground, which are dominated by MOA noise. However, individual overflight events in the ATCAAs would be audible on the ground as reflected by the listed number of events exceeding 65, 75, and 85 dB SEL.
2. Information on baseline sorties by types of aircraft are provided in Section 2.8.3

The cumulative metric DNL_{mr} is widely used to quantify sound levels which are subject to additional noise penalties for environmental night (10 PM to 7 AM) and sudden onset sounds in the proposed airspace (see Appendix I). Cumulative noise metrics represent the overall noise level in an area and not the noise heard at any given time. Table 3.2-2 shows, in addition to DNL_{mr}, the average number of events per day with SEL_r above 65, 75, and 85 dB that a person under each proposed airspace unit at any representative location is likely to hear. These quantities are computed by MRNMAP (Lucas and Calamia 1996).

The noise environments shown in Table 3.2-2 and Figure 3.2-3 fall into two categories:

- ATCAA airspace with operations above 18,000 feet MSL. DNL_{mr} noise levels in these areas from aircraft are calculated to be below 35 dB DNL_{mr}.
- MOA airspace with training flight operations from a floor of 500 feet AGL or 1,000 feet AGL to FL180. DNL_{mr} in these MOAs from aircraft is approximately 49 dB.

It is important to note that the ambient noise in the ROI is typically below 45 dB DNL. Under the Gateway ATCAA, military aircraft overflights would not result in an increase in overall average noise level to greater than 45 dB DNL_{mr}.

The frequency of noise events exceeding an SEL of 65, 75, and 85 dB at several representative noise sensitive locations are presented in Table 3.2-3. Figure 3.2-3 shows the representative noise sensitive locations relative to the existing Powder River airspace and the proposed PRTC.

Broadus is typical of an established small community under the airspace. Broadus is under the edge of the existing Powder River A MOA and would have an estimated existing DNL_{mr} of less than 45 dB.

Ellsworth AFB has established avoidance areas under the Powder River A/B MOAs to reduce noise and overflight above communities, ranches, and other noise-sensitive locations. The number and location of noise avoidance areas limit defensive reaction maneuvering in low-altitude training and create patterns that constrain diversity in some training. Avoidance areas force more training to higher altitudes and reduce training quality. Pilots are instructed to avoid known noise-sensitive avoidance areas by a specified vertical and horizontal distance. Such avoidance areas include known seasonal ranching operations such as calf weaning and branding.

Table 3.2-3. Average Frequency of Military Aircraft Noise Events at Selected Noise-Sensitive Locations

ID#	General Description	Baseline Airspace	Baseline # Events Per Day Exceeding			Baseline # Events Per Day Exceeding		
			65 dB SEL	75 dB SEL	85 dB SEL	65 dB L_{max}	75 dB L_{max}	85 dB L_{max}
1	Inyan Kara Mountain	Gateway ATCAA	0.4	0.1	<0.1	<0.1	<0.1	<0.1
2	Devils Tower National Monument [2]	Gateway ATCAA	0.4	0.1	<0.1	<0.1	<0.1	<0.1
3	Little Bighorn Battlefield National Monument [3]	None	N/A	N/A	N/A	N/A	N/A	N/A
4	Bear Butte National Historic Landmark (NHL)	None	N/A	N/A	N/A	N/A	N/A	N/A
5	Thunder Basin National Forest (northern section)	None	N/A	N/A	N/A	N/A	N/A	N/A
6	Thunder Basin National Forest (southern section)	Gateway ATCAA	0.4	0.1	<0.1	<0.1	<0.1	<0.1
7	Black Hills National Forest	Gateway ATCAA	0.4	0.1	<0.1	<0.1	<0.1	<0.1
8	Custer National Forest (western section)	None	N/A	N/A	N/A	N/A	N/A	N/A
9	Custer National Forest (central section)	Powder River A MOA	0.6	0.2	<0.1	0.1	0.1	<0.1
10	Custer National Forest (southeastern section)	None	N/A	N/A	N/A	N/A	N/A	N/A
11	Little Missouri National Grassland	None	N/A	N/A	N/A	N/A	N/A	N/A
12	Grand River National Grassland	None	N/A	N/A	N/A	N/A	N/A	N/A
13	Crow Indian Reservation (Crow Agency, MT)	None	N/A	N/A	N/A	N/A	N/A	N/A
14	Northern Cheyenne Indian Reservation (Lame Deer, MT)	None	N/A	N/A	N/A	N/A	N/A	N/A
15	Standing Rock Indian Reservation	None	N/A	N/A	N/A	N/A	N/A	N/A
16	Cheyenne River Indian Reservation	None	N/A	N/A	N/A	N/A	N/A	N/A
17	Hardin, MT	None	N/A	N/A	N/A	N/A	N/A	N/A
18	Colstrip, MT	None	N/A	N/A	N/A	N/A	N/A	N/A
19	Broadus, MT [4]	Powder River A MOA	0.6	0.2	0.1	0.2	0.1	<0.1
20	Ekalaka, MT	None	N/A	N/A	N/A	N/A	N/A	N/A
21	Baker, MT	None	N/A	N/A	N/A	N/A	N/A	N/A
22	Elgin, ND	None	N/A	N/A	N/A	N/A	N/A	N/A
23	Bowman, ND	None	N/A	N/A	N/A	N/A	N/A	N/A
24	Bison, SD	None	N/A	N/A	N/A	N/A	N/A	N/A
25	Buffalo, SD	None	N/A	N/A	N/A	N/A	N/A	N/A
26	Sundance, WY	Gateway ATCAA	0.4	0.1	<0.1	<0.1	<0.1	<0.1
27	Belle Fourche, SD	Gateway ATCAA	0.4	0.1	<0.1	<0.1	<0.1	<0.1

Notes:

1. Because several of the listed noise-sensitive areas are very large, locations were selected from within the designated areas that are near the center of proposed airspace units.
2. Devils Tower National Monument published aircraft avoidance area is 5 NM horizontally and 18,000 feet AGL.
3. Little Bighorn Battlefield National Monument published aircraft avoidance area is 0.75 NM horizontally and 2,000 feet AGL.
4. Broadus, MT published aircraft avoidance area is 3 NM horizontally and 1,500 feet AGL.

3.2.3.2 SUPERSONIC NOISE

Supersonic aircraft flight is not currently permitted in the Powder River airspace. Speed is an essential component to B-1 survivability in high-threat environments and airspeeds may come close to Mach 1 during certain portions of training events. In the extremely rare event that an aircraft inadvertently achieves supersonic speeds, actions are taken by the aircrew to decrease speed. Overall, supersonic flight and resulting sonic booms are rare under baseline conditions.

3.3 SAFETY

3.3.1 *DEFINITION OF THE RESOURCE*

This section addresses ground safety and flight safety associated with operations conducted within the ROI consisting of the existing Powder River airspace and proposed PRTC airspace. Training operations would be conducted in proposed military training airspace. The ROI for safety is the same as the ROI for airspace management.

3.3.2 *REGULATORY SETTING*

The Air Force defines five major categories of aircraft mishaps: Classes A, B, C, D and E, which includes High Accident Potential. Class A mishaps are defined as those which result in one or more of the following: a loss of life, permanent total disability, a total cost in excess of $2 million, or destruction of an aircraft. Class B mishaps result in total costs of more than $500,000, but less than $2 million, result in permanent partial disability or inpatient hospitalization of three or more personnel. Class C mishaps involve reportable damage of more than $50,000, but less than $500,000; an injury resulting in any loss of time from work beyond the day or shift on which it occurred, or occupational illness that causes loss of time from work at any time; or an occupational injury or illness resulting in permanent change of job. High Accident Potential events are any hazardous occurrence that has a high potential for becoming a mishap. Class D mishaps result in total cost of property damage of $20,000 or more, but less than $50,000, or a recordable injury or illness not otherwise classified as a Class A, B, or C mishap. Class E mishaps do not meet reportable mishap classification criteria, but are deemed important to investigate for hazard identification and mishap prevention. In 2010 the threshold for determining the class of mishaps was raised from $1 to $2 million for Class A mishaps and the ceiling was raised for Class B from $1 million to $2 million. For the proposed PRTC, all categories of impacts below Class A impacts would be expected to occur on or in association with the base. Class C mishaps and High Accident Potential, the most common types of accidents, represent relatively unimportant incidents because they generally involve minor damage and injuries, and rarely affect property or the public.

During public and agency review of the DEIS, most concerns centered on the potential for Class A mishaps because of their potentially catastrophic results. Concerns included crashes into the ground or mid-air crashes. Other safety issues were the inability to have radio frequency communication to learn the training activity within a MOA, the inability to know when a B-1 could traverse an area at a low level and at a high rate of speed, and the safety risk from flare usage in an arid environment.

3.3.3 *EXISTING CONDITIONS*

This section addresses communication, flight, ground, and bird-aircraft strike baseline safety conditions within the proposed PRTC airspace.

3.3.3.1 COMMUNICATION WITHIN THE AIRSPACE

Public and agency comments during the environmental review process noted the limited radar and radio frequency communication and tracking capabilities under the rural parts of the airspace. As noted in Section 3.1, the proposed PR-2 and PR-3 airspaces, especially, as well as the eastern PR-1B/1D airspace and western PR-4 airspace, have limited communication or tracking capabilities.

FAA reviewers noted that V-120 southeast of Miles City, MT, between the proposed PR-2 and PR-3 and beyond, does not have radar coverage below 13,000 feet MSL. Radar coverage is unavailable below 16,000 feet MSL along V-491 and, especially, south of V-120. During mechanical or severe weather problems, radar coverage from the two radar locations at Gettysburg or Watford City can be out of service. If either radar site is out of service, radar coverage in the proposed PR-2 to PR-3 and western PR-4 can be lost below 37,000 feet MSL. The 50-NM area between Dupree, SD and Miles City, MT does not have radio frequency coverage below 18,000 feet MSL. This creates safety concerns with no radar coverage and limited or no communication.

The great distances between navigational aids in this region affect the route widths for low altitude en route traffic. With limited or no ability to communicate, the majority of low-altitude traffic flies direct routing. This can be seen as the straight lines crossing the MOAs in Appendix A, Figures A-8, A-9, A-14, and A-15. Navigational aids are inadequate for Victor Airways V-2/465 to the north, V-86 to the south, V-120 through the Gap B MOA, V-254 through the Gap A MOA, and V-491 through the Gap C MOA. The minimum en route altitude for IFR traffic for V-120 is 10,000 feet MSL due to the signal reception distance of 105 NM. The distance between navigational aids along V-120 is 196 NM. The minimum en route altitude along V-491 is 9,000 feet MSL due to the signal distance of 84 NM. The distance between navigational aids on V-491 is 173 NM.

Limited radio communication and radar tracking through much of the area result in general aviation pilots typically not flying on established Victor Airways but rather flying much of the time direct using GPS coordinates. Figures A-7 through A-9 and A-13 through A-16, in Appendix A, show the dispersed nature of flights below Class A airspace. This dispersed nature of flight patterns spreads aircraft out and creates a perception of improved safety with increased airspace volume per aircraft.

As described in Section 3.1, the commercial traffic, typically at altitudes above FL300, can be approximately 400 flights per day with up to approximately 80 flights per day in specific airspace segments. The jet routes which traverse over the proposed PRTC airspace provide for commercial and other high flying aircraft to be safely directed by air traffic control services. During east coast congestion or Midwest weather conditions, the Canadian (CAN) routes which overfly this area are used to safely regulate traffic. Adequate communication exists to safely provide for these high-altitude commercial and other flights above FL300.

3.3.3.2 FLIGHT SAFETY

One public concern during public and agency review of the DEIS with regard to flight safety was the potential for aircraft accidents. This concern has been heightened by a 19 August 2013 crash of a B-1 during training in Powder River A near Broadus, MT. Such mishaps may occur as a result of weather-related accidents, mechanical failure, pilot error, mid-air collisions, collisions with manmade structures or terrain, or bird-aircraft collisions. Flight safety risks apply to all aircraft; they are not limited to the military. The Air Force defines four categories of aircraft mishaps described in Section 3.3.1.

It is impossible to predict the precise location of an aircraft accident, should one occur. Improved situational awareness and sensing capabilities installed on B-1s for combat have the benefit of improved tracking and avoidance of light aircraft. Should a B-1 accident occur, the major consideration is loss of

life followed by damage to property. The aircrew's ability to exit from a malfunctioning aircraft is dependent on the type of malfunction encountered. The probability of an aircraft crashing into a populated area is extremely low, but it cannot be totally discounted. Several factors are relevant to the existing Powder River MOAs and the proposed PRTC airspace complex. The area under the proposed airspace and the immediately surrounding areas have low population densities. During training in the existing Powder River airspace, pilots are instructed to avoid direct overflight of population centers at very low altitudes. The limited amount of time an aircraft is over any specific geographic area limits the probability of an impact of a disabled aircraft in a populated area.

Secondary effects of an aircraft crash include the potential for fire or environmental contamination. Again, because the extent of these secondary effects is dependent on the situation, they are difficult to quantify. A crash of any aircraft can cause damage and/or loss of life. The terrain overflown in the ROI is diverse. For example, should a mishap occur in highly vegetated areas during a hot, dry summer, such a mishap would have a higher risk of extensive fires than would a mishap in more barren and rocky areas during the winter. When an aircraft crashes, it may release hydrocarbons. The petroleum, oils, and lubricants not consumed in a fire could contaminate soil and water. The potential for contamination is dependent on several factors. The porosity of the surface soils will determine how rapidly contaminants are absorbed. The specific geologic structure in the region will determine the extent and direction of the contamination plume. The locations and characteristics of surface and groundwater in the area will also affect the extent of contamination to those resources.

Based on historical data on mishaps at all installations, and under all conditions of flight, the military services calculate Class A mishap rates per 100,000 flying hours for each type of aircraft in the inventory. These mishap rates do not consider combat losses due to enemy action. B-1 aircraft have a lifetime Class A mishap rate of 4.28 over the approximately two-thirds of a million hours since the aircraft entered the Air Force inventory during Fiscal Year (FY) 1985. B-52 Aircraft have a rate of 1.30 with over 7 million flight hours since entering the inventory in 1955. Table 3.3-1 presents Class A mishap rates for aircraft flown in the Powder River MOA/ATCAA airspace. These mishap rates demonstrate that the B-1 and representative transient F-16 fighters have mishap rates greater than the B-52. There have been two aircraft crashes reported in the Powder River airspace since 1978, the most recent Class A mishap on 19 August 2013 (Ellsworth AFB 2014).

Table 3.3-1. Projected Class A Mishap Rates for Aircraft

Aircraft	*Lifetime Mishap Rates per 100,000 Flight Hours*[1]	*Baseline Annual Hours in Powder River Airspace*	*Years Between Projected Mishaps*
B-52	1.30	300	256.4
B-1	4.28	875	26.7
F-16[2]	3.56	24	1170.4

Notes: 1. Lifetime through FY13 B-52 Calendar Year (CY) 55-FY 13, B-1 CY84-FY13
2. Representative transient aircraft.
Source: Air Force Safety Center 2014

Aircrews at Ellsworth flew their first B-1 training sortie in CY 1984. Since then, Ellsworth-based B-1s have been involved in three engine-related Class A incidents and four other incidents, one on Ellsworth involving an engine, two in Powder River airspace which resulted in loss of the aircraft and one aircraft loss during a non-local training mission. Since the value of the engines exceeded $1 million, they were recorded as a Class A mishaps. Citizens incurring damage from Ellsworth AFB mishaps need to contact Ellsworth AFB directly to inquire about the damage claims process. The Air Force has an

established claims process for citizens who have damages as a result of aircraft training activities. This process is initiated through contact with a base's Public Affairs Office.

The 28 BW maintains detailed emergency and mishap response plans to implement in the event of an aircraft accident. These two phase plans assign agency responsibilities and prescribe functional activities necessary to react to major mishaps, whether on or off base. As demonstrated during the Class A accident on 19 August 2013, the initial response focuses on rescue, evacuation, fire suppression, safety, elimination of explosive devices, ensuring security of the area, and other actions immediately necessary to prevent loss of life or further property damage. The initial response element consists of those personnel and agencies primarily responsible to initiate the initial phase. This element will include the Fire Chief, who will normally be the first On-scene Commander, firefighting and crash rescue personnel, medical personnel, security police, and crash recovery personnel. A subsequent response team will be comprised of an array of organizations whose participation will be governed by the circumstances associated with the mishap and actions required to be performed.

The Air Force has no specific rights or jurisdiction just because a military aircraft is involved. Regardless of the agency initially responding to the accident, efforts are directed at stabilizing the situation and minimizing further damage. The second, or investigation phase, is accomplished next. If the accident has occurred on non-federal property, a National Defense Area will normally be established around the accident scene and the site will be secured for the investigation phase. The landowner or land managing agency would be informed of the incident. Should there be a potential for environmental contamination from fuels or other materials, base environmental and security personnel will work together, and with the owner or managing agency personnel to identify, isolate, and clean up any contaminating materials. After all required actions on the site are complete, the aircraft will be removed and the site cleaned up to the extent possible.

A Class A mishap can result in metal debris on the ground. The extent of the debris field depends upon the aircraft accident. The Air Force makes every effort to locate, document, and then clean up debris resulting from the accident. This cleanup is performed to reconstruct the cause of the accident and to restore the accident site as much as possible. Small pieces may be missed in any cleanup process and remain at the crash site.

Public review comments expressed concern that tall structures on the ground have the potential to create hazards to flight. The FAA provides detailed instructions for the marking of obstructions (i.e., paint schemes and lighting) to warn pilots of their presence. Appendix J provides the main text of the applicable FAA circular. Any temporary or permanent structure that exceeds an overall height of 200 feet (61 meters) AGL or exceeds any obstruction standard contained in 14 CFR Part 77, should normally be marked and/or lighted. The FAA may also recommend marking and/or lighting a structure that does not exceed 200 feet AGL or 14 CFR Part 77 standards because of its particular location (FAA 2000). The obstruction standards in 14 CFR Part 77 are primarily focused on structures in the immediate vicinity of airports and approach and departure corridors from airports (14 CFR Part 77 2008).

There are a variety of communication, transmission, and wind farms within, and on the periphery of, the proposed PRTC airspace. These towers or high structures are marked with lighting, as noted above, and are mapped on updated aeronautical charts.

During public and agency reviews, concern was expressed regarding local emergency activities which could occur during the time when the MOA was activated. As explained in Section 3.1, in cases of emergency, such as air ambulance, law enforcement, or firefighting, which required ATC clearance, the Air Force has agreed to the same procedures currently used in the existing Powder River airspace for the proposed PRTC. The Air Force immediately responds to ATC direction and relocates the B-1 or other

aircraft training from the emergency needed airspace, and the MOA is deactivated to allow IFR emergency and related arrivals and departures from an airport under the MOA. This means that if a B-1 were flying in proposed PR-1A MOA and an emergency flight were required, the training aircraft would either move to the PR-1A ATCAA, move to another already activated MOA, or return to base, depending upon the extent and duration of the emergency. The training aircraft would not be able to move to an unactivated, unscheduled MOA and begin training, because there would need to be a NOTAM issued 2 to 4 hours in advance of military flight operations. There are not adequate communication capabilities in the area to safely notify a civil aircraft in the airspace that military training aircraft were now using the airspace. If adequate communication was possible, and a MOA were activated and a NOTAM was issued, communication would be required with any aircraft flying IFR or VFR in the airspace. IFR flight would not be possible in an activated MOA although VFR aircraft could transit the airspace using see-and-avoid.

Public and agency review of the DEIS expressed concern for wake vortices on light aircraft from low-level flight of large aircraft, such as the B-1 or B-52. As a plane travels through the air, the trail of disturbed air that follows the aircraft as it passes through the atmosphere is called the wake vortex. Wake vortices can cause a brief period of unstable air which could affect other aircraft. Air traffic control at airports will typically sequence aircraft using time or distance for departures or arrivals to avoid wake vortices. There have not been any reported incidents of pilots encountering wake vortices while traversing an active existing Powder River MOA. The relatively small number of training military aircraft would make it unlikely that a B-1 or B-52 undissipated wake vortex would be in the exact location traversed by a civil aircraft flying VFR in an active MOA.

3.3.3.3 GROUND SAFETY

Day-to-day operations and maintenance activities conducted by the 28 BW are performed in accordance with applicable Air Force safety regulations, published Air Force Technical Orders, and standards prescribed by Air Force Occupational Safety and Health requirements.

Ellsworth AFB fire and emergency services meet all established Air Force staffing and equipment standards. Should extraordinary requirements occur, the Ellsworth AFB Fire Department has established mutual aid support agreements with the nearby community of Rapid City (Air Force 2001e).

During public and agency review of the DEIS, the risk of fire was a ground safety issue noted by commenters. The surface environment under the proposed PRTC consists of high plains with range, farming, timber, mining, and other resource-dependent activities. These activities are very sensitive to wildfires. Fast moving range fires can result in substantial damage to rangeland, infrastructure such as fencing, water distribution systems, outbuildings, livestock, and wildlife. Fire risk throughout the area is ever present from natural lightning strikes and human activity. Aerial fire observation and fire suppression occurs throughout the four states under the proposed PRTC.

The National Fire Danger Rating System is a set of computer programs and algorithms that allow land management agencies to estimate fire danger for a given rating area. National Fire Danger Rating System characterizes fire danger by evaluating the approximate upper limit of fire behavior in a fire danger rating area during a 24-hour period. Calculations of fire behavior are based on fuels, topography, and weather. The National Fire Danger Rating System gives relative ratings of the potential growth and behavior of any wildfire. Fire danger ratings are guides for initiating pre-suppression activities and selecting the appropriate level of initial response to a reported wildfire. The National Fire Danger Rating System links an organization's readiness level (or pre-planned fire suppression actions) to the fire problems of the day (NOAA 2009).

Fire-danger ratings are relative, not absolute. In other words, when a component or index of the system doubles, a doubling of the fire activity or intensity should be expected. The National Fire Danger Rating System evaluates the worst conditions on a rating area by (1) taking fuel and weather measurements when fire danger is normally the highest (mid- to late-afternoon), (2) measuring fire danger in the open, and (3) measuring fire danger on south to west exposures. This means that extrapolation of fire danger to other areas not in the immediate vicinity of the fire danger stations would involve scaling the fire-danger values down, not up. The ratings and indices are interpreted in terms of fire occurrence and fire behavior.

A Red Flag Warning would be issued through the National Fire Danger Rating System when weather conditions could sustain extensive wildfire activity and meet one or more of the following criteria in conjunction with Very High or Extreme fire danger:

a. Sustained surface winds, or frequent gusts, of 25 miles per hour or higher.

b. Unusually hot and dry conditions (e.g., relative humidity less than 20 percent).

c. Dry thunderstorm activity is foreseen during an extremely dry period.

d. Any time the forecaster foresees a change in weather that would result in a significant increase in fire danger (e.g., very strong winds associated with a cold front even though the rangeland fire danger index is below the very high category, extensive lightning, etc.).

Ground safety risks identified during the environmental review process included those associated with mining operations, such as around Colstrip, MT. Substantial blasting occurs to support mining operations. Explosives are prepared and inserted at designated points identified for the mining operation. The explosives are armed and triggered electronically. Historically there was concern that two-way radio devices could have a frequency to trigger an explosive. Accordingly, vehicles within a blast zone were instructed to turn off their radios to reduce risk. The introduction of low flying, highly electronic emitting aircraft to a mining environment was identified as a safety risk by the public.

Low-level subsonic and supersonic events have the potential to disturb loose surface materials through overpressure and vibration. Surface mining operations have the potential to have loose soils on slopes, which could be disturbed by low-level overflights or sonic booms.

Larger aircraft and lower altitudes produce a greater potential for a wake vortex effect on the ground. When the B-1 operates in the mid- to high-altitude range, it has no effect on ground structures. When a large aircraft operates at a low altitude, typically below 1,000 feet AGL, a wake vortex generated by the aircraft turbulence can strike the ground with the force of a brief, strong rotating wind. Extensive review of wake vortices has resulted in the conclusion that, under unique circumstances of aircraft size, altitude, configuration, and meteorological conditions, there is a possibility that wake vortex damage on the ground could occur.

The four-state region is subject to storm wind impacts and tornados. The area under the proposed PRTC airspace is subject to both high winds and tornados. Tornado damage in the area is usually minimal because of the relatively sparsely populated area. Tornados in the area are spawned by severe thunderstorm activity and typically occur in the early morning hours. Wake vortices currently occur within the existing Powder River airspace and do not generate tornado speed winds.

Under normal flight conditions, and all but rare atmospheric conditions, wake vortices from B-52 and B-1 low altitude flights would not generate sufficient velocities to damage structures or vehicles, or pose a hazard to people or animals on the surface. Under infrequent circumstances, such as unusual aircraft maneuvers, damage could occur to a structure, such as a stock watering windmill, which was facing into

the normal wind and was impacted by a wake vortex which created a rapid strong wind force from a different direction and twisted the windmill (Jurkovich and Skujins 2006).

Modern wind machines, towers, and other tall structures are designed to withstand wind forces of the type which could result from a large low-flying aircraft. There have not been any documented reports of wake vortex problems with older stock windmills or otherwise from low-level B-1 training in the existing Powder River airspace. Should wake vortex damage occur, the Air Force has established procedures for damage claims that begin by contacting Ellsworth AFB Public Affairs.

3.3.3.4 BIRD STRIKE HAZARD

Bird-aircraft strikes constitute a safety concern because they can result in damage to aircraft or injury to aircrews or local populations if an aircraft crashes. Aircraft may encounter birds at altitudes up to 30,000 feet MSL or higher. However, most birds fly close to the ground. Over 97 percent of reported bird strikes occur below 3,000 feet AGL. Approximately 30 percent of bird strikes happen in the airfield environment, and almost 55 percent occur during low-altitude flight training (Air Force Safety Center 2010).

Migratory waterfowl (e.g., ducks, geese, and swans) are the most hazardous birds to low-flying aircraft because of their size and their propensity for migrating in large flocks at a variety of elevations and times of day. Waterfowl vary considerably in size, from 1 to 2 pounds for ducks, 5 to 8 pounds for geese, and up to 20 pounds for swans. There are two normal migratory seasons, fall and spring. Waterfowl are usually only a hazard during migratory seasons. These birds typically migrate at night and generally fly between 1,500 to 3,000 feet AGL during the fall migration and from 1,000 to 3,000 feet AGL during the spring migration.

Along with waterfowl, raptors, shorebirds, gulls, herons, songbirds, and other birds also pose a wildlife strike hazard. The results of bird-aircraft strikes show that strikes involving raptors result in the majority of Class A and Class B mishaps related to bird-aircraft strikes. Soaring birds of greatest concern in the proposed PRTC airspace are vultures and red-tailed hawks. Peak migration periods for raptors are from October to mid-December and from mid-January to the beginning of March. In general, military training flights above 1,500 feet AGL would be above most soaring raptors.

Songbirds are small birds, usually less than one pound. During nocturnal migration periods, they navigate along major rivers, typically between 500 to 3,000 feet AGL. The potential for bird-aircraft strikes is greatest in areas used as migration corridors (flyways) or where birds congregate for foraging or resting (e.g., open water bodies, rivers, and wetlands). As shown in Figure 3.6-2 several flyways traverse the existing and proposed airspace.

In order to address the issues of aircraft bird strikes, the Air Force has developed The Avian Hazard Advisory System (AHAS) to monitor bird activity and forecast bird strike risks. Using Next Generation Radar (NEXRAD) weather radars and models developed to predict bird movement, the AHAS is an online, near real-time, geographic information system (GIS) used for bird strike risk flight planning across the continental U.S. and Alaska. Additionally, as part of an overall strategy to reduce Bird-Aircraft Strike Hazard (BASH) risks, the Air Force has developed a Bird Avoidance Model (BAM) using GIS technology as a key tool for analysis and correlation of bird habitat, migration, and breeding characteristics and is combined with key environmental and man-made geospatial data. The model was created to provide Air Force pilots and flight scheduler/planners with a tool for making informed decisions when selecting flight routes. The model was created in an effort to protect human lives, wildlife, and equipment during air operations. This information is integrated into required Pilot briefings which take place prior to any

sortie. While any bird-aircraft strike has the potential to be serious, many result in little or no damage to the aircraft, and only a minute portion result in a Class A mishap. During the FY 1985 to 2013, the Air Force Bird/Wildlife Aircraft BASH Team documented 104,381 bird strikes worldwide. Of these, 48 resulted in Class A mishaps where the aircraft was destroyed. These occurrences constituted approximately 0.05 percent of all reported bird-aircraft strikes (Air Force Safety Center 2014).

Bird-aircraft strike data from 1999 through 2007 indicate that Ellsworth-based aircraft experienced 11 bird strikes in the Powder River MOA in nine years. The majority, approximately 41 percent, occur during July, August, and September. The months of January, February, and March exhibit the lowest incidence of approximately 12 percent of recorded bird strikes. The largest number of strikes occurred in the existing Powder River B MOA.

3.4 AIR QUALITY

3.4.1 *DEFINITION OF THE RESOURCE*

Air quality in a given location is defined by the size and topography of the air basin, the local and regional meteorological influences, and the type and concentration of pollutants in the atmosphere, which are generally expressed in units of parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$). One aspect of significance is a pollutant's concentration in comparison to a national and/or state ambient air quality standard. These standards represent the maximum allowable atmospheric concentrations that may occur and still protect public health and welfare and include a reasonable margin of safety to protect the more sensitive individuals in the population. National standards are established by the U.S. Environmental Protection Agency (USEPA). They are termed the National Ambient Air Quality Standards (NAAQS) and represent maximum acceptable concentrations that generally may not be exceeded more than once per year, except for the annual standards, which may never be exceeded. Under the Clean Air Act (CAA), state and local agencies may establish air quality standards and regulations of their own, provided these are at least as stringent as the federal requirements. The states of North Dakota and Wyoming have set their own ambient air quality standards for certain pollutants; while the states of Montana and South Dakota, in general, have adopted the federal NAAQS for all criteria pollutants. Table 3.4-1 presents a summary of the national and state ambient air quality standards that apply to the ROI.

Identifying the ROI for air quality requires knowledge of the types of pollutants being emitted, pollutant emission rates, topography, and meteorological conditions. The ROI for inert pollutants (pollutants other than ozone [O_3] and its precursors) is generally limited to a few miles downwind from a source. The ROI for O_3 can extend much farther downwind than for inert pollutants. In the presence of solar radiation, the maximum effect of volatile organic compounds (VOCs) and nitrogen oxides (NO_x) emissions on O_3 levels usually occurs several hours after they are emitted and many miles from the source. Therefore, the ROI for O_3 may extend beyond the four-state region overlapped by the proposed PRTC.

Air quality within the planning area for the proposed PRTC and its surroundings could be affected by emissions from operations associated with the Proposed Action or an alternative. This section describes the existing air quality resource of the planning area and applicable air regulations that could apply to the proposed action and alternatives. Figure 2-5 shows the location of the proposed PRTC with respect to states and counties in the planning area. The Proposed Action would involve airspace over the states of Montana, North Dakota, South Dakota, and Wyoming. Table 3.4-2 summarizes the counties in each state that are within the ROI of the proposed PRTC project. Most of the ROI attains all national and

state ambient air quality standards, and the impacts to air quality have not been a substantial constraint to new activities or projects in the ROI.

Table 3.4-1. National and State Ambient Air Quality Standards

Pollutant	*Averaging Time*	*ND Standards*[2]	*WY Standards*[2]	*SD Standards*[2]	*MT Standards*[2]	*National Standards*[1]	
						Primary[2,3]	*Secondary*[2,4]
Ozone (O_3)	8-hour	0.075 ppm	75 ppb	0.075 ppm	0.075 ppm	0.075 ppm	SAP
	1-hour	—	—	—	0.10 ppm	—	—
Carbon monoxide (CO)	8-hour	9 ppm	10,000 µg/m^3	9 ppm	9 ppm	9 ppm	—
	1-hour	35 ppm	40,000 µg/m^3	35 ppm	23 ppm	35 ppm	—
Nitrogen dioxide (NO_2)	Annual	0.053 ppm	100 µg/m^3	53 ppb	0.05 ppm	0.053 ppm	SAP
	1-hour	0.10 ppm	189 µg/m^3	100 ppb	0.30 ppm	0.10 ppm	—
Sulfur dioxide (SO_2)	Annual	—	80 µg/m^3	0.03 ppm	0.02 ppm	0.03 ppm	—
	24-hour	—	365 µg/m^3	0.14 ppm	0.10 ppm	0.14 ppm	—
	3-hour	0.5 ppm	500 ppb	—	—	—	0.5 ppm
	1-hour	0.075 ppm	75 ppb	75 ppb	0.50 ppm	0.075 ppm	—
Particulate matter less than 10 microns in diameter (PM_{10})	AAA	—	50 µg/m^3	—	50 µg/m^3	—	SAP
	24-hour	150 µg/m^3	150 µg/m^3	150 µg/m^3	150 µg/m^3	150 µg/m^3	SAP
Particulate matter less than 2.5 microns in diameter ($PM_{2.5}$)	AAA	12 µg/m^3	15 µg/m^3	15 µg/m^3	—	12 µg/m^3	15 µg/m^3
	24-hour	35 µg/m^3	35 µg/m^3	35 µg/m^3	—	35 µg/m^3	SAP
Lead (Pb)	Calendar Quarter	—	1.5 µg/m^3	—	1.5 µg/m^3	—	—
	Rolling 3-Mo. Average	0.15 µg/m^3		1.5 µg/m^3	—	0.15 µg/m^3	SAP
Hydrogen Sulfide	Instantaneous[6]	10 ppm	70 µg/m^3	—	—	—	—
	1-hour[7]	0.2 ppm	40 µg/m^3	—	0.05 ppm	—	—
	24-Day	0.1 ppm	—	—	—	—	—
	3-month	0.02 ppm	—	—	—	—	—

Notes:
1. Standards, other than for ozone and those based on annual averages, are not to be exceeded more than once a year. To attain the ozone standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentration measured within an area over each year must not exceed 0.075 ppm (effective 27 May 2008).
2. Concentrations are expressed in units in which they were promulgated. Units shown as µg/m^3 are based upon a reference temperature of 25°C and a reference pressure of 760 mm of mercury.
3. Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
4. Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
5. 1-hour average concentration.
6. WY standard is based on ½-hour average not to be exceeded more than 2 times per year.
7. WY standard is based on ½-hour average not to be exceeded more than 2 times in any five consecutive days.

AAA = Annual Arithmetic Mean; SAP = Same as Primary

Sources: USEPA 2010b, USEPA 2010c;
MT - http://www.deq.state.mt.us/dir/legal/Chapters/CH08-02.pdf;
ND - http://www.legis.nd.gov/information/acdata/pdf/33-15-02.pdf;
SD - http://legis.state.sd.us/rules/DisplayRule.aspx?Rule=74:36:02:02;
WY - http://deq.state.wy.us/aqd/stnd/Chapter2_2-3-05FINAL_CLEAN.pdf.

Table 3.4-2. Counties within Each State Potentially Affected by the Proposed PRTC

State	*County*	*NAAQS Attainment Status*
MT	Carter	In attainment
	Powder River	In attainment
	Fallon	In attainment
	Custer	In attainment
	Rosebud	Portion nonattainment PM_{10}
	Treasure	In attainment
	Big Horn	In attainment
WY	Crook	In attainment
	Campbell	In attainment
	Sheridan	Portion nonattainment PM_{10}
	Weston	In attainment
SD	Harding	In attainment
	Butte	In attainment
	Perkins	In attainment
	Carson	In attainment
	Ziebach	In attainment
	Meade	In attainment
	Lawrence	In attainment
	Pennington	In attainment
ND	Bowman	In attainment
	Slope	In attainment
	Adams	In attainment
	Hettinger	In attainment
	Grant	In attainment
	Sioux	In attainment
	Morton	In attainment
	Stark	In attainment
	Golden Valley	In attainment
	Billings	In attainment

Sources: USEPA 2014a, USEPA 2014b

3.4.2 *REGULATORY SETTING*

The federal CAA and its subsequent amendments establish air quality regulations and the NAAQS and delegate the enforcement of these standards to the states. The states enforce air pollution regulations and set guidelines to attain and maintain the national and state ambient air quality standards within their regions. These guidelines are found in a State Implementation Plan (SIP) designed to eliminate or reduce the severity and number of NAAQS violations. Following is a summary of the federal and state air quality rules and regulations that may apply to emission sources associated with the proposed action and alternatives. This is an inclusive summary. Because the Proposed Action involves the addition of airspaces and aircraft sorties to operations that are currently in place, the sources of air pollution expected to result from the proposed action are primarily aircraft exhaust emissions within the PRTC airspace. The Proposed Action includes no defined additions to the number of stationary sources at ground bases or restricted areas, and no increased ground-based vehicular activity within the PRTC.

Prevention of Significant Deterioration. Section 162 of the CAA established the goal of prevention of significant deterioration (PSD) of air quality in all international parks; national parks which exceeded 6,000 acres; and national wilderness areas which exceeded 5,000 acres if these areas were in existence on August 7, 1977. These areas were defined as mandatory Class I areas, while all other attainment or unclassifiable areas were defined as Class II areas. Under CAA Section 164, states or tribal nations, in addition to the federal government, have authority to re-designate certain areas as (non-mandatory) PSD Class I areas, i.e., a National Park or national wilderness area established after August 7, 1977, which exceeds 10,000 acres. Class I areas are areas where any appreciable deterioration of air quality is considered significant. Class II areas are those where moderate, well-controlled growth could be permitted. The PSD requirements affect construction of new major stationary sources in the Class I, II, and III areas and are a pre-construction permitting system.

PSD Class I Areas. Federal Mandatory PSD Class I areas are listed under 40 CFR Part 81. The closest mandatory PSD Class I Federal area in the region which potentially could be affected by the Proposed Action is Wind Cave National Park, Pennington County, SD approximately 30 miles from the proposed action (USEPA 2008a). Additionally, Native American lands of the Northern Cheyenne Reservation in Rosebud and Big Horn Counties, MT have been designated as a Class I area by the State of Montana (Montana Department of Environmental Quality 2007). This area is overlaid by the proposed PRTC airspace and potentially could be affected by the Proposed Action.

Visibility. CAA Section 169A established the additional goal of prevention of further visibility impairment in the Class I areas. Visibility impairment is defined as a reduction in the visual range and atmospheric discoloration. Determination of the significance of an activity on visibility in a Class I area is typically associated with evaluation of stationary source contributions. The USEPA is implementing a Regional Haze rule that addresses impacts of mobile source emissions and air pollution transported from other states or regions to air quality within Class I areas.

General Conformity. CAA Section 176(c), General Conformity, requires that federal agency actions be consistent with the CAA and any approved SIP. To implement this mandate, the EPA promulgated the conformity rule for general federal actions in the 30 November 1993 *Federal Register* (58 FR 63214-63259) and it became effective on 31 January 1994. In 2006, the EPA revised the general conformity rule to include *de minimis* emission levels for particulate matter with a diameter equal to or less than 2.5 microns ($PM_{2.5}$) and its precursors. On 5 April 2010, EPA finalized revisions to the general conformity rule that improve on the methods federal agencies can use to demonstrate conformity (75 FR 17253-17279) (USEPA 2010a). These revisions took effect on July 6, 2010. Federal activities must not:

(a) Cause or contribute to any new violation;

(b) Increase the frequency or severity of any existing violation; or

(c) Delay timely attainment of any standard, interim emission reductions, or milestones in conformity to a SIP's purpose of eliminating or reducing the severity and number of NAAQS violations or achieving attainment of NAAQS.

General conformity applies only to nonattainment and maintenance areas. If the emissions from a federal action proposed in a nonattainment or maintenance area exceed annual *de minimis* thresholds (typically, 100 tons per year) identified in the rule, a formal conformity determination is required of that action. The *de minimis* thresholds are more restrictive as the severity of the nonattainment status of the region increases.

Primary Pollutant Concerns. The pollutants of primary concern for this air quality analysis in the ROI include VOCs, NO_x, carbon monoxide (CO), nitrogen dioxide (NO_2), O_3, sulfur dioxide (SO_2), lead (Pb),

particulate matter less than 10 microns in diameter (PM_{10}), and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). Although VOCs and NO_x (other than NO_2) have no established ambient standards, they are important precursors to O_3 formation. O_3 is a secondary pollutant which formed in the atmosphere by photochemical reactions with these previously emitted precursors. In September 1997, the USEPA promulgated 8-hour O_3 (revised in 2008) and 24-hour and annual $PM_{2.5}$ NAAQS. Following a lawsuit in May 1999, the U.S. Court rescinded these standards and the USEPA's authority to enforce them. Subsequent to an appeal of this decision by the USEPA, the U.S. Supreme Court in February 2001 upheld these standards. This action initiated a new planning process to monitor and evaluate emission control measures for these pollutants. An area will attain the 8-hour O_3 standard if its three-year running average of the annual fourth-highest daily maximum 8-hour O_3 concentration remains below 0.075 ppm. The 1-hour O_3 standard, as well as designations and classifications for all 1-hour O_3 nonattainment and maintenance areas, have been revoked (USEPA 2008c). As is the case for the ROI, implementation of the 8-hour O_3 standard replaced the existing 1-hour standard.

Greenhouse Gas Emissions. Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. These emissions occur from natural processes and human activities. The accumulation of GHGs in the atmosphere regulates the earth's temperature.

The most common GHGs emitted from natural processes and human activities include carbon dioxide (CO_2), methane, and nitrous oxide (N_2O). Examples of GHGs created and emitted primarily through human activities include fluorinated gases (hydro fluorocarbons and per fluorocarbons) and sulfur hexafluoride. Each GHG is assigned a global warming potential. The global warming potential is the ability of a gas or aerosol to trap heat in the atmosphere. The global warming potential rating system is standardized to CO_2, which has a value of one. For example, methane has a global warming potential of 21, which means that it has a global warming effect 21 times greater than CO_2 on an equal-mass basis and N_2O has a global warming potential of 310. Total GHG emissions from a source are often reported as a CO_2 equivalent (CO_2e). The CO_2e is calculated by multiplying the emission of each GHG by its global warming potential and adding the results together to produce a single, combined emission rate representing all GHGs.

The USEPA issued the Final Mandatory Reporting of Greenhouse Gases Rule on 30 October 2009 (USEPA 2009a). This rule does not apply to mobile sources of GHGs and would not apply to the PRTC training activities. Executive Order (EO) 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, was signed by President Bush on January 24, 2007. The EO instructs federal agencies to conduct their environmental, transportation, and energy-related activities in an environmentally, economically and fiscally sound, integrated, continuously improving, efficient, and sustainable manner. The EO requires federal agencies to meet specific goals to improve energy efficiency and reduce GHG emissions by annual energy usage reductions of 3 percent through the end of FY 2015, or by 30 percent by the end of FY 2015, relative to the baseline energy use of the agency in FY 2003. According to EO 13423 § 8 (c) military tactical equipment and vehicles may be exempted from this EO. In general, EO 13423 applies to activities and operations at the installation rather than to aircraft training activities. Thus, the PRTC is exempt from EO 13423.

In addition to EO 13423, on October 5, 2009, President Obama signed *EO 13514, Federal Leadership in Environmental, Energy, and Economic Performance*, to establish an integrated strategy towards sustainability in the federal government and to make reduction of GHGs a priority for federal agencies. Under the EO, the Air Force will be reporting a comprehensive inventory of GHG emissions, including such emissions associated with Powder River airspace operations, for FY 2010 in early January 2011, and

annually thereafter. The emissions reported will include all "Scope 1" emissions, which are all direct emissions of GHGs owned or controlled by the agency; all "Scope 2" emissions, which are all indirect emissions of GHGs from electricity, steam, or heat purchased by the agency; and all "Scope 3" emissions, which includes supply chain, business travel, and employee commuting emissions. The comprehensive GHG emissions inventories for FY 2010 and beyond will, among other things, include emissions from aircraft operations; tactical and highway vehicles; and non-road engines and equipment. While GHG emissions from aircraft and tactical vehicles and equipment will be reported annually beginning with FY 2010, these combat and combat support systems are not subject to the EO's GHG emissions reduction target. The PRTC is exempt from EO 13423 due to the proposed activity. EO 13514 § 19 (h) identifies an exemption for non-road equipment, vehicles and equipment, including aircraft, that are used in combat support or training for such operations.

On 18 February 2010, the Council on Environmental Quality (CEQ) issued for public comment draft guidance "Consideration for Effects of Climate Change and Greenhouse Gas Emissions", the first draft guidance on how federal agencies should evaluate the effects of climate change and GHG emissions for NEPA documentation (CEQ 2010).

3.4.3 *EXISTING CONDITIONS*

The USEPA has designated all areas of the U.S. as having air quality better than (attainment) or worse than (nonattainment) the NAAQS. A nonattainment designation generally means that a primary NAAQS has been exceeded more than once per year in a given area. Areas without sufficient data to determine the attainment/nonattainment status are designated as unclassified. Most of the project region attains all national and state ambient air quality standards. Lame Deer, MT, located in Rosebud County, is nonattainment for PM_{10} and is under the proposed airspace. Outside the airspace, the Laurel area of Yellowstone County, MT is nonattainment for SO_2 and the City of Sheridan portion of Sheridan County, WY is nonattainment for PM_{10} (USEPA 2008c). Many counties within the project ROI presently have no ambient air monitoring stations due to their rural nature and lack of point source emissions or other known air quality concerns. These areas are considered as unclassified and are assumed to be attainment areas from a regulatory standpoint.

Generally, concentrations of photochemical smog are highest during the summer months and coincide with the season of maximum solar insulation. Inert pollutant concentrations tend to be the greatest during periods of light winds, stable atmospheric conditions, and surface-based temperature inversions. These conditions limit atmospheric dispersion.

Table 3.4-3 presents the maximum pollutant levels monitored at locations within the project ROI from 2004 through 2007. The monitoring station locations shown in the table were selected because they are within or near the project ROI and are thought to be representative of general background conditions in the ROI and are directly related to point source emissions or heavily populated areas.

Some of the affected ROI does not have any ongoing monitoring, and there are very few ambient monitoring stations within the Proposed Action area and very limited within the existing Powder River airspace footprint. Not all parameters are measured at all monitoring stations. CO and Pb data were not reported at any of the selected monitoring stations. Air quality in the project ROI is generally considered excellent due to its rural nature, the presence of few substantial emission sources, and the relatively high wind speeds that aid in the dispersion of air pollutants. Only one monitoring location within the project ROI, Lame Deer, MT in Rosebud County, reported exceedances of the PM_{10} NAAQS. This location is used to monitor potential human exposure from remote power generating facilities.

Table 3.4-3. Maximum Pollutant Concentrations Monitored in the Proposed PRTC Project ROI—2004-2007

Pollutant/Monitoring Station[2]	*Averaging Time/ Measurement*	*Maximum Concentration by Year*[1]			
		2004	*2005*	*2006*	*2007*
Ozone O_3					
Thunder Basin, WY	1-hour (ppm)	0.078	0.074	0.087	0.087
Wind Cave, SD		—	0.083	0.083	0.079
Billings County, ND		0.062	0.065	0.073	0.071
Thunder Basin, WY[3]	8-hour (1) (ppm)	—	0.068	0.075	0.081
Wind Cave, SD		—	0.070	0.073	0.069
Billings County, ND		0.055	0.059	0.066	0.064
Nitrogen Dioxide NO_2					
Thunder Basin, WY	Annual (ppm)	0.002	0.002	0.002	0.002
Wind Cave, SD		—	0.001	0.001	0.001
Thunder Basin, WY	1-hour (ppm)	0.029	0.021	0.032	0.021
Sulfur Dioxide SO_2					
Wind Cave, SD	Annual (ppm)	—	0.001	0.001	0.001
Billings County, ND		0.001	0.001	0.001	0.001
Wind Cave, SD	24-hour (ppm)	—	0.002	0.003	0.002
Billings County, ND		0.002	0.002	0.002	0.002
Wind Cave, SD	3-hour (ppm)	—	0.003	0.007	0.004
Billings County, ND		0.006	0.005	0.007	0.009
PM_{10}					
Lame Deer, MT	Annual Arithmetic Mean ($\mu g/m^3$)	22	22	23	22
Arvada, WY		14	16	16	14
Wind Cave, SD		—	7	7	10
Lame Deer, MT	24-hour ($\mu g/m^3$)	48	80	120	107
Arvada, WY		36	138	51	40
Wind Cave, SD		—	32	28	44
$PM_{2.5}$					
Lame Deer, MT	Annual ($\mu g/m^3$)	5.9	7.7	—	—
Wind Cave, SD		—	5.4	5.3	6.9
Billings County, ND		4.4	4.3	4.8	5
Lame Deer, MT	24-hour ($\mu g/m^3$)	22	34	—	—
Wind Cave, SD		—	16	17	22
Billings County, ND		9	12	19	18

Notes: 1. No monitoring data available for CO or Pb.
2. Lame Deer, Rosebud County, MT – Site ID 30-087-0307
Arvada Elementary School, Sheridan County, WY – Site ID 560330099
Thunder Basin Grassland, Campbell County, WY – Site ID 560050123
Wind Cave National Park, Custer County, SD – Site ID 460330132
Billings County, ND – Site ID 380070002
3. 8-hour O_3 concentration of 0.081 for Thunder Basin, WY exceeds Federal and State NAAQS

Sources: WY Department of Environmental Quality 2007, MT Department of Environmental Quality 2003, SD Department of Environment and Natural Resources 2005, and USEPA 2008b.

Annual baseline GHG emissions for aircraft combustive emissions were calculated for methane, N_2O, and CO_2 and for a total CO_2e. Table 3.4-4 shows the annual GHG emissions from baseline aircraft operations.

Table 3.4-4. Annual GHG Emissions from Baseline Aircraft Operations (metric tons/year)

State	*CO_2*	*Methane*	*N_2O*	*CO_2e*
MT	5,875.48	0.17	0.19	5,937.97
ND	—	—	—	—
SD	839.96	0.02	0.03	848.89
WY	2,807.74	0.08	0.09	2,837.60
Total	**9,523.18**	**0.27**	**0.31**	**9,624.46**

Regional Air Emissions

The USEPA compiles inventories of point, area, and mobile source emissions as part of their National Emissions Inventory database. Table 3.4-5 presents the most recent air emissions data for activities that occurred in 2008 for counties overlaid by the proposed PRTC airspace (USEPA 2013a). In general, the largest stationary sources of air emissions within the ROI are related to energy exploration and production. The region is very rural in nature with known coal, natural gas, and oil reserves. Coal-powered electrical generation plants produce the highest annual emissions for all parameters.

The coal-fired electrical plant at Colstrip in Rosebud County had two days in 2003 where PM_{10} emissions were exceeded. In 2008, the County did not exceed emission standards.

The only affected area under the proposed PRTC airspace ROI which has been identified as nonattainment area for the NAAQS is Rosebud County, MT and Sheridan County, WY. The area is identified as the Lame Deer and Sheridan nonattainment area in national records. Rosebud County includes the Colstrip mine, the larger communities of Colstrip and Lame Deer, smaller communities, and scattered ranches. In 2008, Rosebud County or Sheridan County did not exceed the NAAQS standards for PM_{10} or $PM_{2.5}$. Tables 3.4-6 and 3.4-8 summarize the 2008 maximum PM_{10} pollutant concentrations for Rosebud and Sheridan Counties, respectively. Tables 3.4-7 and 3.4-9 summarize the most recent (2008) emissions of criteria air pollutants for Rosebud County and Sheridan County, respectively.

Table 3.4-5. Summary of 2008 Annual Emissions for Counties Affected by the Proposed Action (tons per year)

County	*VOCs*	*CO*	*NO_x*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
MT						
Carter	1,354.79	5,510.32	224.12	47.20	2,314.40	730.57
Powder River	429.87	1,900.41	192.96	16.74	2,448.53	471.47
Fallon	512.41	1,808.40	778.35	133.73	2,755.81	447.07
Custer	5,960.57	26,416.37	1,807.73	159.94	5,235.77	2,406.76
Rosebud	1,782.29	11,162.24	27,561.96	15,509.98	10,550.71	1,890.67
Treasure	976.65	4,160.27	857.92	24.48	1,081.40	359.64
Big Horn	4,925.07	24,004.41	4,995.40	601.54	17,997.49	3,731.87

continued on next page…

Table 3.4-5. Summary of 2008 Annual Emissions for Counties Affected by the Proposed Action (tons per year)

County	*VOCs*	*CO*	*NO_x*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
WY						
Crook	3,444.88	15,175.53	2,588.68	195.81	13,610.99	2,569.80
Campbell	6,075.22	21,844.28	21,647.90	11,042.63	147,065.88	22,440.36
Sheridan	1,928.17	10,996.60	4,594.83	65.42	20,521.67	2,357.67
Weston	4,466.07	4,522.24	4,553.31	3,147.13	8,571.04	1,493.25
SD						
Harding	309.23	834.80	114.33	5.08	1,259.21	253.36
Butte	423.54	1,725.75	410.45	8.57	1,689.66	297.04
Perkins	366.74	1,121.82	300.96	8.26	3,994.13	766.41
Corson	470.26	1,419.06	550.78	9.92	2,816.89	540.34
Ziebach	247.66	729.19	164.25	2.93	2,382.94	457.45
Meade	2,186.58	9,041.02	1,341.34	48.30	4,633.39	1,074.30
Lawrence	2,024.25	9,101.61	998.99	44.92	3,336.77	803.40
Pennington	14,236.69	63,471.84	4,435.47	344.72	11,341.37	4,972.24
ND						
Bowman	414.93	1,627.71	589.41	12.32	2,664.04	473.10
Slope	467.62	1,228.93	321.69	9.54	1,683.26	355.80
Adams	301.75	1,044.65	443.73	12.27	3,632.61	660.28
Hettinger	452.89	1,538.15	718.51	16.22	3,942.70	750.02
Grant	551.15	1,313.14	501.45	22.31	5,750.49	1,127.35
Sioux	287.30	1,301.97	279.21	4.68	2,013.56	313.03
Morton	1,924.09	9,737.89	5,659.15	4,449.52	10,949.86	2,373.39
Stark	1,354.83	6,984.17	2,789.78	107.59	7,292.67	1,424.47
Golden Valley	357.84	1,558.73	870.55	11.29	1,904.58	358.69
Billings	469.38	1,817.11	964.72	259.51	1,327.76	277.59

Source: USEPA 2013a, 2008 National Emissions Inventory

Table 3.4-6. 2008 Particulate Concentrations for Rosebud County, MT

Pollutant	*NAAQS Standard*	*Highest Recorded Concentration*	*Second Highest Recorded Concentration*	*Number of NAAQS Exceedances*	*Stations Monitoring Pollutant*
PM_{10}					
24-hour average	150 μg/m^3	56 μg/m^3	45 μg/m^3	0	2
Annual arithmetic mean	50 μg/m^3	21 μg/m^3	N/A	0	2

Table 3.4-7. 2008 Rosebud County, MT Criteria Pollutants Emissions (in tons per year of pollutant emitted)

Source Category	*VOCs*	*CO*	*NO_x*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
Mobile Sources	1,445.19	7,374.19	25,765.69	15,494.28	10,474.72	1,821.92
Point and Area Sources	337.11	3,788.05	1,796.27	15.70	75.98	68.75
All Sources	**1,782.29**	**11,162.24**	**27,561.96**	**15,509.98**	**10,550.71**	**1,890.67**

Table 3.4-8. 2008 Particulate Concentrations for Sheridan County, WY

Pollutant	*NAAQS Standard*	*Highest Recorded Concentration*	*Second Highest Recorded Concentration*	*Number of NAAQS Exceedances*	*Stations Monitoring Pollutant*
PM_{10}					
24-hour average	150 μg/m^3	103 μg/m^3	83 μg/m^3	0	3
Annual arithmetic mean	50 μg/m^3	23 μg/m^3	N/A	0	3

Table 3.4-9. 2008 Sheridan County, WY Criteria Pollutants Emissions (in tons per year of pollutant emitted)

Source Category	*VOCs*	*CO*	*NO_x*	*SO_x*	*PM_{10}*	*$PM_{2.5}$*
Mobile Sources	985.75	1,907.24	1,034.78	33.74	20,371.50	2,226.03
Point and Area Sources	942.42	9,089.35	3,560.06	31.68	150.17	131.64
All Sources	**1,928.17**	**10,996.60**	**4,594.83**	**65.42**	**20,521.67**	**2,357.67**

Under the existing conditions, B-1s conduct 1,750 and B-52s conduct 1,500 sortie-operations in the MOAs and ATCAAs in the Powder River airspace (see Table 2.5-6). Approximately 150 transient operations occur annually, primarily conducted by F-16s. The emission factors used to calculate combustive emissions for B-1, B-52, F-15, F-16, and KC-135 aircrafts were obtained from the *Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations* (Air Force Institute for Environment, Safety, and Occupational Health Risk Analysis 2003; AFCEC 2013).

Table 3.4-10 shows the annual criteria pollutant emissions from baseline aircraft operations. The detailed emission calculations are presented in Appendix K.

Table 3.4-10. Annual Criteria Pollutant Emissions from Baseline Aircraft Operations (tons per year)

State	*VOC*	*CO*	*NO_x*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
MT	0.24	1.72	26.58	2.18	3.45	3.45
ND	—	—	—	—	—	—
SD	0.03	0.25	3.80	0.31	0.49	0.49
WY	0.11	0.81	12.59	1.04	1.65	1.65
Total	**0.38**	**2.78**	**42.97**	**3.54**	**5.59**	**5.59**

3.5 PHYSICAL SCIENCES

3.5.1 *DEFINITION OF THE RESOURCE*

Physical sciences include topography, geology, soils, and water. Topography refers to an area's surface features including its vertical relief. These features may have scientific, historical, economic, and recreational value. Geologic resources of an area typically consist of surface and subsurface materials and their inherent properties. The term "soils" refers to unconsolidated materials formed from the underlying bedrock or other parent material. Soils play a critical role in both the natural and human environment.

Water resources include surface water, groundwater quantity and quality, floodplains, and wetlands. Surface water resources include lakes, rivers, and streams and are important for a variety of reasons, including economic, ecological, recreational, and human health. Groundwater includes the subsurface hydrologic resources of the physical environment and its properties are often described in terms of depth to aquifer or water table, water quality, and surrounding geologic composition. The ROI for physical sciences includes all land under the proposed PRTC MOAs and ATCAAs.

3.5.2 *REGULATORY SETTING*

The Clean Water Act (CWA) of 1977 (33 USC § 1251 *et seq*.) and the USEPA Storm Water General Permit regulate pollutant discharges. Section 404 of the CWA and EO 11990, *Protection of Wetlands*, regulate development activities in or near streams or wetlands. Potential development actions that may affect streams and/or wetlands require a permit from the U.S. Army Corps of Engineers (USACE) for dredging and filling in wetlands. Floodplains are defined by EO 11988, *Floodplain Management*, as "the lowland and relatively flat areas adjoining inland and coastal waters including flood-prone areas of offshore islands, including at a minimum, the areas subject to a one percent or greater chance of flooding in any given year." Floodplains are not expected to be affected by the actions considered in this EIS, so the existing conditions and environmental consequences discussions analyzed in this section are limited to surface water and groundwater. Wetlands are discussed in Section 3.6, *Biological Sciences*.

3.5.3 *EXISTING CONDITIONS*

3.5.3.1 TOPOGRAPHY

Land resource regions are a group of geographically associated major land resource areas. Major land resource areas are geographically associated land resource units with similarities in climate, geology, physiography, soils, water sources, biological resources, and land use. Identification of these large areas is useful for describing regional characteristics for planning purposes.

The proposed PRTC MOAs and ATCAAs are located within two major land resource areas: the Northern Great Plains Spring Wheat Region and the Western Great Plains Range and Irrigated Region (U.S. Department of Agriculture [USDA] Natural Resource Conservation Service [NRCS] 2006). The Northern Great Plains Spring Wheat Region major land resource area, located almost entirely across North and South Dakota, consists of rolling plains with some local badlands, buttes, and isolated hills. Broad floodplains exist along most of the major drainages and elevation ranges from 1,650 feet in the east with gradual sloping to about 3,600 feet in the western portions of the proposed PRTC. Local relief is rolling with some relief up to 330 feet but is typically lower in most areas of the Dakotas (USDA NRCS 2006).

The Western Great Plains Range and Irrigated Region major land resource area has large river valleys bordered by flat-topped buttes.

The Western Great Plains Range and Irrigated Region major land resource area is located across eastern Montana and Wyoming in an area of old, eroded plateaus and terraces. Some of the large river valleys in this area are bordered by badlands with steep slopes and flat-topped buttes that often rise sharply against the plains. Slopes are gently rolling to steep and elevation ranges from 2,950 feet to 5,900 feet

increasing from east to west and north to south. Local relief is greater under the proposed PR-1A/B/C/D MOAs in the western area of the proposed PRTC (USDA NRCS 2006).

3.5.3.2 GEOLOGY

Surficial geology within the ROI consists primarily of shales, siltstones, and sandstones of the Tertiary Fort Union Formation. Marine and continental sediments of the Cretaceous Montana Group typically underlie these deposits in Montana and Wyoming, while in North Dakota and South Dakota, the area is typically underlain by impermeable Cretaceous shale (USDA NRCS 2006).

The ROI lies within two large structural basins: the Williston Basin and the Powder River Basin. The Williston Basin is a sedimentary structural trough extending approximately 475 miles north-south and 300 miles east-west over eastern Montana, western North Dakota and South Dakota, and into Canada. Sedimentary deposition in the Williston Basin includes rocks well suited to serve as hydrocarbon sources (U.S. Geological Survey [USGS] 1996).

The Powder River Basin is a region in southeast MT and northeast WY about 120 miles east-west and 200 miles north-south known for its coal deposits. It is both a topographic drainage and geologic structural basin. The Powder River Basin is the single largest source of coal mined in the U.S., and contains one of the largest deposits of coal in the world (USGS 1998).

3.5.3.3 SOILS

Soils information for this section is derived from the NRCS Soil Survey spatial and tabular database for the states of Montana, Wyoming, North Dakota, and South Dakota (USDA NRCS 2008a). A soil order is the highest organizational level in the soils classification system and soils are grouped according to the degree of their horizon development and the kinds of horizons present. Each of the soil map units described has minor soils that are encompassed within the map unit. These minor soils may have different properties and limitations that can only be delineated on-site. The properties and limitations of the soil type that comprises the majority of each soil map unit are presented in this section to provide an indication of the conditions and limitations found in the ROI. The soils within the ROI consist of five soil orders: Mollisols, Entisols, Inceptisols, Alfisols, and Vertisols (USDA U.S. Forest Service [USFS] 1980). These soil types are mapped on Figure 3.5-1.

Mollisols: These young soils form in semi-arid to semi-humid areas, typically under a grassland cover. Their parent material is generally limestone, loess, or windblown sand, and soils are typically a deep, high organic matter, nutrient-enriched surface soil between 60 to 80 centimeters thick. Because of their productivity and abundance, the Mollisols are one of the more economically important soil orders (USDA NRCS 2008b).

Entisols: These soils are defined by their lack of horizons and are typically unaltered from their parent material. They are globally extensive, very diverse, and can be found in almost any climate. Many are sandy or very shallow (USDA NRCS 2008b).

Inceptisols: These soils are characterized by a minimal development of soil horizons. They tend to be widely distributed and found on fairly steep slopes, resistant parent material, and young geologic surfaces (USDA NRCS 2008b).

Alfisols: These soils are moderately leached and are considered well developed. Their subsurface horizons typically contain clays, resulting in relatively high fertility. Typically, these soils are found in temperate humid and subhumid regions; they are extensive throughout the U.S. (USDA NRCS 2008b).

Vertisols: These soils are clayey soils that have deep, wide cracks for some time during the year that shrink as they dry and swell as they become moist. The natural vegetation is predominantly grass, savanna, open forest, or desert shrub (USDA NRCS 2008b). As shown on Figure 3.5-1, Vertisols underlie much of the existing Powder River airspace.

Almost all (99 percent) of the soils in the ROI have an acidic level pH greater than 5.0 (extremely acidic) or less than 8.5 (strongly alkaline), with the exception of approximately 0.38 percent (83,141 acres) of the soils with a pH of 4.6, which is considered acidic (equivalent to tomato juice or black coffee) (Table 3.5-1).

Table 3.5-1. PRTC: pH of Soils within ROI

pH	*Percent of Soil with pH*	*Acres*
4.6	0.38%	83,141
5.8	0.60%	130,117
6.1	0.40%	86,368
6.2	0.08%	17,246
6.5	7.11%	1,546,459
6.7	7.26%	1,579,716
6.8	0.28%	60,175
7	30.6%	6,660,134
7.2	12.93%	2,813,715
7.3	1.44%	312,633
7.5	10.88%	2,367,617
7.6	0.79%	173,112
7.8	0.58%	128,026
7.9	9.76%	2,123,481
8	0.80%	174,059
8.2	14.31%	3,115,127
Not rated	1.80%	391,126
Total	**100.00%**	**21,762,252**

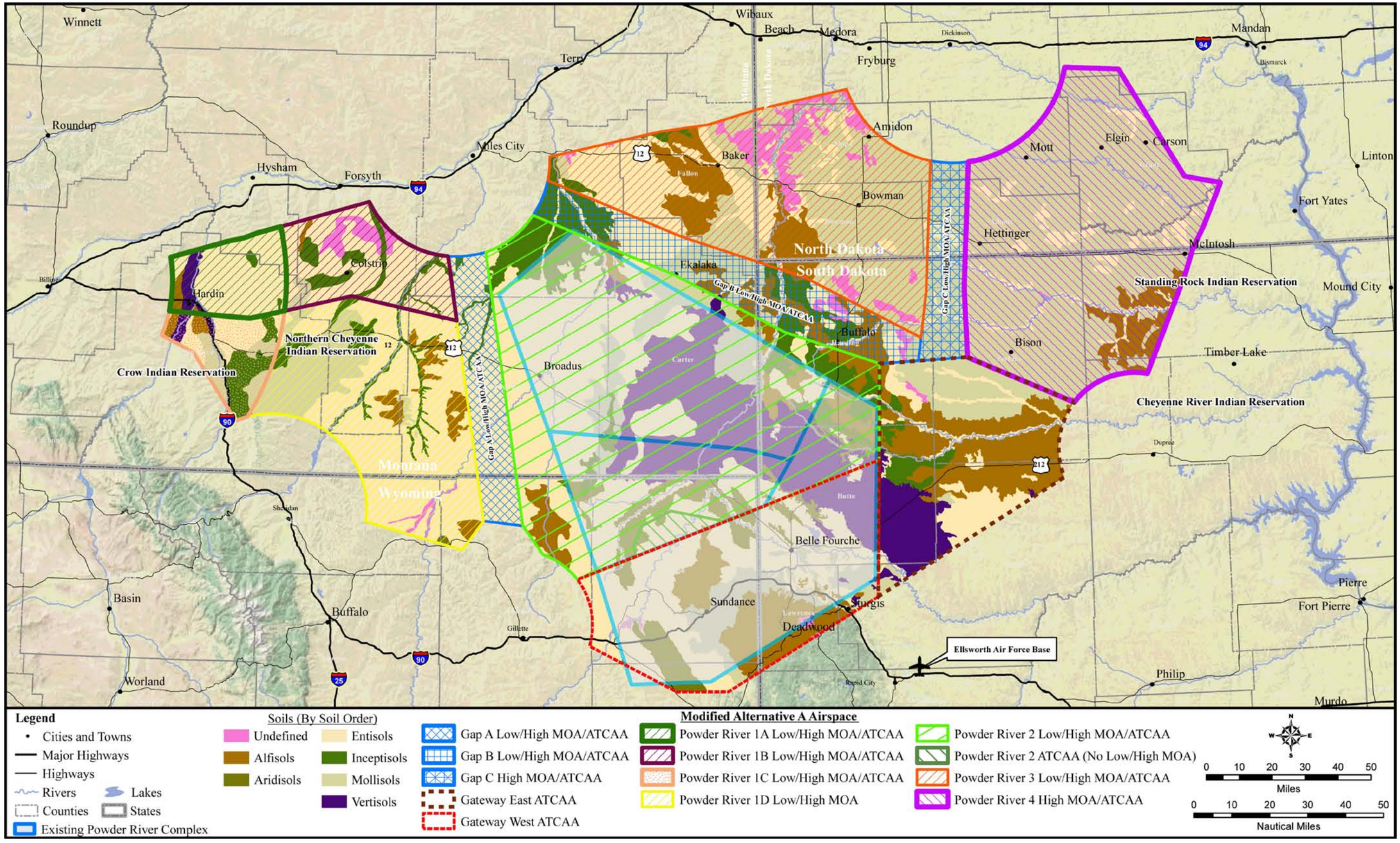

Figure 3.5-1. Soil Types Within the ROI

Source: USDA NRCS 2008a

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3.5.3.4 WATER

SURFACE WATER

The proposed PRTC MOAs and ATCAAs lie within a large regional watershed system called the Missouri River Basin. The Missouri River subbasin, one of six major subbasins within the Missouri River Basin, encompasses 529,350 square miles and all or part of 10 states including those within the ROI: Wyoming, Montana, North Dakota, and South Dakota. The Missouri River flows 2,341 miles from its headwaters in the Rocky Mountains at Three Forks, MT to its confluence with the Mississippi River in St. Louis and drains one-sixth of the contiguous U.S. (USEPA 2008e).

The Tongue River, on Figure 3.5-2, is one of the major surface water features within the ROI.

As shown in Figure 3.5-2, the major surface water features within the ROI include (in approximate order from west to east): the Bighorn, Tongue, Powder, Little Powder, Little Missouri, Belle Fourche, Cheyenne, Moreau, Grand, and Cannonball rivers. The Bighorn, Tongue, Powder, Little Powder and Little Missouri rivers all drain to the north until their confluence with the Yellowstone River. The Yellowstone River, a major tributary to the Missouri River, flows along the northern boundary of the ROI to the northeast until its confluence with the Missouri River. The Cannonball, Grand, Moreau, Belle Fourche, and the Cheyenne rivers all drain east into the Missouri River or Lake Oahe (part of the Missouri River system).

The rivers and their associated tributaries within the ROI serve as an important source of water for both domestic and commercial public-supply, agricultural, and industrial uses. Much of the surface water has been largely appropriated for agricultural use, primarily irrigation, and for compliance with downstream water pacts. Reservoirs store some of the surface water for flood control, irrigation, power generation, and recreational purposes (USGS 1996).

The acidity of surface water within the ROI reflects the soils and most lakes and rivers within the ROI have a pH within the range of 4.5 to 9 (USEPA 2007). Most of the surface waters measured by the National Atmospheric Deposition Program/National Trends Network, a nationwide network of water monitoring sites supported by the USDA, show surface water pH within the ROI ranging from 4.8 to 6.5 with trends typically showing a slight increase in pH over the past 20 years (National Atmospheric Deposition Program/National Trends Network 2008).

GROUNDWATER

The proposed PRTC MOAs and ATCAAs lie within the Northern Great Plains aquifer system – a system that underlies most of North Dakota and South Dakota, about one-half of Montana, and about one-third of Wyoming encompassing about 300,000 square miles (USGS 1996). According to the USGS (1996), an aquifer system consists of two or more aquifers that function similarly, share common geologic and hydrologic characteristics, and can be hydraulically connected so that a change in hydrologic conditions in one of the aquifers could affect the other aquifers. The Northern Great Plains aquifer system lies primarily within the Williston and Powder River basins.

As shown in Figure 3.5-3, there are 4 major aquifers within the Northern Great Plains aquifer system in the ROI (from shallowest to deepest): Lower Tertiary, Upper Cretaceous, Lower Cretaceous, and Paleozoic (USGS 1996).

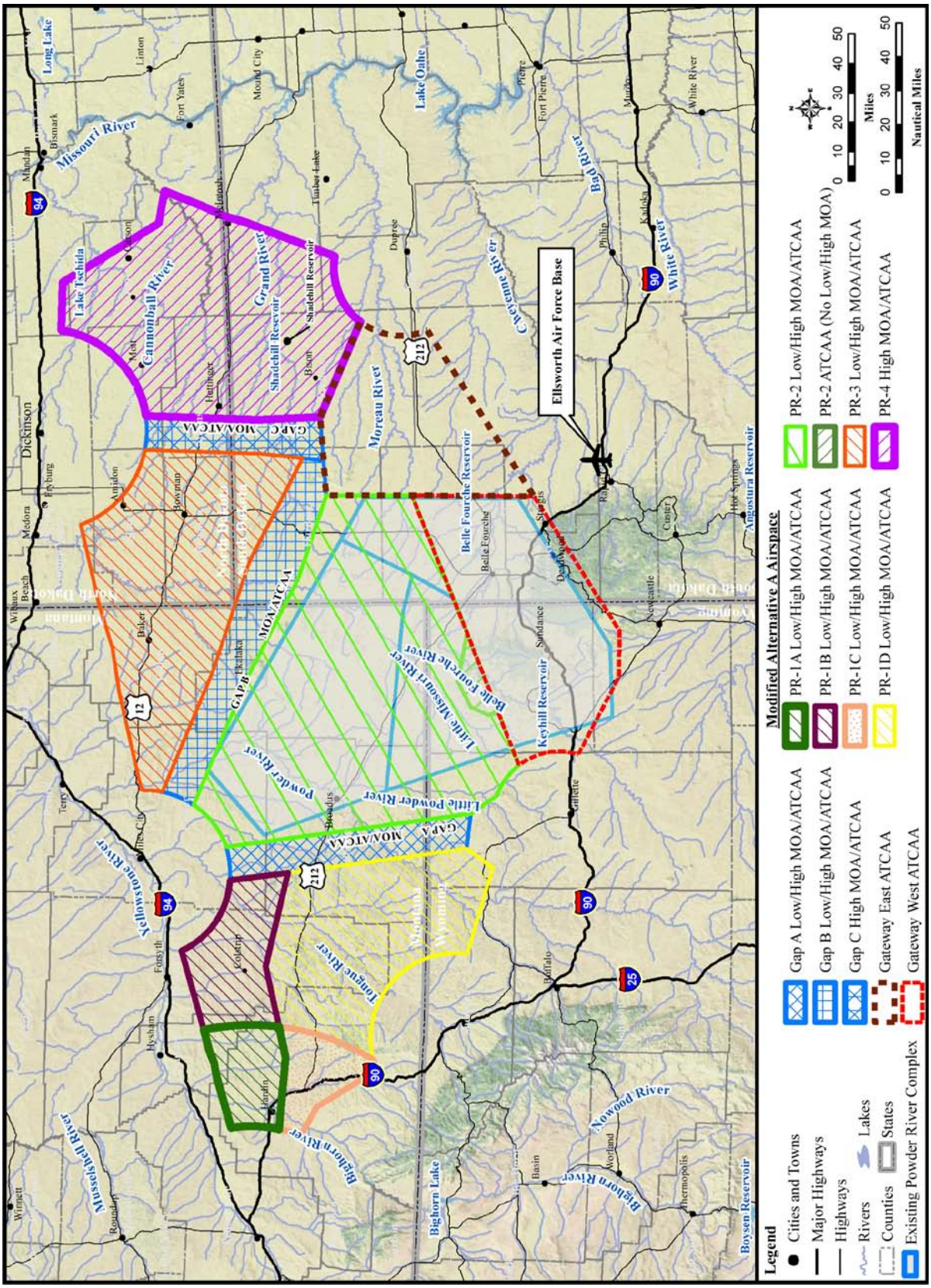

Figure 3.5-2. Surface Water Features

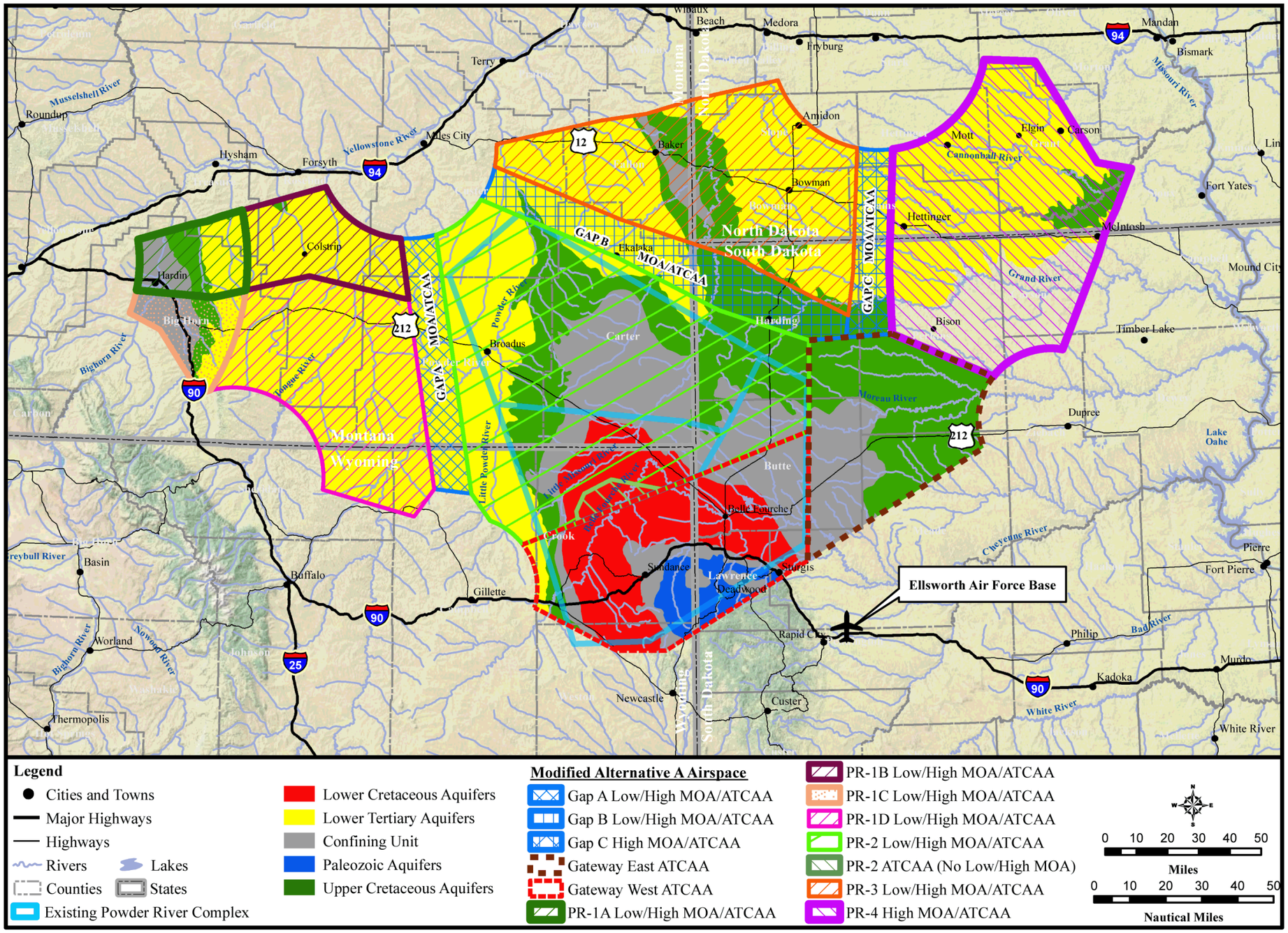

Figure 3.5-3. Aquifer

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3.6 BIOLOGICAL SCIENCES

3.6.1 *DEFINITION OF THE RESOURCE*

Biological resources consist of native or naturalized plants and animals, along with their habitats, including wetlands. Although the existence and preservation of biological resources are both intrinsically valuable, these resources also provide essential aesthetic, recreational, and socioeconomic benefits to society. The analysis focuses on plant and animal species and vegetation types that are important to the functioning of local ecosystems, are of special societal importance, or are protected under federal or state law.

Biological resources include vegetation and habitat, wetlands, fish and wildlife, and special-status species. In addition, because of concerns expressed during the EIS public review process, domestic animals are included in the discussion of environmental consequences to biological resources.

The ROI for this resource is the lands under the proposed PRTC training airspace. The ROI spans several landownership classifications: Bureau of Land Management (BLM); USFS; DoD; National Park Service (NPS); USFWS; tribal, state, and local governments; and private lands.

3.6.2 *REGULATORY SETTING*

Endangered Species Act

The Endangered Species Act (ESA) of 1973 (16 USC §§ 1531–1544, as amended) established measures for the protection of plant and animal species that are federally listed as threatened and endangered, and for the conservation of habitats that are critical to the continued existence of those species. Federal agencies must evaluate the effects of their proposed actions through a set of defined procedures, which can include the preparation of a Biological Assessment and can require formal consultation with the USFWS under Section 7 of the Act.

Compliance with the ESA requires communication and consultation with the USFWS in cases where a federal action could affect listed threatened or endangered species, species proposed for listing, or candidates for listing. The primary focus of this consultation is to request a list of these species that may occur in the ROI. If any of these species are present, a determination of the potential effects on the species is made. Should no species protected by the ESA be affected by the Proposed Action, no additional action is required. Letters were sent to the appropriate USFWS offices, as well as state agencies, informing them of the Proposed Action and alternatives, and requesting data regarding applicable protected species. Appendix E includes copies of relevant coordination letters sent by the Air Force.

Clean Water Act

The CWA of 1977 (33 USC § 1251 *et seq*.) and the USEPA Storm Water General Permit regulate pollutant discharges. Section 404 of the CWA and EO 11990, *Protection of Wetlands*, regulate development activities in or near streams or wetlands. Potential development actions that may affect streams and/or wetlands require a permit from the U.S. Army Corps of Engineers (USACE) for dredging and filling in wetlands. EO 11988, *Floodplain Management*, requires federal agencies to take action to reduce the risk of flood damage; minimize the impacts of floods on human safety, health, and welfare; and to restore and preserve the natural and beneficial values served by floodplains. Federal agencies are directed to consider the proximity of their actions to or within floodplains.

Migratory Bird Treaty Act (16 USC 703 et seq.) and EO 13186

The Migratory Bird Treaty Act governs the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. The take of all migratory birds is governed by the Migratory Bird Treaty Act's regulation that affects educational, scientific, and recreational purposes and requires harvest to be limited to levels that prevent overuse. The Migratory Bird Treaty Act also prohibits the export, selling, purchase, barter, or offering for sale, purchase or barter, any migratory bird, their eggs, parts, and nests, except as authorized under a valid permit (50 CFR 21.11).

EO 13186 (effective January 10, 2001), outlines the responsibilities of federal agencies to protect migratory birds, in accordance with the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Acts, the Fish and Wildlife Coordination Act, ESA, and NEPA. This order specifies:

- The USFWS as the lead for coordinating and implementing EO 13186;
- Federal agencies are required to incorporate migratory bird protection measures into their activities; and
- Federal agencies are required to obtain permits from USFWS before any "take" occurs, even when the agency intent is not to kill or injure migratory birds.

Sikes Act (16 USC 670)

The Sikes Act applies to federal land under DoD control and requires military services to establish Integrated Natural Resources Management Plans (INRMPs) to conserve natural resources for their military installations. The INRMPs include evaluations of threatened and endangered species, other fish and wildlife resources, wetlands, migratory bird habitat, and forest lands. INRMPs are developed in cooperation with the USFWS and State Fish and Wildlife agencies.

3.6.3 *EXISTING CONDITIONS*

3.6.3.1 VEGETATION AND WETLANDS

The proposed PRTC airspace is located within the Great Plains-Palouse Dry Steppe Province ecoregion (Bailey 1995). This area is characterized primarily by mixed-grass and shortgrass prairies with scattered trees and shrubs, primarily sagebrush (*Artemisia* spp.) and rabbitbrush (*Chrysothamnus* spp.) (Bailey 1995). Typical grasses include buffalograss (*Buchloe dactyloides*), blue grama (*Bouteloua gracilis*), western wheatgrass (*Elymus smithii*), and needlegrass (*Stipa* spp.) (Bailey 1995; SD Game, Fish and Parks 2006). The region is primarily flat, but has occasional valleys and foothills that support woodlands such as bur oak, ponderosa pine, pine/juniper and riparian woodlands (dominated by cottonwoods [*Populus* spp.]). Table 3.6-1 lists the major vegetation types that underlie the ROI. Underlying soils are described in Section 3.5.3.3.

Typical northern plains grassland under the proposed PRTC airspace; primarily used for livestock grazing.

GRASSLANDS

The most extensive vegetation type within the project area ROI is grasslands covering 57 percent of the area and over 12,408,320 acres (Table 3.6-1). Figure 3.6-1 maps these vegetation types under the proposed PRTC airspace. The majority of the grasslands within the proposed project area lies in the ecotone between tall-grass and short-grass prairies and is characterized as mixed-grass prairies. The two most dominant vegetative associations are wheatgrass-needlegrass and blue grama-needlegrass-wheatgrass grasslands (Mac *et al.* 1998).

Table 3.6-1. Major Vegetation Types Underlying the Proposed PRTC Airspace

Habitat Type	*Acres*[1]	*% Area*
Grasslands Total	12,408,320	57
Mixed-grass and other prairie	11,732,170	
Introduced grassland (primarily hay/pasture)	676,150	
Shrubland & Steppe	3,628,160	17
Forest and Woodland	1,639,040	8
Cultivated Agriculture/Crops	2,732,800	13
Developed Areas	241,280	1
Barren and Sparsely vegetated	185,600	<1
Open Water	83,200	<1
Wetlands Total	842,880	4
Depressional/Herbaceous Wetlands	229,061	
Greasewood Flats/Woody/Riparian Wetlands	613,819	
TOTAL	**21,761,280**	**~100**

Note: 1. Includes Gaps, MOAs, and ATCAAs that are part of each alternative. If MOAs and ATCAAs overlap, acreage is only counted once under the airspace.
Source: USGS 2007

Ninety-five percent of the grasslands present in the ROI composed of a diverse mix of herbaceous species including sand prairies, tallgrass prairies, mesic meadows, semi-desert grasslands, and foothills and piedmont grasslands. The remaining grasslands of the area are composed of introduced perennial and annual grasses and primarily used for haying and pastureland.

SHRUBLAND AND STEPPE

The second most extensive vegetation type within the project area includes shrubland and steppe and covers approximately 17 percent (3,628,160 acres) of the area (Figure 3.6-1). Steppe vegetation types are co-dominated by shrubs and grasses. The majority of these shrublands in the ROI support sagebrush-dominated (*Artemisia* spp.) and sagebrush-steppe communities. Sagebrush communities are variable in composition and structure depending on the soils, elevation, and moisture present. In general, the vegetation in sagebrush communities is widely spaced and has an understory dominated by bunchgrasses and forbs.

The expanse and quality of sagebrush communities across the U.S. have declined over the past few decades mainly due to fragmentation, alteration, and loss of habitat as a result of urbanization, agriculture, grazing practices, invasive species, and disruption of natural disturbance regimes such as fire (Connelly *et al.* 2004; Rowland 2004). Alteration of fire regimes and the related invasion of invasive plants, notably cheatgrass (*Bromus tectorum*), are believed to be the greatest threats to the health of

sagebrush communities (USDA NRCS 2005). It has been estimated that about 50 percent of the historical range of sagebrush habitat remains today (USDA NRCS 2005; Shroeder *et al.* 2004).

In the upper elevations of the region fire frequency has decreased, in some cases leading to the invasion of juniper (*Juniperus* spp.) and piñon pine (*Pinus edulis*) that outcompete herbaceous and shrub species upon which wildlife such as the greater sage-grouse depend. In some lower elevations, fire frequency has increased due to the spread of cheatgrass (*Bromus tectorum*) and other invasive grasses that burn readily and carry wildfires (USDA NRCS 2005). Cheatgrass is an annual species that can invade during the first season following a fire and is capable of fueling repeated fires at very short intervals. Frequent fires therefore prevent regeneration of sagebrush and other slower-growing shrubs, which can lead to a conversion of a shrub-dominated community to a community dominated by short-lived weedy grasses that offer limited forage value.

FORESTS AND WOODLANDS

Forests and woodlands under the proposed PRTC include the Custer National Forest under portions of PR-1A and PR-1B.

Forests and woodlands make up approximately 8 percent of the ROI (approximately 1,639,040 acres) and are composed of primarily wooded draws and ravines, ponderosa pine forests, limber pine-juniper woodlands, and various other deciduous and coniferous forests. Wooded draws and ravines support ash (*Fraxinus* spp.) and elm (*Ulmus* spp.) species with some areas containing Rocky Mountain juniper (*Juniperus scopulorum*). Forests cover a small (approximately 128,000 acres [0.5%]) proportion of the project area and are found scattered on discontinuous mountains, canyons, and plateaus up to 6,000 feet, primarily in the southern and western project area (Figure 3.6-1 Vegetation). The forests are dominated by ponderosa pine (*Pinus ponderosa*) in the overstory with associated midstory woody species including Rocky Mountain juniper, green ash (*Fraxinus pennsylvancia* var. *lanceolata*), and chokecherry (*Prunus virginiana*). The density of woody species varies depending on moisture availability and the fire history, with more frequent fires creating a more open savannah-like forest with a grassy understory. Typical understory plants include bluebunch wheatgrass (*Pseudoroegneria spicata*) and needle-and-thread (*Stipa comata*) (USDA USFS 1990).

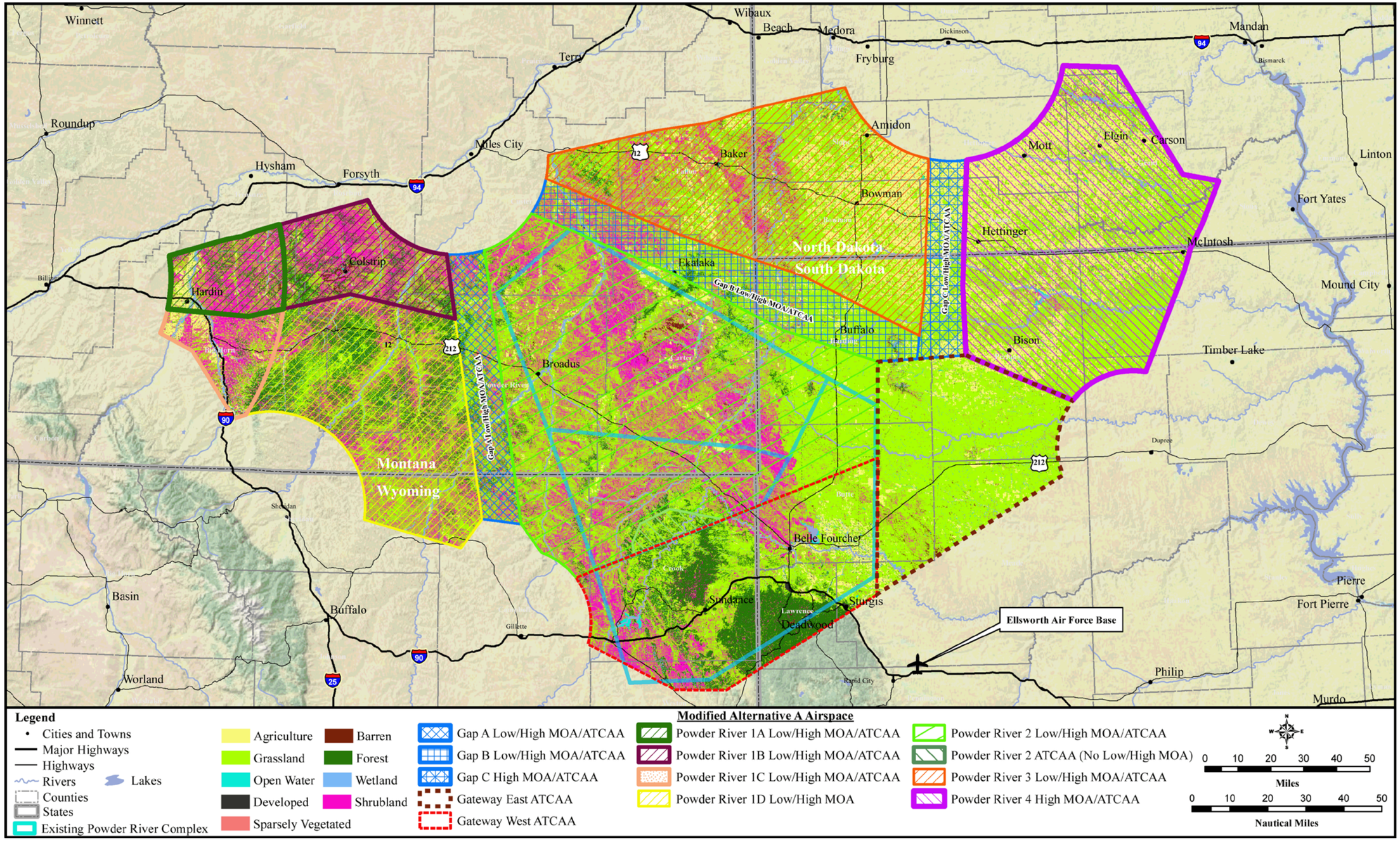

Figure 3.6-1. Vegetation

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AGRICULTURE

Agriculture and grasslands encompass over two-thirds of the vegetation under the proposed PRTC.

Cultivated agricultural areas (encompassing hay/pastureland, irrigated, and other cultivated cropland) cover approximately 13 percent of the ROI (2,732,800 acres) with major crops including wheat, sunflowers, alfalfa, hay, barley, and soybean fields (SDDA 2008; USDA 2009; NDDA 2000). Additional information on the socioeconomic agricultural impacts is found in Table 3.9.12. The availability of irrigation water is a limiting factor on agricultural production in the region. Dryland farming also occurs. Conversion of native grasslands to crops and pastureland is one of the primary reasons for a decline in diversity of wildlife habitat across the Great Plains, primarily east and south of the project area where more moisture is available. While croplands do not support the diversity of wildlife species that native habitat does, agricultural fields can provide open space, cover, and foraging habitat for a variety of wildlife species such as upland game birds, rodents, lagomorphs (rabbit species), introduced, and ubiquitous species (Brady 2007).

The majority of agricultural use in the project area on private land and public land leases is for livestock grazing. Grazing land use retains the open character of the landscape, can support native plant species, and allows forage and cover access for wildlife species. Agriculture and livestock are discussed in Section 3.8, *Land Use*.

DEVELOPED AREAS

Developed areas, including commercial, industrial and residential developments, and other built up areas constitute about one percent of the area under the airspace. These are few and far between as the area is primarily rural and uninhabited in character.

BARREN AND SPARSELY VEGETATED AREAS

Barren and sparsely vegetated areas include naturally barren areas such as badlands or other areas where characteristics of the soil or bedrock severely limit the growth of vegetation. Other barren areas include sandstone buttes, shale barren slopes, and exposed rocky outcrops such as the granite-metamorphic rocky outcrops in the Black Hills (NatureServe 2008).

FLOODPLAINS, RIPARIAN SYSTEMS, AND OTHER WETLANDS

Floodplains. Floodplain forests within the ROI are riparian areas that occur along water bodies, usually along level ground, and vary in width from less than a mile to seven miles in the ROI. These systems include floodplains of medium and large rivers such as the Missouri River Basin and the Yellowstone River. Floodplains have alluvial soils and are subject to periodic flooding typically at 5 to 25 year intervals. Flooding is primarily driven by snowmelt in the mountains. Vegetative communities within these systems are variable ranging from floodplain forests dominated by cottonwood (*Populus* spp.), ash, elm, and willow (*Salix* spp.), to wet meadows dominated by graminoids (grasses and grass-like plants such as sedges [*Carex* spp.] and rushes [*Juncus* spp.]), to gravel/sand flats. In many cases these vegetative communities have been degraded due to groundwater depletion, lack of fire, or over-grazing (NatureServe 2008; Sullivan 1995).

Riparian Systems. Other riparian systems within the proposed airspace are differentiated from floodplains in that they are found as bands along more narrow rivers, along stream banks at higher elevations, or along seeps or isolated springs on hill slopes. These systems consist of a variety of vegetative communities including herbaceous-dominated systems, shrub-dominated areas within montane conifer or aspen forests, and tree-dominated systems within montane areas. The dominant shrubs within montane riparian areas include gray alder (*Alnus incana*), birch (*Betula* spp.), willow, and dogwood (*Cornus sericea*). At higher elevations along narrow valleys and canyons, dominant riparian tree species include Douglas-fir (*Pseudotsuga menziesii*), spruce (*Picea pungens* and *P. engelmannii*), aspen (*Populus tremuloides*), and Rocky Mountain juniper (NatureServe 2008).

Even though they occupy a small percentage of western lands, floodplains and riparian habitats are biologically rich, and therefore, disproportionately valuable for wildlife habitat. These areas provide an ecologically diverse transition between upland and aquatic systems and provide forage, cover, migration corridors, wind and sun protection, breeding habitat, and water sources for a variety of wildlife species. These areas, especially on slopes, are also subject to rapid changes such as resulting from flash floods and snow/soil movement events.

WETLANDS

Wetlands are defined by the USACE and USEPA as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include marshes, bogs, and similar areas" (33 CFR 328.3[b]). Wetlands provide a variety of functions including groundwater recharge and discharge, floodflow attenuation, sediment stabilization, sediment and toxicant retention, nutrient cycling, and habitat for plants and fish and wildlife species. Three criteria are necessary to define wetlands: vegetation (hydrophytes), soils (hydric), and hydrology (duration of flooding or soil saturation).

This section describes the major wetland types that occur underneath the airspace of the ROI. Wetlands were mapped as covering 4 percent of the area under the proposed airspace. Some portions of the floodplains and riparian areas described above meet the delineation criteria and are considered wetlands as well, but were too small in scale to map. The most common types of wetlands that occur under the ROI are Western Great Plains Depressional Wetlands and Inter-Mountain Basins Greasewood Flats. These two wetland types cover less than one percent of the area under the proposed airspace; however, wetlands, as well as riparian systems and floodplains, have a disproportionately high value to wildlife and ecosystem function in this region.

Depressional/Herbaceous Wetlands. Approximately 229,061 acres of Western Great Plains Depressional wetlands are found under the ROI. The depressional wetlands include closed and open systems that are either freshwater or saline. Closed, freshwater systems have a perched water table, separate from the groundwater table, have an impermeable layer of clay or hydric soil, and are recharged by rainwater or runoff. These closed systems are usually dominated by a variety of herbaceous plants including graminoids and forbs (NatureServe 2008). Open freshwater systems include submergent and emergent marsh as well as wet meadows and wet prairies along lowland depressions and lake borders. They differ from the closed systems in that they are part of a larger watershed or are connected to the groundwater. Vegetative communities include emergent species such as cattails (*Typha* spp.), sedges, rushes, and spikerush (*Eleocharis* spp.) (NatureServe 2008). Saline systems often have a salt encrustation on the soil surface. These systems can be open or closed and are

dominated by salt-tolerant and halophytic herbaceous species such as saltgrass (*Distichlis spicata*) and alkali sacaton (*Sporobolus airoides*), and are often intermingled with greasewood flats (NatureServe 2008).

Greasewood Flats/Woody Wetlands. Approximately 613,819 acres of greasewood flats and other woody wetlands occur underneath the ROI. Greasewood flats are found near drainages on stream terraces and flat areas or can grow in rings around playas, which form in the bottoms of undrained basins. These sites have saline soils, a shallow water table, and flood intermittently, but normally remain dry for most of the growing season. Vegetative communities are usually dense to open shrublands dominated by greasewood (*Sarcobatus vermiculatus*) and co-dominant species including sagebrush and saltbush (*Atriplex* spp.). In areas where water or snow remains the longest, grasses may be present in the understory including alkali sacaton, western wheatgrass (*Pascopyrum smithii*) and saltgrass (NatureServe 2008). Woody vegetation that grows in riparian areas was covered under Riparian Systems above.

Other types of wetlands which exist under the proposed airspace, but are too small to map at a regional scale, include fens, playas, wet meadows, seeps, and springs (USEPA 2008f).

OPEN WATER

Open water habitats constitute a very small percentage of the area under the proposed airspace and are important in sustaining many fish and wildlife species in the region. Open water occurs most frequently in the North Dakota and South Dakota portions under the proposed airspace. Shallow water habitats may be vegetated with submergent plants (e.g., pondweeds), which provide food and cover for aquatic vertebrates and invertebrates as well as waterfowl. Open water habitats also typically support emergent wetland or riparian vegetation around their margins and in very shallow areas. Migratory birds, particularly waterfowl, find open water, including reservoirs, in the Great Plains states invaluable for rest stops and foraging on long migration routes (see Section 3.6.3.2, *Wildlife*).

Water provides breeding habitat and water sources for waterfowl and other wildlife.

3.6.3.2 WILDLIFE

The major wildlife habitats that occur under the proposed airspace are summarized in Table 3.6-2. Eight primary habitats are present, each supporting its own distinctive array of wildlife species. Within each of these habitats there exist a matrix of microhabitats with subtle differences in plant composition and physiographic features. In addition, the ROI overlays a multitude of private, public, and tribal land ownership (see Section 3.8, *Land Use*). As a result, wildlife habitat management objectives and techniques vary from area to area according to the landowner. Given that the proposed project area covers a number of habitats in four states, the diversity of wildlife species is considerable. This section discusses the primary game and nongame wildlife species that occur under the project area. Table 3.6-3 summarizes representative species and their season of occurrence. Information on species of special concern and federally listed species is presented in Section 3.6.3.3.

Table 3.6-2. Wildlife Habitats that Occur Under the Proposed PRTC Airspace

Habitat Type	*Description*	*Habitat Value*	*Characteristic Wildlife*
Wetlands, Floodplains and Riparian Systems	Riparian areas along streams and rivers, floodplains, depressional wetlands, and greasewood flats	These areas have value for most life-stages of amphibians, as well as foraging, cover, breeding, and water sources for a variety of other wildlife species.	Mammals (mule and white-tailed deer, moose); amphibians; birds (waterfowl and breeding migratory)
Open Water	Lakes, rivers, streams, reservoirs, ponds.	Open water habitat in the study area has value for fish, most life-stages of amphibians, as well as foraging, breeding, and a water source for a variety of other wildlife including waterfowl and shorebirds.	Mammals (river otter); amphibians and reptiles (snapping turtle, frogs); birds (migratory and resident waterfowl, shorebirds, wading birds); fish; invertebrates
Grasslands	Mixed-grass prairies with varying amounts of shrub cover, shortgrass prairies, and rangelands, which can be dominated by introduced grasses such as cheatgrass.	Provides foraging, nesting, and migration habitat	Mammals (ungulates, prairie dogs and other rodents); birds (upland game birds, songbirds, raptors); reptiles (snakes, lizards)
Shrubland and Steppe	Sagebrush, saltbush, montane-foothill deciduous shrubland, northwestern great plains shrubland	Provide foraging, cover, and nesting habitat for a wide variety of species.	Birds (sharp-tailed grouse, songbirds, raptors) ungulates (pronghorn, deer)
Forests and Woodlands	Ponderosa pine forests, bur oak, and pine/juniper woodlands,	Forested upland habitat in the study area has value for breeding, foraging, cover from predators, and shelter for a variety of wildlife species.	Mammals (elk, mule deer, black bear, mountain lion, bats); Birds (songbirds, woodpeckers), amphibians (tree frogs, salamanders)
Agriculture	Major crops include wheat, sunflowers, alfalfa, hay, barley, and soybean fields	Value for foraging and cover for a variety of wildlife species.	Upland game birds, rodents, and lagomorphs and ubiquitous species.
Developed Areas	Comprised mainly of buildings, paved surfaces, landscaped areas, and other infrastructure.	Developed areas in the study area are not important habitat for wildlife. Some wildlife use human structure for nesting or forage on garbage in developed areas.	Ubiquitous species such as small mammals (e.g., rodents), birds (e.g., mockingbird, grackle, eastern towhee)
Barren and Sparsely Vegetated	Rocky outcrops, cliffs, or sparsely vegetated grasslands and shrublands	Provide very little habitat value. Rocky outcrops and cliffs can provide refuge or nesting areas for some species.	Small mammals, lizards, raptors.

Table 3.6-3. Representative Game and Nongame Wildlife Species that Occur Under the Proposed PRTC Airspace

Wildlife Grouping	*Representative Species*[1]	*Season(s) of Occurrence*
Game Species		
Ungulates	White-tailed deer, mule deer, elk, moose, and pronghorn.	Generally year-round
Upland Game Birds	Sharp-tailed grouse, turkey, ring-necked pheasant, chukar, mourning dove	Generally year-round
Waterfowl	Merganser, green-winged teal, lesser scaup, snow goose, Canada goose, mallard, redhead, ring-necked duck, etc.	Year round: mallard, Canada goose; Summer: green-winged teal, lesser scaup; snow geese; redhead
Mammals	*Carnivores:* (e.g., black bear, mountain lion, fox, bobcat, coyote, mink, weasel, badger) *Small mammals*: (e.g., prairie dogs, cottontails, white-tailed jackrabbits, raccoon, muskrat, porcupine, beaver, skunk)	Generally year-round
Nongame Species		
Mammals	Northern pocket gopher, chipmunks, ground squirrels, mice, voles, rats *Bats:* (e.g., big brown bat, hoary bat)	Generally year-round
Birds	*Raptors:* (e.g., prairie falcon, red-tailed hawk, Swainson's hawk, sharp-shinned, golden eagle, barn owl, great-horned owl) *Woodpeckers:* (e.g., downy woodpecker, northern flicker, sapsuckers) *Other:* (e.g., meadowlark, longspur, sparrows, swallows, warblers, finches, black-billed magpie, chickadee)	Year -round: red-tailed hawk, prairie falcon, great-horned owl; woodpeckers, black-billed magpie, chickadee Winter: Sharp-shinned hawk Summer: golden eagle, barn owl, Swainson's hawk, woodpeckers, warblers, swallows, sparrows.
Amphibians	Plains spadefoot, boreal chorus frog, Great Plains toad, leopard frog, salamanders	Primarily spring-summer (outside hibernation season)
Reptiles	Eastern racer, plains gartersnake, bullsnake, common sagebrush lizard, greater short-horned lizard, painted turtle	Primarily spring-summer (outside hibernation season)

Notes: 1. This table does not include ESA-listed species or Species of Special Concern (see next section).
Sources: MT Natural Heritage Program 2007; Bailey 1995.

GAME SPECIES

Species considered "game species" by local state game and fish departments within the project area include ungulates, upland game birds, waterfowl, carnivores such as mountain lion, bear, and coyotes, and other mammals that are trapped including mink, fox, and raccoon.

White-tailed deer represent both a biological and an economic resource under the proposed PRTC.

Ungulates: Ungulate game species within the project area include mule deer, white-tailed deer, elk, pronghorn (commonly known as antelope), and moose. Mule deer occur throughout the project area in grasslands, riparian areas, foothills and montane shrublands, and aspen groves (MT Natural Heritage Program 2007; ND Game and Fish 2005). Their winter is spent primarily in lower elevations and mule deer move to higher elevations in the summer (Scribner 2006). Elk primarily inhabit coniferous forests interspersed with openings such as meadows and grasslands (MT Natural Heritage Program 2007). White-tailed deer are most often found in lower elevation river and creek bottoms where vegetation is dense (MT Natural Heritage Program 2007; ND Game and Fish 2005). Moose prefer wetter habitats and usually inhabit mountain meadows, river valleys, swamps, willow flats, and mature coniferous forests (MT Natural Heritage Program 2007). Because these habitats are limited in the ROI, moose are uncommon. Bison were once native to the ROI and are raised on some ranches but are no longer free-ranging. Pronghorn are found throughout the project area mainly in open rolling sagebrush/grasslands with slopes of less than 10 percent (ND Game and Fish 2005, 2006; MT Natural Heritage Program 2007).

Other Game Species: Large carnivores such as black bears and mountain lions are hunted, primarily in western portions of Montana and Wyoming. Smaller game includes a variety of furbearing mammals and those considered "predatory" including coyote, badger, beaver, bobcat, mink, weasel, muskrat, porcupine, prairie dogs, squirrels, rabbits, red fox, raccoon, and skunk.

***Upland game birds*:** A variety of upland game birds occur throughout the proposed project area. Most species, including sharp-tailed grouse, chukar, and ring-necked pheasant, are found in open grasslands and croplands (MT Natural Heritage Program 2007; ND Game and Fish 2005). Wild turkeys can be found in similar habitat as well as in open ponderosa pine forest and wooded river bottoms (MT Natural Heritage Program 2007; ND Game and Fish 2005). The greater sage-grouse is also present and is discussed in Section 3.6.3.3, *Special Status Species*.

Waterfowl: The proposed project area generally occurs under the convergence of several principal routes of both the Central Flyway and the Mississippi Flyway for migratory birds (Figure 3.6-2). The diversity of species crossing under the proposed airspace during migratory periods is large. Waterfowl known to occur in the area include the merganser, green-winged and cinnamon teal, scaups, snow goose, Canada goose, mallard, redhead duck, and ring-necked duck. These species are dependent upon wetlands and surface waters such as freshwater ponds, lakes, rivers, and marshes for their primary habitat during migration stopovers and for foraging (MT Natural Heritage Program 2007; ND Game and Fish 2005). Such habitats are typically located in river valleys and lower elevations within the ROI. Croplands and grasslands in the airspace may also be used by waterfowl and shorebirds for foraging.

NONGAME SPECIES

Typical nongame species include birds, bats and small rodents. Nongame bird species include raptors (hawks, owls, golden eagle) songbirds and other perching birds. All amphibian species are nongame and those present in the project area include salamanders, the Great Plains toad and the plains spadefoot. The eastern racer, greater short-horned lizard and the painted turtle are examples of reptiles that can be found within the project area.

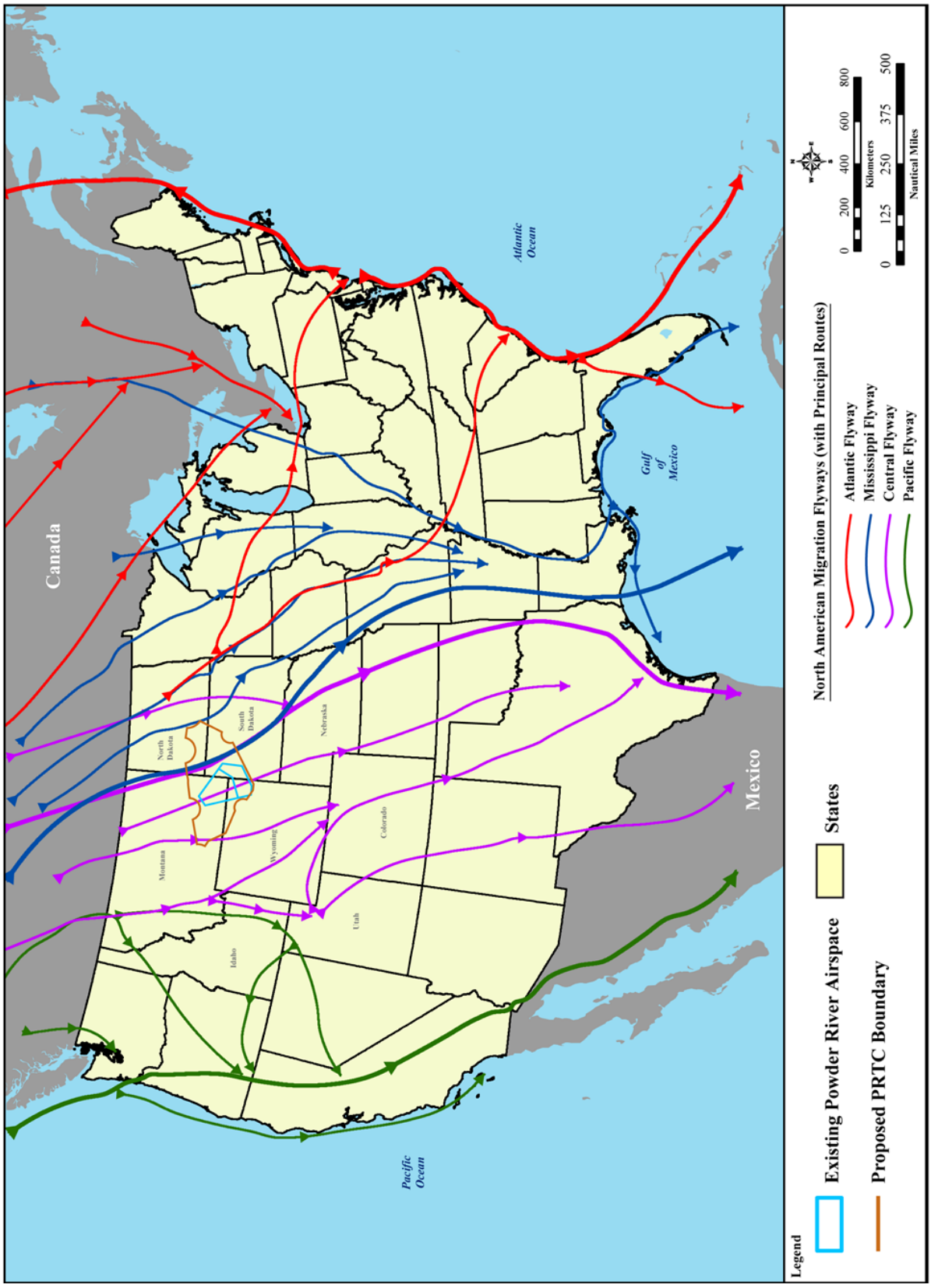

Figure 3.6-2. Migratory Flyways

3.6.3.3 THREATENED, ENDANGERED, AND OTHER SPECIAL STATUS SPECIES

FEDERALLY LISTED SPECIES

Nine animal species (four birds, three mammals, and two fish) and one plant species that are listed under the ESA as threatened or endangered and three ESA candidate bird species have been documented or have the potential to occur in suitable habitats within or near the ROI (Table 3.6-4). The federally listed bird species include the threatened piping plover (*Charadrius melodus*), endangered whooping crane (*Grus americana*), endangered interior least tern (*Sterna antillarum athalassos*), and the proposed threatened red knot (*Calidris canutus rufa*). The western distinct population segment of the yellow-billed cuckoo (*Coccyzus americanus*), Sprague's pipit (*Anthus spragueii*), and the greater sage-grouse (*Centrocercus urophasianus*) are candidate species.

The interior least tern and the piping plover are both found along sand, gravel and/or pebble beaches of rivers and lakes, primarily along the Missouri and Yellowstone Rivers, both of which fall just outside the airspace (Hagen *et al.* 2005). Some of the piping plover range overlaps the project area and, given the close proximity of suitable habitat, there is potential for these species to occur along tributaries within the ROI.

The central migration route of the whooping crane is the last naturally-occurring route of this species in the U.S. and has been mapped as crossing from northwest North Dakota through central South Dakota east of the proposed ROI (NatureServe 2008). The whooping crane is a seasonal migrant that uses wetland areas of North Dakota and South Dakota east of the proposed airspace for stopover and resting during these long migrations. The Sprague's pipit is closely tied with native prairie habitat and breeds in the north-central U.S. Sprague's pipit often goes undetected during migration through the Great Plains, potential occurrence within the ROI includes Montana, North Dakota and South Dakota (Montana Natural Heritage Program and Montana Fish, Wildlife and Parks 2014, USFWS 2011a). The western yellow-billed cuckoo is also a long-distance migrant that uses riparian forested thickets in South Dakota, and occasionally Wyoming, for breeding (WY Game and Fish [WYGF] 2005).

The Red knot is one of the longest-distance migrants in the animal kingdom, flying more than 9,300 miles from south to north in spring and repeat in reverse every autumn. Migrating knots can complete nonstop flights of 1,500 miles and more, converging on critical stopover areas to rest and refuel. Stopover habitat includes aquatic areas where easily digested foods such as juvenile clams and mussels and horseshoe crab eggs can be readily consumed (USFWS 2014a). Potential occurrence within the ROI is limited as open water and wetland habitat make up a very small percentage of the area under the proposed airspace.

The greater sage-grouse is dependent year-round upon sagebrush shrublands, which have been in decline in recent years. Consequently, sage-grouse population numbers have been decreasing for decades, thought to be due to reduction in suitable habitat (Connelly *et al.* 2004; Rowland 2004). In 1999, growing concern for the species lead to a petition to list the greater sage-grouse under the ESA. After review, the USFWS ruled in 2004 that listing was not warranted (McCarthy and Kobriger 2005). Subsequent recent review resulted in adding the greater sage-grouse to the federal candidate list on March 5, 2010. The species receives special management attention under USFS, BLM, and in all four states of the project area.

Table 3.6-4. Federally Listed Species Known to Occur or with Potential to Occur Under the Proposed PRTC Airspace

Common Name	Scientific Name	Airspace States and Counties of Occurrence				FED[1]	Expected Occurrence and Habitat
		ND	SD	MT	WY		
Birds							
Piping plover	*Charadrius melodus*	All counties - rare	Corson	Fallon, Custer?		T	Potential during migration, nesting occurs along Missouri and Cheyenne rivers and may occur along Moreau River. Uses sandbars, islands, shorelines.
Whooping crane	*Grus americana*	All counties - rare	Butte, Corson, Meade, Perkins, Pennington, Ziebach	Custer, Fallon, Yellowstone	Very rare migrant	E	Potential during migration. Uses sloughs, marshes, rivers, lakes, ponds, croplands, and pastures.
Interior least tern	*Sterna antillarum athalassos*	Morton, Sioux	Meade	Custer, Rosebud		E	Potential during migration, nesting occurs along Missouri and Cheyenne rivers and may occur along Moreau River. Uses sandbars, islands, shorelines.
Yellow-billed cuckoo	*Coccyzus americanus*				Crook, Sheridan	C	Cottonwood –riparian areas
Red knot	*Calidris canutus rufa*		All counties			PT	Potential during migration. Long-distance migrants flying more than 9,300 miles from south to north in spring and repeat in reverse every autumn. Stopover habitat includes aquatic areas where easily digested foods can be readily consumed. Breeding occurs outside of the ROI in the central Canadian Arctic from northern Hudson Bay to the southern Queen Elizabeth Islands. (USFWS 2014a)

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Table 3.6-4. Federally Listed Species Known to Occur or with Potential to Occur Under the Proposed PRTC Airspace

Common Name	Scientific Name	Airspace States and Counties of Occurrence				FED[1]	Expected Occurrence and Habitat
		ND	SD	MT	WY		
Sprague's pipit	*Anthus spragueii*	All counties	All counties – rare	All counties		C	Uses medium to intermediate height prairie. Also known to utilize alkaline meadows around the edges of alkaline lakes. Ground nester that breeds and winters on open mixed-grassland habitat. (USFWS 2011a)
Greater sage-grouse	*Centrocercus urophasianus*	Bowman, Slope, Golden Valley	Butte, Harding, with incidental observations in Perkins and Meade	Carter, Fallon, Custer, Powder River, Rosebud, Big Horn, Treasure	Campbell, Crook, Sheridan, Weston,	C	Dependent upon large stands of mature sagebrush year round for foraging and cover. Flat, open grassland needed for breeding (leks). Historically occurred across the entire ROI; eastern portion of range has subsided.
Mammals							
Northern long-eared bat	*Myotis septentrionalis*		All counties		County-level range not defined	PE	Historical occurrence within the ROI. Species range includes 39 states. Roost in caves, mines, and both live and dead trees. (USFWS 2014c)
Canada lynx	*Lynx canadensis*				Sheridan	T	Historical occurrence documented along the western border of Sheridan County, outside of the ROI. Live in subalpine/coniferous forests. Critical habitat limited to western Wyoming.
Black-footed ferret	*Mustela nigripes*		Six parcels in western portion of state, includes Badlands and Wind Cave national parks	Four parcels in state, one in southeastern portion on N. Cheyenne Reservation		E, N/E in MT, WY, SD	Historical occurrence across ROI. All current populations have been re-introduced; suitable habitat includes prairie dog towns >80 acres or any towns part of a >1,000 acre complex of prairie dog colonies

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Table 3.6-4. Federally Listed Species Known to Occur or with Potential to Occur Under the Proposed PRTC Airspace

Common Name	Scientific Name	Airspace States and Counties of Occurrence				FED[1]	Expected Occurrence and Habitat
		ND	SD	MT	WY		
Fish							
Topeka shiner	*Notropis topeka*		Corson (historical)			E	Historical occurrence only. All current populations are found in small streams within eastern SD, within the Big Sioux, Vermillion, and James River watersheds
Pallid sturgeon	*Scaphirhynchus albus*	Morton, Sioux	Corson	Custer		E	Historical occurrence within the ROI. Large-river ecosystems and associated floodplains, backwaters, chutes, sloughs, islands, sandbars, and main channel waters. (USFWS 2014f)
Plants							
Ute ladies'-tresses	*Spiranthes diluvialis*				All counties	T	Historical occurrence across ROI. Primarily associated with stream terraces, floodplains, oxbows, seasonally flooded river terraces, sub-irrigated or spring-fed abandoned stream channels and valleys, and lakeshores. (USFWS 2014e)

Note: 1. Federal Listing as C= Candidate; E=endangered; PE = Proposed Endangered; T=threatened; PT=proposed threatened; N/E = Nonessential Experimental, referring to reintroduced populations; "?" indicates uncertainty as to county occurrence.

Sources: USFWS 2006; USFWS 2007; USFWS 2008a; USFWS 2014a; USFWS 2014b; USFWS 2014c; USFWS 2014d; USFWS 2014e; USFWS 2014f; USFWS 2014g; WY Natural Diversity Database (WYNDD) 2003; Montana Sage Grouse Work Group 2005; SD Wildlife Division, Department of Game, Fish and Parks 2008; McCarthy and Kobriger 2005.

The historic range of the black-footed ferret (*Mustela nigripes*) included all four of the project area states. Having nearly been extirpated in the U.S. as a result of prairie dog extermination, the black-footed ferret has been successfully reintroduced to eight states as of 2008, including Montana, Wyoming, and South Dakota. Although all of these populations are listed as endangered, some of them are managed as nonessential experimental. The black-footed ferret is found in shortgrass and mixed–grass prairies, and suitable habitat for reintroduction is defined as prairie dog towns that are generally greater than 80 acres or are part of a 1,000 acre or more complex of prairie dog colonies (WY Game and Fish 2005; USFWS 2008a). One of the recent reintroduction sites is located on the Northern Cheyenne Indian Reservation in southeast Montana (USFWS 2008b), which is under the proposed PR-1B MOA.

The proposed endangered Northern long-eared bat (*Myotis septentrionalis*) is found across much of the eastern and north central U.S. and all Canadian provinces. The species' range includes 39 states (2 of which are within the ROI; North Dakota and South Dakota). Very little is known about most aspects of life history, including hibernation, and foraging habitat requirements, population dynamics, population trends, and migration and dispersal patterns. Roost habitat includes caves, mines, quarry tunnels, and both live and dead trees (NatureServe 2013; USFWS 2014c).

The distribution of the threatened Canada lynx (*Lynx canadensis*) in North America is closely associated with the distribution of North American boreal and subalpine/coniferous forests. Canada lynx are most likely to persist in areas that receive deep snow and have high-density populations of snowshoe hares, their principal prey. Historical occurrence for the lynx has been documented along the western border of Sheridan County, WY outside of the ROI. Critical habitat limited to western Wyoming (USFWS 2014d).

The threatened Ute ladies'-tresses (*Spiranthes diluvialis)* historical occurrence includes all Wyoming counties under the ROI. However, habitat for Ute ladies'-tresses is limited to areas primarily associated with stream terraces, floodplains, oxbows, seasonally flooded river terraces, subirrigated or spring-fed abandoned stream channels and valleys, and lakeshores (USFWS 2014e). The endangered Topeka shiner (*Notropis topeka*) occupies small prairie streams that have groundwater input. The current known populations have been found outside the ROI, with the closest populations being in eastern South Dakota, within the Big Sioux, Vermillion, and James River watersheds (Shearer 2003). The USFWS species list includes a historical occurrence for the Topeka shiner in Corson County, SD; however, the species is no longer considered present.

The endangered pallid sturgeon (*Scaphirhynchus albus*) occupies habitat associated with stream terraces, floodplains, oxbows, seasonally flooded river terraces, subirrigated or spring-fed abandoned stream channels and valleys, and lakeshores. Historical occurrence within the ROI includes Montana (Custer County), North Dakota (Morton and Sioux Counties), and South Dakota (Corson County).

SPECIES OF SPECIAL CONCERN

Species of special concern to the states and other federal agencies (e.g., Bureau of Land Management [BLM], USFS) that are considered the highest priority for each state in the ROI may occur in counties under the proposed ROI. Appendix L lists these species and the ROI states and counties in which they are found. Appendix L briefly describes the habitat requirements for each. General species groups that often receive special management consideration by federal and state wildlife agencies and/or have potential to be affected by aircraft training within the proposed airspace include bats and waterfowl. The bald eagle was previously listed for federal protection under the ESA; however, due to recovery the bald eagle was delisted in 2007. The bald eagle is now protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Bats: Three species of bats considered species of special concern in Montana and Wyoming are found in the project area. Townsend's big-eared bat (*Corynorhinus townsendii)* inhabits caves and abandoned mines near conifer and bottomland woodlands. The pallid bat (*Antrozous pallidus)* can be found in ponderosa pine forests and big sagebrush shrublands with rock outcrops. The spotted bat (*Euderma maculatum)* prefers open, arid habitats close to tall cliffs (MT Natural Heritage Program 2007).

Waterfowl: Waterfowl species of special concern include the common loon (*Gavia immer*), the horned grebe (*Podiceps auritus*) and the American white pelican (*Pelicanus erythrorhynchos*). The common loon is found in Wyoming and often inhabits clear, secluded mid-elevation lakes typically less than four acres in size. The horned grebe is a passage migrant within the proposed airspace and can be found in most open water resources. The American white pelican is also considered a passage migrant and is often observed in lakes, marshes, and rivers (MT Natural Heritage Program 2007). Section 3.6.3.1 details the limited extent of water bodies in the ROI, so those water sources present are of considerable importance to waterfowl as well as other species.

DOMESTIC ANIMALS

The majority of agricultural use in the project area on private land and public land leases is for livestock grazing. Ranches and associated livestock grazing alone constitute approximately 78 percent of the land use in the ROI. Cultivated agricultural areas (encompassing hay/pastureland, irrigated, and other cultivated cropland) cover approximately 8 percent of the ROI (2,078,986 acres) with major crops including wheat, sunflowers, alfalfa, hay, barley, and soybean fields (SDDA 2008; USDA 2009; NDDA 2000).

Beef cattle, with some milk cows, represent the greatest proportion of livestock in the ROI, accounting for 71 percent of all livestock. Sheep and lambs account for 23 percent, horses account for 4.7 percent and the remaining 0.5 percent is comprised of hogs and pigs.

Livestock in the ROI counties represents a portion of the statewide livestock inventory for each of the four states. The beef cows in the ROI counties in Montana comprise approximately 13.5 percent of the total inventory of beef cows in the state. The beef cow inventory in the ROI states of North Dakota and Wyoming also comprise 25 percent and 17 percent of the total inventory in the respective states. The number of milk cows in the North Dakota ROI counties comprises over 33 percent of the total number of milk cows in the state. Livestock on the ROI farms is shown on Table 3.9.13.

3.7 CULTURAL AND HISTORIC RESOURCES

3.7.1 *DEFINITION OF THE RESOURCE*

Cultural resources are prehistoric and historic sites, buildings, districts, or objects that are important to a culture or community. Cultural resources are generally divided into four categories: archaeological resources, architectural resources, traditional cultural resources, and cultural landscapes.

Archaeological resources occur in places where people altered the ground surface or left artifacts or other physical remains (e.g., arrowheads, glass bottles, pottery). Archaeological resources can be classified as either sites or isolates. Isolates generally cover a small area and often contain only one or two artifacts, while sites are usually larger in size, contain more artifacts, and sometimes contain features or structures. Archaeological resources can be either prehistoric or historic.

Architectural resources are standing buildings, dams, canals, bridges, windmills, oil wells, and other such structures. They are generally historic in affiliation.

Traditional cultural properties can include properties, sites, or other resources associated with the cultural practices or beliefs of a living community that link the community to its past and help maintain its cultural identity, and that are eligible for or listed on the NRHP. Traditional cultural resources are areas that are associated with the cultural practices or beliefs of a living community that link the community to its past and help maintain its cultural identity that have not been evaluated for NRHP eligibility. Sacred sites are well known areas associated with cultural practices or beliefs of a living community. Most traditional cultural properties, resources, or sacred sites in Montana, Wyoming, South Dakota, and North Dakota are associated with Native Americans. Traditional cultural properties or resources may also be associated with other traditional lifeways, such as ranching. Traditional cultural properties or resources can include archaeological resources, locations of prehistoric or historic events, sacred areas, sources of raw materials used in the manufacture of tools and/or sacred objects, certain plants, or traditional hunting and gathering areas.

Cultural landscapes are geographic areas where cultural and natural resources and wildlife have been associated with historic events, activities, or people, or which serve as an example of cultural or aesthetic value. The four types of cultural landscapes are: historic sites (e.g., battlefields, properties of famous historical figures), historic designed landscapes (e.g., parks, estates, gardens), historic vernacular landscapes (e.g., industrial parks, agricultural landscapes, villages), and ethnographic landscapes (contemporary settlements, religious sites, massive geological structures). These categories are not mutually exclusive from each other or the other types of resources defined here (Birnbaum 1994).

The ROI for cultural resources is the area within which the proposed action has the potential to affect significant cultural resources. For the Proposed Action, the ROI is defined as the land under the training airspace proposed for use by B-1, B-52, and transient aircraft in day-to-day or LFE training.

3.7.2 *REGULATORY SETTING*

Archaeological and historic sites and structures are protected under a number of laws including the Antiquities Act of 1906, Historic Sites Act of 1935, Archaeological Resources Protection Act of 1979, and the National Historic Preservation Act (NHPA) of 1966, as amended. Under the NHPA and its implementing regulations, only significant cultural resources are considered when assessing the possible effects of a federal undertaking or action. Significant archaeological, architectural, and traditional cultural resources include those that are listed or eligible for listing on the National Register of Historic Places (NRHP). The significance of cultural resources is determined by using specific criteria as defined by the NHPA under 36 CFR 60.4, including association with an event or individual significant to the past, embodiment of distinctive characteristics, ability to contribute to scientific research, or ability to add to an understanding of history or prehistory. Cultural resources generally must exceed 50 years of age to be considered for listing on the NRHP; however, more recent resources such as Cold War-era buildings may warrant protection if they manifest "exceptional significance." Traditional cultural resources can be evaluated for NRHP-eligibility, as well. Whether or not a traditional cultural resource is evaluated for NRHP eligibility, it may have special importance to the respective tribe, and as such, DoD has particular trust responsibilities to ensure its proper stewardship.

National Historic Landmarks (NHLs) are cultural resources of national historic importance and are automatically listed on the NRHP. Under the implementing regulations for Section 106 of the NHPA (36 CFR Part 800.10), special consideration to minimize harm to NHLs is required and both the Advisory Council on Historic Preservation (ACHP) and the Secretary of the Interior are consulted if any adverse effects are likely to occur to such resources. *National Monuments* are established under the Antiquities Act of 1906, which gives the President of the U.S. authority to restrict the use of public land owned by the federal government as parks or conservation lands by EO. National Monuments are "historic

landmarks, historic and prehistoric structures, and other objects of historic or scientific interest" (16 USC 431-433) that are identified for protection and federal management. National monuments that are historic in character and managed by the NPS are administratively listed on the NRHP. Devils Tower National Monument, now under the Gateway ATCAA, was the first national monument to be established, on September 24, 1906.

Several laws and regulations address the requirement of federal agencies to notify or consult with Native American tribes or otherwise consider their interests when planning and implementing federal undertakings. In particular, on April 29, 1994, the President issued the *Memorandum on Government-to-Government Relations with Native American Tribal Governments*, which specifies a commitment to developing more effective day-to-day working relationships with sovereign tribal governments. In addition to the Memorandum, EO 13175 *Consultation and Coordination with Indian Tribal Governments* (November 6, 2000) reaffirms the U.S. Government's responsibility for continued collaboration and consultation with tribal governments in the development of federal policies that have tribal implications, to strengthen the U.S. government-to-government relationships with Native American tribes, and reduce the imposition of un-funded mandates upon Native American tribes. This EO supersedes EO 13084 signed May 14, 1998.

The DoD Instruction 4710.02, *DoD Interactions with Federally-Recognized Tribes*, September 16, 2006, implements the DoD American Indian and Alaska Native Policy, assigns responsibilities, and provides procedures for DoD interaction with federally-recognized tribes. Other laws and regulations requiring consultation with Native Americans include the NHPA of 1966, Native American Religious Freedom Act, and EO 13007. The NHPA requires agencies to consult with Native American tribes if a proposed federal action may affect historic properties to which they attach religious and cultural significance. The Native American Religious Freedom Act sets the policy of the U.S. to "protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian…including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonies and traditional rites."

EO 13007, *Indian Sacred Sites*, issued on May 24, 1996 requires that in managing federal lands, agencies must accommodate access and ceremonial use of sacred sites, which may or may not be protected by other laws or regulations, and must avoid adversely affecting the physical integrity of these sites.

3.7.2.1 DATA SOURCES

Information on cultural resources within the ROI was derived from conducting background research to identify NRHP and the State Register of Historic Places properties beneath the affected airspace, NHLs, National Battlefields, National Historic Trails, any cultural landscapes, ghost towns, historic forts, or historic ranches recorded or known within the same area, and Native American Reservations, sacred areas, or traditional use areas. State Historic Preservation Offices (SHPOs) were contacted at Cheyenne, WY; Helena, MT; Bismarck, ND; and Pierre, SD; and sources were reviewed on the National Register Information System, and the on-line South Dakota State Register. Regional offices of the BLM and cultural resources managers associated with national forests under the airspace were also contacted. Information was solicited as well from Tribal Historic Preservation Offices associated with the four reservations that are under portions of the proposed airspace: the Crow Reservation, Northern Cheyenne Reservation, Standing Rock Indian Reservation, and the Cheyenne River Reservation and from state historic preservation societies in Wyoming, Montana, North Dakota, and South Dakota. Other Native American tribes contacted are listed in Table 3.7-1.

3.7.2.2 CONSULTATION

Consultation in accordance with all relevant laws, regulations, EOs, and DoD or Air Force instructions resulted in development of a Programmatic Agreement regarding the proposed development, implementation and operation of the PRTC. The Programmatic Agreement is discussed in greater detail in Section 4.7 and is located in Appendix N, *Government-to-Government and Section 106 Correspondence*. The following sections briefly describe consultation conducted by the Air Force.

Native American Government-to-Government Consultation

In an ongoing effort to identify traditional cultural resources as well as to satisfy the requirements of various laws, regulations, and EOs, the Air Force consulted with Native American tribes according to the Presidential Memorandum on Government-to-Government Relations with Native American Tribal Governments, EO 13175, Section 106 of the NHPA, and DoD American Indian and Alaska Native Policy (annotated, 1999).

There are four Native American reservations located under portions of the airspace -- the Northern Cheyenne Reservation, the Crow Reservation, the Standing Rock Indian Reservation, and the Cheyenne River Reservation (Figure 3.7-1). Ellsworth AFB initiated Government-to-Government consultation with each of these tribes in April and May 2008 and in July and August 2009; all four tribes indicated their interest in continued Government-to-Government consultation. In addition, tribes on 11 reservations outside of the airspace in Wyoming, Montana, North Dakota, and South Dakota were sent letters requesting information on concerns and initiating Government-to-Government consultation in June 2008 (Table 3.7-1). The Oglala Sioux and Rosebud Sioux Tribes responded that they would like to be included in the Government-to-Government consultation for the proposed action. Ellsworth AFB conducts ongoing Government-to-Government consultation with the Oglala Sioux through regular communication regarding issues of concern, including the PRTC. The Rosebud Sioux indicated it would work side-by-side in conjunction with the Northern Cheyenne Tribe in conducting Government-to-Government consultation regarding the PRTC (refer to Appendix N).

Table 3.7-1. Native American Tribes Contacted

Crow Nation, Crow Reservation[1]	Three Affiliated Tribes Business Council, Fort Berthold Reservation	Rosebud Sioux Tribe, Rosebud Reservation
Northern Cheyenne Tribe[1]	Turtle Mountain Tribal Council, Turtle Mountain Reservation	Eastern Shoshone Tribal Council, Wind River Reservation
Standing Rock Indian Reservation[1]	Chippewa-Cree Business Committee, Rocky Boy's Reservation	Oglala Sioux Tribal Council, Pine Ridge Reservation
Cheyenne River Sioux Tribe, Cheyenne River Reservation[1]	Fort Peck Tribal Executive Board, Fort Peck Indian Reservation	Confederated Salish and Kootenai Tribe, Flathead Indian Reservation
Spirit Lake Sioux Tribal Council, Spirit Lake Reservation	Arapaho Business Council, Wind River Reservation	Fort Belknap Community Council, Fort Belknap Reservation

Note: 1. Reservation is below proposed PRTC airspace
Source: See Appendix N

Tribal scoping meetings were held at the Crow Agency on June 23, the Northern Cheyenne Tribal Council Chamber in Lame Deer, MT on June 24, the Standing Rock Indian Reservation in McLaughlin, SD and Fort Yates, ND on July 11, and at the Cheyenne River Reservation at Dupree, SD on July 16, 2008. The Air Force followed these meetings with continued communication, consultation, and/or meetings with tribal representatives during 2008 through 2014 (refer to Appendix N).

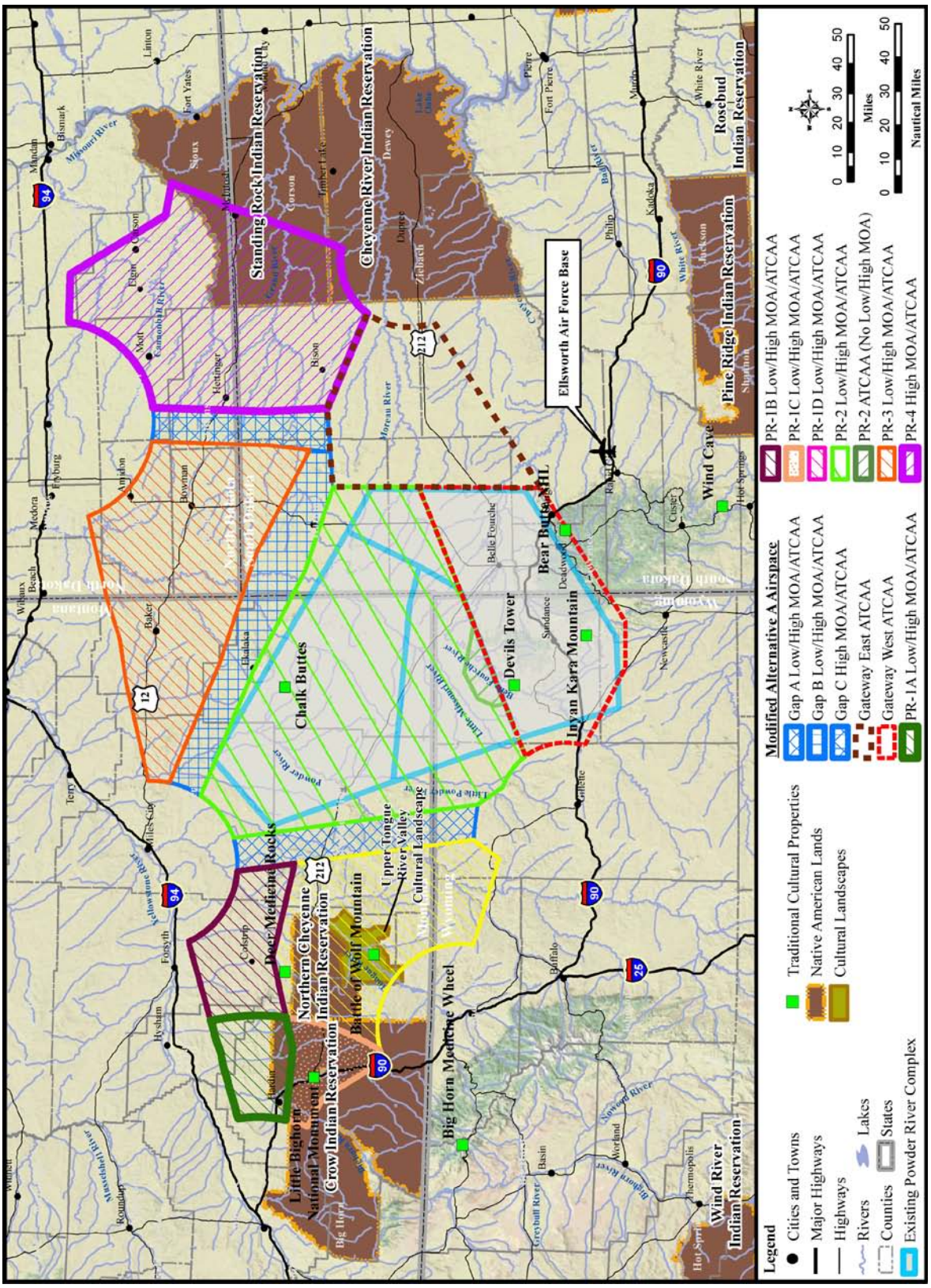


Figure 3.7-1. Native American Reservations and Identified Traditional Cultural Properties within the Affected Environment

There were three primary areas of concern expressed by tribal representatives during meetings and other communications that relate to cultural resources. These are (1) the effects of overflights on Native American sacred areas and ceremonies (mentioned by both the general public and by members of each of the four reservations), (2) visual effects to sites and sacred areas from overflights and chaff and flares, and (3) effects on sacred areas and historic sites from subsonic and supersonic noise.

Specific concerns associated with the Proposed Action included:

- The annual Crow Fair and Rodeo takes place at Crow Agency in August, which is an important event on the Crow Indian Reservation.
- There are also other sensitive times and areas on the Crow Reservation that the Crow request be avoided. The Crow also expressed concerns over impacts on tribal ceremonies.
- The Northern Cheyenne have concerns about ceremonies and calving with aircraft activity in airspace over their reservation. They also expressed concerns about noise, impacts on civil aviation, and impacts on the local economy.
- Calving season, which occurs February through May, and ceremonial times, which primarily occur in the summer, are a concern to the Standing Rock Indian Reservation. One area they expressed concern about is west of Bullhead on the Grand River where Sundance ceremonies are held. The Standing Rock Sioux Tribe also expressed concerns over Bear Butte, Wind Cave, and Devils Tower, which they consider sacred areas. The Standing Rock Sioux Tribe also expressed concerns about weather patterns and flight safety (aircraft crashes).
- Members of the Cheyenne River Indian Reservation expressed concerns about use of airspace over the reservation between June and August because of the potential for interference with ceremonies and calving season. They expressed concerns over potential financial loss during calving season. Sacred/Ceremonial sites are located near Bear Butte, Thunder Butte, Slim Buttes, Inyan Karan Mountain, Devils Tower, and all reservation rivers. Concerns were expressed for ceremonial activities such as Vision Quests and Sundance activities.

Federal and Local Agency Consultation

The Air Force identified all relevant federal and local agencies that might have cultural resources concerns, in addition to the tribes and tribal councils discussed previously. These agencies included the SHPOs in Wyoming, Montana, North Dakota, and South Dakota; Bureau of Indian Affairs; the BLM; the NPS; local and state historical societies; and state parks. In compliance with Section 106 of the NHPA (36 CFR 800), correspondence with the SHPOs initiated consultation on the undertaking. Areas of specific concern included:

- Little Bighorn Battlefield National Monument, MT.
- Great Sioux War Battlefields historic properties in Montana, North Dakota, and South Dakota, including Deer Medicine Rocks NHL and Wolf Mountains Battlefield/Where Big Crow Walked Back and Forth NHL.
- Archaeological locations containing sensitive rock art throughout the area of potential effect, including the Tongue River Valley, Chalk Buttes, and Slim Butte, MT; and North and South Cave Hills, SD.

Social Communities

A small Amish settlement is located 10 miles north of Ashland, MT under the proposed PR-1D MOA airspace. A small Hutterite Colony, called 40-Mile, is located about halfway between Sheridan, WY and Hardin, MT, under the proposed PR-1C MOA. While these communities differ in their religious beliefs and cultural practices, both are farming communities that have descended from the Anabaptists. Both communities maintain communal lifestyles and remain largely isolated from the culture at large. The Amish and the Hutterites maintain material simplicity to varying degrees. Most Amish do not operate machinery or use modern technology. Pacifism is a basic tenet of Hutterite religion. Variation from baseline noise levels may be more disruptive to communities whose residents are not accustomed to machine or industrial noise.

3.7.3 *EXISTING CONDITIONS*

The affected environment includes the lands and resources potentially affected by the Proposed Action. The affected airspace varies according to which of the alternatives is adopted, but would involve all areas beneath newly created or expanded MOAs and ATCAAs. The rich history of these areas is described briefly below.

3.7.3.1 HISTORIC SETTING

Historic setting is derived from written records and oral traditions from Western and Native American cultures.

PREHISTORY

In a conventional Western version of the "prehistory" (i.e., the period before written evidence) of the ROI, Frison (1978) has suggested a cultural chronology for the high plains of North America. This chronology is presented here because most of the prehistoric complexes known in the project area are represented in Frison's chronology. Oral traditions of the Crow, Cheyenne, Sioux, and other Native American peoples of the high plains also provide important historical information.

PALEOINDIAN PERIOD

The Paleoindian Period dates from approximately 12,000 B.C. to 6,000 B.C. The Paleoindian period includes a large number of apparently distinct human groups, which range from the earliest known recorded Clovis complex to the later and varied "Plano" groups. Evidence for Clovis period use of the project area is scant. Excavations at Paleoindian period sites indicate that later Paleoindian groups relied heavily on now-extinct species of bison for food and industrial items. Plant processing items (e.g., manos, metates, and pestles) are generally lacking at Paleoindian sites, suggesting that processing plants was secondary in importance to hunting for subsistence.

Gradually, the Paleoindian peoples began to rely more heavily on small game and wild plants for subsistence, leading into what is known as the Archaic Period.

ARCHAIC

The Archaic Period is characterized in part by an increase in the archaeological record of ground stone tools and baking hearths—evidence of increased reliance of plant foods. Technologies were also adapted to changing climatic conditions and evidence for more permanent settlements is found. In the high plains, the Archaic Period is subdivided into Early Plains, Middle Plains, and Late Plains Archaic as described below.

The Early Plains Archaic dates from approximately 6,000 B.C. to 2,500 B.C. Bison hunting continued into this period (both extinct and modern forms). Evidence for the processing of plant foods is still scarce at Early Plains Archaic sites, but plant resources were likely gathered in seasonal rounds. Simple manos and grinding slabs are occasionally found at Early Plains Archaic sites.

Frison's (1978) Middle Plains Archaic Period dates from approximately 2,500 B.C. to 500 B.C. and is associated with the widespread appearance of occupations throughout the northern Plains, even in areas that were previously devoid of human groups. In some areas of the northern Plains, such as north-central Wyoming, archaeological evidence suggests an increased reliance on plant foods and their preparation. McKean Complex sites in Wyoming also include flat sandstone grinding slabs and manos, and roasting pits (HRA 1979). Bison continued to be an important resource during the Middle Plains Archaic.

Approximate dates for the Late Plains Archaic range from 1,000 B.C. to A.D. 700. This period is associated with communal bison hunting on the plains. Evidence for the preparation of plant resources is scarce during this period.

LATE PREHISTORIC PERIOD

The last 200 years or so of the Late Plains Archaic Period overlap with the Late Prehistoric Period. The Late Prehistoric Period dates from approximately A.D. 500 to A.D. 1700 and is associated with the introduction of the bow and arrow (Frison 1978, HRA 1979). Communal bison hunting reached its greatest expression, in terms of efficiency, during this period. There are hundreds of Late Prehistoric Period bison kill sites in the northern plains.

After moving westward from their original homeland in Minnesota, Cheyenne bands unified in the Black Hills of South Dakota in the mid-1700s. Bear Butte is sacred to the Cheyenne (as well as other tribes) The Sweet Medicine legends explain the origin of the Sacred Arrows, an event that took place at Bear Butte. The Sacred Arrows are the most sacred possession of the Cheyenne people (Rambow 2004). Ethnographic accounts suggest that the Cheyenne adapted to more of a nomadic lifestyle after moving to the Black Hills rather than the more sedentary, horticultural based lifestyle they originally practiced (Gunnerson and Gunnerson 1988). Cheyenne hunted bison on horseback and horses became an important part of their economy (Gunnerson and Gunnerson 1988). By the mid-1800s the Cheyenne encountered increased Euroamerican emigration, warfare, and disease (Moore et al. 2001).

Sioux traditions place their origins near northern lakes east of the Mississippi River (DeMallie 2001). According to Sioux history, before European contact, the Sioux practiced a seasonal round, and based dates of ceremonies on the equinoxes (Rosebud Sioux Tribe 2010). The Sioux practiced a woodland culture before becoming a plains culture (Rosebud Sioux Tribe 2010). Other oral histories suggest that some Sioux bands moved west to hunt bison (DeMallie 2001). By the mid-1600s, Sioux economy focused on bison hunting. Sioux bands gathered during mid-summer or autumn in large groups to celebrate the Sun Dance and good fortunes. During other times of the year smaller groups disbanded and operated independently (Schusky 1975). By the mid-1700s the Sioux were a major power between the Black Hills and the Missouri River, and often warred with the Pawnee (Gunnerson and Gunnerson 1988).

Crow traditions place their origins near the Bear Paw Mountains and at the Three Forks of the Missouri River (Voget 2001). In the 1700s horses became central to Crow economy and the quest for wealth, status, and spouses. Bison was the major meat source for the Crow by the late 1700s, with the hunt

significantly aided by horses (Voget 2001). After the introduction of the horse, the Crow were mobile for a good portion of the year (Curtis 1909). Traditional Crow religious practices include the sweat lodge, vision quest, and the Sun Dance. The Crow Sun Dance differs from that of other Plains tribes (Voget 2001).

PROTO-HISTORIC PERIOD

The Proto-Historic Period begins around 1700 and is generally considered to end with the arrival of the Lewis and Clark Expedition in 1805 (Wood and Associates 2003). The horse was introduced to northern Plains Native Americans during the beginning of this period. This changed bison hunting strategies, trading networks, and settlement patterns. Small amounts of European trade goods also appear in archaeological sites dating to this time period (HRA 1979).

HISTORY

The historic Euroamerican occupation and settlement of the project area can be broken down into several periods, including early exploration and the fur trade, the gold rush and Native American/U.S. Government conflicts, and ranching/agricultural development.

In 1805 the Lewis and Clark expedition passed just north of the project area. From 1805 to the 1850s the Euroamerican presence in the region consisted of explorers and traders. The area was influenced by the fur trade out of Taos, NM, to the south and the Missouri River trade to the north. The fur trade was centered mainly on beaver pelts and reached its peak between 1820 and 1840. Because the fur trade was based on a single resource, it declined when areas were trapped out of beaver pelts and when the fashion changed from beaver hats to silk hats.

Westward movement continued along the Oregon Trail and other trails throughout the 1800s. These roads began informally, but as traffic to the area increased (especially during the gold rush) the roads began to see formal construction and upkeep. Steamboats began moving up the Missouri and Yellowstone Rivers in the 1850s. In the 1860s commercial steamboats began docking further up the rivers at forts there (Malone *et al.* 1991). Railroads have also been a significant factor in the history of the project area. Construction of the Union Pacific Railroad across Wyoming in the late 1860s and the Northern Pacific routes across North Dakota and Montana in the 1880s (Muhn 1980) opened the lands now in the project area to permanent settlement. The railroad provided the necessary connection to eastern markets vital to ranching development.

One of the lasting effects of Euroamerican movement into lands previously occupied only by Native Americans was the disruption of Native American lifeways. Prior to the incursion of Euroamericans into their lands, Native Americans in the Plains generally relied upon hunting and gathering for survival. Overhunting of animals by Euroamericans and Native Americans to supply the demand for furs and pelts depleted the range of resources used by Native Americans for subsistence. This resulted in a settlement clustering effect around forts, where trading could occur and new forms of subsistence could be obtained. This clustering, in addition to the over-exploitation of formerly rich lands, brought Native Americans and Euroamericans into conflict for resources.

The Second Treaty of Fort Laramie was an agreement between the U.S. and representatives of the Lakota nation, Yanktonai Sioux, Santee Sioux, and Arapaho signed in 1868 at Fort Laramie in the Wyoming Territory, guaranteeing to the Lakota ownership of the Black Hills, and furthering land and hunting rights in Wyoming, Montana, and South Dakota. The Powder River Country was to be henceforth closed to all Euroamericans. The treaty created the Great Sioux Reservation which included

the current Standing Rock, Cheyenne River, Pine Ridge, and Rosebud reservations. The Missouri River formed the eastern boundary of the reservation which stretched west to the Black Hills. Unceded Native American Territory stretched further south and west (Figure 3.7-2).

Conflict was exacerbated by the Black Hills gold rush as the Second Treaty of Fort Laramie was violated by settlers in search of gold. Prospectors moved into the region illegally to begin mining in the 1860s. The Black Hills gold rush reached its peak in 1876 when the majority of the land in areas containing gold was claimed, including the Black Hills, land sacred to the Dakota and Lakota. Mining and other unlawful intrusions into the Great Sioux Reservation resulted in increased hostility, and the U.S. government took action on the side of the Euroamericans. Though the best known clash of U.S. forces and tribal groups came in the form of the Battle of Little Bighorn on June 25 and 26, 1876, a number of other battles took place within or near the affected environment. These battles, occurring mostly from the 1860s to the 1880s, were the result of Native American resistance (primarily Cheyenne and Sioux groups) to displacement from their lands. These battles are currently identified as part of the Great Sioux War and include:

- the battle of Powder River, located in southern Montana (March 17, 1876);
- the battle of the Rosebud in southern Montana (June 17, 1876);
- the battle of Slim Butte in South Dakota (September 8, 1876);
- the battle of Wolf's Mountain, located in southern Montana (January 7, 1877); and
- the battle of Lame Deer in southeastern Montana (May 7, 1877).

Continuing hostilities and the intense activity of Euroamericans working gold claims in the region resulted in the U.S. Congress enacting legislation which "in effect, abrogated the Fort Laramie Treaty" and constituted a taking of tribal property (U.S. Supreme Court, United States v. Sioux Nation of Indians, 448 U.S. 371 [1980]). U.S. government policies regarding reservations and the use of the military forced most of the northern Native American tribes onto reservations by the early 1880s (Malone *et al.* 1991; Muhn 1980). The Battle of Wounded Knee in 1890, which resulted in the killing or wounding of hundreds of Lakota, effectively ended organized Sioux and Cheyenne resistance.

Though mining continued in the Black Hills into the 21st century, the majority of the boom was over by the 1880s and the easily extracted gold was played out. This resulted in an exodus of many Euroamerican gold miners, leaving only those with large-scale operations and those that chose to stay for farming and ranching.

In 1889, five reservations were created from portions of the Great Sioux Reservation by the Sioux Act of March 2, 1889: the Standing Rock Indian Reservation, Cheyenne River Reservation, Lower Brule Reservation, Rosebud Reservation, and the Pine Ridge Reservation (see Figure 3.7-2). The boundaries of these five reservations permitted approximately 9 million acres, one half of the former Great Sioux Reservation, to be opened for ranching and homesteading.

The Crow Reservation was established in 1851 as a portion of Crow tribal lands. The Crow and Sioux-Cheyenne were traditional enemies and Crow scouts regularly supported U.S. Cavalry actions against the Sioux and related Cheyenne tribal groups. The Northern Cheyenne Reservation was established in 1884 following an 1878-1879 seven-month running fight by the Northern Cheyenne to return to a portion of their traditional lands after being relocated to Oklahoma.

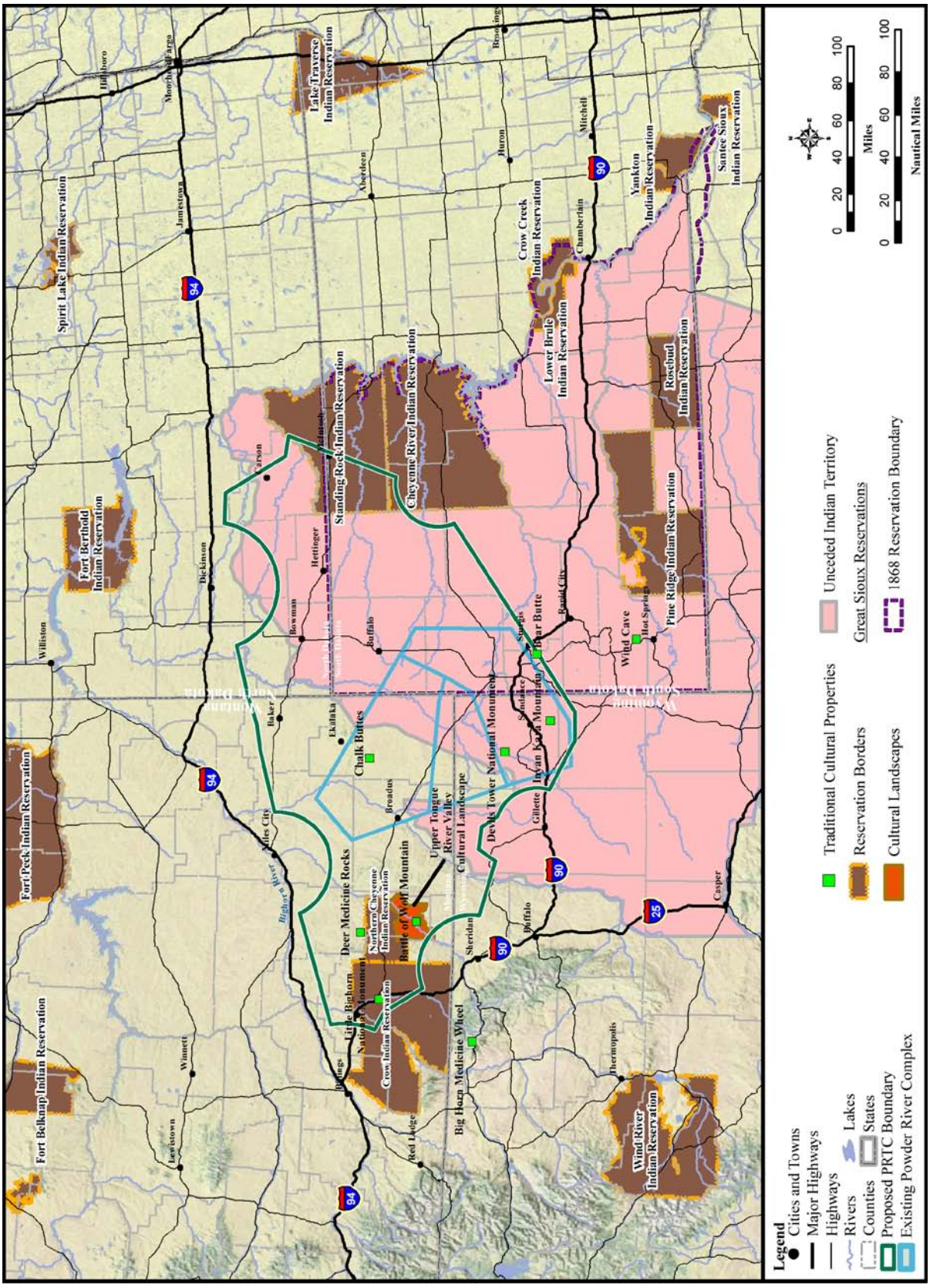


Figure 3.7-2. Native American Historic and Existing Lands in Relation to the Proposed PRTC

With the end of Native American/U.S. government hostilities and the end of the gold rush, the livestock industry began to develop in earnest in the area proposed for the PRTC. The vast grass and sagebrush plains were valuable for fattening livestock. Cattle and sheep ranches were established in the 1870s and 1880s. Farming developed slowly in the project area due to the arid conditions that prevail in the region. The previous establishment of the livestock industry in areas with water (river drainages) prevented small farmers from settling in the area until the later 1880s and 1890s. With increased immigration to the U.S., good, cheap land became scarce. Farmers began settling in more marginal areas in the early 1900s and relied on dry farming techniques. Increasing settlement by farmers in the region and the troubles of dry farming resulted in a push by private investors and government to establish systems of irrigation to support farmers. The 1902 Reclamation Act was intended to support the development of agriculture nationwide by making funds available to support such projects.

Approximately one-half of the Crow Reservation and all of the Northern Cheyenne Reservation are under portions of the proposed PR-1A, C, and D MOAs. The Northern Cheyenne Health Service facilities are pictured.

Most of the development in the project area from the early 1900s to present has revolved around ranching, farming, and exploitation of energy resources in the forms of coal, oil, and natural gas (Muhn 1980).

Following the procedures of the Dawes Act, the remaining reservations were in turn greatly reduced in size, through the allocation of 320 acre parcels to heads of families and other measures which greatly reduced the land in Native American ownership, while attempting to force them to convert to farmers and craftsmen. "Surplus" land was then made available for homesteading, and often, allocated land was sold by its Native American owners. In some cases, even when homesteads were abandoned during the Dust Bowl era of the 1930s, the land ended up in federal control. Some tribal lands became part of the modern National Grasslands, Badlands National Park, and land controlled by the Bureau of Land Management or other federal agencies, rather than reverting to the Native American nations. The sale of lands privately held by Native Americans and non-Native Americans (inholdings) continues in some areas into the 21st century.

Devils Tower National Monument, in northeastern WY, is under the existing Gateway ATCAA. The top of Devils Tower is at elevation 5,112 MSL. The floor of the Gateway ATCAA is 18,000 feet MSL.

3.7.3.2 IDENTIFIED CULTURAL RESOURCES

WYOMING

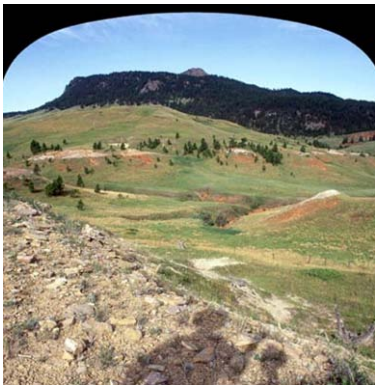
Fourteen properties are currently listed in the NRHP in Crook and Sheridan Counties, WY beneath the proposed PRTC airspace (Table 3.7-2). Twelve of these properties are under the existing Powder River airspace. They consist of archaeological sites, historic structures at Devils Tower National Monument, bridges, and historic buildings. No properties under the proposed PRTC airspace are located in Campbell or Weston Counties, WY. Devils Tower National Monument (Table 3.7-3) is beneath the existing Gateway ATCAA (see Figure 3.7-1) and also beneath the proposed Gateway ATCAA which begins at 18,000 feet MSL.

A search of ghost towns within the lands beneath the affected airspace in Wyoming revealed the presence of three ghost towns.

Several of the ghost towns contain standing wood/log structures associated with historic mining, ranching, stage or Pony Express routes, or railroad stations (Table 3.7-4). Most of the ghost towns have not been subjected to professional archaeological and/or architectural assessments and may be eligible for the National or State Registers pending further investigation by cultural resources professionals.

There is one historic ranch beneath the proposed airspace (Table 3.7-5). Ranch A is listed on the NRHP and deserves special consideration due to the large number of standing structures present at the site.

A historic vernacular landscape within the area beneath the affected airspace is present in the form of a historic trail (Table 3.7-6). The Texas Trail runs through Weston, Crook, and Campbell Counties.



Inyan Kara Mountain, south of Devils Tower in northeast WY, is considered sacred by American Indian peoples of the area. The mountain is at 6,348 feet MSL and is under the existing Gateway ATCAA which has a floor of 18,000 feet MSL.

Several traditional cultural properties and resources have been identified within the lands beneath the affected airspace (Table 3.7-7). The areas of Devils Tower and Inyan Kara Mountain are considered sacred sites by Native American peoples of the region. There are also two traditional cultural resources whose status is being discussed in consultation with tribes. The first is located to the north of the town of Gillette on Forest Service land inside the project area. The second is located northwest of the town of Hulett. These unnamed traditional cultural resources are associated with multiple tribes.

Table 3.7-2. NRHP-Listed Resources Under Proposed PRTC Airspace

Site Name	*General Location (County/Town)*	*Modified Alternative*[1]
WY		
Arch Creek Petroglyphs	Crook/Moorcroft	A, B, C
DXN Bridge over Missouri River	Crook/Hulett	Existing, A, B, C
EBF Bridge over Powder River	Sheridan/Leiter	A, C
Entrance Road—Devils Tower National Monument	Crook/Devils Tower	Existing, A, B, C
Entrance Station—Devils Tower National Monument	Crook/Devils Tower	Existing, A, B, C
Inyan Kara Mountain	Crook/Sundance	Existing, A, B, C
McKean Archaeological Site	Crook/Moorcroft	Existing, A, B, C
Old Headquarters Area Historic District	Crook/Devils Tower	Existing, A, B, C
Ranch A	Crook/Beulah	Existing, A, B, C
Sundance School	Crook/Sundance	Existing, A, B, C
Sundance State Bank	Crook/Sundance	Existing, A, B, C
Tower Ladder-Devils Tower National Monument	Crook/Devils Tower	Existing, A, B, C
Vore Buffalo Jump	Crook/Sundance	Existing, A, B, C
WY Mercantile	Crook/Aladdin	Existing, A, B, C
MT		
Wolf Mountains Battlefield/Where Big Crow Walked Back and Forth NHL	Rosebud/Birney	A, C
Baker Hotel	Fallon/Baker	A, B, C
Baldwin House	Big Horn/Lodge Grass	A, C
Bones Brother Ranch	Rosebud/Birney	A, C

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Table 3.7-2. NRHP-Listed Resources Under Proposed PRTC Airspace

Site Name	*General Location (County/Town)*	*Modified Alternative*[1]
Boyum, John, House	Big Horn/Hardin	A, C
Burke, Thomas H., House	Big Horn/ Hardin	A, C
Cammock's Hotel	Big Horn/Lodge Grass	A, C
Chivers Memorial Church	Big Horn/Lodge Grass	A, C
Commercial District	Big Horn/Hardin	A, C
Cross Ranch Headquarters	Powder River/Broadus	A, B, C
Deer Medicine Rocks NHL	Rosebud/Birney	A, C
Drew, J.W., Grain Elevator	Big Horn/Lodge Grass	A, C
Ebeling, William, House	Big Horn/Hardin	A, C
Eder, Charles S., House	Big Horn/Hardin	A, C
Fallon County Jail	Fallon/Baker	A, B, C
First Baptist Church	Big Horn/Hardin	A, C
Haverfield Hospital	Big Horn/Hardin	A, C
Kopriva, Francis, House	Big Horn/Hardin	A, C
Little Bighorn Battlefield National Monument	Big Horn/Hardin	A, C
Lodge Grass City Jail	Big Horn/Lodge Grass	A, C
Lodge Grass Merchandise Company Store	Big Horn/Lodge Grass	A, C
Moncure Tipi	Big Horn/Busby	A, C
OW Ranch	Big Horn/Birney	A, C
Pease's George, Second Store	Big Horn/Lodge Grass	A, C
Ping, J.J., House	Big Horn/Hardin	A, C
Reno Apartments	Big Horn/Hardin	A, C
Residential District	Big Horn/Hardin	A, C
Ryan's, John, House	Big Horn/ Lodge Grass	A, C
Sharp's Jay, Store	Big Horn/Lodge Grass	A, C
Simmonsen's House	Big Horn/Lodge Grass	A, C
St. Joseph's Catholic Church	Big Horn/Hardin	A, C
Stevens, Dominic House	Big Horn/Lodge Grass	A, C
Sullivan Rooming House	Big Horn/Hardin	A, C
Sullivan, James J., House	Big Horn/Hardin	A, C
Trytten, J.M., House	Big Horn/Lodge Grass	A, C
Tupper, J. S., House	Big Horn/Hardin	A, C
ND		
Adams County Courthouse	Adams/Hettinger	A, B
Carson Roller Mill	Grant/Carson	A, B
Cedar Creek Bridge	Adams/Haynes	A, B
Evangelisch Lutheraner Dreienigkeit Gemeinde	Grant/New Leipzig	A, B
Fort Dilts	Bowman/Rhame	A, B, C
Hettinger County Courthouse	Hettinger/Mott	A, B
Hope Lutheran Church	Grant/Elgin	A, B
H-T Ranch	Slope/Amidon	A, B, C
Medicine Rock State Historic Site	Grant/Heil	A, B
Mystic Theatre	Slope/Marmarth	A, B, C
Neuburg Congregational Church	Hettinger/Mott	A, B
Original Slope County Courthouse	Slope/Amidon	A, B, C
Riverside	Hettinger/New England	A, B

continued on next page…

Table 3.7-2. NRHP-Listed Resources Under Proposed PRTC Airspace

Site Name	*General Location (County/Town)*	*Modified Alternative*[1]
Schade, Emma Petznick and Otto, House	Bowman/Bowman	A, B, C
Stern, John and Fredricka (Roth), Homestead	Hettinger/Mott	A, B
U.S. Post Office – Hettinger	Adams/Hettinger	A, B
SD		
Ainsworth, Oliver N., House	Lawrence/Spearfish	Existing, A, B, C
Antelope Creek Stage Station	Corson/Morristown	A, B
Archaeological Site No. 39HN1	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN5	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN17	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN18	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN21	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN22	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN26	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN30	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN50	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN53	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN54	Harding/Ludlow	A, B, C
Archaeological Site No. 39MD81	Meade/Sturgis	A, B, C
Archaeological Site No. 39MD82	Meade/Sturgis	A, B, C
Archaeological Site No. 39HN121	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN150	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN155	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN159	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN160	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN162	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN165	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN167	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN168	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN171	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN174	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN177	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN198	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN199	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN205	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN207	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN208	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN209	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN210	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN213	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN217	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN218	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN219	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN227	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN228	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN232	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN234	Harding/Ludlow	A, B, C

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Table 3.7-2. NRHP-Listed Resources Under Proposed PRTC Airspace

Site Name	*General Location (County/Town)*	*Modified Alternative*[1]
Archaeological Site No. 39HN484	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN485	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN486	Harding/Ludlow	A, B, C
Archaeological Site No. 39HN487	Harding/Ludlow	A, B, C
Ashcroft, Thomas, Ranch	Harding/Buffalo	A, B, C
Baker Bungalow	Lawrence/Spearfish	Existing, A, B, C
Bartlett, L. L. House	Meade/Stoneville	A, B, C
Bear Butte NHL	Meade/Sturgis	A, B, C
Beckon, Donald, Ranch	Perkins/Zeona	A, B, C
Belle Fourche Commercial District	Butte/Belle Fourche	Existing, A, B, C
Belle Fourche Dam	Butte/Belle Fourche	Existing, A, B, C
Belle Fourche Experiment Farm	Butte/Newell	Existing, A, B, C
Bethany United Methodist Church	Perkins/Lodgepole	A, B
Blake Ranch House	Harding/Gustave	Existing, A, B, C
Bolles, Charles, House	Butte/Belle Fourche	Existing, A, B, C
Butte County Courthouse and Historic Jail Building	Butte/Belle Fourche	Existing, A, B, C
Butte-Laurence County Fairgrounds	Butte/Nisland	Existing, A, B, C
Carr No. 60 School	Perkins/Lodgepole	A, B
Carr, Anna, Homestead	Perkins/Bison	A, B
Cook, Fayette, House	Lawrence/Spearfish	Existing, A, B, C
Corbin, James A. House	Lawrence/Spearfish	Existing, A, B, C
Court, Henry, House	Lawrence/Spearfish	Existing, A, B, C
Dakota Club Library	Dewey/Eagle Butte	A, B, C
Dakota Tin and Gold Mine	Lawrence/Spearfish	Existing, A, B, C
Deadwood Historic District (NHL)	Lawrence/Deadwood	Existing, A, B, C
Dickey, Eleazer C. and Gwinnie, House	Lawrence/Spearfish	Existing, A, B, C
Dickey, Walter, House	Lawrence/Spearfish	Existing, A, B, C
Ditchrider House	Butte/Nisland	Existing, A, B, C
Driskill, William D., House	Lawrence/Spearfish	Existing, A, B, C
Duck Creek Lutheran Church and Cemetery	Perkins/Lodgepole	A, B
Emmanuel Lutheran Church and Cemetery	Harding/Ralph	A, B, C
Episcopal Church of All Angels	Lawrence/Spearfish	Existing, A, B, C
Erskine School	Meade/Sturgis	A, B, C
Evans, Robert H., House	Lawrence/Spearfish	Existing, A, B, C
Fort Manuel	Corson/McIntosh	A, B
Fort Meade District	Meade/Sturgis	A, B, C
Foster Ranch House	Perkins/Chance	A, B
Fowler Hotel	Harding/Buffalo	A, B, C
Frawley Historic Ranch (NHL)	Lawrence/Spearfish	Existing, A, B, C
Frozenman Stage Station	Perkins/Bison	A, B
Fruitdale School	Butte/Fruitdale	Existing, A, B, C
Fruitdale Store	Butte/Fruitdale	Existing, A, B, C
Galena School	Lawrence/Lead	A, B, C
Gartner, Carl Frederick, Homestead	Butte/Newell	Existing, A, B, C
Gay, Thomas Haskins, House	Butte/Belle Fourche	Existing, A, B, C
Giannonatti Ranch	Harding/Ludlow	A, B, C

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Table 3.7-2. NRHP-Listed Resources Under Proposed PRTC Airspace

Site Name	*General Location (County/Town)*	*Modified Alternative*[1]
Golden Rule Department Store	Perkins/Lemmon	A, B
Golden Valley Norwegian Church	Harding/Ralph	A, B
Graf, Stephen and Maria, House	Meade/Sturgis	A, B, C
Halloran-Matthews-Brady House	Lawrence/Spearfish	Existing, A, B, C
Harriman, L. F., House	Perkins/Lemmon	A, B
Harris, Fred S., House	Butte/Belle Fourche	Existing, A, B, C
Harvey, Jerome and Jonetta Homestead Cabin	Lawrence/Lead	Existing, A, B, C
Hay Creek Bridge	Butte/Belle Fourche	Existing, A, B, C
Hewes, Arthur, House	Lawrence/Spearfish	Existing, A, B, C
Homestake Workers House	Lawrence/Spearfish	Existing, A, B, C
Hoover, Alexander House	Butte/Hoover	A, B, C
Hoover Store	Butte/Hoover	A, B, C
Immanuel Lutheran Church	Perkins/Zeona	A, B, C
Jesse Elliott Ranger Station	Harding	A, B, C
Johnson, Axel, Ranch	Harding/Reva	A, B, C
Johnson, William House	Butte/Fruitdale	Existing, A, B, C
Keets, Henry, House	Lawrence/Spearfish	Existing, A, B, C
Kenaston, William G., House	Butte/Newell	Existing, A, B, C
Knight, Webb, S., House	Lawrence/Spearfish	Existing, A, B, C
Kroll Meat Market and Slaughterhouse	Lawrence/Spearfish	Existing, A, B, C
Langdon School	Butte/Nisland	Existing, A, B, C
Lead Historic District	Lawrence/Lead	Existing, A, B, C
Lemmon Petrified Park	Perkins/Lemmon	A, B
Lemmon, G. E., House	Perkins/Lemmon	A, B
Lightning Spring	Harding/Ludlow	A, B, C
Lincoln School	Butte/Belle Fourche	Existing, A, B, C
Little Missouri Bank Building	Harding/Camp Crook	Existing, A, B, C
Livingston, John and Daisy May, Ranch	Harding/Sorum	A, B, C
Lown, William Ernest, House	Lawrence/Spearfish	Existing, A, B, C
McLaughlin Ranch Barn	Lawrence/Spearfish	Existing, A, B, C
Minnesela Bridge	Butte/Belle Fourche	Existing, A, B, C
Mount Theodore Roosevelt Monument	Lawrence/Deadwood	Existing, A, B, C
Newell Depot Bridge	Butte/Newell	Existing, A, B, C
Newell High School	Butte/Newell	Existing, A, B, C
Nisland Bridge	Butte/Nisland	Existing, A, B, C
Old Finnish Lutheran Church	Lawrence/Lead	Existing, A, B, C
Old Redwater Bridge	Lawrence/Spearfish	Existing, A, B, C
Old Spearfish Post Office	Lawrence/Spearfish	Existing, A, B, C
Olson Bridge	Butte/Belle Fourche	Existing, A, B, C
Peace Valley Evangelical Church and Cemetery	Harding/Ralph	A, B, C
Qullian, Thomas, House	Lawrence/St. Onge	Existing, A, B, C
Raskob, Jacob and Elizabeth Ranch	Meade/Sturgis	A, B, C
Richards Cabins	Perkins/Faith	A, B, C
Riley, Almira, House	Lawrence/Spearfish	Existing, A, B, C
Rockford No. 40 School	Perkins/Bison	A, B
Scotney, John Aaron, House	Butte/Belle Fourche	Existing, A, B, C

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Table 3.7-2. NRHP-Listed Resources Under Proposed PRTC Airspace

Site Name	*General Location (County/Town)*	*Modified Alternative*[1]
SD Department of Transportation Bridge No 10-109-360	Butte/Belle Fourche	Existing, A, B, C
SD Department of Transportation Bridge No. 10-270-338	Butte/Newell	Existing, A, B, C
Shevling, L.W., Ranch	Harding/Harding	Existing, A, B, C
Sittner Farm	Perkins/Meadow	A, B
Small, Charles and Eleanor House	Butte/Belle Fourche	Existing, A, B, C
Snoma Finnish Cemetery	Butte/Fruitdale	Existing, A, B, C
Soper-Behymer Ranch	Butte/Belle Fourche	Existing, A, B, C
Sorum Cooperative Store	Perkins/Sorum	A, B
Sorum Hotel	Perkins/Sorum	A, B
Spearfish City Hall	Lawrence/Spearfish	Existing, A, B, C
Spearfish Filling Station	Lawrence/Spearfish	Existing, A, B, C
Spearfish Fisheries Station	Lawrence/Spearfish	Existing, A, B, C
Spearfish Historic Commercial District	Lawrence/Spearfish	Existing, A, B, C
Spring Creek School	Perkins/Zeona	A, B, C
St. Lawrence O'Toole Catholic Church	Lawrence/Central City	Existing, A, B, C
St. Onge Schoolhouse	Lawrence/St. Onge	Existing, A, B, C
St. Onge State Bank	Lawrence/St. Onge	Existing, A, B, C
Stokes, Oliver O., House	Harding/Harding	Existing, A, B, C
Stomprude Trail Ruts	Perkins/Bison	A, B
Stonelake Bridge	Butte/Newell	Existing, A, B, C
Sturgis Commercial Block	Meade/Sturgis	A, B, C
Sturgis High School	Meade/Sturgis	A, B, C
Tallent, Annie, House	Meade/Sturgis	A, B, C
The Mail Building	Lawrence/Spearfish	Existing, A, B, C
Toomey House	Lawrence/Spearfish	Existing, A, B, C
Tri-State Bakery	Butte/Belle Fourche	Existing, A, B, C
Uhlig, Otto L., House	Lawrence/Spearfish	Existing, A, B, C
Vale Bridge	Butte/Vale	Existing, A, B, C
Vale Cut Off Belle Fourche River Bridge	Butte/Belle Fourche	Existing, A, B, C
Vale School	Butte/Vale	Existing, A, B, C
Veal, Thomas J., Ranch	Perkins/Chance	A, B
Vessey School	Harding/Haley	A, B, C
Viken, Nicholas Augustus Homestead	Butte/Newell	Existing, A, B, C
Walsh Barn	Lawrence/Spearfish	Existing, A, B, C
Walton Ranch	Lawrence/Spearfish	Existing, A, B, C
Wenke, John G., House	Meade/Sturgis	A, B, C
Whitewood Historic District	Lawrence/Whitewood	Existing, A, B, C
Whitney, Mary, House	Lawrence/Spearfish	Existing, A, B, C
Wide Awake Grocery Building	Butte/Belle Fourche	Existing, A, B, C
Wolzmuth, John, House	Lawrence/Spearfish	Existing, A, B, C
Woodmen Hall	Lawrence/St. Onge	Existing, A, B, C

Note: 1. Modified Alternatives A, B, and C described in EIS Sections 2.5–2.7; Existing refers to the Powder River A/B MOAs and ATCAAs.

Table 3.7-3. National Monuments Under Proposed PRTC Airspace

Site Name	*General Location*	*Status*	*Modified Alternative*[1]
WY			
Devils Tower	Devils Tower	NRHP Listed	Existing, A, B, C
MT			
Little Bighorn Battlefield	Garryowen	NRHP Listed	A, C

Note: 1. Modified Alternatives A, B, and C described in EIS Sections 2.5–2.7; Existing refers to the Powder River MOAs and ATCAAs.

Source: NPS 2014

Table 3.7-4. Ghost Towns Under Proposed PRTC Airspace

Name	*County*	*Remains*	*Status*	*Modified Alternative*[1]
WY				
Mineral Hill	Crook	Many original buildings, including original mill	Not Listed	Existing, A, B, C
Moskee	Crook	Single standing building	Not Listed	Existing, A, B, C
Old Upton	Weston	Many shacks, including the first jail	Not Listed	Existing, A, B, C
ND				
Amidon[2]	Slope	Many original buildings (some still occupied)	Not Listed	A, B, C
Bucyrus[2]	Adams	Some original buildings	Not Listed	A, B
Gascoyne[2]	Bowman	Many original buildings, houses, schools, general store	Not Listed	A, B, C
Griffin	Bowman	Old school house, general store	Not Listed	A, B, C
Marmarth[2]	Slope	Many original buildings (some still occupied)	Not Listed	A, B, C
SD				
Astoria	Lawrence	Many original buildings	Not Listed	A, B, C
Balmoral (Ragged Top)	Lawrence	Many original buildings (now known as Preston)	Not Listed	Existing, A, B, C
Bear Gulch I	Lawrence	Many original buildings	Not Listed	Existing, A, B, C
Carbonate	Lawrence	Many original buildings	Not Listed	Existing, A, B, C
Central City[2]	Lawrence	Two blocks of old buildings	Not Listed	Existing, A, B, C
Crook City	Lawrence	Stone school house	Not Listed	Existing, A, B, C
Maitland	Lawrence	Many original buildings/ruins	Not Listed	Existing, A, B, C
Pluma	Lawrence	Mill ruins	Not Listed	A, B, C
Reed	Butte	School house	Not Listed	A, B, C
Savoy	Lawrence	Many original buildings	Not Listed	Existing, A, B, C
Terraville	Lawrence	Ruins	Not Listed	Existing, A, B, C
Tinton	Lawrence	10-12 buildings (Main Street is on Crook County, WY-Laurence County, SD line; Tinton is generally considered to be in SD)	Not Listed	Existing, A, B, C

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Table 3.7-4. Ghost Towns Under Proposed PRTC Airspace

Name	*County*	*Remains*	*Status*	*Modified Alternative*[1]
Trojan (Portland)	Lawrence	Portland Mine buildings, several small houses, stores	Not Listed	Existing, A, B, C
Whitewood[2]	Lawrence	Many original buildings	NRHP Listed	Existing, A, B, C

Note: 1. Modified Alternatives A, B, and C described in EIS Sections 2.5–2.7; Existing refers to the Powder River MOAs and ATCAAs.

2. Although listed as ghost towns, these locations still have residents.

Source: United States Ghost Towns 2010

Table 3.7-5. Historic Ranches Under Proposed PRTC Airspace

Name	*General Location*	*Status*	*Modified Alternative*[1]
WY			
Ranch A	Beulah	NRHP Listed	Existing, A, B, C
MT			
Bones Brothers Ranch	Rosebud/Birney	NRHP Listed	A, C
Cross Ranch Headquarters	Powder River/Broadus	NRHP Listed	A, B, C
Drew, J.W., Grain Elevator	Big Horn/Lodge Grass	NRHP Listed	A, C
Lee Homestead	Big Horn/Decker	NRHP Listed	A, C
OW Ranch	Big Horn/Birney	NRHP Listed	A, C
ND			
H-T Ranch	Slope/Amidon	NRHP Listed	A, B, C
SD			
Ashcroft, Thomas, Ranch	Harding/Buffalo	NRHP Listed	A, B, C
Beckon, Donald, Ranch	Perkins/Zeona	NRHP Listed	A, B, C
Blake Ranch House	Harding/Gustave	NRHP Listed	Existing, A, B, C
Carr, Anna, Homestead	Perkins/Bison	NRHP Listed	A, B
Foster Ranch House	Perkins/Chance	NRHP Listed	A, B
Frawley Ranch	Lawrence	National Historic Landmark (NRHP Listed)	Existing, A, B, C
Gartner, Carl Frederick, Homestead	Butte/Newell	NRHP Listed	Existing, A, B, C
Giannonatti Ranch	Harding/Ludlow	NRHP Listed	A, B, C
Johnson, Axel, Ranch	Harding/Reva	NRHP Listed	A, B, C
Livingston, John and Daisy May, Ranch	Harding/Sorum	NRHP Listed	A, B, C
McLaughlin Ranch Barn	Lawrence/Spearfish	NRHP Listed	Existing, A, B, C
Raskob, Jacob and Elizabeth Ranch	Meade/Sturgis	NRHP Listed	A, B, C
Shevling, L.W., Ranch	Harding/Harding	NRHP Listed	Existing, A, B, C

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Table 3.7-5. Historic Ranches Under Proposed PRTC Airspace

Name	*General Location*	*Status*	*Modified Alternative*[1]
Soper-Behymer Ranch	Butte/Belle Fourche	NRHP Listed	Existing, A, B, C
Veal, Thomas J., Ranch	Perkins/Chance	NRHP Listed	A, B
Viken, Nicholas Augustus Homestead	Butte/Newell	NRHP Listed	Existing, A, B, C
Walsh Barn	Lawrence/Spearfish	NRHP Listed	Existing, A, B, C
Walton Ranch	Lawrence/Spearfish	NRHP Listed	Existing, A, B, C
William Holst Farmstead	Meade/Vale	SD State Register Property	Existing, A, B, C

Note: 1. Modified Alternatives A, B, and C described in EIS Sections 2.5–2.7; Existing refers to the Powder River MOAs and ATCAAs.

Source: NPS 2014

Table 3.7-6. Historic Trails Under Proposed PRTC Airspace

Site Name	*Counties*	*Status*	*Modified Alternative*[1]
WY			
Texas Trail	Weston, Crook, Campbell	Not Listed	Existing, A, B, C

Note: 1. Modified Alternatives A, B, and C described in EIS Sections 2.5–2.7; Existing refers to the Powder River MOAs and ATCAAs.

Source: NPS 2014

Table 3.7-7. Traditional Cultural Properties and Traditional Cultural Resources Under Proposed PRTC Airspace

Area Name	*General Location*	*Status*	*Modified Alternative*[1]
WY			
Devils Tower	Devils Tower	NRHP Listed	Existing, A, B, C
Inyan Kara Mountain	South of Sundance	NRHP Listed	Existing, A, B, C
Unnamed 1	North of Gillette	Not Listed	Existing, A, B, C
Unnamed 2	Northwest of Hulett	Not Listed	Existing, A, B, C
MT			
Chalk Buttes	Ekalaka	Not Listed	Existing, A, B, C
Wolf Mountains Battlefield/Where Big Crow Walked Back and Forth	Tongue River	NRHP Listed	A, C
SD			
Bear Butte NHL	Sturgis	NRHP Listed	A, B, C

Note: 1. Modified Alternatives A, B, and C described in EIS Sections 2.5–2.7; Existing refers to the Powder River MOAs and ATCAAs.

Source: NPS 2014

MONTANA

Thirty-six properties are currently listed on the NRHP in Fallon, Powder River, Rosebud, and Big Horn Counties (Table 3.7-2). They consist of battlefields and historic buildings.

Little Bighorn Battlefield National Monument falls under the proposed airspace. Though this property is also listed on the NRHP, it deserves special consideration due to its status as a National Monument. In addition, the battlefield itself is held as sacred by many Native Americans. A Sioux and Cheyenne monument, as well as historic markers, are part of the battlefield. This site is also an NHL, as is Deer Medicine Rocks.

Little Bighorn Battlefield National Monument is under the proposed PR-1D MOA.

There are five historic ranches beneath the proposed airspace in Montana that are listed on the NRHP.

Two historic battlefields lie beneath the proposed project airspace. The Little Bighorn Battlefield is already a National Monument. Wolf Mountains Battlefield/Where Big Crow Walked Back and Forth is on the NRHP and is also an NHL. The Montana SHPO is currently processing a form to elevate all of the battlefields of the Great Sioux War to the NRHP (personal communication, Hampton 2008). These battlefields are also either current traditional cultural properties, or in consultation for recognition of that status.

The Tongue River Valley (Table 3.7-8), in Rosebud County, has been the focus of a project to document and nominate the cultural landscape to the NRHP. The area has been studied and nominated for this designation due to the number and preservation of sites from prehistoric contexts (over 1,700 sites), Great Sioux War battlefield context (Wolf Mountains Battlefield/Where Big Crow Walked Back and Forth), and early ranching settlement contexts (Three Circle Ranch, SH Ranch, and others) (personal communication, Hampton 2008).

The Tongue River Valley in southeastern Montana has been nominated as cultural landscape due to the large number and preservation of cultural sites. Proposed overflights would transit the area perpendicular to the valley rather than fly along it.

Table 3.7-8. NRHP-Nominated Cultural Landscapes Under Proposed PRTC Airspace in Montana

Area Name	*General Location*	*Modified Alternative*[1]
Tongue River Valley	Ashland	A, C

Note: 1. Modified Alternatives A and C described in EIS Sections 2.5–2.7.

Two Traditional Cultural Properties have been specifically identified within the lands beneath the affected airspace (Table 3.7-7). The location of Wolf Mountains Battlefield/Where Big Crow Walked Back and Forth NHL is also listed on the NRHP. The Chalk Buttes are an area considered sacred by Native American peoples of the region. In addition, as many as 48 cultural resources have been

recorded on the Northern Cheyenne Reservation that have ceremonial functions (Deaver and Tallbull 2001). The recorded ceremonial sites include vision questing/fasting sites, sweat lodges, and memorials.

NORTH DAKOTA

Sixteen properties are currently listed in the NRHP in Bowman, Slope, Adams, Hettinger, and Grant Counties, ND beneath the proposed PRTC airspace (Table 3.7-2). They consist of historic buildings and bridges. No properties under the proposed PRTC airspace are located in Golden Valley, Sioux, Morton, Stark, or Billings Counties, ND.

A search of ghost towns within the lands beneath the affected airspace in North Dakota revealed the presence of five ghost towns, four of which are still occupied to some extent. Several of the ghost towns contain standing wood/log structures associated with historic mining, ranching, stage or Pony Express routes, or railroad stations (Table 3.7-4). Most of the ghost towns have not been subjected to professional archaeological and/or architectural assessments and many may be eligible to the National or State Registers pending further investigation by cultural resources professionals.

There is one historic ranch beneath the proposed airspace (Table 3.7-5). The H-T Ranch is already listed on the NRHP; however, it deserves special consideration due to the large number of standing structures present at the site. The John and Fredricka Stern Homestead has walls made of manure, straw and water, and is notably fragile (Paaverud 2014).

SOUTH DAKOTA

One hundred seventy-five properties are currently listed in the National Register in Harding, Butte, Meade, Lawrence and Perkins Counties, SD beneath the proposed PRTC airspace (Table 3.7-2). They consist of archaeological sites, historic buildings, bridges, monuments, stage stations and cemeteries. Seventy-one of these properties are under the existing Powder River training airspace. No National or State Register properties under the proposed PRTC airspace are located in Pennington and Ziebach Counties, SD.

Bear Butte, on the southern edge of the existing Gateway ATCAA, in northwest South Dakota, is a Sioux and Cheyenne sacred area. Bear Butte is a prehistoric and historic location of annual tribal gatherings, and is also the birthplace of Crazy Horse.

Three NHLs are located beneath the existing Gateway ATCAA training airspace and under the proposed Gateway ATCAA (Table 3.7-9). All three of these sites are also listed on the NRHP. Bear Butte is a sacred area, the Frawley Ranch is a historic ranch, and the Deadwood Historic District is an area of historic structures and features. The Northern Cheyenne Tribe owns land near Bear Butte.

Table 3.7-9. National Historic Landmarks Under Proposed PRTC Airspace

Site Name	*General Location*	*Modified Alternative*[1]
MT		
Deer Medicine Rocks	Tongue River	A, C
Wolf Mountains Battlefield/Where Big Crow Walked Back and Forth	Tongue River	A, C
SD		
Bear Butte	Sturgis	A, B, C
Deadwood Historic District	Deadwood	Existing, A, B, C
Frawley Ranch	Whitewood	Existing, A, B, C

Note: 1. Modified Alternatives A, B, and C described in EIS Sections 2.5–2.7; Existing refers to the Powder River MOAs and ATCAAs.

Three properties beneath the PRTC airspace are listed on the South Dakota State Register of Historic Places (Table 3.7-10). Two are historic structures while the Thoen Stone and Site is the location of an inscribed stone detailing a doomed 1883 mining expedition.

Table 3.7-10. SD State Register Sites Under Proposed PRTC Airspace

Site Name	*Site Name*	*Modified Alternative*[1]
Sturgis City Auditorium	Meade/Sturgis	A, B, C
Thoen Stone and Site	Lawrence/Spearfish	Existing, A, B, C
William Holst Farmstead	Meade/Vale	Existing, A, B, C

Note: 1. Modified Alternatives A, B, and C described in EIS Sections 2.5–2.7; Existing refers to the Powder River MOAs and ATCAAs.

There are 14 ghost towns within the lands beneath the proposed PRTC airspace in South Dakota. Several of the ghost towns contain standing wood/log structures associated with historic mining, ranching, stage or Pony Express routes, or historic railroad stations (Table 3.7-4), and at least two of them retain a substantial number of residents. Most of the ghost towns have not been evaluated for NRHP eligibility. Many may be eligible for listing on the National or State Registers pending further investigation by cultural resources professionals.

Nineteen historic ranches are located under the proposed airspace. A number of these ranches have been found eligible (and not yet listed) or have not been evaluated for potential eligibility to the NRHP (Table 3.7-5). In addition, one of these properties, the William Holst Farmstead, is listed on the South Dakota State Register.

One traditional cultural property has been identified within the lands beneath the affected airspace (Table 3.7-7). The area of Bear Butte is considered sacred by Native American peoples of the region.

3.8 LAND USE

3.8.1 *DEFINITION OF THE RESOURCE*

The attributes of land use addressed in this analysis include general land use patterns, land ownership, land management plans, and special use areas. General land use patterns characterize broad types of uses within a large area, for example, agricultural, rangeland, forest, and urban, which may support various uses such as recreation, grazing, mineral production, commercial or residential development. Land ownership is a categorization of land according to type of owner; the major land ownership categories include private, federal, Native American, and state. Federal lands are described by the managing agency, which may include the USFWS, USFS, BLM, or DoD. Land management plans include those documents prepared by agencies to establish appropriate goals for future use and development. As part of this process, sensitive land use areas (e.g., Wilderness, Wild and Scenic Rivers) are often identified by agencies as being worthy of more rigorous management.

Recreation resources consider outdoor recreational activities that take place away from the residences of participants. This includes natural resource areas (such as BLM-managed land) and associated developed facilities (such as off-road vehicle trails and developed camp sites) that are designated or available for public outdoor recreational use. Cultural and historic sites and battlegrounds are lands with high recreational use.

The ROI for land use consists of about 34,000 square miles comprised of the lands under the current airspace (about 14,100 square miles) plus the land under an additional approximate 20,000 square miles of expanded airspace (Table 3.8-1). This ROI is the land and land users under the proposed PRTC

airspace. Of this land, 41 percent is in Montana, 30 percent in South Dakota, 16 percent in North Dakota, and 13 percent in Wyoming.

3.8.2 *REGULATORY SETTING*

The proposed airspace overlies a portion or all of 29 counties in four states, as listed in Table 3.8-1 (see Figure 3.8-1). Most counties are managed and governed by elected commissioners, and few have "home rule" charters. Land use controls (such as zoning) are generally only used within incorporated cities. Native American Reservations within the ROI have tribal sovereignty over their reservations and govern through tribal elections. Land uses on the reservations are determined by tribal decisions.

Table 3.8-1. Land Jurisdiction in ROI

County	*Current Powder River Airspace (square miles)*	*Expanded PRTC (square miles)*	*% of Expanded PRTC Area*
MT	**4,040**	**13,841**	**40.7%**
Big Horn	—	2,093	6.2%
Carter	2,463	3,348	9.8%
Custer	325	1,629	4.8%
Fallon	—	1,373	4.0%
Powder River	1,252	3,297	9.7%
Rosebud	—	1,895	5.6%
Treasure	—	205	<1%
ND	**0**	**5,502**	**16.2%**
Adams	—	989	2.8%
Billings	—	30	<1%
Bowman	—	1,167	3.4%
Golden Valley	—	86	<1%
Grant	—	1,345	4.0%
Hettinger	—	587	1.7%
Morton	—	59	<1%
Sioux	—	295	<1%
Slope	—	942	2.8%
Stark	—	2	<1%
SD	**2,760**	**10,186**	**30.0%**
Butte	1,516	2,266	6.7%
Corson	—	897	2.5%
Harding	581	2,678	7.9%
Lawrence	294	580	1.7%
Meade	369	912	2.7%
Perkins	—	2,748	8.1%
Ziebach	—	105	<1%
WY	**2,787**	**4,473**	**13.1%**
Campbell	99	980	2.9%
Crook	2,688	2,839	8.3%
Sheridan	—	387	1.1%
Weston	—	266	<1%
Total	**9,587**	**34,002**	**100.0%**

Source: ESRI 2000

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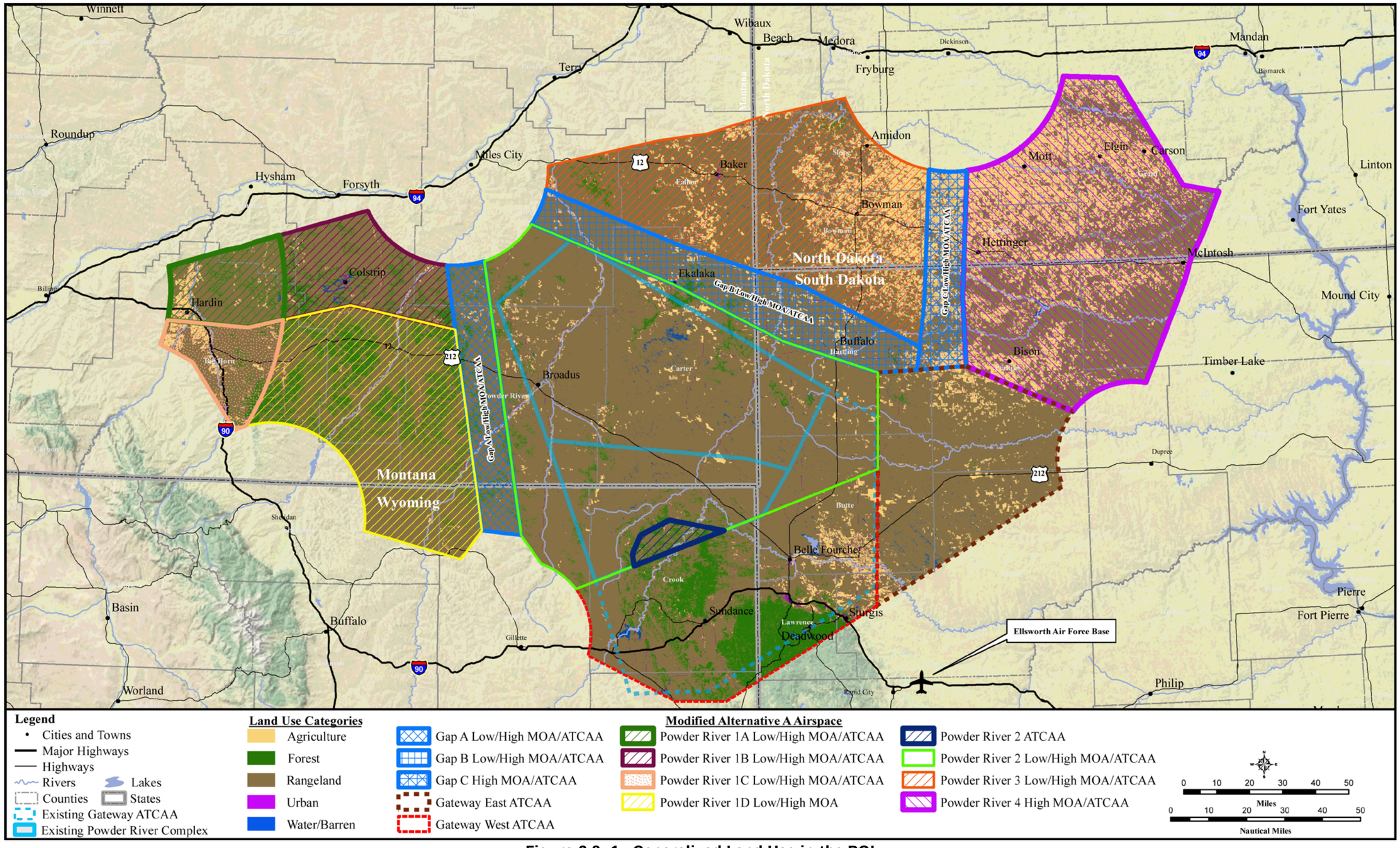

Figure 3.8-1. Generalized Land Use in the ROI

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Table 3.8-2. Generalized Land Use in the ROI (square miles)

Airspace	*Water/ Barren*	*Urban*	*Rangeland*	*Forest*	*Agriculture*	*Total*
PR-1A MOA/ATCAA	3	9	613	62	78	765
PR-1B MOA/ATCAA[1]	13	7	979	205	18	1,222
PR-1C MOA/ATCAA	1	10	532	48	89	680
PR-1D MOA/ATCAA	6	11	2,569	697	24	3,307
PR-2 ATCAA	0	0	43	19	0	62
PR-2 MOA/ATCAA	80	30	7,566	281	206	8,163
PR-3 MOA/ATCAA	37	82	3,359	58	1,011	4,547
PR-4 MOA/ATCAA	45	128	3,135	7	1,966	5,281
Gap A MOA/ATCAA	4	1	822	109	13	949
Gap B MOA/ATCAA	11	9	1,529	35	110	1,694
Gap C MOA/ATCAA	2	18	315	1	334	670
Gateway East ATCAA	38	12	2,572	9	211	2,842
Gateway West ATCAA	44	60	2,506	991	219	3,820
Total	284	377	26,540	2,522	4,279	34,002

Source: Landfire 2008

3.8.2.1 OWNERSHIP

Figure 3.8-2 shows land ownership in the ROI, and Table 3.8-3 quantifies the surface ownership underlying each of the proposed PRTC airspace elements. Over half the land under the existing Powder River A and B MOAs (about 55 percent), is privately owned. About 36 percent of the land is federal (public) land and about 9 percent is state-owned. State-owned land includes dispersed school sections (brown dots on Figure 3.8-2).

The expanded PRTC area includes a slightly different mix of ownership. The majority (80 percent) of the land under the proposed PRTC is privately owned. Most of the private land in the ROI has split estate ownership, with the surface held privately and the mineral and oil and gas rights held by the federal government. Much of the private land is used for grazing, agriculture, and some land is made available for hunting by the public. The federal government leases mineral rights, along with the surface use of private land needed to extract the resources.

Native American reservations account for just over 6 percent of the ROI, mostly concentrated under two proposed airspace units, PR-1 and PR-4. All of the Northern Cheyenne and portions of the Crow Reservations are under the proposed PR-1A/B/C/D MOAs. Portions of the Cheyenne River Sioux and Standing Rock Indian Reservations are under the proposed PR-4 MOA. Agriculture and grazing are dominant uses on these tribal lands. The Northern Cheyenne and Crow Reservations have extensive coal reserves.

About 13 percent of the land surface is federal land managed by the USFS or BLM. Both agencies manage lands for multiple purposes, including productive or consumptive uses such as energy production, timbering, hunting, and grazing, and non-consumptive uses such as dispersed recreation and resource conservation. The Wyoming portion of the ROI is almost entirely federally-owned interspersed with state land. Private land is mostly along rivers and streams. State land (about 5 percent of the ROI) is interspersed in the private and federal lands. State land is typically used and managed like surrounding lands, with the states deriving tax revenues from productive uses.

Table 3.8-3. Land Ownership in ROI (square miles)

Preferred Mitigated Airspace	*Federal*	*Local Govt*	*Military*	*Native American*	*Private*	*State*	*Total*
Gap A Low/High MOA, Gap A ATCAA	124	0	0	0	811	13	**948**
Gap B Low/High MOA, Gap B ATCAA	150	0	0	0	1,539	0	**1,689**
Gap C Low/High MOA, Gap C ATCAA	15	0	0	0	655	0	**670**
Gateway East ATCAA	101	0	0	0	2,741	0	**2,842**
Gateway West ATCAA	679	0	1	0	3,008	124	**3,812**
Powder River 1A Low/High MOA, PR-1A ATCAA	0	1	0	123	638	0	**762**
Powder River 1B Low/High MOA	73	0	0	1	1,146	0	**1,220**
Powder River 1C Low/High MOA, PR-1C ATCAA	1	0	0	369	308	0	**678**
Powder River 1D Low/High MOA	851	0	0	742	1,681	30	**3,304**
Powder River 2 ATCAA (note 2)	1	0	0	0	57	4	**62**
Powder River 2 Low/High MOA/ATCAA	1,643	0	0	1	6,403	110	**8,157**
Powder River 3 Low/High MOA	555	8	0	0	3,971	0	**4,534**
Powder River 4 Low/High MOA	259	0	0	1,226	3,791	0	**5,276**
Total	**4,452**	**9**	**1**	**2,462**	**26,749**	**281**	**33,954**

Notes:
1. Excludes 48 square miles of water bodies (ownership not classified).
2. Portion of PR-2 ATCAA that does not have MOA; for total area of ATCAA, sum both PR-2 rows. Area is not double-counted as shown.
Sources: BLM Montana State Office 2009; BLM Wyoming State Office 2013; U.S. Census Bureau, 2010a

Under the existing Powder River MOAs, the BLM administers land within the Miles City Field Office in Montana, a small portion of the land in the Buffalo and Newcastle Field Offices in Wyoming, and the North Dakota and South Dakota Field Offices. Under the existing Powder River airspace, the USFS administers portions of the Custer National Forest, with segments in the Ashland and Sioux Ranger Districts. The Ashland Ranger District has one of the largest grazing programs in the nation, and is rich in coal and wildlife. The Sioux Ranger District, located in the southeast corner of Montana and the northwest corner of South Dakota, is comprised of hills or mesas of ponderosa pine rising above rolling grasslands. The area offers excellent antelope, mule deer, white-tail deer and game bird hunting. The area is rich in archeology, paleontology, produces some oil, and supports a sizable livestock population. One of the largest populations of Merlins (a small falcon) is found in the Sioux Ranger District (USDA USFS 2008).

Under the proposed PRTC, BLM administers a larger portion of the federal lands of these same administrative areas named above, and the mineral rights on most of the state and private land. The USFS manages additional units of the Custer National Forest in Montana, the Thunder Basin National Grassland in Wyoming, Black Hills National Forest (spanning Wyoming and South Dakota), Grand River National Grasslands in South Dakota, and the Little Missouri National Grasslands in North Dakota. These areas all offer recreational resources, particularly hunting and some fishing. Figure 3.8-3 shows the location of the national forest and grasslands in the ROI.

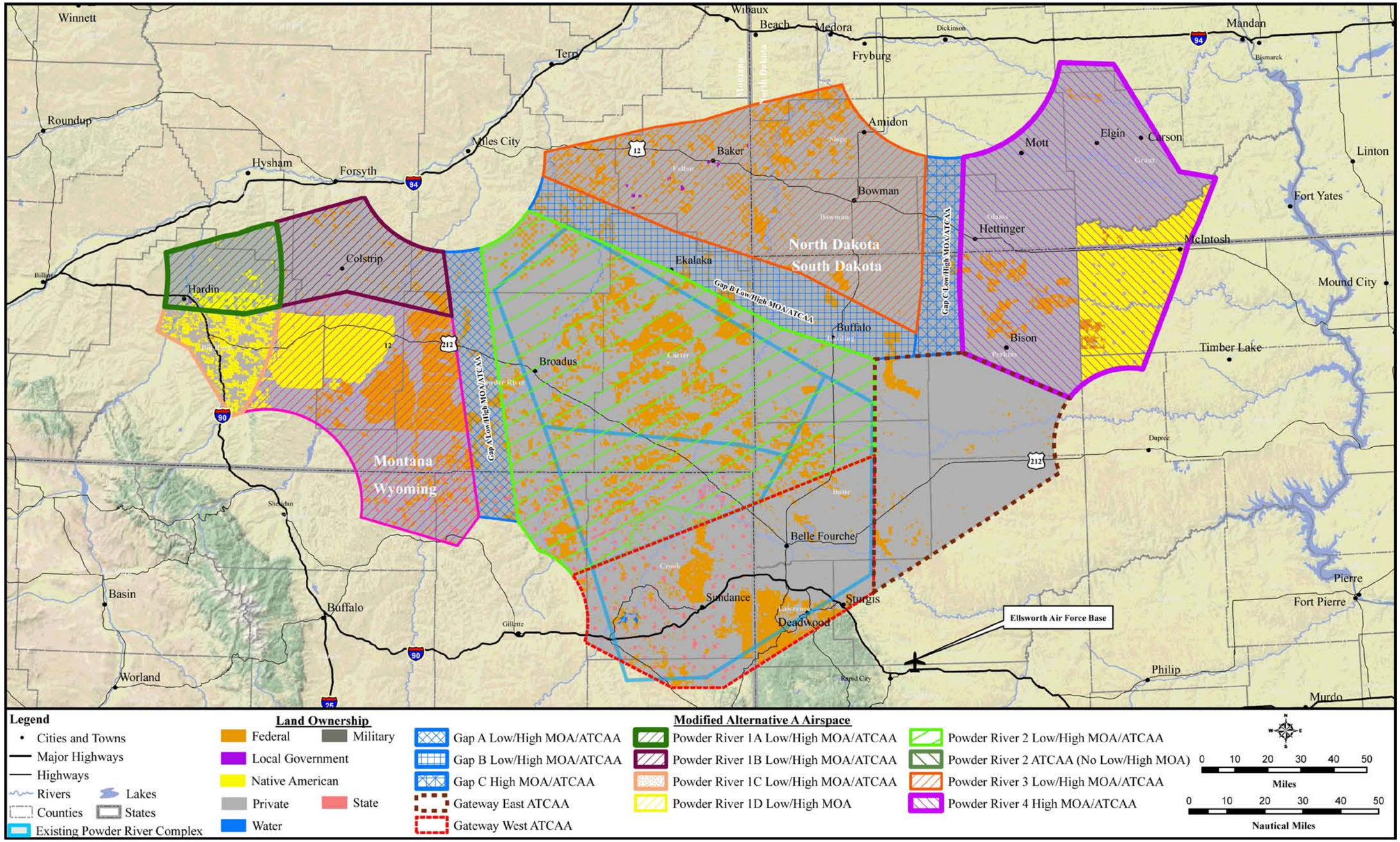

Figure 3.8-2. Land Ownership in the ROI

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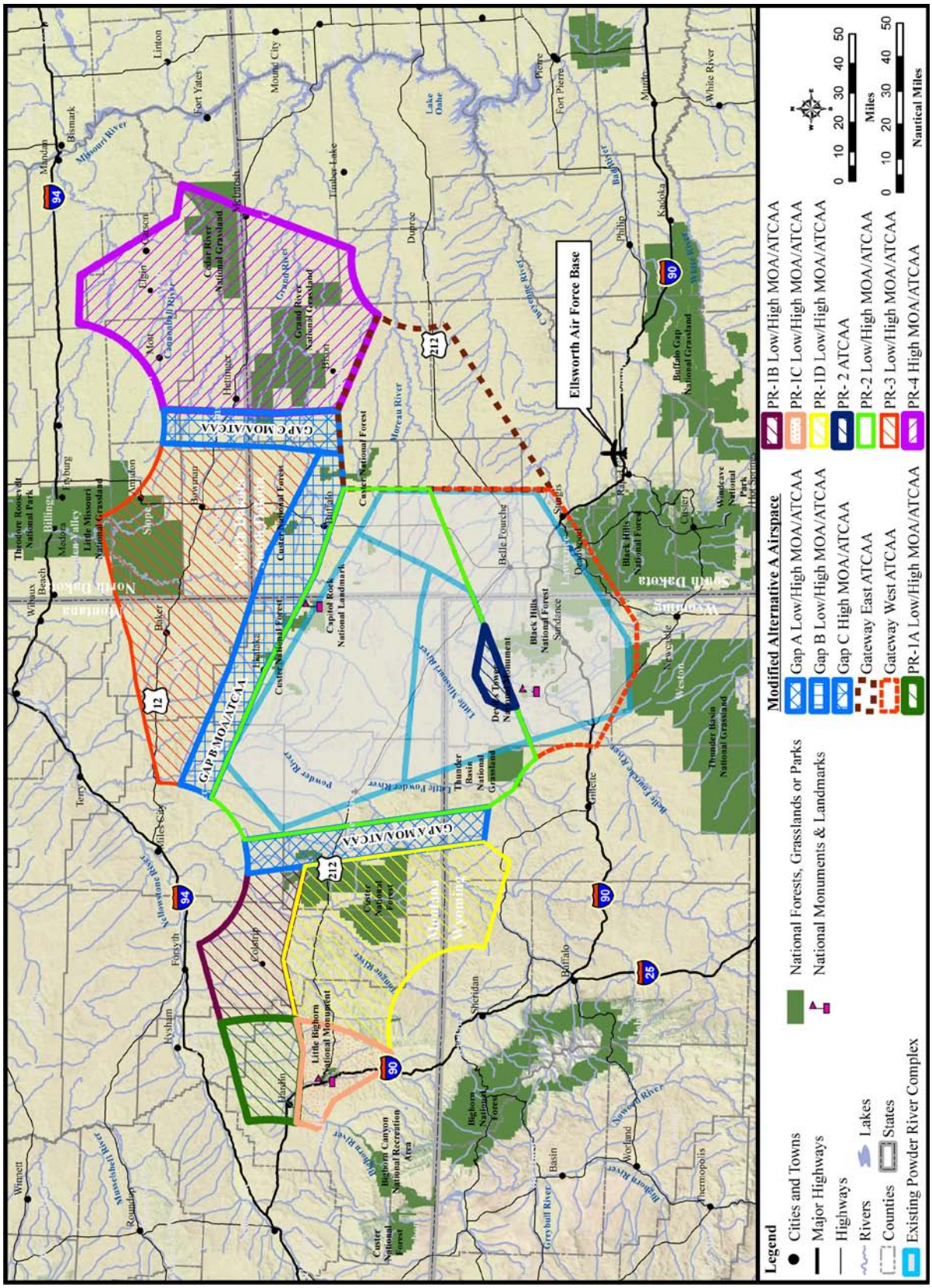

Figure 3.8-3. Special Use Areas in the ROI

3.8.2.2 RANCHING, FARMING, AND RURAL COMMUNITIES

Ranching and farming are well-established activities that define the regional character and economy since settlement by Americans of European descent. Ranching and farming have become important activities of Native Americans within the ROI. Agricultural operations tend to occur in rural regions. In the ROI, these regions tend to be quiet with wide open spaces with expansive vistas. Ranch operations include cattle round-ups for branding and shipping, horseback riding to maintain property in remote areas, and light aircraft for surveillance. Some ranchers and farmers consider the ability to maintain their operations with minimal outside intrusion to be a quality of life factor.

3.8.2.3 SPECIAL USE AREAS

Some federal land within the ROI is managed and protected for particular resource values or attributes such as wilderness or wildlife preserves. The area also has units of the National Park system, State Parks, and National Monuments. Table 3.8-4 lists major special use areas in the ROI (managed by state and federal entities for their specific qualities) and primary attractions (mostly private or commercial) of the area. The ROI includes portions of the Custer and Black Hills National Forests, Thunder Basin National Grassland, Cedar River and Grand River National Grasslands. These areas are popular for recreation, including hunting, fishing, and birding. Both USFS and BLM designate areas or locations with specific attributes or resource value for special management. There are two classified National Landmarks in the USFS Sioux Ranger District, the Castles and Capitol Rock. The Castles, located in the Slim Buttes Unit in South Dakota, are a massive limestone uplift that resembles a medieval castle. Capitol Rock, located in the Long Pines Unit in Montana, is a massive white limestone uplift that resembles the Nation's capitol building.

There are no wilderness areas or wild and scenic river segments under the proposed airspace.

The open spaces and this statue in Belle Fourche help explain the perspective of residents and visitors who value the western heritage of the area.

Table 3.8-4. Special Use Areas and Points of Interest in the ROI

Airspace	*Special Area*	*Attraction/Uses*
Existing Powder River airspace	Custer National Forest	Timber, recreation, hunting, fishing, grazing
Proposed PRTC		
PR-1A MOA/ATCAA	Little Bighorn Battlefield National Monument	Historic value. Tourism. Annual visitation ranges between 300,000 and 500,000 visits per year
	Custer National Forest	Timber, recreation, hunting, grazing
PR-1B MOA/ATCAA	Custer National Forest	Timber, recreation, hunting, grazing
PR-1C MOA/ATCAA	Little Bighorn Battlefield National Monument	Historic value. Tourism. Recreation,
	Two Leggins Fishing Access Site	Recreation, fishing

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Table 3.8-4. Special Use Areas and Points of Interest in the ROI

Airspace	*Special Area*	*Attraction/Uses*
PR-1D MOA/ATCAA	Custer National Forest	Timber, recreation, hunting, grazing;
	Poker Jim Research Natural Area (USFS)	Ecological research
	Buffalo Creek and Zook Creek Wilderness Study Areas (BLM)	Diverse outdoor recreation
	Hells Half Acre Area of Critical Environmental Concern	Geologic attraction/feature of interest
PR-2 MOA/ ATCAA	Custer National Forest	Timber, recreation, hunting, fishing, grazing
	Thunder Basin National Grassland	Exceptional wildlife viewing, hunting, fishing, undeveloped camping, livestock grazing
	Capitol Rock National Landmark	Massive limestone formation in prairie setting.
	Black Hills National Forest	Timber, recreation, hunting, fishing, grazing
	Wickham Gulch Camp Recreation Site	Diverse outdoor recreation
	Finger Buttes Area of Critical Environmental Concern (BLM)	Scenic area, recreation
PR-3 MOA/ ATCAA	Little Missouri National Grassland	Recreation, hunting (particularly waterfowl), spectacular badlands landscape, hiking, camping, horseback riding, photography, canoeing, fishing, hunting, and backpacking
	Custer National Forest	Timber, recreation, hunting, fishing, grazing
	Buffalo Creek Wilderness Study Area (BLM)	Recreation, hunting
	White Lake National Wildlife Refuge	Wildlife protection
	South Sandstone Reservoir (State Game and Fish site)	Diverse outdoor recreation
	Medicine Rocks State Park	Diverse outdoor recreation
	Stewart Lake National Wildlife Refuge	Wildlife protection
	Spring Creek, Speck Davis Pond, Alkali Creek, Cedar Lake Wildlife Management Area	State wildlife management and recreation
	Bowman Haley Lake (USACE)	Diverse outdoor recreation
PR-4 MOA/ ATCAA	Grand River National Grassland	Recreation, remote, wildlife /nature viewing, hunting (particularly waterfowl), cultural interest
	Cedar River National Grassland	Recreation, remote, wildlife /nature viewing, hunting (particularly waterfowl), cultural interest
	Dakota Prairie National Grasslands	Diverse outdoor recreation
	Pretty Rock National Wildlife Refuge	Wildlife protection
	Owen Lake, McIntosh, Lemmon Lake, North Lemmon Lake, Indian Creek, C.C. Lee, Dogtown, Vobejda Dam, Shadehill Reservoir Game Production Areas	State-managed game production areas, recreation, hunting
	Lake Tschida (Heart Butte Reservoir (BOR)	Diverse outdoor recreation, fishing, boating
	Hugh Glass State Recreation Area	Diverse outdoor recreation
	Shadehill Reservoir State Recreation Area	Diverse outdoor recreation
	Llewellyn Johns State Recreation Area	Diverse outdoor recreation

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Table 3.8-4. Special Use Areas and Points of Interest in the ROI

Airspace	*Special Area*	*Attraction/Uses*
Gap A MOA/ATCAA	Custer National Forest	Timber, recreation, hunting, fishing, grazing
Gap B MOA/ATCAA	Custer National Forest	Timber, recreation, hunting, grazing
	Medicine Rocks State Park	Diverse outdoor recreation
	Macnab Pond Recreation Site	Diverse outdoor recreation
Gap C MOA/ATCAA	Grand River National Grassland	Recreation, hunting (particularly waterfowl)
	Dakota Prairie National Grasslands	Recreation, hiking, fishing
Gateway East ATCAA	Custer National Forest	Timber, recreation, hunting, grazing
	Opal Lake (SD State Game and Fish)	Diverse outdoor recreation, fishing
Gateway West ATCAA	Black Hills National Forest	Timber industries; hunting and fishing; diverse recreation; developed campgrounds, scenic by-ways
	Whitewood Creek, Newell Lake, Marcoux, Iron Creek Lake, Harrison Badger, Trucano, Coxes Mirror Lakes, Belle Fourche Dam, Beilage Hepler Game Production Areas	State-managed game management, recreation, hunting
	Bear Butte Lake State Recreation Area; Rocky Point State Recreation Area	Diverse outdoor recreation
	Northern Hills Spring Creeks Conservation Area	Wildlife conservation
	Bear Butte National Wildlife Refuge	Wildlife protection
	Thunder Basin National Grassland	Diverse outdoor recreation
	Custer National Forest	Timber, recreation, hunting, fishing, grazing
	Devils Tower National Monument	Climbing, spectacular rock formation, interpretive site
	Town of Sturgis	Annual motorcycle rally

BLM = Bureau of Land Management; USACE = U.S. Army Corps of Engineers; USFS = U.S. Forest Service

3.8.2.4 RECREATION AND TOURISM

Access to and quality of recreation opportunities is important within the ROI. Activities such as off-road vehicles, hunting, fishing, hiking, horseback riding, and rock climbing occur on both public and private lands. Devils Tower National Monument, Badlands National Park, state parks, battlefields and other historic sites (such as the Little Bighorn Battlefield National Monument) situated within the study area are revered as remote, contemplative, or educational sites. People who choose to live in or visit this region often value its open space, isolation, and natural beauty.

The ROI includes a wide range of recreational opportunities which provide both important social and economic benefits. The wide open spaces and remoteness of the study area provide settings with a high degree of solitude. Popular activities include camping, hunting (deer and antelope, waterfowl), fishing, nature viewing, hiking, motorized and non-motorized biking, off-road vehicle use, scenic driving, cross country skiing, and snowmobile use. Most public lands have specific off-road designations to provide safe, quality recreational opportunities while minimizing adverse impacts on sensitive resource values (ACC 2007). Many Special Recreation Management Areas provide areas for specific activities in order to accommodate a wide range of public preferences, including those that seek quiet activities and those that generate noise as part of the activity. Hunting, as an organized public recreational activity, occurs

on suitable private land throughout the ROI. For example, North Dakota Department of Game and Fish has developed the Private Land Open to Sportsmen program, for leasing land for public pedestrian access as part of a wider conservation program. In addition, some private land owners throughout the ROI run commercial hunting operations as a source of income.

3.9 SOCIOECONOMICS

3.9.1 *DEFINITION OF THE RESOURCE*

Socioeconomics is defined as the basic attributes and resources associated with the human environment, particularly population and economic activity. Economic activity typically encompasses employment, personal income, and regional industries. Changes to these fundamental socioeconomic components can influence other resources such as housing availability, utility capabilities, and community services.

The ROI for socioeconomics consists of 29 counties across rural southeastern Montana, northeastern Wyoming, southwestern North Dakota, northwestern South Dakota (Figure 3.9-1). Throughout this Socioeconomics section, the term ROI refers to these 29 counties in their entirety. The term affected area is the specific land area under the proposed PRTC airspace boundaries. There are eight counties in which over 90 percent of the counties' land area is included under the proposed airspace (see Table 3.9-1). Given the rural nature of the ROI, many of the population centers are small or are outside the airspace. The focus of this analysis is based on county-level data and combined county-level data from the affected counties. More detailed data, at the census block-group level, is available regarding certain demographic characteristics. Discussions of these demographic data are specific to those portions of the counties underlying the proposed airspace.

3.9.2 *EXISTING CONDITIONS*

3.9.2.1 POPULATION AND HOUSING

Portions of the airspace associated with the proposed action have been in existence for many years. The existing Powder River A and B MOAs cover most of the area proposed for the PR-2 MOA. The PRTC changes being proposed would alter the current airspace configuration by expanding the total affected airspace to include counties underlying the proposed PR-1A/B/C/D MOAs and ATCAAs, Gap A MOA and ATCAA, Gateway West ATCAA, Gateway East ATCAA, Gap B MOA and ATCAA, PR-4 MOA and ATCAA, Gap C MOA and ATCAA, and PR-3 MOA and ATCAA. Some areas under the proposed edges of the PR-2 MOA and ATCAA are outside the current Powder River A and B MOAs.

The Powder River A and B MOAs were configured to avoid densely populated and metropolitan or urban areas. The proposed PRTC by design tends to be also located over rural and less developed areas. While populated areas do occur within the boundaries of the PRTC affected airspace, these areas are typically scattered, relatively low in density compared to urbanized areas, and would be avoided during training to the maximum extent possible. The following information concentrates on the existing conditions in each county that could be affected under the proposed airspace. The information includes counties under the existing Powder River airspace which would continue to be affected by military aircraft training under either the proposed PRTC or No Action.

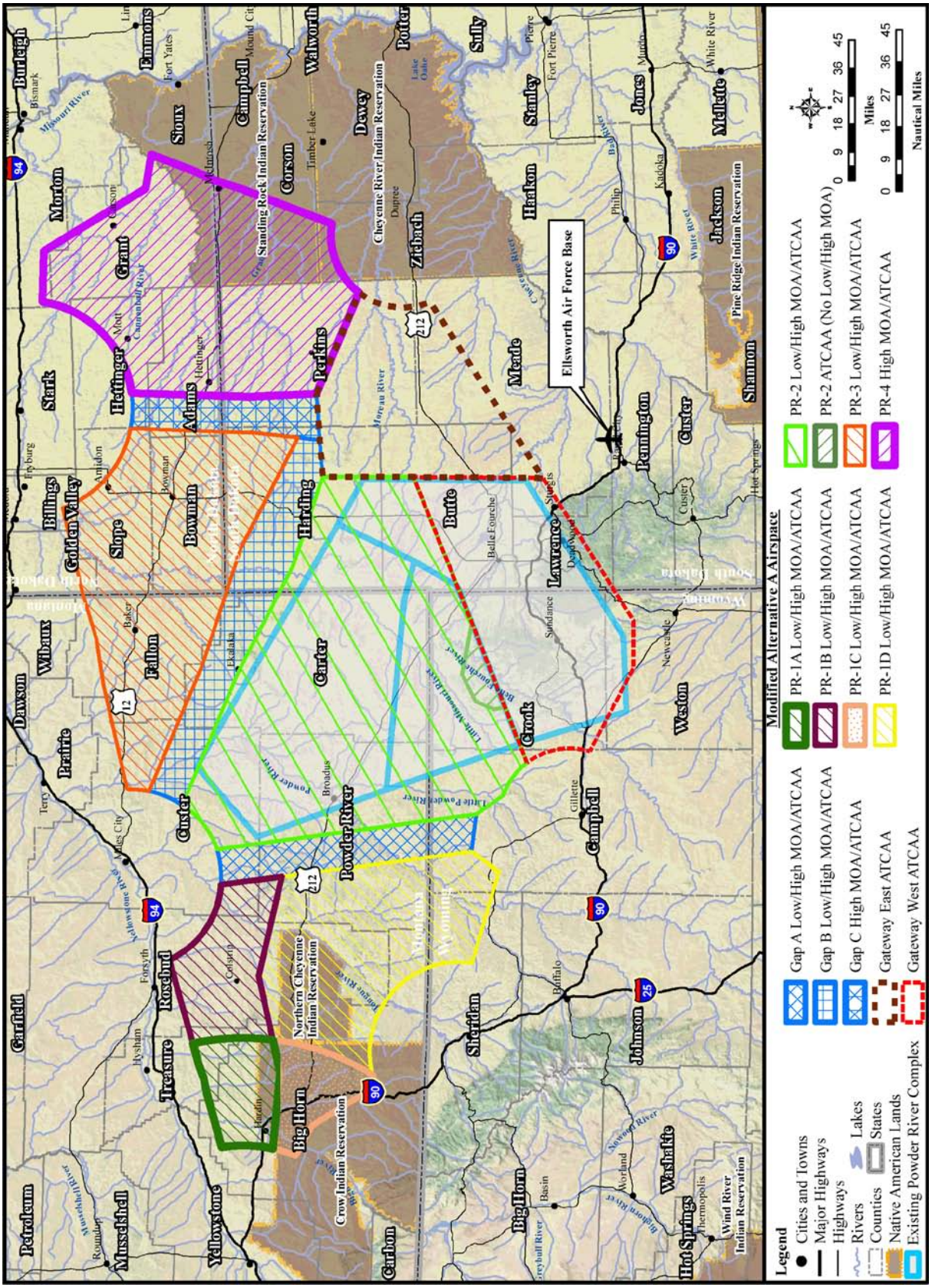

Figure 3.9-1. Counties Under or Around the Existing and Proposed Airspace

Table 3.9-1. Land Area under the PRTC Affected Airspace by County

County	*Current Powder River airspace (square miles)*	*Expanded PRTC (square miles)*	*% of Expanded PRTC Area*
MT	**4,040**	**13,841**	**40.7%**
Big Horn	—	2,093	6.2%
Carter	2,463	3,348	9.8%
Custer	325	1,629	4.8%
Fallon	—	1,373	4.0%
Powder River	1,252	3,297	9.7%
Rosebud	—	1,895	5.6%
Treasure	—	205	<1%
ND	**0**	**5,502**	**16.2%**
Adams	—	989	2.8%
Billings	—	30	<1%
Bowman	—	1,167	3.4%
Golden Valley	—	86	<1%
Grant	—	1,345	4.0%
Hettinger	—	587	1.7%
Morton	—	59	<1%
Sioux	—	295	<1%
Slope	—	942	2.8%
Stark	—	2	<1%
SD	**2,760**	**10,186**	**30.0%**
Butte	1,516	2,266	6.7%
Corson	—	897	2.5%
Harding	581	2,678	7.9%
Lawrence	294	580	1.7%
Meade	369	912	2.7%
Perkins	—	2,748	8.1%
Ziebach	—	105	<1%
WY	**2,787**	**4,473**	**13.1%**
Campbell	99	980	2.9%
Crook	2,688	2,839	8.3%
Sheridan	—	387	1.1%
Weston	—	266	<1%
Total	**9,587**	**34,002**	**100.0%**

Source: ESRI 2000

POPULATION CHARACTERISTICS

Population data for the ROI are presented in Table 3.9-2. The total 2010 population for the 29 counties in the ROI was 370,903 persons, representing 12.2 percent of the total population of the four affected states of 3.04 million persons. This number of persons includes the population in all the counties in Table 3.9-1. Of these 370,903 persons, a total of approximately 89,099 persons would be located under the proposed PRTC MOAs and ATCAAs. This includes persons under the existing MOAs and ATCAAs.

Population change during the 10 years, from 2000 to 2010, varied greatly across the affected counties. The population in several counties decreased during the time period (see Table 3.9-2). The Treasure County, MT population decreased 16.6 percent, while the population of Grant County in North Dakota decreased 15.7 percent. Several other affected counties in North Dakota and South Dakota decreased in population by 10 percent or more. Some counties in the ROI also experienced moderate to high rates of population growth. The population in Campbell County, WY increased 36.9 percent. Other affected counties experienced population growth ranging from 1.5 percent to 20.3 percent. In general, there has been a concentration of rural population from smaller farms or communities to larger communities within the ROI.

Counties currently under the existing Powder River MOAs and ATCAAs which would continue to be under the proposed PR-2 MOA/ATCAA include portions of Carter, Custer, and Powder River in Montana; Harding, Butte, and Lawrence in South Dakota; and Campbell and Crook in Wyoming. Table 3.9-3 presents the population under the existing Powder River A and B MOAs and the population under the proposed PR-1A/B/C/D, PR-2, PR-3, and PR-4 MOA/ATCAAs. Persons under the existing Powder River A and B MOAs (most of the proposed PR-2) are in areas of existing low-altitude overflight. Persons under the existing Powder River A and B MOAs (most of the proposed PR-2) are in areas of existing low-altitude overflight. Persons under the proposed PR-1A, PR-1B, PR-1C, PR-1D, and PR-3 MOAs (and PR-4 MOA under Modified Alternative B), as well as the associated Gap MOAs (for not more than 10 days per year) would be in areas where low-level overflight could occur to 500 feet AGL. Table 3.9-3 presents the estimated number of persons under the existing Gateway ATCAA which has a floor of FL180 (18,000 feet MSL). Persons under the proposed Gateway East and West ATCAAs are also estimated in Table 3.9-3. These individuals would not be expected to experience training aircraft in the proposed PRTC below 18,000 feet MSL.

As of 2010, the population density in the affected areas under the proposed MOAs ranged from 0.3 persons per square mile in Carter County to 36.4 persons per square mile in Pennington County (see Table 3.9-2). The average population density in the ROI counties including urban areas outside the affected area is 5.8 persons per square mile. Population density is 8.3 persons per square mile in the combined four-state area. Population density in the U.S. overall is 87.4 persons per square mile.

The rural nature of the affected area is evident by reviewing the detailed Census data for lands under the proposed PRTC airspace, as presented in Table 3.9-4. The average population density under the affected airspace is 2.62 persons per square mile, which is lower than the 29-county ROI average density of 5.8 persons per square mile.

The estimated resident population under the proposed PRTC MOA and ATCAA airspace is 89,099 persons (Table 3.9-4). This estimate was derived using Census Tract and Block Group data from the 2010 Census. The 2010 Census is the latest data available at the Census Tract and Block Group level. The total populations of Carter County and Powder River County, MT; Adams County and Bowman County, ND; Butte County and Harding County, SD; and Crook County, WY are included under the affected airspace. One other county, Perkins County, has over 90 percent of its respective population under the affected airspace. Table 3.9-3 presents estimated population under each of the proposed PRTC airspace units.

Table 3.9-2. Population and Population Change by ROI County

Location	Population		Percent Change, 2000-2010	Population Density, 2010 (per mile)^2
	2000	2010		
MT	**902,195**	**989,415**	**9.7%**	**6.8**
Big Horn	12,671	12,865	1.5%	2.6
Carter[1]	1,360	1,160	-14.7%	0.3
Custer[1]	11,696	11,699	0.0%	3.1
Fallon	2,837	2,890	1.9%	1.8
Powder River[1]	1,858	1,743	-6.2%	0.5
Rosebud	9,383	9,233	-1.6%	1.8
Treasure	861	718	-16.6%	0.7
ND	**642,200**	**672,591**	**4.7%**	**9.7**
Adams	2,593	2,343	-9.6%	2.4
Billings	888	783	-11.8%	0.7
Bowman	3,242	3,151	-2.8%	2.7
Golden Valley	1,924	1,680	-12.7%	1.7
Grant	2,841	2,394	-15.7%	1.4
Hettinger	2,715	2,477	-8.8%	2.2
Morton	25,303	27,471	8.6%	14.3
Sioux	4,044	4,153	2.7%	3.8
Slope	767	727	-5.2%	0.6
Stark	22,636	24,199	6.9%	18.1
SD	**754,844**	**814,180**	**7.9%**	**10.7**
Butte[1, 2]	9,094	10,110	11.2%	4.5
Corson	4,181	4,050	-3.1%	1.6
Harding[1, 3]	1,353	1,255	-7.2%	0.5
Lawrence[1, 4]	21,802	24,097	10.5%	30.1
Meade[1, 4]	24,253	25,434	4.9%	7.3
Pennington	88,565	100,948	14.0%	36.4
Perkins[2]	3,363	2,982	-11.3%	1.0
Ziebach	2,519	2,801	11.2%	1.4
WY	**493,782**	**563,626**	**14.1%**	**5.8**
Campbell[1]	33,698	46,133	36.9%	9.6
Crook[1, 2]	5,887	7,083	20.3%	2.5
Sheridan	26,560	29,116	9.6%	11.5
Weston[1, 4]	6,644	7,208	8.5%	3.0

Notes: 1. Portions of county under existing MOAs or ATCAAs.
2. Proposed training airspace 50 to 75 percent ATCAA.
3. Proposed training airspace 10 to 20 percent ATCAA.
4. Proposed training airspace all ATCAA.

Source: U.S. Census Bureau 2009, 2013

Table 3.9-3. Population under Proposed PRTC Airspace by Airspace (2010)

Airspace Unit	*Population Under Affected Airspace*	*Percent of Affected Population*
Gap A Low/High MOA, Gap A ATCAA	1,057	1.2
Gap B Low/High MOA, Gap B ATCAA	814	0.9
Gap C Low/High MOA, Gap C ATCAA	1,091	1.2
Gateway East ATCAA	3,327	3.7
Gateway West ATCAA	43,092	48.4
Powder River 1A Low/High MOA, PR-1A ATCAA	3,322	3.7
Powder River 1B Low/High MOA	3,254	3.7
Powder River 1C Low/High MOA, PR-1C ATCAA	2,491	2.8
Powder River 1D Low/High MOA	8,158	9.2
Powder River 2 ATCAA	140	0.2
Powder River 2 Low/High MOA	7,662	8.6
Powder River 3 Low/High MOA	6,792	7.6
Powder River 4 High MOA	7,899	8.9
Proposed PRTC	**89,099**	**100.00%**

Source: U.S. Census Bureau 2010b

Table 3.9-4. Population Under the Proposed PRTC Airspace by County (2010)

Location	*Population Under Affected Airspace*	*Percent of Affected Population*	*Percent of Total County/State Population*	*Population Density Under Affected Airspace (per mile)*^{2}
MT	**20,206**	**22.7**	**2.0**	**1.5**
Big Horn	7,486	8.4	58.2	3.6
Carter[1]	1,160	1.3	100.0	0.3
Custer[1]	820	0.9	7.0	0.5
Fallon	2,445	2.7	84.6	1.8
Powder River[1]	1,743	2.0	100.0	0.5
Rosebud	6,402	7.2	69.3	3.4
Treasure	149	0.2	20.8	0.7
ND	**10,237**	**11.5**	**1.5**	**1.9**
Adams	2,343	2.6	100.0	2.4
Billings	21	0.0	2.6	0.7
Bowman	3,151	3.5	100.0	2.7
Golden Valley	144	0.2	8.6	1.7
Grant	1,934	2.2	80.8	1.4
Hettinger	1,249	1.4	50.4	2.1
Morton	258	0.3	0.9	4.4
Sioux	570	0.6	13.7	1.9
Slope	562	0.6	77.3	0.6
Stark	6	0.0	0.0	2.4
SD	**45,798**	**51.4**	**5.6**	**4.5**
Butte[1, 2]	10,110	11.3	100.0	4.5
Corson	848	1.0	20.9	0.9
Harding[1, 3]	1,255	1.4	100.0	0.5
Lawrence[1, 4]	21,531	24.2	89.4	37.1
Meade[1, 4]	9,070	10.2	35.7	9.9

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Table 3.9-4. Population Under the Proposed PRTC Airspace by County (2010)

Location	*Population Under Affected Airspace*	*Percent of Affected Population*	*Percent of Total County/State Population*	*Population Density Under Affected Airspace (per mile)*[2]
Pennington	0	0.0	0.0	0.0
Perkins[2]	2,836	3.2	95.1	1.0
Ziebach	149	0.2	5.3	1.4
WY	**12,858**	**14.4**	**2.3**	**2.9**
Campbell[1]	3,839	4.3	8.3	3.9
Crook[1, 2]	7,083	7.9	100.0	2.5
Sheridan	1,620	1.8	5.6	4.2
Weston[1, 4]	375	0.4	5.2	1.4

Notes: 1. Portions of county under existing MOAs or ATCAAs.
2. Proposed training airspace 50 to 75 percent ATCAA.
3. Proposed training airspace 10 to 20 percent ATCAA.
4. Proposed training airspace all ATCAA.

Source: U.S. Census Bureau 2010b

HOUSING CHARACTERISTICS

Housing supply in the ROI is presented in Table 3.9-5. The ROI had a total of 168,557 units in 2010 including urban areas outside the affected area. The 2010 Census is the latest data available for housing in these rural areas. Occupied housing units amounted to 149,192 units, resulting in a housing occupancy rate of about 89 percent. Owner-occupied units account for 69 percent of occupied units, with the remaining 31 percent occupied by renters. Vacancy rates widely vary throughout the ROI. The lowest vacancy rate is in Stark, ND at 6.1 percent while the highest vacancy rate is in Carter, MT at 34.3 percent. There are approximately 43,287 housing units under the proposed PRTC, as presented in Table 3.9-6.

Table 3.9-5. Housing Characteristics by ROI County (2010)

Location	*Household Size, 2010*	*Total Housing Units, 2010*	*Occupied Housing Units*	*Owner-Occupied Units*	*Renter-Occupied Units*
MT	2.35	482,825	409,607	278,418	131,189
Big Horn	3.18	4,695	4,004	2,560	1,444
Carter	2.16	810	532	398	134
Custer	2.24	5,560	5,031	3,349	1,682
Fallon	2.32	1,470	1,233	902	331
Powder River	2.26	1,022	755	579	176
Rosebud	2.7	4,057	3,395	2,259	1,136
Treasure	2.14	422	335	241	94
ND	2.3	317,498	281,192	183,943	97,249
Adams	2.09	1,377	1,098	797	301
Billings	2.16	484	358	273	85
Bowman	2.22	1,683	1,385	1,036	349
Golden Valley	2.1	967	774	567	207
Grant	2.1	1,690	1,128	876	252
Hettinger	2.19	1,414	1,056	897	159

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Table 3.9-5. Housing Characteristics by ROI County (2010)

Location	*Household Size, 2010*	*Total Housing Units, 2010*	*Occupied Housing Units*	*Owner-Occupied Units*	*Renter-Occupied Units*
Morton	2.38	12,079	11,289	8,490	2,799
Sioux	3.55	1,311	1,158	486	672
Slope	2.23	436	326	278	48
Stark	2.31	10,735	10,085	6,860	3,225
SD	2.42	363,438	322,282	219,558	102,724
Butte	2.4	4,621	4,160	3,016	1144
Corson	3.21	1,540	1,260	704	556
Harding	2.27	731	539	396	143
Lawrence	2.19	12,756	10,536	6,772	3,764
Meade	2.49	11,000	9,903	7,339	2,564
Pennington	2.38	44,949	41,251	26,792	14,459
Perkins	2.26	1,739	1,291	966	325
Ziebach	3.35	987	836	435	401
WY	2.42	261,868	226,879	157,077	69,802
Campbell	2.66	18,955	17,172	12,595	4,577
Crook	2.41	3,595	2,921	2,317	604
Sheridan	2.27	13,939	12,360	8,501	3,859
Weston	2.28	3,533	3,021	2,349	672

Source: U.S. Census Bureau 2010b

Table 3.9-6. Housing Under the Proposed PRTC Airspace (2010)

Location	*Housing Under Affected Airspace*
MT	8,637
Big Horn	2,556
Carter	810
Custer	401
Fallon	1,244
Powder River	1,022
Rosebud	2,516
Treasure	88
ND	5,910
Adams	1,377
Billings	13
Bowman	1,683
Golden Valley	83
Grant	1,365
Hettinger	728
Morton	129
Sioux	192
Slope	337
Stark	3

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Table 3.9-6. Housing Under the Proposed PRTC Airspace (2010)

Location	*Housing Under Affected Airspace*
SD	22,574
Butte	4,621
Corson	352
Harding	731
Lawrence	10,945
Meade	4,219
Pennington	0
Perkins	1,654
Ziebach	52
WY	6,166
Campbell	1,572
Crook	3,566
Sheridan	849
Weston	179

3.9.2.2 ECONOMIC ACTIVITY

EMPLOYMENT AND JOB COMPOSITION

Employment in the four states overall increased between 2000 and 2012 (the most recent data available). However, employment growth in the ROI counties was not consistent. Several counties experienced a decline in employment ranging from a decrease of 0.13 percent in Meade County, SD to a decrease of 18.95 percent in Grant County, ND. The majority of counties in the ROI experienced at least nominal employment growth during this period. Slope County, ND experienced the greatest percentage increase in employment growth with an increase of over 100 percent between 2000 and 2012 with the addition of 442 jobs for a total 2012 employment of 861 jobs.

Total employment characteristics of the ROI counties in their respective states are presented in Table 3.9-7. While individual counties may have higher or lower rates of unemployment, the average unemployment rate for the ROI counties was lowest in North Dakota an average unemployment rate of 2.6 percent in 2012. The highest average unemployment rate was in Montana with an average unemployment rate of 6.7 percent. Unemployment in most of the individual counties increased between 2000 and 2012 with the largest increase of 3.4 percentage points occurring in Big Horn, MT.

Table 3.9-7. Employment Characteristics in ROI

	2000			*2012*		
ROI	*Civilian Labor Force*	*Employment*	*Unemployment Rate*	*Civilian Labor Force*	*Employment*	*Unemployment Rate*
MT ROI Counties	19,489	18,324	6.0%	19,959	18,628	6.7%
ND ROI Counties	35,336	34,301	2.9%	43,384	42,261	2.6%
SD ROI Counties	82,126	79,896	2.7%	90,241	86,084	4.6%
WY ROI Counties	41,135	39,683	3.5%	51193	48,640	5.0%

Source: U.S. Bureau of Labor Statistics 2000; 2013

Persons employed at the Northern Cheyenne Health Center, designed to improve wellness for Native American residents, are part of the regional services employment.

Table 3.9-8 shows employment by industry in the ROI. Farm employment accounts for approximately 3.3 percent and 3.5 percent for the ROI counties in South Dakota and Wyoming during 2011, respectively. In the ROI counties in North Dakota and Montana, farm employment accounts for 9 percent and 10.5 percent of total employment in 2011, respectively. State and local government accounts for over 19 percent in the ROI counties of Montana. State and local government comprises over 10 percent of total employment in the ROI counties in South Dakota; 12 percent in the ROI counties in North Dakota; and 13.5 percent in the ROI counties in Wyoming (Table 3.9-8). Retail trade is another industry that comprises a large share of total employment in each of the ROI areas with a share of employment ranging between nearly 8.5 percent up to 12.2 percent.

The industrial employment for the ROI counties is affected by the larger communities outside the potentially affected airspace but with portions of the counties potentially affected by the proposed MOA low-level airspace training boundaries. This means that employment for cities such as Miles City, Gillette, and Rapid City is represented in Table 3.9-8. As explained by participants at public meetings, employment under the airspace is generally more rural than the urban areas with more agricultural, recreational-oriented, and localized mining operations. Many participants specifically noted the non-urban aspects of their lifestyle as key reasons why they chose to live in the rural areas of the potentially affected counties.

Table 3.9-8. Distribution of ROI Employment by Industry (2011)

	ROI Counties, MT		*ROI Counties, ND*		*ROI Counties, SD*		*ROI Counties, WY*	
Total Employment	25,864	100.0%	48,588	100.0%	111,742	100.0%	61,958	100.0%
Farm employment	2,715	10.5%	4,390	9.0%	3,731	3.3%	2,194	3.5%
Forestry, fishing, related activities, and other	0	0.0%	127	0.3%	176	0.2%	491	0.8%
Mining	1,913	7.4%	3,162	6.5%	75	0.1%	10,703	17.3%
Utilities	510	2.0%	115	0.2%	339	0.3%	352	0.6%
Construction	1,202	4.6%	3,131	6.4%	7,815	7.0%	5,214	8.4%
Manufacturing	269	1.0%	2,304	4.7%	3,496	3.1%	1,381	2.2%
Wholesale trade	75	0.3%	1,097	2.3%	2,830	2.5%	2,259	3.6%
Retail Trade	2,203	8.5%	4,371	9.0%	13,676	12.2%	5,623	9.1%
Transportation and warehousing	678	2.6%	2,083	4.3%	2,520	2.3%	2,575	4.2%
Information	242	0.9%	625	1.3%	1,318	1.2%	487	0.8%
Finance and insurance	794	3.1%	1,717	3.5%	5,576	5.0%	1,735	2.8%
Real estate and rental and leasing	570	2.2%	1,277	2.6%	4,276	3.8%	2,186	3.5%

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Table 3.9-8. Distribution of ROI Employment by Industry (2011)

	ROI Counties, MT		*ROI Counties, ND*		*ROI Counties, SD*		*ROI Counties, WY*	
Professional and technical services	608	2.4%	1,396	2.9%	4,480	4.0%	2,349	3.8%
Management of companies and enterprises	32	0.1%	69	0.1%	877	0.8%	351	0.6%
Administrative and waste services	318	1.2%	234	0.5%	3,626	3.2%	1,708	2.8%
Educational services	152	0.6%	134	0.3%	1,877	1.7%	289	0.5%
Health care and social assistance	1,222	4.7%	1,114	2.3%	12,449	11.1%	2,939	4.7%
Arts, entertainment, and recreation	531	2.1%	507	1.0%	3,084	2.8%	787	1.3%
Accommodation and food services	1,468	5.7%	2,559	5.3%	11,492	10.3%	3,873	6.3%
Other services, except public administration	1,177	4.6%	2,239	4.6%	6,161	5.5%	2,811	4.5%
Government and government enterprises	6,095	23.6%	7,246	14.9%	19,104	17.1%	9,890	16.0%
Federal, civilian	912	3.5%	693	1.4%	3,335	3.0%	986	1.6%
Military	187	0.7%	507	1.0%	4,591	4.1%	512	0.8%
State and local	4,969	19.2%	5,843	12.0%	11,161	10.0%	8,392	13.5%

Note: Columns may not total as information is not available in some counties due to confidentiality of information but these jobs are included in the total employment.
Source: U.S. Bureau of Economic Analysis 2012

Table 3.9-9 presents a representative view of existing rural employment, which reflects the public input. The employment distribution under these counties demonstrates the greater proportion of farm and forestry employment when compared with the overall ROI county employment in Table 3.9-8.

Table 3.9-9. Representative County Employment under the Proposed PRTC MOAs by Industry (2011)

County	*Total*	*Farm and Forestry*	*Mining, Manufacturing, and Construction*	*Trade and Transpor-tation*	*Professional*[1]	*Education and Health*	*Recreation*[1]	*Government*
MT								
Big Horn	6,432	738	901	599	151	0	126	2,424
Carter	1,147	301	107	107	(D)	15	25	116
Fallon	2,579	290	730	373	47	180	(D)	279
Powder River	1,299	303	72	109	(D)	22	57	204
Rosebud	6,059	518	1,105	419	91	35	146	1,800
ND								
Adams	1,968	403	145	231	(D)	358	(D)	165
Bowman	2,867	379	512	489	82	289	45	262
Grant	1,753	514	29	139	(D)	231	36	190
Hettinger	1,974	510	196	172	(D)	174	(D)	213
Slope	681	235	0	30	10	0	20	39

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Table 3.9-9. Representative County Employment under the Proposed PRTC MOAs by Industry (2011)

County	*Total*	*Farm and Forestry*	*Mining, Manufacturing, and Construction*	*Trade and Transpor-tation*	*Professional*[1]	*Education and Health*	*Recreation*[1]	*Government*
SD								
Harding	1,277	284	132	103	(D)	51	(D)	140
Perkins	2,102	417	126	322	39	184	(D)	298
WY								
Crook	4,389	611	980	464	118	0	130	761
Representative County Totals	**34,527**	**5,503**	**5,035**	**3,557**	**538**	**1,539**	**585**	**6,891**
Representative County Percentages		**17%**	**15%**	**11%**	**2%**	**5%**	**2%**	**21%**

Note: 1. (D) Not shown to avoid disclosure of confidential information but the estimates for this item are included in the totals.
Source: U.S. Bureau of Economic Analysis 2012

INCOME AND EARNINGS

Per capita income and earnings per job for the ROI counties in each state in the years 2000 and 2011 (the most recent data available) are presented in Table 3.9-10. Per capita income in the Montana ROI counties increased approximately 75 percent between 2000 and 2011 an increase of $14,363. During the same time period, per capita income more than doubled in the North Dakota ROI counties and increased by approximately 87 percent and 76 percent, in the ROI counties of South Dakota and Wyoming, respectively.

Table 3.9-10. ROI Income and Earnings

	2000		*2011*	
ROI	*Per Capita Income*	*Earnings per Job*	*Per Capita Income*	*Earnings per Job*
MT ROI Counties	$19,064	$20,557	$33,427	$31,976
ND ROI Counties	$21,385	$21,461	$49,246	$42,112
SD ROI Counties	$20,157	$20,311	$37,632	$41,121
WY ROI Counties	$27,261	$26,466	$47,896	$44,389

Source: U.S. Bureau of Economic Analysis 2009a, 2013

Table 3.9-11 presents the distribution of the earnings by industry in the ROI counties. A large portion of the earnings in the region were generated through government and government enterprises and state and local governments. Mining is also a large source of earnings, particularly in the ROI counties of Wyoming where earnings from the mining industry comprised 28.2 percent of total earnings. Other staple industries include manufacturing, and construction.

Table 3.9-11. ROI Earnings Distribution by Industry in Thousands (2011)

	ROI Counties, MT		*ROI Counties, ND*		*ROI Counties, SD*		*ROI Counties, WY*	
Total Earnings	$908,720	100.0%	$1,870,939	100.0%	$3,756,221	100.0%	$2,947,918	100.0%
Farm earnings	$24,705	2.7%	$20,587	1.1%	$18,943	0.5%	$18,208	0.6%
Forestry, fishing, related activities, and other	$0	0.0%	$2,020	0.1%	$2,663	0.1%	$9,756	0.3%
Mining	$140,284	15.4%	$293,588	15.7%	$2,819	0.1%	$831,987	28.2%
Utilities	$70,294	7.7%	$13,217	0.7%	$33,780	0.9%	$42,321	1.4%
Construction	$55,648	6.1%	$161,019	8.6%	$259,524	6.9%	$253,566	8.6%
Manufacturing	$6,790	0.7%	$142,009	7.6%	$158,875	4.2%	$90,541	3.1%
Wholesale trade	$2,243	0.2%	$50,500	2.7%	$134,593	3.6%	$169,638	5.8%
Retail Trade	$45,891	5.1%	$116,163	6.2%	$324,334	8.6%	$154,752	5.2%
Transportation and warehousing	$30,252	3.3%	$165,899	8.9%	$82,343	2.2%	$167,348	5.7%
Information	$8,905	1.0%	$26,158	1.4%	$51,742	1.4%	$20,846	0.7%
Finance and insurance	$24,495	2.7%	$51,334	2.7%	$193,970	5.2%	$54,515	1.8%
Real estate and rental and leasing	$1,244	0.1%	$14,198	0.8%	$27,667	0.7%	$19,159	0.6%
Professional and technical services	$12,150	1.3%	$62,737	3.4%	$137,999	3.7%	$95,691	3.2%
Management of companies and enterprises	$2,547	0.3%	$4,539	0.2%	$70,363	1.9%	$37,725	1.3%
Administrative and waste services	$3,824	0.4%	$5,016	0.3%	$71,967	1.9%	$48,680	1.7%
Educational services	$984	0.1%	$991	0.1%	$40,663	1.1%	$5,713	0.2%
Health care and social assistance	$45,274	5.0%	$38,041	2.0%	$562,307	15.0%	$124,381	4.2%
Arts, entertainment, and recreation	$6,992	0.8%	$3,800	0.2%	$49,102	1.3%	$7,444	0.3%
Accommodation and food services	$20,062	2.2%	$42,033	2.2%	$205,038	5.5%	$70,342	2.4%
Other services, except public administration	$14,693	1.6%	$54,212	2.9%	$132,127	3.5%	$89,428	3.0%
Government and government enterprises	$309,591	34.1%	$338,275	18.1%	$1,139,209	30.3%	$602,019	20.4%
Federal, civilian	$83,489	9.2%	$58,701	3.1%	$285,628	7.6%	$87,304	3.0%
Military	$9,105	1.0%	$23,011	1.2%	$382,989	10.2%	$22,787	0.8%
State and local	$216,997	23.9%	$256,532	13.7%	$470,592	12.5%	$491,928	16.7%

Note: Columns may not total as information is not available in some counties due to confidentiality of information but the earnings from these industries are included in the total earnings.

Source: U.S. Bureau of Economic Analysis 2012

AGRICULTURE

Agriculture, represented by farm, forestry, and related activities, is an important component of the economy in the region under the proposed PRTC. Farming employment and related food processing and food service jobs comprise approximately 5.3 percent of the ROI's combined employment. A variety of agricultural commodities are produced on farms and ranches in the ROI, including hay and grass silage, wheat, barley, sugar beets, sunflower seeds, cattle, and sheep. In addition to its direct contributions to output and employment in the ROI, agricultural activity also supports a number of secondary industries, including those associated with farm equipment, feed, and fertilizer.

Farm and forestry products are produced under the existing Powder River airspace and under the proposed PRTC.

The U.S. Census of Agriculture, taken at 5-year intervals, provides a detailed description of agricultural operations and provides the most comprehensive published data on farm and ranch activity in the ROI. The most recent published agricultural census is dated 2007. The U.S. Department of Agriculture is planning to release the 2012 Census data later in the spring of 2014 (USDA 2014).

The 2007 Census of Agriculture identified a total of 12,745 farms and ranches in the ROI counties containing approximately 35.8 million acres of land (Table 3.9-12). The average farm in the ROI is 3,625 acres in size, ranging from an average of 444 acres in Lawrence County, SD to 6,334 acres in Harding County, SD. Cropland, including pastureland, comprises over 22 percent of the land in farms in the ROI and irrigated land comprises less than 1 percent of the land in farms. Pastureland and other uses account for 72 percent of land in farms in the ROI.

The 2007 Census of Agriculture provides numbers of livestock on farms by county, summarized within the ROI by state in Table 3.9-13. Beef cattle, with some milk cows, represent the greatest proportion of livestock in the ROI, accounting for 71 percent of all livestock. Sheep and lambs account for 23 percent, horses account for 4.7 percent and the remaining 0.5 percent is comprised of hogs and pigs.

Livestock in the ROI counties represents a portion of the statewide livestock inventory for each of the four states. The beef cows in the ROI counties in Montana comprise approximately 13.5 percent of the total inventory of beef cows in the state. The beef cow inventory in the ROI states of North Dakota and Wyoming also comprise 25 percent and 17 percent of the total inventory in the respective states. The number of milk cows in the North Dakota ROI counties comprises over 33 percent of the total number of milk cows in the state.

Table 3.9-12. General Agricultural Data for ROI Counties (2007)

County	*Farms*	*Land in Farms (Acres)*	*Average Size of Farm*	*Total Cropland (Acres)*	*Irrigated Land (Acres)*	*Market Value of Products*
MT	29,524	61,388,462	2,079	18,241,710	2,013,167	$2,803,062
Big Horn	695	2,899,620	4,172	383,588	231	$94,853
Carter	308	1,698,363	5,514	267,216	7,104	$42,812
Custer	411	2,127,013	5,175	186,726	31,352	$73,205
Fallon	296	978,818	3,307	247,773	1,536	$35,938
Powder River	319	162,008	5,079	178,104	10,039	$40,960
Rosebud	478	2,714,024	5,678	238,852	34,623	$56,823
Treasure	101	461,790	4,572	36,103	20,344	$30,377
ND	426	626,663	1,471	407,315	—	$70,542
Adams	243	724,532	2,982	120,203	(D)	$23,750
Billings	353	720,756	2,042	371,877	920	$77,682
Bowman	243	570,210	2,347	231,840	896	$43,102
Golden Valley	528	1,058,178	2,004	510,893	1,895	$79,870
Grant	546	707,833	1,296	582,789	—	$93,560
Hettinger	836	1,165,098	1,394	548,569	6,616	$117,251
Morton	204	730,306	3,580	148,797	(D)	$32,319
Sioux	238	768,938	3,231	269,563	460	$47,645
Slope	865	837,143	968	529,062	1,009	$96,812
Stark	31,169	43,666,403	1,401	19,094,311	1,627	$6,570,450
SD	584	1,140,405	1,953	163,375	47,701	$55,443
Butte	392	1,283,038	3,273	372,883	1,193	$65,475
Corson	252	1,596,101	6,334	207,638	976	$163,695
Harding	301	133,503	444	30,531	3,775	$11,620
Lawrence	879	2,208,880	2,513	520,398	6,647	$78,408
Meade	655	1,185,055	1,809	280,265	7,893	$56,038
Pennington	432	1,829,157	4,234	427,292	611	$59,485
Perkins	234	1,058,403	4,523	258,548	—	$37,481
Ziebach	11,069	30,169,526	2,726	2,576,017	1,550,723	$1,157,535
WY	633	2,345,915	3,706	170,423	4,023	$41,141
Campbell	457	1,569,912	3,435	166,553	4,552	$43,983
Crook	599	1,224,625	2,044	91,424	56,325	$48,662
Sheridan	237	1,328,294	5,605	49,282	6,593	$26,501
Weston	29,524	61,388,462	2,079	18,241,710	2,013,167	$2,803,062

Notes: (D) = data withheld to avoid disclosing data for individual farms.
Source: U.S. Department of Agriculture 2009.

Table 3.9-13. Number of Livestock on ROI Farms (2007)

Counties	*Beef Cows*	*Milk Cows*	*Hogs/Pigs*	*Sheep/Lambs*	*Horses/Ponies*
MT Counties	205,489	56	279	63,632	13,759
ND Counties	230,711	8,833	2,489	29,204	8,781
SD Counties	257,539	1,516	2,466	124,322	16,963
WY Counties	126,559	21	728	52,844	15,598

Source: U.S. Department of Agriculture 2009

ENERGY RESOURCE DEVELOPMENT

Wyoming, Montana, North Dakota, and South Dakota all have large reserves of natural resources that are in demand for energy development. In particular, oil, natural gas, and coal are prevalent throughout the area and comprise a large part of the growth economies (see Table 3.9-14). Wind energy is also becoming more common as the technology is further developed and more wind farms are proposed in these states (see Table 3.9-15).

Natural gas, oil, and coal are produced throughout the region under the proposed PRTC airspace.

Eastern Montana and western North Dakota overlie the Williston-Basin which contains two of the 100 largest oil fields in the U.S. Montana is also a leading producer of coal which is largely extracted from several surface mines in the Powder River Basin located on the Montana-Wyoming border. In 2008, Montana was producing approximately 44.8 million short tons of coal with reserves of over 925 billion short tons (Energy Information Administration 2010). Large coal deposits are located on the Crow Indian Reservation in the Powder River Basin. The Crow Tribe is currently planning to extract the coal and build a coal-to-liquids plant to process the coal into diesel or other fuels as part of an economic development initiative (Brown 2008). As a result of the large coal deposits in the area, the city of Colstrip in Rosebud County has the largest coal-fired power plant west of the Mississippi (personal communication, Atchison 2008).

Table 3.9-14. Statewide Reserves and Production of Energy Resources (2011)

Production	*Crude Oil (Thousand Barrels)*	*Natural Gas-Marketed (Million Cubic Feet)*	*Coal (Thousand Short Tons)*	*Total Energy (Trillion British Thermal Units)*
MT	24,151	74,624	42,008	1,105
ND	152,985	97,102	28,231	1,518
SD	1,615	1,848	0	249
WY	54,710	2,159,422	438,673	10,353

Source: Energy Information Administration 2011

MT has a number of wind farms that produce wind energy from large wind turbines located around the state. Currently, the state of Montana has 454 wind turbine units with the power capacity of 645 megawatts of energy (see Table 3.9-15) (American Wind Energy Association 2013).

Table 3.9-15. Statewide Wind Energy (2013)

Location	*Units*	*Power Capacity-Existing Projects (megawatts)*	*Power Capacity-Under Construction (Number of Projects)*
MT	454	645	—
ND	994	1,680	32
SD	474	783	13
WY	960	1,410	24

Source: American Wind Energy Association 2013

In 2008, North Dakota was ranked 7th in oil production out of 31 oil-producing states and two federal offshore areas (ND State Data Center 2009). In that same year, North Dakota produced approximately 63 million barrels comprising 3.5 percent of the total production in the U.S. (ND State Data Center 2009). In 2011, North Dakota produced 152,985 thousand barrels of crude oil and 97,102 million cubic feet of natural gas (see Table 3.9-14).

In 2013 there were 994 wind turbines in North Dakota with a capacity of 1,680 megawatts. Additional wind energy projects are under construction with 32 wind turbines that are projected (American Wind Energy Association 2013).

South Dakota has fewer discovered fossil fuel reserves, such as oil and natural gas, than the other ROI states. Most of the electricity generated in South Dakota is produced from coal power plants or hydroelectric power plants. As of 2011, South Dakota had produced 1,615 thousand barrels of crude oil and produced 1,848 million cubic feet of natural gas. Sources of renewable energy utilized by the state of South Dakota includes ethanol, wind, and geothermal.

In 2013, South Dakota reported 474 wind turbine units with the capacity to produce over 783 megawatts. Additional wind turbines are under construction with a total of 13 wind projects (American Wind Energy Association 2013).

In 2011, coal production was estimated at 438,673 thousand short tons and crude oil production was approximately 54,710 thousand barrels (Table 3.9-14).

Wind energy is also being developed in Wyoming as a renewable energy source. In 2013 there were 960 wind turbines located throughout the state with the power capacity of 1,410 megawatts. There are 24 wind projects under construction with the potential capacity of 5,742 megawatts (Table 3.9-15).

CIVIL AVIATION

Several economic and related factors contribute to the importance of civil aviation within the areas under the proposed PRTC. As described by participants at scoping, the rural nature of the area combined with the large agricultural operations, the growing energy industry, and the sheer distances involved make reliance on the airplane greater than might be experienced in other parts of the country.

This section focuses on the lower altitude civil aviation generally occurring below commercial traffic. Section 3.1, Airspace, provides expanded discussion of civil aviation at airports within the ROI and civil aviation flying in the proposed PRTC airspace.

There are 33 public airports and 30 private airfields reported under the proposed PRTC MOAs and ATCAAs. The private airfields include ranch and medical services. Table 3.9-16 summarizes the information on the public airports and private airfields by alternative. Section 3.1.3.3 presents the public airports and private airfields and regional airspace use. Many of the airports provide fuel and services to pilots transiting the area and most of the airports and airfields have permanently based aircraft at the airfields (Table 3.9-16).

Table 3.9-17 presents the estimated daily operations by airports and airfields under the existing (approximately the same area as PR-2) and proposed MOAs. Comments made during the EIS process referenced a number of pilots who flew private aircraft as part of their recreation. A review of FAA hourly data did not identify a greater number of aircraft in the MOAs during the weekends as compared with weekdays. This means that the numbers of reported annual operations from public airports and private airfields presented in Table 3.9-17 are not concentrated on weekends but appear to be distributed evenly across the weekdays and weekend.

Table 3.9-16. Summary of Public Airports, Private Airfields, and Based Aircraft by Modified Alternative

Proposed Airspace	*Total Airports and Airfields Under Airspace*	*Total Airports and Airfields Near Airspace*	*Total Based Aircraft Under Airspace*	*Total Based Aircraft Near Airspace*
Modified Alternative A				
Public	14	12	124	576
Private	12	9	19	17
Totals	26	21	143	593
Modified Alternative A ATCAAs (below)				
Public	5	2	128	119
Private	8	1	11	3
Totals	13	3	139	122
Modified Alternative B				
Public	12	8	106	287
Private	11	7	19	16
Totals	23	15	125	303
Modified Alternative B ATCAAs				
PR-1A/C/C/D ATCAAs and Gap A ATCAA				
Public	2	4	18	289
Private	1	2	0	1
Gateway ATCAAs (below)				
Public	5	2	128	119
Private	8	1	11	3
Totals	16	9	157	412
Modified Alternative C				
Public	8	7	68	369
Private	10	6	16	13
Totals	18	13	84	382
Modified Alternative C ATCAAs				
PR-4 ATCAA and Gap C ATCAA				
Public	6	5	56	263
Private	2	3	3	3
Gateway ATCAAs (below)				
Public	5	2	128	119
Private	8	1	11	3
Totals	21	11	198	388
Proposed Gateway ATCAAs				
Public	5	2	128	119
Private	8	1	11	3
Totals	13	3	139	122

Notes:
1. Includes PR-1A/B/C/D, PR-2, PR-3, PR-4, and all Gap MOAs
2. Includes PR-2, PR-3, PR-4, and Gap B and Gap C MOAs
3. Includes PR-1A/B/C/D, PR-2, PR-3, and Gap A and Gap B MOAs

Table 3.9-17. Estimated Daily Traffic in the Proposed MOAs

Proposed MOA	*Daily Average Operations*			
	FAA Reported Operations[1]	*Public Airports Under Airspace Reported Operations*[2]	*Private Airfields Under Airspace Estimated Operations*[3]	*Estimated Total Daily Average Civilian Operations*
PR-1A/1B/C/D (includes Gap A)	6	24	2	32
PR-2 (Approximately existing airspace)	4	16	1	21
PR-3 (includes Gap B)	6	50	18	74
PR-4 (includes Gap C)	14	42	4	60

Notes: 1. Refer to data in Table 3.1-9.
2. Refer to data in Table 3.1-6.
3. Refer to data in Table 3.1-7.

A large number of public airports and private airfields located under the affected airspace support ranchers, farmers, and others who often use small aircraft for agricultural aerial application (crop dusting), predator control, and checking on livestock and fences that are spread over large areas of land not easily accessible by vehicles. Some private airfields belong to hospitals or other emergency medical facilities as well as fire departments or federal agencies.

During public hearings, participants explained how rural area aircraft are often used for emergency medical and firefighting purposes. Civil aircraft are used for aerial photography to monitor biological and wetland resources, for cloud seeding, and for related activities which require quick response to weather or related circumstances. Nearly all of the land under the proposed PRTC PR-2 MOA is currently under the Powder River A and B MOAs. A variety of procedures have been established by Ellsworth AFB to support emergency and related monitoring activities under the existing Powder River A and B MOAs. Communication has been the key to avoiding or reducing the potential for impacts.

Public airports throughout the ROI support general aviation and provide access for economic pursuits, which include oil, gas, agricultural, and hunting.

In cases of emergency, such as air ambulance or law enforcement, which require ATC clearance, the Air Force immediately responds to ATC direction and temporarily raises the floor of the Powder River A and/or B MOAs for B-1 and B-52 training to an altitude which permits emergency activity below the training aircraft. If necessary, to support the emergency activity, the Air Force terminates training within the airspace and either relocates for training or terminates training and returns to base. Firefighting activities are covered under the existing Memorandum of Agreement between Ellsworth AFB and the Bureau of Land Management.

Related aircraft activities which require special conditions within the Powder River A or B MOAs include regional requirements for airspace use. In addition to fire monitoring and related emergency activities, state or federal agencies provide digital aerial photography for wetlands surveys and wildlife monitoring. This photography requires that aircraft be flown at specific altitudes over specific areas under specific visibility conditions. These seasonal activities can occur for one to two week periods. Ellsworth AFB airspace schedulers work with monitoring organizations to coordinate B-1 training operations and schedule MOA usage to support monitoring activities. This requires additional communication and scheduling. The requirement for civil aircraft involved in emergency and related services and military training aircraft is the need for communication. This permits B-1s and B-52s to relocate to another altitude in response to emergency conditions.

3.10 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN

3.10.1 *DEFINITION OF THE RESOURCE*

For the purpose of the environmental justice analysis, minority and low-income populations and the population of children are defined as:

- *Minority Populations*: All persons identified by the Census of Population and Housing to be of Hispanic or Latino origin, regardless of race, plus non-Hispanic persons who are Black or African American, Native American and Alaskan Native, Asian, Native Hawaiian and Other Pacific Islander, Some Other (i.e., non-white) Race or Two or More Races.
- *Low-Income Populations*: The 2010 Census did not collect information on income or poverty levels. Low-income populations include persons living below the poverty level ($23,021 for a family of four in 2011) as reported in the 2007-2011 American Community Survey by the U.S. Census Bureau. The percentage of low-income persons is calculated as a percentage of all persons for whom the Census Bureau determines poverty status, which is generally a slightly lower number than the total population as it excludes institutionalized persons, persons in military group quarters and in college dormitories, and unrelated individuals under 15 years old.
- *Children*: All persons identified by the Census of Population and Housing to be under the age of 18 years.

For the purpose of this analysis, the ROI for environmental justice is the Community of Comparison (COC) and consists of 29 counties across four states where all or portions of the county underlie the proposed PRTC. The COC refers to the aggregate 29 counties in their entirety. The affected area, by comparison, refers to the census tracts or portions of census tracts that constitute the precise land area under the proposed PRTC airspace boundaries. Of the 29 counties containing affected lands, there are eight in which over 90 percent of the counties' land area is included under the proposed airspace.

Environmental justice data for the four states, the COC 29 counties, and the census tracts or portions of census tracts under the proposed PRTC airspace are used for comparison in identifying potential environmental effects, including human health, economic, and social effects to environmental justice populations in the specific affected areas. For the purposes of this analysis, environmental justice data was assessed for the COC, for the affected area, and for each proposed PRTC airspace element.

3.10.2 *REGULATORY SETTING*

In November 1997, the *Interim Guide for Environmental Justice Analysis with the Environmental Impact Analysis Process* (EIAP) (Air Force 1997b) was issued by the Department of the Air Force to provide Air Force guidance for conducting environmental justice analysis in accordance with EO 12898.

In 1994, EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations (Environmental Justice)*, was issued to focus the attention of federal agencies on human health and environmental conditions in minority populations and low-income populations. This EO was also established to ensure that, if there were disproportionately high and adverse human health or environmental effects of federal actions on these populations, those effects would be identified and addressed. The environmental justice analysis addresses the characteristics of race, ethnicity and poverty status for populations residing in areas potentially affected by implementation of the proposed action.

In 1997, EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (*Protection of Children*), was issued to identify and address anticipated health or safety issues that affect children. The protection of children analysis addresses the distribution of population by age in areas potentially affected by implementation of the proposed action.

3.10.3 *EXISTING CONDITIONS*

Environmental justice data for the four relevant states and 29 COC counties are presented in Table 3.10-1. Minority persons account for 15.5 percent of the 29-county population, compared to 13.2 percent for the combined four states of Wyoming, Montana, North Dakota, and South Dakota. Native Americans constitute most of the minority persons within the COC counties identified in Table 3.10-1 with greater than 10 percent minority populations. For example, Native Americans in Big Horn County, MT, represent 95 percent of the county minority population and, in Rosebud County, Native Americans represent 86 percent of the minority population. In Sioux County, ND, Native Americans represent 96 percent of the county minority population. Native Americans in Corson and Ziebach Counties, SD, represent 94 percent of each county's minority population and in Pennington County, 53 percent. Minority population percentages are below 10 percent of the total populations of the Wyoming COC counties. The names and locations of the four affected Native American Reservations are displayed in Figure 3.7-1: Crow Indian Reservation, Big Horn County, MT; Northern Cheyenne Indian Reservation, Big Horn and Rosebud Counties, MT; Cheyenne River Indian Reservation, Ziebach and Dewey Counties, SD; and Standing Rock Indian Reservation, Sioux County, ND and Corson and Campbell Counties, SD.

The low-income population in the individual counties ranges from a low of 5.3 percent in Slope County, ND, to a high of 43.5 percent in Ziebach County, SD. Of the four states, Montana had the highest state-wide average of low-income populations at 14.6 percent.

Children under the age of 18 years constitute 24.7 percent of the 29-county COC population, compared to 23.4 percent for the combined four-state region. There is a wide variation in the youth population among the COC counties, ranging from a low of 17.5 percent in Carter County, MT, to a high of 39.1 percent in Ziebach County, SD.

Table 3.10-1. Environmental Justice Data for the COC by County

ROI Counties	2010 Population	Minority Population		Low-Income Populations*	Youth Population	
		Number	Percent	Percent	Number	Percent
MT	**989,415**	**120,787**	**12.2%**	**14.6%**	**223,563**	**22.6%**
Big Horn	12,865	8,957	69.6%	26.7%	4,268	33.2%
Carter	1,160	28	2.4%	13.4%	203	17.5%
Custer	11,699	690	5.9%	14.3%	2,657	22.7%
Fallon	2,890	97	3.4%	8.7%	679	23.5%
Powder River	1,743	98	5.6%	12.6%	363	20.8%
Rosebud	9,233	3,677	39.8%	18.0%	2,732	29.6%
Treasure	718	52	7.2%	14.1%	134	18.7%
ND	**672,591**	**74,584**	**11.1%**	**12.3%**	**149,871**	**22.3%**
Adams	2,343	77	3.3%	8.6%	446	19.0%
Billings	783	12	1.5%	8.8%	138	17.6%
Bowman	3,151	112	3.6%	7.1%	676	21.5%
Golden Valley	1,680	67	4.0%	11.1%	404	24.0%
Grant	2,394	69	2.9%	12.4%	450	18.8%
Hettinger	2,477	105	4.2%	10.8%	468	18.9%
Morton	27,471	1,934	7.0%	7.4%	6,561	23.9%
Sioux	4,153	3,636	87.6%	42.3%	1,516	36.5%
Slope	727	20	2.8%	5.3%	146	20.1%
Stark	24,199	1,434	5.9%	9.3%	5,186	21.4%
SD	**814,180**	**124,678**	**15.3%**	**13.8%**	**202,797**	**24.9%**
Butte	10,110	750	7.4%	15.0%	2,527	25.0%
Corson	4,050	2,848	70.3%	38.8%	1,390	34.3%
Harding	1,255	58	4.6%	12.8%	292	23.3%
Lawrence	24,097	1,748	7.3%	14.1%	4,720	19.6%
Meade	25,434	2,483	9.8%	12.1%	6,415	25.2%
Pennington	100,948	18,510	18.3%	13.1%	24,837	24.6%
Perkins	2,982	99	3.3%	13.5%	639	21.4%
Ziebach	2,801	2,194	78.3%	43.5%	1,095	39.1%
WY	**563,626**	**79,752**	**14.1%**	**10.1%**	**135,402**	**24.0%**
Campbell	46,133	5,101	11.1%	6.3%	12,982	28.1%
Crook	7,083	289	4.1%	7.8%	1,689	23.8%
Sheridan	29,116	1,997	6.9%	8.2%	6,485	22.3%
Weston	7,208	446	6.2%	11.2%	1,573	21.8%

Note: * Based on American Community Survey 5 year estimate, 2007-2011
Source: U.S. Census Bureau 2010b; 2013

4.0 ENVIRONMENTAL CONSEQUENCES

This chapter presents an assessment of the potential environmental consequences of implementing the proposed Powder River Training Complex (PRTC) with the full application of the mitigation measures described in Section 2.3.

The analysis presented in this chapter is based on overlaying the modified alternatives described in Chapter 2.0 upon the baseline or existing conditions presented in Chapter 3.0. Each of the environmental resources described in Chapter 3.0 can be affected to a different degree and has a different method of analysis. Each resource section presented in this chapter defines the environmental resource, presents the methodology for conducting the impact analysis, identifies the issues and concerns that focused the analysis, and describes the potential direct and indirect consequences of implementing a PRTC alternative.

Cumulative effects of an alternative with other past, present, and reasonably foreseeable future actions within the region of influence (ROI) are presented in Chapter 5.0. Irreversible, irretrievable, short-term, and long-term effects are also discussed in Chapter 5.0.

4.1 AIRSPACE/AIR TRAFFIC

The proposed PRTC would modify and add to the existing Powder River airspace to establish the PRTC in order to meet the defined need for improved training opportunities. The modified alternatives presented in this Final Environmental Impact Statement (FEIS) would provide airspace to conduct local realistic training for Ellsworth and Minot Air Force Bases (AFBs) while applying mitigations to reduce or avoid potential impacts to airspace and commercial and general aviation aircraft operations. The FEIS-proposed PRTC would restructure and reconfigure the existing Powder River Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspaces (ATCAAs) with boundary adjustments for major airports and proposed Gap MOAs. During normal daily training, the PRTC MOAs would be scheduled in advance and NOTAMs will be issued 2 to 4 hours prior to the initiation of military training in the airspace to provide near real-time information to civil aircraft pilots. Up to three additional Gap MOA/ATCAA combinations with ATCAAs limited to FL260 would be scheduled at least 30 days in advance and NOTAMs will be issued 4 hours in advance for Large Force Exercises (LFEs). LFEs would be 1 to 3 days per quarter for not more than 10 days per year. The linked up MOA/ATCAA airspaces would create a versatile, realistic training complex for LFEs. LFEs would permit approximately 20 bomber, fighter, and support aircraft to train with the tactics and skills the comprehensive team must have in combat.

Proposed changes to the airspace would permit increased training flights dispersed throughout the MOAs and ATCAAs. PRTC would allow for almost a full range of required combat training missions, including dissimilar aircraft training and LFEs. The proposed PRTC would support realistic training with chaff and flare defensive countermeasures. Required B-1 aircrew training within the proposed PR-1, PR-3, and PR-4 airspaces has been reduced by approximately 12 percent in this FEIS as compared with the Draft EIS (DEIS). This reduces the actual time these proposed airspaces would be activated for B-1 training. The FEIS-proposed LFEs would have not more than 10 days per year of training with supersonic flight above 20,000 feet above mean sea level (MSL) for B-1s and above 10,000 feet above ground level (AGL) for fighter aircraft.

4.1.1 *METHODOLOGY*

Modifications to existing MOA airspace and establishment of new MOA airspace would require nonrulemaking action by the Federal Aviation Administration (FAA) (FAA 2010). Responsibilities, procedures for aircraft operations, air traffic control operations, and utilization of ATCAAs for the

existing Powder River airspace are documented in Letters of Agreement between the scheduling military agency (28th Bomb Wing [28 BW] Ellsworth AFB) and the applicable Air Route Traffic Control Center (ARTCC). These Letters of Agreement are supplemental to the procedures in FAA Orders 7110.65 (Air Traffic Control) and 7610.4 (Special Military Operations). Appendix M presents the current Letter of Agreement for Powder River airspace operations. Similar Letters of Agreement for the proposed PRTC would be developed between the United States Air Force (Air Force) and the FAA. Table 4.1-1 summarizes the PRTC airspaces and alternatives.

Table 4.1-1. Proposed PRTC Airspace Designation and Use

Airspace			*Modified Alternative*				*Proposed Use*	
	MOA	*ATCAA*	*A*	*B*	*C*	*No Action*	*Day-to-Day*[2]	*LFE*[3]
PR-1A Low MOA[5]	X		X		X		X	X
PR-1A High MOA[5]	X		X		X			X
PR-1B Low MOA[5]	X		X		X		X	X
PR-1B High MOA[5]	X		X		X		X	X
PR-1C Low MOA[5]	X		X		X		X	X
PR-1C High MOA[5]	X		X		X			X
PR-1D Low MOA[5]	X		X		X		X	X
PR-1D High MOA[5]	X		X		X		X	X
PR-2 MOA	X		X	X	X	X[1]	X	X
PR-3 Low MOA	X		X	X	X		X	X
PR-3 High MOA	X		X	X	X		X	X
PR-4 Low MOA[4,6]	X			X			X	X
PR-4 High MOA[6]	X		X	X			X	X
Gap A Low MOA[5]	X		X		X			X
Gap A High MOA[5]	X		X		X			X
Gap B Low MOA	X		X	X	X			X
Gap B High MOA	X		X	X	X			X
Gap C Low MOA[4,6]	X			X				X
Gap C High MOA[6]	X		X	X				X
PR-1A ATCAA		X	X	X	X			X
PR-1B ATCAA		X	X	X	X		X	X
PR-1C ATCAA		X	X	X	X			X
PR-1D ATCAA		X	X	X	X		X	X
PR-2 ATCAA		X	X	X	X	X[1]	X	X
PR-3 ATCAA		X	X	X	X		X	X
PR-4 ATCAA		X	X	X	X		X	X
Gateway West ATCAA		X	X	X	X	X[1]	X	X
Gateway East ATCAA		X	X	X	X			X
Gap A ATCAA		X	X	X	X			X
Gap B ATCAA		X	X	X	X			X
Gap C ATCAA		X	X	X	X			X

Notes:
1. These airspaces extend over much of the same area currently within the Powder River airspace.
2. For PR-1A Low, PR-1B High/Low, PR-1C Low, PR-1D High/Low; PR-2 High/Low, PR-3 High/Low; and PR-4 High by NOTAM 2 hours in advance during 0730-1200 and 1800-2330 Monday–Thursday and 0730-1200 Friday; other times by NOTAM 4 hours in advance. For PR-1A High, PR-1C High, Gap A High/Low, Gap B High/Low and Gap C High by NOTAM 4 hours in advance.
3. Large Force Exercise: Approximately 20 aircraft of various types training together from 1-3 days per quarter for a total of not more than 10 days per year.
4. Not included in Modified Alternative A.
5. Not included in Modified Alternative B.
6. Not included in Modified Alternative C.

In general, the proposed PR-1A, PR-1B, PR-1C, PR-1D, PR-2, PR-3, and PR-4 MOAs would be scheduled from Monday through Thursday from 7:30 a.m. to 12 noon local time and again from 6 p.m. to 11:30 p.m. The schedule on Friday would be from 7:30 a.m. to 12 noon. The airspaces could be scheduled at times other than published times of use (and a NOTAM would be issued at least 4 hours in advance). Although the airspace would be scheduled a total of 10 hours Monday through Thursday and four and one half hours on Friday, the actual expected usage for most proposed MOAs would typically be 3 hours per day with PR-2 MOAs usage up to 6 hours per day. Air Traffic Control (ATC) would be notified when training aircraft completed their missions in the respective MOAs, and a NOTAM would be issued to deactivate the airspace.

The potential environmental effects of implementing the proposed PRTC were assessed by incorporating the Section 2.3 mitigations into the training and the airspace and considering the changes in airspace, airspace operations, and airspace use that could occur. The proposed changes are related to current documented and estimated civil and military flight operations in the proposed airspace. The assessments considered compliance with Air Force Instruction (AFI) 13-201 (*Air Force Airspace Management)* and supplements thereto, as well as FAA evaluation of the proposed PRTC as it relates to the ROI and the National Airspace System.

FAA commercial air traffic data, other aircraft traffic data, and local airport reported data, were collected for each of the proposed MOA and ATCAA airspace units as presented in Section 3.1. Day-to-day training would occur in proposed MOA/ATCAA segments explained in Chapter 2.0. Specific Air Force authorization would be required for supersonic flight (AFI 13-201).

Projected flight operations for each military aircraft type within the proposed PRTC airspaces (see Sections 2.5 through 2.7) are overlaid on airspace and air traffic baseline conditions described in Section 3.1. Each alternative is addressed in terms of the agency and public issues and concerns. Section 2.3.1 details the airspace mitigations to reduce impacts to civil aircraft operators. The environmental consequences resulting from proposed training under each alternative are explained. All three action alternatives share several features. The proposed Gap MOAs and Gap ATCAAs, when not active, would avoid civil aviation Victor Airways by a minimum of 5 nautical miles (NM). All other Victor airways adjacent to the airspace are avoided by a minimum of 4 NM. The remaining proposed MOA boundaries would avoid Victor Airway intersections by 20 NM or more.

4.1.2 *ISSUES AND CONCERNS*

The type, size, and configuration of individual airspace elements in a region are based upon, and are intended to satisfy, competing aviation requirements. Potential impacts could occur if air traffic in the region and/or the ARTCC were encumbered by changed flight activities associated with the PRTC proposal.

4.1.2.1 SUMMARY OF PUBLIC AND AGENCY CONCERNS

Table 2.12-1 summarizes public and agency concerns from the DEIS review. Airspace or air traffic concerns expressed by the public include (1) potential impacts on overflying civil aviation and civil aviation flights in the proposed airspace, (2) radar and radio coverage in the proposed airspace; (3) the accuracy or availability of information regarding active MOAs; (4) agricultural applications and other commercial activity; (5) arrivals and departures from airfields and airports under, or on the periphery of, the proposed airspace; (6) identification of low-altitude avoidance areas and not flying low-level over identified cultural locations, historic locations, livestock, people, or buildings; and (7) training aircraft staying within MOA boundaries. Specific concerns were expressed for areas such as the Little Bighorn

Battlefield National Monument, Devils Tower National Monument, other culturally sensitive locations, weather modification programs, emergency flights, biological or water resource monitoring, ranch monitoring, and recreational activities such as gliders and skydiving in the airspace.

4.1.2.2 FAA REVIEW AND OTHER TIMES ANNOUNCED BY NOTAM

A NOTAM is issued to provide pilots information about factors that could affect flight operations. A NOTAM would be issued regarding actual MOA activation at least 2 hours in advance of military training operations. The published times of use for PRTC are 7:30 a.m. to 12:00 noon and 6:00 p.m. to 11:30 p.m. on Monday through Thursday and 7:30 a.m. to 12:00 noon on Friday. Although not anticipated on a regular basis, when training is scheduled for times other than the published times of use, a NOTAM would be issued no later than 4 hours in advance (see Section 4.1.3.1.3).

FAA requires consideration of potential impacts that could result from use of training airspace outside of the charted schedule. The FAA seeks to determine if such changes could adversely affect (1) ARTCC and/or facilities; (2) movement of other air traffic in the area; or (3) airspace already designated and used for other purposes supporting military, commercial, or general aviation.

The Air Force aeronautical proposal includes the ability to activate airspace outside of the published times of use and announcing the activation by NOTAM. This is primarily because mechanical, personnel, or weather conditions could delay or otherwise require training flights outside the published times of use. The FAA recognizes that the provision of training at other times than the published times of use (which would be announced by NOTAM) permits potential access to a MOA up to 24 hours per day. The extent of civil airspace impacts would depend upon the specific hours during a 24-hour period in which one or more MOA segments would be active. A comparison of the proportional recorded FAA MOA activity by 2-hour block (see Appendix A) from Table 3.1-9 permits an estimate of the civilian aircraft activity during the unscheduled MOA periods during Monday through Friday. Activating a MOA at times other than published times of use (which would be announced by NOTAM) could impact additional civilian flights during the 12 noon to 6 p.m. time period on weekdays or during daylight hours on weekends. If military training operations were to occur during a 12:00 noon to 6:00 p.m. time period, additional impacted civilian flight operations can be estimated from FAA operations, public airports, and private airfields data in Tables 3.1-2, 3.1-6, and 3.1-7: the estimated total daily impact would be approximately 60% greater than the total presented in Table 3.1-9 in PR-1, approximately 50% greater than the total presented in Table 3.1-9 in PR-2, approximately 60% greater than the total presented in Table 3.1-9 in PR-3, and approximately 55% greater than the total presented in Table 3.1-9 in PR-4. These impacts would be in addition to the impacts anticipated from activation of the airspaces for training during published times of use.

4.1.3 *ENVIRONMENTAL CONSEQUENCES*

Potential airspace and air traffic environmental consequences for each alternative are presented in this section. Modified Alternative A represents the Proposed Action and provides the greatest amount of training airspace with the establishment of PR-1 (includes PR-1A/B/C/D), PR-3, and PR-4 MOAs and ATCAAs, associated Gap MOAs and ATCAAs, and Gateway ATCAAs, and the adjustment of the boundaries of the existing Powder River A/B MOAs into PR-2. Modified Alternatives B and C each would include two new MOA combinations and two Gap MOAs. The Modified Alternative A and Modified Alternative C would provide for improved low-altitude terrain following training as compared with Modified Alternative B. Proposed ATCAAs are the same for each alternative.

For all proposed MOA/ATCAA airspaces, one consistent need identified in Section 2.3 is for increased communication among all parties involved. The published times of use of the MOAs would be published

on the FAA aeronautical charts. The website with the next day's scheduled MOA use would be available on http://sua.faa.gov. A NOTAM would be issued at least 2 hours in advance of a MOA being activated for training (see Section 4.1.2.2). Airspaces needed for LFEs, up to 10 days per year, 1 to 3 days per quarter, would be scheduled 30 days in advance and would have a NOTAM issued 4 hours in advance of activation for training use. ATC would be informed that training aircraft have entered an activated MOA and be notified when training was completed in the MOA. Training in an active MOA would be suspended and the MOA then would be deactivated to allow ATC to vector an Instrument Flight Rules (IFR) civil aircraft pilot arriving or departing an airport under the active MOA. A pilot would contact ATC to determine if the MOA were active. A Visual Flight Rules (VFR) pilot could fly in an active MOA using see-and-avoid. Pilots seeking to learn the status of the MOA would need to check the schedule and review any NOTAMs regarding activation of specific MOAs for training. This additional communication requirement could result in annoyance to civilian pilots and some climbing, descending, or re-routing for IFR pilots or for VFR pilots who choose not to enter an active MOA using see-and-avoid.

4.1.3.1 MODIFIED ALTERNATIVE A – THE PROPOSED ACTION

MOAS AND ATCAAS

Under Modified Alternative A, a total of 2,882 day-to-day and LFE training hours would be conducted annually in the proposed PRTC airspace (Table 2.5-5). The baseline training hours in the existing Powder River airspace are 1,249 annually. The mission profiles in the MOAs/ATCAAs would be low-level to mid-altitude combat maneuvering and high-altitude staging for battlefield operations. The total hours of training represent approximately 78 percent day-to-day training, primarily by B-1 and B-52 aircraft and 22 percent LFE training which would include a variety of aircraft types to replicate real world warfighting conditions. The proposal to allow supersonic flight by bombers during LFEs to 20,000 feet MSL and fighters to 10,000 feet AGL throughout the reconfigured airspace would require specific approval by the Air Force (AFI 13-201).

The 28 BW and 5th Bomb Wing (5 BW) propose to use training chaff and flares in the MOA/ATCAA airspace. These defensive countermeasures would be employed in accordance with current Air Force, Air Combat Command (ACC), and Ellsworth and Minot AFB regulations. The minimum release altitude for flares would be 2,000 feet AGL except during periods of extreme fire danger in a MOA when flare release would be discontinued. Projected annual deployed chaff bundles within the MOA/ATCAA would be up to 24,508 and approximately 2,450 flares (refer to Table 2.8-2). Any and all military training aircraft using PRTC would be briefed on all altitude and fire danger restrictions applying to defensive countermeasures if they intend to employ chaff or flares.

Coordination between the 28 BW, 5 BW, and FAA would let the ARTCC know that military aircraft were training with chaff and flares in the airspace. Specific operating procedures and constraints on the use of chaff and flares have proven effective and have not significantly impacted ATC systems. The Air Force would implement standing instructions to brief pilots training in the proposed PRTC airspace that only RR-188, RR-112, RR-179 chaff or MJU-23, M206, MJU-7, and MJU-10 flares would be permitted (with limitations) for training use within the PRTC MOAs and ATCAAs. Appendices C and D describe these defensive countermeasures. Flares do not present any issues involving the management or use of airspace. Chaff would not be deployed within 60 NM of airport approach radars to avoid any potential for impact to FAA radars. No significant airspace impacts would be expected to result from this proposed use of chaff and flares. Further information on impacts of chaff and flares is discussed in Section 4.3, *Safety*. Section 4.3 also addresses comments from meeting participants about emergency and firefighting aircraft operations flight deconfliction.

4.1.3.1.1 *AIRSPACE CATEGORIES*

The Proposed Action would result in changes within specific airspace. There would be no changes in airspace categories described in Section 3.1. The proposed PRTC ATCAA segments would be within Class A airspace. The ATCAAs would be identified within the airspace and, when activated, the ATCAA segment would be airspace within which high-speed military aircraft could be expected to perform rapid maneuvers. Commercial traffic would not be routed through an active ATCAA by ARTCC although a non-activated ATCAA would not affect routing. Capping the proposed ATCAAs to exclude training above FL260 (or FL230 in some airspaces) is expected to allow overflight transit by commercial and other aviation under ARTCC routing as with any Class A airspace.

Some Class E Controlled and Class G Uncontrolled airspace within the ROI would become MOAs under the proposed PRTC. This would add the MOA airspace designation to aeronautical charts. IFR arrivals and departures to airports under an active airspace would be accommodated by suspending military training for the IFR routing. IFR transit could occur above or below an activated MOA with direction from the applicable ATC. An active MOA is joint-use airspace and can be entered and traversed by VFR traffic using see-and-avoid while high-speed military aircraft are concurrently operating in the activated MOA.

The FAA non rule-making action to establish and chart the MOAs and establish the ATCAAs would create joint use airspace. When the MOAs or ATCAAs are not activated, the airspace would be treated as normal Class E, G, or A airspace.

4.1.3.1.2 *MILITARY TRAINING AIRSPACE*

There would be no change to existing military training routes (MTRs). MTRs would continue to be available for high-speed military aircraft low-altitude navigation training. The MTRs were used regularly during the Cold War but are currently used infrequently for low-level navigation. That use is not expected to change with the proposed PRTC. The MTRs, segments of which lie partially beneath the proposed PRTC MOA airspace (IR-473, IR-485/492), were historically used for low-level penetration missions and are infrequently used in conjunction with existing Powder River MOA activities. The use of these MTRs would likely continue at the present low rate because the training activities associated with these MTRs are independent from the proposed use of the PRTC airspace. Commenters at hearings mentioned experiences with MTR low-level overflights and referred to such overflights as “buzzing” over livestock, people, and buildings. MTR use, although infrequent, would continue for specific mission training. None of the modified alternatives would change the use of the MTRs.

Any given location under a low MOA would be expected to experience a low-level overflight at 2,000 feet AGL or below within one-quarter of a mile of the flight path approximately 6 to 9 times per year (see Section 4.9.3.1.5). B-1 random flight patterns are seen as the loops and circles on, for example, Appendix A Figures A-8, A-9, and A-10. These training patterns suggest that locations toward the center of an airspace could be overflown more and locations on the edges less than the projected annual average of 6 to 9 times. Table 2.5-4 presents the projected Modified Alternative A day-to-day airspace use and baseline use. The availability of the Gap MOAs and ATCAAs and the ability to activate them as part of the overall PRTC creates new training opportunities and an expanded airspace for not more than 10 days of LFE training per year, 1 to 3 days per quarter.

4.1.3.1.3 *CIVIL AIRSPACE USAGE*

Section 3.1 explains civil airspace usage throughout the ROI. This section addresses potential civil airspace impacts to Victor Airways, jet routes, and airports and airfields within the ROI.

The multiple additional MOA segments included in this FEIS are designed to mitigate potential impacts to civil aircraft and create the flexibility to schedule multiple MOAs/ATCAAs for day-to-day training. When the current Powder River airspace is activated, a NOTAM is issued; the proposed PRTC airspace segments would be scheduled in advance and NOTAMs will be issued 2 to 4 hours prior to the initiation of military training in the airspace to provide near real-time information to civil aircraft pilots. The proposed PRTC schedule for days and hours of operation is included in Chapter 2.0 (Tables 2-10 and 2-11). This means that small airports and both commercial and general aviation pilots would be able to review the schedule and any NOTAMs and plan for when a MOA would be active. IFR traffic could arrive or depart from airports under an active MOA by temporarily suspending military training in the MOA. IFR transiting traffic would be vectored around an activated MOA segment. DEIS reviewers expressed the concern that VFR flights using see-and-avoid would be unsafe if low-level B-1 training aircraft could be encountered at any time within a MOA, especially at altitudes of 2,000 feet AGL or below. Issuing a NOTAM to announce the activation of an airspace segment and the Air Force notifying ATC when the B-1 was training in the MOA and when training was completed would reduce uncertainty about when and where a B-1 aircraft was training. Civilian pilots would use inactive MOA airspace for IFR or VFR flights. The Air Force believes multiple high and low airspace segments, coordination of the airspace with the FAA, and activation notification by NOTAM would mitigate impacts of uncertainty and accommodate civil aviation flights.

Victor Airways

During the public review process, the public and agencies noted that much of the low-altitude civilian traffic does not fly Victor Airways, but instead flies direct routing using Global Positioning System (GPS). Appendix A Figures A-7, A-8, and A-9 show considerable winter traffic below FL180 on V-254 and V-491. Figures A-14, A-15, and A-16 show more summer traffic below FL180 flying direct, especially east-west, and through Billings. Low-altitude direct routing often has no radar and radio coverage to provide IFR vector route service in much of the area. Table 3.1-9 suggests that, based on reported public and private airport operations, the FAA data represents between 6 and 32 percent of the estimated traffic in the proposed MOAs below Class A airspace.

The Gap MOAs are designed to coincide with Victor Airways below FL180. As a result of public and agency input, the Air Force proposed revised Gap MOA corridors to allow for the expanded route width generated by the great distances between navigational aids under the airspace. The public noted that, without adequate communication, the use of the Gap MOA/Victor Airway corridors would be severely limited by the minimum en route altitudes created by limited navigational aids. The minimum en route altitude requirements limit the options for traffic conflict resolution. Prior to the use of low-altitude MOAs for training, the Air Force would establish communication procedures to ensure the ability of the Air Force to recall training aircraft from the PR-1A, 1B, 1C, 1D, or PR-3 Low MOAs for Modified Alternative A. The Gap B and Gap C connection has been adjusted for the FEIS to facilitate civil aircraft traffic.

PRTC altitude requirements, combined with the en route altitude requirements for civil aviation, dictated by the distances between navigational aids, has the potential to add an estimated 2-hour ground delay and/or re-routing impact upon civil aviation not willing to fly VFR in an activated MOA or unable to transit an active MOA IFR. The up-to 4-hour delay estimate is based on the scheduled MOA times, the issuance of NOTAMs 2 hours in advance of MOA activation, and and an average of 3 hours per day of training in the active airspace.

The FAA has noted that radar coverage along V-120 between Dupree, South Dakota (SD), and Miles City, Montana (MT), is nonexistent below 13,000 feet MSL. Radar coverage south of V-120 along and west of V-491 does not exist below 16,000 feet MSL. In addition to limited radar coverage, the lack of radio

frequency coverage restricts the ability to communicate with civil aviation flying within the PRTC proposed airspace. Radio frequency coverage is nonexistent below 18,000 feet MSL in a 50-NM area between Dupree, SD, and Miles City, MT. Inability to communicate with civil aircraft would require traffic to be re-routed around the airspaces. This re-routing would concentrate traffic and cause congestion over Dickinson, North Dakota (ND) and Rapid City, SD. Absence of navigable routes and limited radar and radio frequency coverage currently impact civil aviation and would have the potential for greater impacts when PRTC MOA segments were activated for day-to-day training. There would be greater impacts during LFEs when all the Victor Airways in the Gap MOAs would be activated.

Public and FAA Review

The FAA and Air Force met following receipt of review comments to address how to reduce potential impacts to civil aviation. The FAA reviewed the Air Force's original aeronautical proposal and made a series of observations. The observations are presented first, followed by the mitigation to reduce or avoid potential impacts. The FAA observations were:

1) There was no alternative in the original airspace proposal to provide for airspace below 10,000 feet MSL which could potentially be used by IFR traffic.

2) There were no specifics in the original airspace proposal about limiting the times and altitude for training.

3) There are existing communication inadequacies for civil aircraft traffic on Victor Airways below FL180, civil aircraft traffic en route, or civil aircraft seeking to traverse an activated PRTC.

The FAA reviewed the four Victor Airways that transect the proposed PRTC ATCAAs (refer to Figure 3.1-5). The FAA determined that the original Air Force proposal would have a potential for adverse impacts on civil aviation airspace use for the following reasons:

1) The PRTC MOAs avoid federal Victor Airways by 5 NM internal and 4 external NM and avoid any major Victor Airway intersections by 20 NM. The Gap A, B, and C MOAs each mirror a portion of a Victor Airway. These Gap MOAs are designed to adjoin abutting MOA airspace for large force exercises, planned for, at most, once per quarter, for a total of 1 to 3 days. The Gap MOAs would not be activated on a daily basis. The limited radar and radio communication in much of the proposed airspace results in civil aviation "widening out" the Victor corridors or flying GPS or an IFR direct routing. This reduces the likelihood of a number of aircraft being concentrated in a narrow corridor. The Gap MOAs without communication and radar enhancements would result in a concentration of civil aircraft during day-to-day MOA activation.

2) The Gap MOAs are designed to be activated for LFEs to avoid impacting airports in Billings and Miles City, MT; Sheridan and Gillette, Wyoming (WY); Dupree and Rapid City, SD; and Bismarck and Dickinson, ND. The Gap MOAs do not include provision for the communication and radar coverages when activated for LFEs. An LFE effectively shuts down all IFR aircraft traffic in a large area of Wyoming, Montana, North Dakota, and South Dakota during 4 hours an estimated 1 to 3 LFE days per quarter (or a total of 10 LFE days per year).

In response to the FAA and public concerns, the Air Force applied mitigations which resulted in Modified Alternative A, Modified Alternative B, and Modified Alternative C to reduce potential impacts upon civil aviation. The mitigations from Section 2.3 specifically address the concerns:

1) The Air Force's modified aeronautical proposal provides for eight Low and High PR-1 MOAs, Low and High PR-2 and PR-3 MOAs, and a High PR-4 MOA. There would be no Gap C Low MOA and no PR-4 Low MOA in Modified Alternative A or C. This is specifically designed to permit VFR operations below 12,000 feet MSL in PR-4 and to provide for activation and de-activation of a

MOA in support of IFR arrivals and departures. The multiple MOA segments and activation notification by NOTAM reduces uncertainty for pilots flying VFR. The elimination of the Gap C Low MOA provides improved general aviation access to the area under both VFR and IFR operations. The Air Force also modified the Gap B MOA/ATCCA lateral boundaries to avoid Gap B extending across Gap C, which would prevent usage of V-491 when Gap B is active.

2) The Air Force proposal identifies specific days and times per day when the proposed MOAs would be scheduled. The Air Force expects actual daily use of 3 hours per day for all MOAs except for 6 hours per day for PR-2 MOAs. If Modified Alternative A airspace were activated for the duration of the published times of use (i.e., from Monday through Thursday mornings and evenings and Friday mornings), which is not expected to occur, the number of civilian flights projected to be impacted using data from Table 3.1-9 is estimated to be approximately 91 civil flights (see Table 4.1-3). Impacts could be rerouting, increased communication, or up to 4-hour ground delay. Per the FAA's recommendation, the Air Force proposes that information will be submitted to support the following NOTAM distribution times:

    a. NOTAM issuance 2 hours in advance within published MOA times of use

    b. NOTAM issuance 4 hours in advance outside of published times of use

    c. NOTAM issuance 4 hours in advance for LFE-only airspace

3) The Air Force recognizes that there is limited low-altitude communication and navigation capability in much of the area proposed for PRTC. The Gap MOAs and MOA boundaries were adjusted to allow for civil aircraft navigation. The addition of Low and High MOAs and communication procedures to recall training aircraft, as well as the controlling agency release of the airspace as soon as low-level training is completed, reduces the potential for impact on civil aircraft operations. The Modified Alternative A does not include a Gap C Low MOA or a PR-4 Low MOA. So civil aircraft flights in those areas would not be affected below 12,000 feet MSL.

4) The southwest corner of the proposed PR-1C was adjusted to avoid V-247.

5) Each Gap MOA was reviewed for radar coverage and the boundary widths of the Gap MOAs were "widened out" to reduce the likelihood of a number of aircraft being concentrated in a narrow corridor. MOA boundaries from major airports such as Billings, Bismarck, Gillette, Dickinson, and Miles City to the MOAs were moved back to support airport traffic.

6) The LFEs would activate the entire airspace for a limited number of hours each LFE day (1 to 3 days per quarter, not to exceed 10 days per year). The LFE schedule would be issued at least 30 days in advance and a NOTAM would be issued 4 hours in advance. IFR aircraft would be unable to transit active airspace. Since the aeronautical proposal presents the daily duration of an LFE as 4 hours, the actual number of IFR flights impacted in the entire proposed PRTC airspace by an LFE day, based upon FAA data, reported public airport operations, and estimated private airfield operations would average an estimated 72 to 86 civilian flights per day based on four hours of weekday flying (from Table 4.1-4). These impacted civilian flights would consist of flights unable to transit IFR and those assumed to be unwilling to fly VFR in the active MOAs. The civilian flights could incur an estimated up to 4-hour delay during an LFE day while the entire PRTC airspace was activated.

7) Ellsworth AFB will develop a process and staff a position to manage real-time activation, use, modification, recall, and return of the current airspace.

8) The Proposed Action has been modified to incorporate recommended lateral boundaries at Hulett, WY in order to accommodate IFR procedures.

9) The Air Force will comply with AFI 11-214, *Air Operations Rules and Procedures*, during all LFE activities.

Jet Routes

As described in Sections 3.1.3.4.2 and 3.1.3.5, there is extensive commercial overflight above FL260 and especially above FL300. This includes daily east-west en route traffic as well as traffic on Canadian (CAN) routes. Hundreds of commercial air carrier flights traverse the proposed PRTC airspace on a daily basis, primarily above FL260. To mitigate impacts upon the jet route traffic above FL260, the Air Force revised proposal removes ATCAAs above FL260.

The Colstrip airport under the proposed PR-1B supports mining operations and the community of Colstrip.

As presented in Tables 2.5-6 through 2.5-8 training operations of B-1 aircraft would be below FL260. This would be expected to result in little to no impact to traffic on jet routes, CAN routes, or other high-altitude routes. A comparison of Appendix A Figures A-16, A-17, and A-18 shows that the preponderance of commercial flight is above FL260.

FAA Denver ARTCC has a Letter of Agreement (LOA) with Ellsworth AFB regarding the existing Crossbow ATCAA activation schedule. This LOA allows for use of the Crossbow ATCAA below FL270 and limits use above FL270. Although not explicitly included in the Proposed Action (Chapter 2.0), Letters of Agreement would need to be executed with all affected ARTCCs to mitigate potential impacts to commercial and general aviation.

Airports and Airfields

Public airports under or near the proposed PRTC airspaces are presented on Figure 3.1-6. These airports are depicted on aeronautical charts. The aeronautical charts identify a 3 NM by 1500 feet AGL avoidance area over the Belle Creek and Broadus public airports.

During review of the DEIS, the public and agencies expressed concerns that the PRTC could significantly impact public airports and private airfields under the proposed airspace and civil aircraft traffic within the proposed airspace. These concerns included the inability for radar to track aircraft and the limited radio frequency coverage in rural areas. Concerns included the inability to know in advance the hours of airspace activation and the low-level training of the B-1 aircraft, which could occur anywhere throughout the airspace at any time the airspace was activated. Aircraft flying IFR would incur no undue delay during departure and arrival operations to/from airports beneath PRTC. Training aircraft would relocate to another MOA to allow IFR arrivals/departures. When a MOA was activated, IFR flight could not transit the active airspace and VFR access would be by see-and-avoid. The FAA initially expressed concern that some airports not under the airspace could face access limitations. For example, Dickinson, ND, is daily served by 10 to 12 commercial flights from Denver, Colorado, as well as cargo operations to and from Bismarck and Minot, ND. The original Air Force proposal conflicted with Instrument Landing System (ILS) 32, GPS14, GPS32, and very high frequency omnidirectional radio range (VOR), an instrument approach into Dickinson. With the PR-4 Low MOA not included in the Modified Alternative A, IFR traffic below 12,000 feet MSL would be able to access Hettinger, Lemmon, Mott, or Bison. Table 4.1-2 provides estimated impacts at airports under the proposed PRTC for Modified Alternatives A, B, and C after the mitigations in Section 2.3 are applied.

Colstrip, MT, supports large scale open pit mining operations and has civil aviation activity in support of mining operations. Under the original proposed action, if the PR-1 MOA was activated, the Colstrip

airport would have been inaccessible to IFR traffic. FAA reviewers noted that Colstrip traffic flow potentially impacted includes GPS Runway (RWY) 6, GPS RWY 24, CISPU 1 departure, and CONUK 1 departure. The Air Force's revised aeronautical proposal has Low and High PR-1B MOAs to support IFR traffic into Colstrip. Sheridan, WY, flights potentially affected include GPS RWY 14, VOR RWY 14, ILS RWY 32, and RNAV (GPS) RWY 32. The Sheridan, WY avoidance area in PR-1C and PR-1D has been expanded in the Air Force revised aeronautical proposal to support access to the airport. The Forsyth, MT GPS RWY 26 and NDB RWY 26 have the potential to be impacted by the proposed airspace. A 20 NM distance measuring equipment (DME) arc is incorporated into the Air Force revised aeronautical proposal to provide for the VOR/DME RWY 16 holding pattern at Gillette, WY. A 35 NM DME arc was established to the east of Billings to provide for airport access.

The initially proposed PR-4 MOA/ATCAA was noted by the FAA as encroaching upon the southwest quadrant of the Bismarck, ND Municipal Airport approach control and conflicted with a series of instrument approach procedures into Bismarck. Bismarck instrument approach conflicts would include ILS 13, ILS 31, GPS 3, and GPS 21. The PRTC Proposed Action was revised by the Air Force in the aeronautical proposal to move the proposed PR-4 MOA airspace away from Bismarck to support access to this airport.

All or portions of five small airfields (Belle Fourche, Black Hills, Upton, Sturgis, and Hulett) lie under the PRTC Gateway ATCAA (Figure 3.1-6), which is essentially the existing Gateway ATCAA. These airports would be unaffected by ATCAA operations which occur at 18,000 feet MSL or higher. Table 4.1-2 includes public airports under or near the PRTC alternatives. The relative location of each airport is described and the potential consequences identified. A comparison of Table 4.1-2 and Table 3.1-3 shows the relative location of public airports. Private airfields under the proposed MOAs are listed by MOA on Table 3.1-4. Private airfields under a MOA would have comparable impacts to those of public airports. During the typical day when a Low MOA was activated, aircraft could launch, land, or transit the MOA VFR using see-and-avoid. IFR arrival and departure traffic would be supported when a Low MOA was activated by temporarily moving the training aircraft out of the MOA.

Table 4.1-2. Public Airport Consequences Summary

Airport	*Designation*	*Estimated Annual Operations*[1]	*Location*	*Environmental Consequences*		
				Modified Alternative A	*Modified Alternative B*	*Modified Alternative C*
Baker, MT	BHK	7,039	Under PR-3 MOA	IFR arrival and departure provisions under airspace if Low MOA active	IFR arrival and departure provisions under airspace if Low MOA active	IFR arrival and departure provisions under airspace if Low MOA active
Beach, ND	20U	1,147	North of PR-3 MOA	Within area with limited radio/ radar; potential secondary effects from increased traffic	Within area with limited radio/ radar; potential secondary effects from increased traffic	Within area with limited radio/ radar; potential secondary effects from increased traffic
Belle Creek, MT	3V7	550	Under existing Powder River MOAs and proposed PR-2 MOA	No expected change from existing conditions	No expected change from existing conditions	No expected change from existing conditions

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Table 4.1-2. Public Airport Consequences Summary

Airport	Designation	Estimated Annual Operations[1]	Location	Environmental Consequences		
				Modified Alternative A	Modified Alternative B	Modified Alternative C
Belle Fourche, SD	EFC	4,954	Under Gateway ATCAA	No impact on traffic up to FL180	No impact on traffic below FL180	No impact on traffic below FL180
Billings, MT	BIL	86,505	West of PR-1A and PR-1C	PR-1A MOA/ ATCAA adjusted to avoid traffic pattern	No expected change from existing conditions	PR-1A MOA/ ATCAA adjusted to avoid traffic pattern
Bismarck, ND	BIS	50,370	Northeast of PR-4 MOA	PR-4 Low MOA removed from this alternative to avoid air traffic	PR-4 Low MOA could affect approach control	PR-4 ATCAA above FL180 not expected to impact approach control
Bison, SD	6V5	2,920	Under PR-4 MOA	PR-4 Low MOA was removed from this alternative to avoid air traffic	PR-4 Low MOA was removed from this alternative to avoid air traffic	Under PR-4 ATCAA; no local impacts to traffic below FL180
Black Hills, SD	SPF	13,870	Under Gateway ATCAA	No impact on traffic up to FL180	No impact on traffic up to FL180	No impact on traffic up to FL180
Bowman, ND	BPP	4,829	Under PR-3 MOA	IFR arrival and departure provisions under airspace if Low MOA active	IFR arrival and departure provisions under airspace if Low MOA active	IFR arrival and departure provisions under airspace if Low MOA active
Broadus, MT	00F	5,371	Under existing Powder River MOAs and proposed PR-2 MOA	No expected change from existing conditions	No expected change from existing conditions	No expected change from existing conditions
Colstrip, MT	M46	3,233	Under PR-1B MOA	IFR arrival and departure provisions under airspace if Low MOA active	No expected change from existing conditions	IFR arrival and departure provisions under airspace if Low MOA active
Dickinson, ND	DIK	10,585	North of intersection between PR-3 and PR-4 MOAs	In an area of low communication; some crowding could occur on northern routes during PRTC activation; IFR traffic to south vectored on V-491 (not accessible during LFE); see-and-avoid cross-country GPS traffic in PRTC	In an area of low communication; some crowding could occur on northern routes during PRTC activation; IFR traffic to south vectored on V-491 (not accessible during LFE); see-and-avoid cross-country GPS traffic in PRTC	In an area of low communication; some crowding could occur on northern routes during PRTC activation; IFR traffic to south on V-491 or southeast below FL180 not impacted; cross-country GPS traffic would be see and avoid when PR-3 Low MOA activated

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Table 4.1-2. Public Airport Consequences Summary

Airport	Designation	Estimated Annual Operations[1]	Location	Environmental Consequences		
				Modified Alternative A	Modified Alternative B	Modified Alternative C
Ekalaka, MT	97M	2,555	Under Gap B MOA	LFE activation of Gap MOA impacts IFR and through traffic on V-120	LFE activation of Gap MOA impacts IFR and through traffic on V-120	LFE activation of Gap MOA impacts IFR and through traffic on V-120
Elgin, ND	Y71	210	Under PR-4 MOA	PR-4 Low MOA is not in this alternative	IFR arrival and departure provisions under airspace if Low MOA active	PR-4 MOAs is not in this alternative
Faith, SD	D07	1,356	East side of Gateway ATCAA south of PR-4 MOA	Outside of direct impact area; IFR traffic to west on V-120; PR-4 Low MOA is not in this alternative; traffic to southwest under Gateway ATCAA could fly below FL180; all other traffic as under normal conditions	Outside of direct impact area; IFR traffic to west on V-120; IFR arrival and departure provisions under airspace if Low MOA active; traffic to southwest under Gateway ATCAA could fly below FL180; all other traffic as under normal conditions	Outside of direct impact area; IFR traffic to west on V-120; PR-4 MOA is not in this alternative; traffic to southwest under Gateway ATCAA could fly below FL180; all other traffic as under normal conditions
Fort Smith, MT	5U7	3,076		Outside airspace; PR-1B MOA affects traffic to northeast	PR-1 ATCAA not expected to impact traffic	Outside airspace; PR-1B MOA affects traffic to northeast
Gillette, WY	GCC	19,345	South of PR-2 MOA/ATCAA	Traffic to north on V-254 traverses Gap A MOA/ATCAA; traffic impacted during LFE; IFR arrival and departure provisions under airspace if Low MOA active	Traffic to north and northwest could fly under PR-1A/B/C/D ATCAA below FL180	Traffic to north on V-254 traverses Gap A MOA/ATCAA; traffic impacted during LFE; IFR arrival and departure provisions under airspace if Low MOA active
Glen Ullin, ND	D57	864		Outside airspace; PR-4 Low MOA was not in this alternative	Outside airspace; PR-4 MOA affects traffic to south	PR-4 ATCAA not expected to impact traffic
Hardin, MT	F02	5,579	Under PR-1 MOA/ATCAA	IFR arrival and departure provisions under airspace if Low MOA active	Under PR-1 ATCAA; traffic unaffected below FL180 when ATCAA activated	IFR arrival and departure provisions under airspace if Low MOA active
Harding (Buffalo), SD	9D2	888	Under Gap B MOA/ATCAA	LFE activation of Gap MOA impacts traffic on V-120	LFE activation of Gap MOA impacts traffic on V-120	LFE activation of Gap MOA impacts traffic on V-120

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Table 4.1-2. Public Airport Consequences Summary

Airport	Designation	Estimated Annual Operations[1]	Location	Environmental Consequences		
				Modified Alternative A	Modified Alternative B	Modified Alternative C
Hettinger, ND	HEI	4,849	Under west side of PR-4 MOA	PR-4 Low MOA was not in this alternative	IFR arrival and departure provisions under airspace if Low MOA active	Under PR-4 ATCAA no local impacts to traffic below FL180
Hulett, WY	W43	3,816	Under Gateway ATCAA	No impact on traffic below FL180	No impact on traffic below FL180	No local impact on traffic below FL180
Lemmon, SD	LEM	5,579	Under PR-4 MOA	PR-4 Low MOA was not in this alternative	IFR arrival and departure provisions under airspace if Low MOA active	Under PR-4 ATCAA; no local impacts to traffic below FL180
Mandan, ND	Y19	24,820		Outside airspace; PR-4 Low MOA was not in this alternative	Outside airspace	PR-4 ATCAA not expected to impact approach
McIntosh, SD	8D6	70	East edge of PR-4 MOA	PR-4 Low MOA was not in this alternative	IFR arrival and departure provisions under airspace if Low MOA active	Under PR-4 ATCAA; no local impacts to traffic below FL180
Miles City, MT	MLS	11,315	Intersection of V-2/V-465, V-120, and V-254 northwest of PR-2 MOA/ATCAA	No direct impact; traffic on Victor Airways to south and southeast when Low MOAs activated; potential increased traffic as civil aircraft avoid activated MOAs; see-and-avoid cross-country GPS to south when Low MOAs activated	No direct impact; traffic to south and southwest under FL180 when PR-1 ATCAA activated; see-and-avoid traffic to south or southeast during LFE	No direct impact; traffic on Victor Airways to south and southeast when Low MOAs activated; potential increased traffic as civil aircraft avoid activated MOAs; see-and-avoid cross-country GPS to south when Low MOAs activated
Mott, ND	3P3	1,877	Under PR-4 MOA	PR-4 Low MOA is not in this alternative	IFR arrival and departure provisions under airspace if Low MOA active	Under PR-4 ATCAA; no local impacts to traffic below FL180
Newcastle, WY	ECS	2,555	South of Gateway ATCAA	Outside of direct impact area; traffic to north under activated ATCAA could occur below FL180; all other traffic as under normal conditions	Outside of direct impact area; traffic to north under activated ATCAA could occur below FL180; all other traffic as under normal conditions	Outside of direct impact area; traffic to north under activated ATCAA could occur below FL180; all other traffic as under normal conditions

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Table 4.1-2. Public Airport Consequences Summary

Airport	*Designation*	*Estimated Annual Operations*[1]	*Location*	*Environmental Consequences*		
				Modified Alternative A	*Modified Alternative B*	*Modified Alternative C*
Rapid City, SD	RAP	39,785	Southeast of Gateway ATCAA	Outside of direct impact area; traffic to north to remain below FL180 when Gateway ATCAA activated; IFR traffic on V-491 could not traverse Gap C MOA/ATCAA during LFE	Outside of direct impact area; traffic to north to remain below FL180 when Gateway ATCAA activated; IFR traffic on V-491 could not traverse Gap C MOA/ATCAA during LFE	Outside of direct impact area; traffic to north to remain below FL180 when Gap C ATCAA or PR-4 ATCAA activated; IFR traffic on V-491 could not traverse Gap C MOA/ATCAA during LFE
Sheridan, WY	SHR	36,865	South of PR-1B MOA/ATCAA	PR-1B MOA adjusted so that traffic to northwest and southeast skirts PR-1B MOA	Traffic to north and northwest could fly under PR-1A/B/C/D ATCAA below FL180	PR-1B MOA adjusted so that traffic to northwest and southeast skirts PR-1B MOA
Sturgis, SD	49B	12,775	Under southeast edge of Gateway ATCAA	No impact on traffic below FL180	No impact on traffic below FL180	No impact on traffic below FL180
Tillitt (Forsyth), MT	FOR	8,030	North of PR-1 MOA/ATCAA	Outside of direct impact area; some increased congestion as traffic avoids activated MOAs by flying V-2/ V-465; all other traffic as under normal conditions	Outside of direct impact area; traffic not affected below FL180 during PR-1 ATCAAs activation	Outside of direct impact area; some increased congestion as traffic avoids activated MOAs by flying V-2/V-465; all other traffic as under normal conditions
Upton, WY	83V	50	Under Gateway ATCAA	No impact on traffic up to FL180	No impact on traffic up to FL180	No impact on traffic up to FL180

1. Based on most recent available information as of January 30, 2014; FAA information effective dates vary. FAA information for each airport was the most current information available from airnav.com for the annual period shown in this table.

4.1.3.1.4 *OTHER CIVILIAN USE*

Local public airports and private airfields are used for a variety of civil aircraft activities within the ROI. Agricultural support activities, including aerial applications, ranch and farm oversight and time-sensitive delivery of equipment are typical regional aircraft activities. Aerial applications typically occur below 500 feet AGL, although return flights to base locations can occur at higher altitudes. Aerial applications frequently occur in the morning and/or in the more calm meteorological conditions to ensure appropriate distribution of the materials. Low-level B-1 flights, which could occur at any time within an activated MOA, were of concern to public commenters and could place significant limitations on the timing of aerial applications. Meteorological conditions and business requirements could require commercial applicators to perform required treatments whether or not a MOA were activated for B-1 training. Although general aviation could fly VFR in an activated MOA, the normal fixed wing and rotary wing aircraft commuting to and from aerial application areas and participating in aerial applications

have very limited experience with high-speed military aircraft at altitudes between 500 and 2,000 feet AGL and are usually at or very near gross weight capacity en route to an application. Scheduling of the respective Low MOAs and issuing a NOTAM to announce the activation of the Low MOA would help agriculture applicators with needed information for business and safety decisions. Even with a NOTAM being issued up to 4 hours in advance, agricultural applicators may still perceive a low-level B-1 or other military aircraft as having an impact on their operations.

Time-sensitive delivery of equipment parts or personnel can be critical to ensure replacement parts or specialized personnel are available for needed agricultural, mining, or other machinery. Civil aviation IFR transport could be required whether or not a MOA is activated. Public comments included concerns that activated MOAs could interfere with delivery of time-sensitive materials. During the one to three hours on a weekday when a Low MOA was activated, IFR arrival and departures would be coordinated by temporarily reassigning training aircraft from the Low MOA. ATC would work with the Air Force to shift training and deactivate a Low or High MOA to route a time-sensitive IFR delivery above or below training military aircraft.

The scheduling of MOAs and issuing NOTAMs to announce MOA activation could help with other civilian use; however, the infrequent, but random appearance of low-level, high-speed large military aircraft could be seen by pilots as potentially impacting their operations during the time on weekdays when a Low MOA was used for training.

Emergency and Related Services

Public comments included concern that military aircraft training in the PRTC airspace could impact life-flight, firefighting, weather modification aircraft, and other general aviation pilots who considered sharing an active MOA with high-speed military aircraft below 3,000 feet AGL to be unsafe even under "see-and-avoid" conditions. Health care providers based at Bismarck, ND, regularly provide air ambulance and medical doctors to communities for health services. Healthcare providers typically fly IFR at altitudes above 10,000 feet MSL. As is currently the case with the Powder River airspace and would be the case throughout the PRTC, if an emergency, such as a life-flight, were required, the Air Force would immediately shift aircraft or end training in airspace requiring life-flight transport to accommodate the emergency. A MOA would be deactivated to allow IFR emergency and related arrivals and departures from an airport under the MOA.

In cases of emergency, such as air ambulance, law enforcement, or firefighting, which require ATC clearance, the Air Force would immediately respond to ATC direction and relocate. Should emergency activity require more airspace than a Low MOA, the Air Force would cease training within the MOA and either relocate to an alternate airspace already activated for training or terminate training and return to base. No new MOA could be activated for a relocated training aircraft because an airspace could only be activated with a 2-hour (4 hours outside published hours) advance notice by NOTAM.

Related aircraft activities which require special conditions could include regional requirements for airspace use. In addition to fire monitoring and related emergency activities, the U.S. Fish and Wildlife Service (USFWS) and state agencies provide digital aerial photography for wetlands surveys and wildlife monitoring. This photography requires that aircraft be flown at specific altitudes over designated areas under specific visibility conditions at designated times of the year. These activities can occur during specific seasons at specific altitudes for one to two week periods. Uncertainty with the Air Force's initial proposal resulted in the concern that access would not be possible and significant impacts to monitoring could occur. The modified Air Force proposal includes multiple airspace segments that could be activated to avoid monitoring organizations. The Air Force would coordinate B-1 training operations and schedule MOA segments to support monitoring activities. Communication, Low and High MOA

segments, and scheduling would minimize potential impact to monitoring aircraft. The primary impact to civil aircraft involved in emergency and related services and to military training aircraft would be the need for communication and the possible requirement for military aircraft to relocate to another activated MOA in response to emergency conditions.

Commercial Carriers

Adequate communication exists for commercial carriers flying in Class A airspace. The inadequacy of communication within the proposed PRTC MOAs could affect commercial carriers accessing or transiting below Class A airspace. Commercial carriers currently transiting or accessing the airspace provide regular service to Billings, Bismarck, Dickinson, Gillette, Rapid City, and Sheridan. These airports are all outside the proposed PRTC. The inadequate communication throughout much of the PRTC airspace results in commercial carriers using more airspace than might otherwise be anticipated for IFR traffic. This results in aircraft more spread out, especially along the Bismarck-Billings corridor and in the areas around PR-2, PR-3, and the western portions of PR-4. The Gap MOA boundaries and the PRTC proposed airspace distance setbacks have been increased in the revised Air Force proposal from what was originally presented at scoping to support civil aircraft flying in areas with inadequate radio frequency and/or radar coverage.

Other General Aviation

Public commenters considered low-level flights, which could occur any time a MOA was scheduled, to be a significant impact to civil aviation.
Photo courtesy of A.S. Elliott

General aviation pilots operating especially below 10,000 feet MSL in the proposed MOAs expressed concern about limited radar and communication and the inability to be notified when the airspace was activated for training and when the airspace was no longer active. As noted above under Victor Airways, there is limited radar or radio coverage in much of the area. General aviation which uses altitudes below 10,000 feet MSL includes farm and ranch VFR flight operations, hunting support, and recreational flying. Although pilots can fly VFR in an activated MOA, pilots at public hearings expressed concern with flying see-and-avoid where B-1 overflights could impact their flight activities. If they chose not to fly in an active MOA, they could be delayed up to 4 hours or re-routed. General aviation often flies at altitudes below radar and below radio frequency coverage. The fact that the Air Force would have high-speed military training aircraft which could be anywhere when a MOA is scheduled and the uncertainty of B-1 training flights altitudes which could occur randomly below 2,000 feet AGL were seen by commenters as potentially significant impacts upon their general aviation activities throughout an active Low MOA. The Air Force revised the aeronautical proposal with several mitigations to address these concerns. The proposed MOAs would be stratified in Low and High stacks to provide for IFR arrivals and departures. The Air Force would coordinate with the FAA to issue a NOTAM 2 to 4 hours in advance of military flight operations (see Section 4.1.2.2) to provide pilots with information about which MOAs would be active at any given time. The aeronautical proposal specifies weekday hours when the MOAs would be scheduled to reduce uncertainty and the Air Force would coordinate with the FAA to issue NOTAMs a minimum of 2 hours in advance to inform general aviation pilots of day-to-day MOA active or inactive status. The Air Force would schedule low-level training early in a mission to provide for early release of the Low MOAs for civilian uses. The Air Force would inform ATC when training aircraft had completed training in the Low MOA so that the Low MOA could be deactivated. This would permit a training mission to be in a

Low MOA for specific training and then perform continued training in a High MOA or in an ATCAA. These mitigations and others noted in Section 2.3 are directly designed to respond to public and agency concerns and would be expected to reduce time when a Low MOA was active.

Public commenters expressed concern that the large area of the MOAs would deter general aviation pilots from flying through the MOAs. The concern was that active MOAs could reduce the stops and associated expenditures by en route aircraft at airports under the airspace. A comparison of actual MOA traffic from the FAA on Appendix A Figures A-8, A-9, A-14, and A-15 shows that much of the MOA traffic flies direct point-to-point. The aircraft tracks do not generally follow the Gap MOA corridors except V-491. This means that civil aircraft seeking to fly IFR would request ATC clearance in a deactivated MOA segment or delay or divert around airspaces to avoid an active MOA. The revised Air Force proposal with scheduling, stacked MOAs, and 2 hour in advance NOTAM ATC information would reduce potential IFR delays and provide information for VFR pilots. Some general aviation pilots would see the ATC information as too difficult to access, the risk of flying VFR too great, and the limited communication for IFR flight to result in an impact to general aviation.

Glider and Sky Diving Operations. Gliders and soaring operations in the PRTC proposed MOA areas were a concern during public review of the DEIS. Soaring and sky diving operations occur on an infrequent basis with the majority typically on the weekends when military training would not normally occur. Gliders tend to operate below 10,000 feet MSL. There is no restriction on a glider operating VFR in these areas; however, a pilot should be alert since military training activities may include low altitudes and abrupt maneuvers. MOAs and their published times of use are depicted on aeronautical charts. NOTAMs are available to general aviation users when the MOAs are active outside of the published hours of use (via https://pilotweb.nas.faa.gov). The NOTAMs would be checked for activity during glider or sky diving preflight. Aeronautical charts also depict where skydiving and glider operations regularly occur. Military pilots training in the proposed MOAs would be briefed of known glider activity that may occur in the area. See-and-avoid procedures are the responsibilities of all pilots. Any delay or change in airspace which could affect plans for soaring or sky diving would be seen by participants as an annoyance. Ellsworth and Minot AFBs airspace managers would:

- Plan to avoid known glider activities/events.
- Provide a briefing item to aircrews warning of glider/sky diving activity.
- Inform the glider community about procedures and safety in the airspace as requested.

Training aircraft would not normally schedule airspace from Friday afternoon through the weekend (see Section 4.1.2.2). There would be no significant adverse impacts expected to glider or sky diving operations in the regional airspace with participants reviewing military training schedules and military training pilots briefed to avoid areas and times of glider/sky diving activity.

Other Questions. Existing wind generation towers and other flight obstacles are published on aeronautical charts. Should any towers or commercial wind-based energy systems be constructed within the airspace in excess of 200 feet in height they would be subject to FAA tower visibility and lighting requirements. These requirements would be necessary regardless of the existence of a MOA. The MOAs are of sufficient size that training military aircraft would be able to avoid electromagnetic effects from wind generation towers. Additional communication with Ellsworth AFB would be required to support weather modification programs in an active MOA. Military training pilots would be briefed where weather modification activity could occur and would use see-and-avoid techniques to work with weather modification activities.

4.1.3.1.5 *FAA AIRSPACE USAGE DATA*

FAA airspace usage data during PRTC proposed scheduling hours are presented on Table 3.1.2. B-1 aircraft would train for approximately 1.5 to 2 hours within a MOA/ATCAA combination. During this time, a B-1 could be at 2,000 feet AGL or below traveling at speeds of approximately 540 knots for 15 to 20 minutes.

The Air Force modified proposal is designed to reduce potential impacts on civil aviation. Changes include increasing the distance from the edges of MOAs and ATCAAs from major airports, stacking MOAs with the overlying ATCAA to allow release of a Low or High MOA to support IFR traffic, publishing in charts the published times of use of airspace, issuing a NOTAM to announce the activation of scheduled airspace, providing real-time information to ATC when training aircraft have completed activity within an airspace such as a Low MOA, modifying Gap MOAs to have greater widths, and establishing provisions in Low MOAs for the recall of training aircraft prior to MOA activation. These changes in the revised Air Force aeronautical proposal are designed to reduce potential impacts to civil aviation. Table 4.1-3 summarizes the daily number of civilian operations estimated to be impacted by PRTC Modified Alternative A as 86. The estimated civilian operations are summarized from Table 3.1-9 and include FAA data for representative days, public airport reported annual operations divided by the number of days in a year, and estimated private airfield operations determined by the reported based aircraft and the number of operations per year for public airports.

Monday through Thursday daily aircraft affected represent the estimated daily civilian operations in the MOAs proportioned to the FAA data. MOA scheduling would impact approximately 60 percent of the daily civil aircraft operations at airports under an active Low MOA on Monday through Thursday and approximately 20 percent of the daily civil aircraft operations on Friday morning. The FAA data used to prepare Table 3.1-2 identify a difference between the numbers of aircraft flying IFR in the proposed PRTC airspace on weekdays as opposed to weekends (see Table 3.1-10).

Table 4.1-3. Estimated Monday Through Thursday and Friday Morning MOA Civilian Traffic Affected by PRTC Modified Alternatives

Proposed MOA	*Daily Average Civilian Operations*[2,4]	*PRTC Modified Alternative*			*No Action*[1,3]
		A[1]	*B*[1]	*C*[1]	
PR-1A/B/C/D	24	18	0	18	0
PR-2	24	24	24	24	24
PR-3	38	38	38	38	0
PR-4	45	6	45	0	0
Day-to-Day Total		**86**	**107**	**80**	**24**

Notes:
1. MOAs scheduled Monday through Thursday, 7:30 a.m. to 12:00 noon and 6:00 p.m. to 11:30 p.m.; Friday, 7:30 a.m. to 12:00 noon, with NOTAMs issued at least 2 hours in advance; other times with NOTAM issued at least 4 hours in advance. MOA scheduling would impact approximately 60% of the daily civilian aircraft operations on for Monday through Thursday and 20% on Friday based on time distribution of flights from Table 3.1-10.
2. From Table 3.1.9; 6 day-to-day flights in PR-1A or 1C High not impacted.
3. Represents operations in proposed PR-2, which is approximately existing Powder River A/B MOAs.
4. ATCAA traffic assumed to be vectored IFR around or above active airspace.

Table 4.1-3 includes more public airport operations than are tracked by the FAA. The FAA usage data can be directly used to identify potential impacts to commercial and other aircraft traversing the proposed PRTC. The Air Force has removed any military training flight operations above FL260 to reduce the potential for impacts to commercial and other aircraft overflying the airspace. FAA data demonstrate that average daily commercial flight activity is 4 to 12 flights in the proposed PRTC ATCAA. Civilian aircraft fly IFR in the ATCAAs.

If PRTC is approved by the FAA, the expanded MOA airspace would be well-publicized and documented on aeronautical charts. MOA activation would be on a scheduled basis and announced by NOTAM in all cases (see Section 2.3.1). The Air Force scheduling and communication efforts with the FAA could provide deconfliction of the PRTC airspace units for military training. Ongoing interaction between Ellsworth AFB and state and federal agencies would help ensure continued compatibility of military and commercial/civil aviation in the affected environment of PRTC airspace. All pilots using aeronautical charts would be aware of the changed configuration and scheduling of this special use airspace (SUA).

4.1.3.1.6 *LFE IMPACTS*

The 10 LFE days have training scheduled during fewer hours than on a normal training day. The LFE encompasses the entire airspace and utilizes more military aircraft. An LFE would propose to activate all or a substantial portion of the PRTC MOAs and ATCAAs, including Gap MOA/ATCAAs an estimated 2 to 4 hours daily for 1 to 3 days a maximum of once per quarter. LFE airspace would be scheduled in advance and NOTAMs will be issued 2 to 4 hours prior to the initiation of military training in the airspace to provide near real-time information to civil aircraft pilots (see Section 4.1.2.2). These LFEs would include approximately 20 aircraft of various types performing combined training within the airspace as they would in a real-world conflict. The 2- to 4-hour daily LFE use of the entire airspace would be publicized at least 30 days in advance. IFR access or departures of airports under the airspace would be accommodated by temporarily reassigning participating training aircraft. The LFE would place restrictions on civil aircraft seeking to transit IFR or seeking to avoid flying VFR through active MOAs. Avoidance could be accomplished by scheduling civil aircraft flights within the proposed PRTC to avoid the MOA activation times, ground holding, diverting to another airport for a period of up to 4 hours while LFE training occurred, or diverting around the activated airspace. VFR aircraft under the airspace would have to fly see-and-avoid or remain on the ground during the hours of LFE training. Although the total area affected is greater during LFE training than during day-to-day training, the duration of LFE training is less than the duration of day-to-day training. This means that the number of civilian aircraft projected to be impacted is less during an LFE day than during day-to-day training. Table 4.1-4 calculates an average of 83 civilian MOA flights would be impacted by re-routing, ground hold, rescheduling, or flying VFR through an active PRTC during each day of Modified Alternative A LFE training.

Table 4.1-4 presents the estimated daily LFE MOA impacts for each alternative. Each day's LFE is estimated to occur within the normally scheduled airspace period. Appendix A Figures A-2 through A-3 show that 30 percent of civilian flights occur during a typical four-hour period.

Table 4.1-4. Estimated LFE Daily MOA plus Gap MOA Civil Operations Affected by PRTC Modified Alternatives

Proposed MOA	*Daily Average Traffic*[2,5]		*PRTC Modified Alternative*		
	MOA	*ATCAA*	*A*[1]	*B*[1]	*C*[1]
PR-1A/B/C/D (includes Gap A)	26	12	20	8	20
PR-2	24	8	16	16	16
PR-3 (includes Gap B)	50	12	32	32	32
PR-4 (includes Gap C)[4]	50	11	10	32	6
		LFE Total	**78**	**88**	**74**

4.1.3.1.7 *DECONFLICTION MEASURES*

The Air Force would employ the mitigation measures listed in Section 2.3 during regular training and LFEs to aid with deconfliction and address impacts. Section 2.3.1 summarizes the changes to the Air Force aeronautical proposal designed to reduce impacts upon civil aviation.

4.1.3.2 MODIFIED ALTERNATIVE B

4.1.3.2.1 *AIRSPACE CATEGORIES*

Modified Alternative B includes all Modified Alternative A ATCAAs and the PR-2, PR-3, and PR-4 Low and High MOAs. Modified Alternative B also includes Gap B MOA/ATCAA, and Gap C MOA/ATCAA. The Gap MOAs/ATCAAs would be activated during LFEs as explained under Modified Alternative A.

4.1.3.2.2 *MILITARY TRAINING AIRSPACE*

Modified Alternative B would modify the existing Powder River A and Powder River B MOAs to become the PR-2 MOA. There would be no change to PR-2 from what was described for Modified Alternative A. ATCAAs would be the same as described for Modified Alternative A. Modified Alternative B does not include the PR-1A/B/C/D MOAs or the Gap A MOAs. The total volume of airspace would be reduced from Modified Alternative A, and the terrain conditions of the PR-1A/B/C/D MOAs would not be available for low altitude training under Modified Alternative B. Any given location under the Modified Alternative B Low MOAs would be expected to be overflown an average of 6 to 9 times per year within one quarter mile of the flight path at an altitude of 2,000 feet AGL or below. A comparison of Table 2.5-5 with Table 2.6-2 demonstrates that Modified Alternative B would result in fewer overall sortie operations conducted annually within the airspace when compared with Modified Alternative A. Training within the PRTC Modified Alternative B MOAs/ATCAAs would be similar to baseline training in the Powder River A and B MOAs and the consequences would be comparable to those described under Modified Alternative A for the PR-2, PR-3, and associated Gap MOAs. Training within the Modified Alternative B MOAs/ATCAAs would be similar to projected training in the PR-3 High and Low MOAs. Environmental consequences would be comparable to those described under Modified Alternative A for the PR-2, PR-3, and associated Gap MOAs. Under Modified Alternative B, PR-4 would have low-altitude overflight consequences and constraints on underlying airports as described for PR-3 under Modified Alternative A (see Table 4.1-2). Modified Alternative B training would include low-level to high-level combat maneuvering and staging for LFEs as described for Modified Alternative A.

4.1.3.2.3 *CIVIL AIRSPACE USAGE*

Victor Airways

Impacts to Victor Airways would be comparable to Modified Alternative A except that fewer Victor Airways would be impacted. V-120 and V-491 would have the same impacts as under Modified Alternative A (see Figure 3.1-5). V-254 below FL180 would not be impacted by Modified Alternative B. V-254 traffic would be parallel to the Modified Alternative B PR-2 MOA with an internal distance of 4 miles from the eastern border of the PR-2 MOA. Civil aircraft would be able to traverse north-south under the proposed PR-1 ATCAA as depicted on Appendix A Figures A-7, A-8, A-9, A-13, A-14, and A-15. Impacts to aircraft within the proposed PR-2 and PR-3 MOAs not currently using Victor Airways or the aircraft on other Victor Airways would be as described for Modified Alternative A. Modified Alternative B includes PR-4 Low and High MOAs and impacts to aircraft not currently using Victor Airways would be comparable to the impacts described for Modified Alternative A under PR-2 or PR-3.

If the Modified Alternative B airspace were activated for the duration of the published times of use from Monday through Thursday, the total daily number of civilian operations projected to be impacted from Table 4.1-3 is estimated to be 107 civil operations.

Jet Routes

Modified Alternative B would have no change in ATCAA use from those described for Modified Alternative A. Jet route impacts would be minimal as described for Modified Alternative A since the vast majority of the jet route traffic transiting the ROI is above FL260 as discussed previously.

Airports and Airfields

Public airports under the PR-2 and PR-3 MOAs would be impacted by military flight training as described for Modified Alternative A. Public airports under PR-4 Low MOA would be impacted comparable to the impacts described for the PR-3 under Modified Alternative A. Airports under PR-2 are already under the Powder River A and B MOAs. Airfields under the PR-2, PR-3, and PR-4 MOAs would be impacted comparable to the impacts upon public airports. Airports and airfields under the Gap B MOA and Gap C MOA would be impacted during LFEs as described under Modified Alternative A. Table 4.1-2 summarizes the impacts to airports for Modified Alternative B.

Airports at Hardin and Colstrip would not have a MOA above them. The ATCAA above those airports would be at FL180 and above. IFR traffic between those airports and Miles City, Gillette, Sheridan, Billings, and airports under the PR-1 ATCAAs would be able to fly IFR below FL180 even during the time when the ATCAA was activated. Communication would be required by pilots at these airports to ascertain the activation status of the PR-1 ATCAAs and to ascertain the activation status of other Modified Alternative B MOAs/ATCAAs if their flight plans took them through the Modified Alternative B airspace. This requirement for communication could be seen by pilots as an impact to their use of the airspace.

4.1.3.2.4 *OTHER CIVILIAN USE*

Commercial Carriers

Commercial carriers or time-sensitive deliveries operating on the western side of the airspace under the PR-1 ATCAAs would be able to fly IFR below FL180 during the time the ATCAAs were activated. This could result in some commercial carriers being required to fly at less efficient altitudes than would otherwise be desired during 10 days per year when an ATCAA was activated. IFR arrival and departure traffic would be given priority over training aircraft.

Commercial carriers operating within the PR-2, PR-3, and PR-4 Low and High MOAs and ATCAAs would face the same consequences as those described under Modified Alternative A for airspace with Low and High MOAs. IFR arrivals or departures would be given priority over training aircraft, and the IFR aircraft would be directed out of the training MOA. The lack of radio frequency communication and radar coverage in the PR-2, PR-3, and western part of the PR-4 MOA could affect corridors between Miles City, Dickinson, Bismarck, and Faith as well as through the Gap B and C MOAs/ATCAAs.

Other General Aviation

Other general aviation throughout the Modified Alternative B PR-2, PR-3, PR-4 and associated Gap MOAs would be impacted as described for Modified Alternative A. This includes the ability for IFR arrival or departure but the inability to traverse an active airspace flying IFR. Ground hold or re-routing of civil aviation pilots unable or unwilling to fly VFR in an activated MOA would be seen by pilots as an impact.

All general aviation activities under the PR-1, and the Gap A ATCAAs (when activated for LFEs) would be able to fly IFR or VFR below FL180 as under existing conditions. General aviation under the PR-2 MOA would face comparable flight conditions as experienced under the existing Powder River A and B MOAs.

General aviation and aerial application impacts under Modified Alternative B within the PR-2 MOA and PR-3 MOA would be as described for Modified Alternative A. Under Modified Alternative B, the PR-4 MOA would have both a Low and High MOA. PR-4 Low MOA scheduling would have impacts to airports and airfields under the MOA comparable to the impacts to airports described for PR-3 under Modified Alternative A.

Modified Alternative B skydiving and glider effects within PR-2, PR-3, and PR-4 Low and High MOAs would be as described for Low and High MOAs under Modified Alternative A. Modified Alternative B would have no low-altitude overflight impacts under the PR-1 ATCAAs or under the Gap A ATCAA. Skydiving and glider activity, where it occurs under the PR-1 ATCAAs would not be impacted at altitudes below FL180.

Weather modification program effects to the east side of the Modified Alternative B airspace would be as described for Modified Alternative A.

Emergency and Related Services

Emergency services, including life flight, fire support, and other emergency support, would be given priority under Modified Alternative B as described under Modified Alternative A. Such emergencies would require communication with ATC and Ellsworth AFB. Air Force training activities would not be initiated within an airspace until adequate recall capabilities for training aircraft were in place. Adjustments to allow for the emergency uses could include relocating to another airspace or canceling missions and returning to base, depending upon the extent of the emergency. Conditions would be as described for Modified Alternative A.

Related services include natural resource photography and monitoring, which would be conducted during specific times under specific meteorological conditions. As described under Modified Alternative A, the Air Force would work with the appropriate agencies to schedule training activities in support of these ongoing monitoring operations.

4.1.3.2.5 *FAA Airspace Usage Data*

FAA airspace usage data from Table 3.1-2 were used to project potential air traffic impacts under Modified Alternative B. If all of the day-to-day airspace was activated on an average day, Modified Alternative B FAA data, reported public airport operations, and estimated private airfield operations would impact an estimated 107 civilian flights (from Table 4.1-3). Air traffic impacts would be as described for Modified Alternative A and include possible ground hold of up to 4 hours. Air traffic above FL180 would be affected the same as described for Modified Alternative A. Air traffic below FL180 in the Modified Alternative B PR-2 and PR-3 MOAs would be the same as described for Modified Alternative A. Air traffic under the PR-4 Low MOA would be impacted as described for PR-3 under Modified Alternative A. Traffic in the Billings-Miles City-Gillette triangle below FL180 would not be impacted by the activation of the PR-1 ATCAAs. This means that ATC would continue to support IFR traffic transiting the airspace below FL180 and the airports at Hardin and Colstrip under the PR-1 ATCAAs.

4.1.3.2.6 *LFE Impacts*

Table 4.1-4 presents the estimated Modified Alternative B MOA LFE impacts. The LFE ATCAA impacts would be essentially the same as those described for Modified Alternative A. Impacts to civil traffic in MOAs during an LFE day would be comparable to those described for Modified Alternative A in

Section 4.1.3.1.6 with the exception that LFE training below FL180 would not occur beneath the PR-1 and Gap A ATCAAs. Training during an LFE day under Modified Alternative B would impact an estimated 88 civilian flight operations in the MOAs. Impacts would be as described for Modified Alternative A. Civilian flights could be impacted by re-routing, ground holds, rescheduling, or flying VFR through an active MOA.

4.1.3.2.7 *DECONFLICTION MEASURES*

The Air Force would employ the same measures listed in Section 2.3 to aid with deconfliction and address impacts.

4.1.3.3 MODIFIED ALTERNATIVE C

4.1.3.3.1 *AIRSPACE CATEGORIES*

Modified Alternative C includes all Modified Alternative A ATCAAs. Modified Alternative C MOAs include the PR-1A, PR-1B, PR-1C, PR-1D, PR-2, and PR-3 MOAs, and the Gap A and Gap B MOAs. The Gap MOAs/ATCAAs would be activated during LFEs as explained under Modified Alternative A. PR-4 and Gap C MOAs would not be included in Modified Alternative C.

4.1.3.3.2 *MILITARY TRAINING AIRSPACE*

The existing Powder River A and Powder River B MOAs would be modified to become the PR-2 MOA under Modified Alternative C as described for Modified Alternative A. ATCAAs would be the same as described for Modified Alternative A. The total volume of airspace would be less for Modified Alternative C than for Modified Alternative A. Terrain conditions for training in the PR-1 MOAs would be available for superior, low-altitude training under Modified Alternative C.

Table 2.7-5 presents the combined day-to-day and LFE military training activity under Modified Alternative C. Training within the PRTC Modified Alternative C MOAs/ATCAAs would be similar to current training in the Powder River airspace and the consequences would be comparable to those described under Modified Alternative A including low-level overflight frequency with the exception of PR-4 MOA and the Gap C MOA. Military training would include all Modified Alternative C MOAs and ATCAAs for low-level to high-altitude combat maneuvering for LFEs, typically 1 to 3 days per quarter, not to exceed 10 days per year.

4.1.3.3.3 *CIVIL AIRSPACE USAGE*

Victor Airways

Impacts to Victor Airways on the central and west sides of the proposed PRTC airspace would be comparable to those described for Modified Alternative A. The PR-4 ATCAA would be above FL180 for Modified Alternative C and V-491 traffic would be able to continue IFR below FL180. PR-1, PR-2, and PR-3 MOA impacts would be as described for Modified Alternative A. Traffic on Victor Airway V-491 would not be expected to be impacted by Alterative C.

If the Modified Alternative C airspace were activated for the duration of the published times of use during any day from Monday through Thursday, the total daily number of civilian operations projected to be impacted using Table 4.1-3 is estimated to be 80 civil operations.

Jet Routes

Jet route should not be expected to be impacted as described for Modified Alternative A.

Airports and Airfields

Modified Alternative C impacts under the PR-1, PR-2, and PR-3 would be as described for Modified Alternative A. This means that impacts to Hardin and Colstrip airports would be as described under Modified Alternative A. During Low MOA activation, IFR traffic would be given priority for arrival or departure from airports under the PR-1A, PR-1B, PR-1C, PR-1D, PR-2, or PR-3 MOAs. The different MOA segments could facilitate IFR transit of the airspace by adjusting training flights to other MOA segments. Air traffic within the Billings-Miles City-Gillette triangle would be impacted as described for Modified Alternative A.

Modified Alternative C does not include the PR-4 MOA or the Gap C MOA. This means that airports and airfields at Mott, Elgin, Hettinger, Lemmon, McIntosh, and Bison would not be under a Low or High MOA. Traffic to and from these communities could occur under IFR or VFR below FL180 even if the PR-4 ATCAA were activated. Traffic into and out of Bismarck, Dickinson, and local smaller airports would not be impacted below FL180. Traffic on V-491 between Dickinson and Rapid City under the Gap C ATCAA and the Gateway ATCAA would be able to transit the area IFR or VFR below FL180 even when the ATCAA was activated. This could result in some pilots flying at less efficient altitudes than desired. Table 4.1-3 summarizes civilian traffic affected under Modified Alternative C.

Communication with ATC and/or Ellsworth AFB would be required by pilots operating from these airfields to ascertain the activation status of the PR-4 ATCAA or of Modified Alternative C MOAs if flight plans took them through the PRTC. This communication and the altitude limitation of FL180 during PR-4 ATCAA activation would be the primary impacts to the eastern side of the airspace.

4.1.3.3.4 *OTHER CIVILIAN USE*

Commercial Carriers

Commercial carriers operating on the eastern side of the airspace under the PR-4 ATCAA would be able to fly IFR below FL180 during the time the PR-4 ATCAA was activated. Commercial carriers using V-491 would also be able to fly below FL180 during the time that the PR-4 ATCAA was activated. This altitude limitation could result in some commercial carriers being required to fly at less efficient altitudes than would otherwise be desired. Commercial carriers on the western side of the airspace operating within the Billings-Miles City-Gillette triangle would be impacted as described under Modified Alternative A. Radio frequency communication and radar coverage limitations throughout the PR-2 and PR-3 MOA/ATCAAs and along the northern edge of the Modified Alternative C airspace would continue to impact aircraft access as described under Modified Alternative A. This limited radio and radar coverage would affect airports and air traffic under or adjacent to the PR-2 and PR-3 MOAs/ATCAAs as well as the Gap B MOA/ATCAA. The Air Force would establish recall capabilities for training aircraft prior to activation of PR-1A, 1B, 1C, 1D, or PR-3 Low MOAs for Modified Alternative C. Commercial carriers operating in the PR-2 and PR-3 MOAs and on the Gap A and Gap B MOA/ATCAA under Modified Alternative C would be impacted as described under Modified Alternative A. Other General Aviation

Other general aviation throughout the Modified Alternative C MOAs would be impacted as described under Modified Alternative A for the PR-1, PR-2, PR-3, and associated Gap MOA/ATCAA. This includes the inability to transit an activated MOA IFR. IFR arrivals and departures to airports under an active airspace would be accomplished by temporarily relocating training aircraft to allow for IFR vectoring. Limitations on radio communication, the need to contact ATC to determine real-time MOA conditions, and uncertainty regarding where and when low-level B-1 training would occur within a Low MOA during published times of use would impact general aviation. Under Modified Alternative C, the PR-4 and Gap C MOAs would not be created and all general aviation activities under PR-4 and Gap C ATCAAs would

continue below FL180 as under existing conditions. Modified Alternative C aerial application and skydiver/glider impacts within the PR-1, PR-2, and PR-3 MOAs would be as described for Modified Alternative A. Aerial applications and other agricultural operations under the Modified Alternative C PR-4 ATCAA or Gap C ATCAA would not be impacted. Skydiving and glider activity, where it occurs under the PR-4 ATCAA, would not be impacted at altitudes below FL180.

Weather modification programs under the Modified Alternative C PR-4 ATCAA below FL180 would not be impacted. Weather modification activities where they occur within the PR-1, PR-2, or PR-3 MOAs would be as described for Modified Alternative A. Additional communication would be required to coordinate with weather modification programs. Military training pilots would be briefed where weather modification activity could occur and would use see-and-avoid techniques to work with weather modification activities. Activity below FL180 would not be impacted under the PR-4 ATCAA. Any weather modification or similar activities in PR-1, PR-2, PR-3, or associated Gap MOAs and ATCAAs would be affected as described for Modified Alternative A.

Emergency and Related Services

Emergency services, including life flight, fire support, and other emergency support, would be treated the same under Modified Alternative C as under Modified Alternative A. Such emergencies would require communication with ATC and adjustment in Air Force training and other activities to allow for the emergency. That adjustment could include relocating to another airspace or canceling missions and returning to base, depending upon the extent of the emergency. Related services include natural resource photography and monitoring, which would be conducted during specific times under specific meteorological conditions. The Air Force would work with the appropriate agencies to schedule MOAs and training activities in support of these ongoing monitoring operations.

4.1.3.3.5 *FAA Airspace Usage Data*

Air traffic below FL180 in the Modified Alternative C PR-1, PR-2, and PR-3 MOAs would be the same as described for Modified Alternative A. Traffic in the Bismarck-Faith-Dickinson area below FL180 would not be impacted by the activation of the PR-4 ATCAA. This means that Mott, Elgin, Hettinger, Lemmon, McIntosh, and Bison under the PR-4 ATCAA would continue to support IFR traffic within and transiting the airspace below FL180.

Table 4.1-3 contains the estimated number of civilian flights impacted in the MOAs if all MOAs were active during a normal training day. FAA data, reported public airport operations, and estimated private airfield operations result in an estimated 80 civilian operations impacted for Modified Alternative C. Impacts would be as described under Modified Alternative A.

4.1.3.3.6 *LFE Impacts*

Modified Alternative C LFE impacts in the ATCAAs would be as described for Modified Alternative A. Table 4.1-4 presents the estimated Modified Alternative C MOA LFE impacts. An average LFE day under Modified Alternative C would impact an estimated 74 civilian operations (see Table 4.1-4). The LFE ATCAA impacts would be the same as those described for Modified Alternative A with the exception that LFE training below FL180 would not occur beneath the PR-4 or Gap C ATCAAs. Impacts to civil traffic during an LFE day would be comparable to those described for Modified Alternative A in Section 4.1.3.1.6 and could include re-routing, ground holds, rescheduling, or flying VFR through an active MOA.

4.1.3.3.7 *DECONFLICTION MEASURES*

The Air Force would employ the same measures listed in Section 2.3 to aid with deconfliction and address impacts.

4.1.3.4 NO ACTION

Under the No-Action Alternative, no change in baseline conditions would occur. The 28 BW and 5 BW would continue to conduct B-1 and B-52 flight training in the Powder River A/B MOAs, and Powder River, Gateway, Crossbow, and Black Hills ATCAAs as permitted under the existing letter of agreement. This means that Powder River A and B MOA effects would be comparable to those described for Modified Alternative A PR-2. Existing conditions have an estimated 24 civil flights affected under PR-2. Annual sortie-operations in the existing Powder River MOAs/ATCAAs would be expected to occur as under projected baseline conditions. Chaff and flares are not authorized and would not be employed in the airspace. Supersonic activities are unauthorized in the MOAs/ATCAAs and would not be conducted. The existing airspace is not of adequate size to support LFEs training for real-world conditions. The structure and management of Powder River A/B MOAs and associated ATCAAs would continue to provide limited and not realistic training to the aircrews of the 28 BW and 5 BW

4.2 NOISE

4.2.1 *METHODOLOGY*

Subsonic and supersonic noise levels were calculated for each PRTC alternative using approved noise metrics and approved Air Force noise level calculation methodologies. Subsonic aircraft noise levels referenced in this section were calculated using the computer programs SEL_CALC and MR_NMAP. Supersonic noise levels were calculated using the programs PCBOOM and BOOMAP. Noise metrics, impact calculation methodologies, and studies relevant to estimation of noise impacts are discussed in greater detail in Appendix I.

4.2.2 *ISSUES AND CONCERNS*

Specific issues and concerns about aircraft noise and sonic booms that were identified during the EIS process included the following:

- Annoyance, startle effect, and activity interference associated with subsonic and supersonic aircraft overflights
- Interference with sleep resulting from late-night overflights and/or day-time overflights (for day-time sleepers, such as night shift workers at the Colstrip power plant)
- Speech interference
- Learning interference
- Health impacts
- Land uses including hunting, fishing, recreation and outdoor activities, such as rock climbing, agricultural activities
- Safety impacts associated with livestock operations such as calving, branding, and weaning and/or reactions of domesticated animals to noise (e.g., stampedes, horses bucking)
- Impacts to structures

- Interference with tribal ceremonies and culturally-sensitive sites such as Devils Tower, Wind Cave, and Bear Butte
- Socioeconomics and rainfall
- Stress effects on task performance
- Disrupting the natural quiet of the area
- Impacts to domestic and wild animals (such as dogs, deer, etc.), including threatened and endangered species in the ROI (such as sage grouse and several species of raptors)

4.2.3 *ENVIRONMENTAL CONSEQUENCES*

This section explains the environmental consequences from aircraft overflights. The PRTC would be capable of supporting a higher number of Ellsworth AFB and Minot AFB training sorties, as well as LFEs not to exceed 10 days per year that would include approximately 20 aircraft of various types.

4.2.3.1 MODIFIED ALTERNATIVE A – THE PROPOSED ACTION

As described in Section 2.5.2, *Airspace Operations*, the Modified Alternative A would involve replacement of the existing Powder River airspace with the larger PRTC. The total number of sortie-operations flown in the proposed PRTC would be greater than had previously been flown in the Powder River airspace and supersonic flight would be allowed during LFEs, subject to altitude restrictions, not to exceed 10 days per year.

4.2.3.1.1 *SUBSONIC NOISE*

The analysis addressed operations of all aircraft expected to use the proposed PRTC airspace including Ellsworth-based B-1 aircraft, Minot-based B-52 aircraft, and transient aircraft from numerous other installations. Section 3.2.3.1 describes subsonic noise. Noise impacts were calculated by comparing estimated day-night average sound levels (DNLs) for each alternative against baseline noise levels, as described in Section 3.2.3. Potential effects of noise are diverse and several categories of noise impacts are discussed in this section, as well as in sections of this Final EIS (FEIS) devoted to other resource areas (such as Sections 4.6, *Biological Sciences*; 4.7, *Cultural and Historic Resources*; 4.8, *Land Use*; 4.9, *Socioeconomics;* and 4.10, *Environmental Justice*).

4.2.3.1.2 *SUPERSONIC NOISE ANALYSIS*

The sonic boom environmental effects under Modified Alternatives A, B, and C have been computed for the not more than 10 days per year of LFEs. The analysis is based on the entire airspace being used, with opposing forces typically staging in PR-1A/B/C/D at one end, and PR-4 at the other, then proceeding in general west to east and east to west direction and conducting combat primarily in PR-2 and PR-3. While the entire airspace is modeled, it is expected that the central portion in PR-2, PR-3, and Gap B MOAs would experience more supersonic activity than the east or west ends, as this is where the opposing forces would most often be expected to engage.

Two general types of supersonic operations are proposed. One is air combat by fighter aircraft. During the not more than 10 days of LFEs, this would involve up to 100 sorties of transient aircraft, consisting of primarily F-16s and would be expected to include other military fighter aircraft such as the F-22. The second type of operation is evasive maneuvers by B-1 aircraft.

4.2.3.1.3 *FIGHTER SUPERSONIC OPERATIONS*

Fighter aircraft may attain supersonic speeds during LFE air combat training events. This can occur as aircraft approach an engagement, at times during an engagement, and during break at the end of an engagement. The events tend to occur in an elliptical region centered along a line between setup points. The ellipses, presented in Figure 4.2-1, provide a general indication of where supersonic activity will occur; portions of the ellipses outside of the proposed SUA would not be used during supersonic training. The cumulative sonic boom exposure is modeled by BOOMAP, a statistical model based on long term sonic boom monitoring in a number of airspaces. BOOMAP has been run for 100 sorties per year, consisting of a 50/50 mix of F-16 and F-22 aircraft. To account for the expected higher activity in the central portion, operations were modeled with three overlapping maneuver ellipses. Sixty percent of operations were placed in a central ellipse that covers PR-2 and PR-3 and Gap B, and parts of adjacent airspace units. The other two ellipses, each with 20 percent of operations, are at the west and east ends. Where sonic booms are experienced can depend on various factors, including the speed, configuration, altitude, and attitude of the aircraft as well as meteorological conditions. As a result, a sonic boom may propagate beyond the area of combat training. Since lightning is a supersonic event which has a sonic boom (i.e., thunder), aircraft-caused sonic booms on the periphery of an airspace may be experienced as low rolling thunder and may not be recognized as aircraft-caused. Figure 4.2-1 shows ellipses which could result in such effects outside the proposed PRTC airspace.

The calculated boom environment, as C-weighted Day-Night Average Sound Level (CDNL), and numbers of booms per year for each airspace unit, are shown in Table 4.2-4. The maximum CDNL in the center of the airspace is 36 C-weighted decibel (dBC), where there would be a calculated six booms from fighters per year. The calculated six booms would occur during quarterly LFE and would be spread over 10 days per year for a period of 1 to 3 days each.

Application of the BOOMAP model resulted in a calculated one to two booms experienced at any given location under PR-2 and PR-3 and Gap B, and parts of adjacent airspace units during each LFE. The boom environment away from the center would be less, about 10 decibels (dB) lower and one tenth as many booms near the edge. There is a calculated 10% to 20% chance that, during each LFE, a boom from a fighter would be heard near the edge of the airspace.

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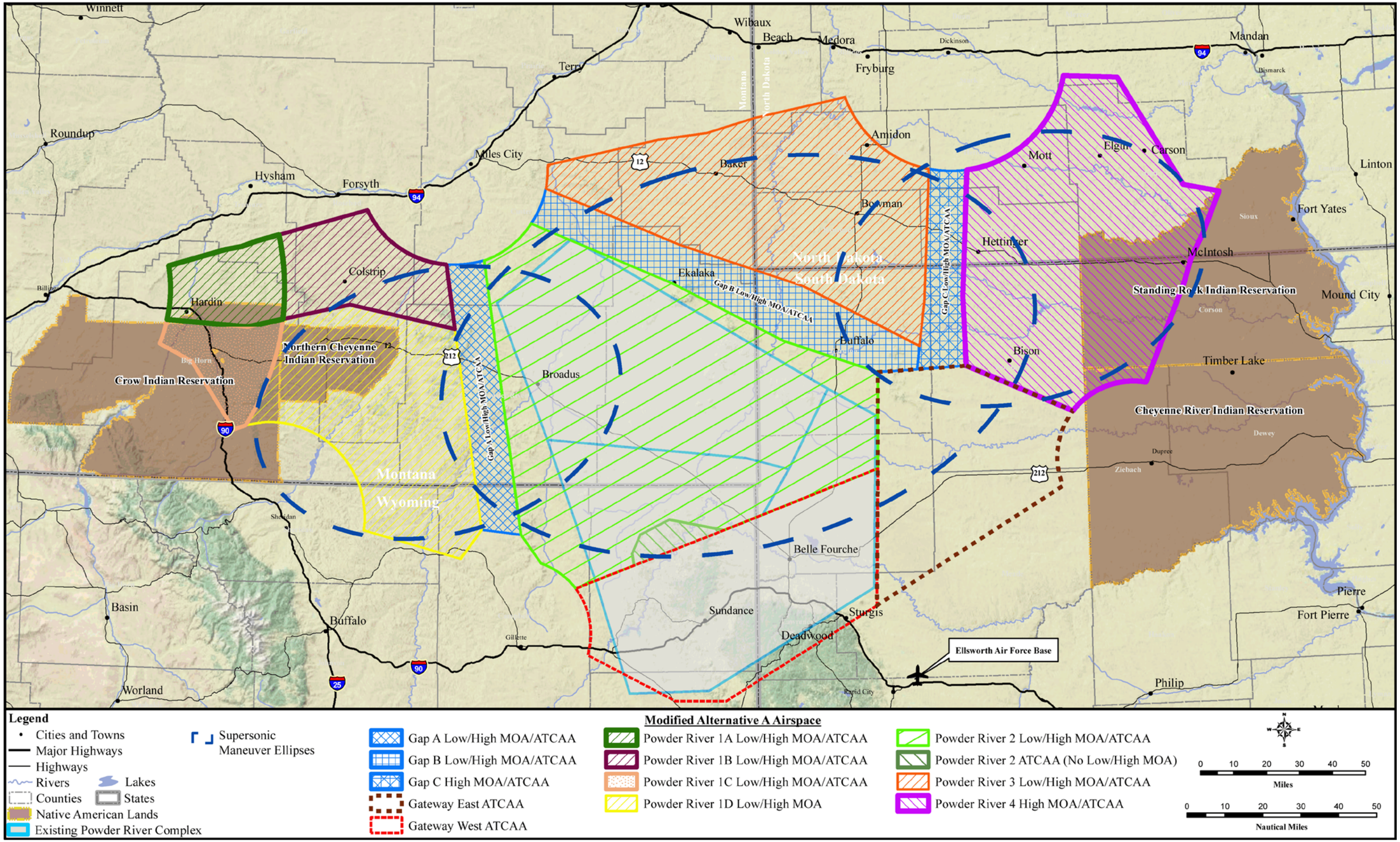

Figure 4.2-1. Supersonic Maneuver Ellipses

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4.2.3.1.4 *B-1 SUPERSONIC OPERATIONS*

Supersonic events by the B-1 are expected to consist of evasive dashes. If pursued by an opposing fighter, the B-1 would accelerate to supersonic speed, and then decelerate after the fighter gives up pursuit. During LFEs, over a total of not more than 10 days, 1 to 3 days per quarter, an estimated 60 such operations per year would be expected, with supersonic duration of about 30 seconds for each operation. Details of the maneuver vary and particularly depend on whether the aircraft dives or remains at constant altitude. Two maneuver profiles have been analyzed, which bracket the expected range of expected maneuvers in terms of intensity of sonic boom impacts. Sonic booms from these maneuvers have been computed using PCBOOM.

- Profile 1, where the aircraft dives at a 5 degree angle, beginning around 25,000 feet MSL. It exceeds Mach 1 at 23,500 feet, and reaches a maximum speed of Mach 1.1 30 seconds later. It then decelerates, falling below Mach 1 before reaching 20,000 feet MSL. Deceleration from Mach 1.1 to 1.0 takes about 5 seconds.
- Profile 2, where the aircraft accelerates in level flight at 25,000 feet MSL. Acceleration from Mach 1.0 to 1.05 takes about 30 seconds. Deceleration back to Mach 1 takes 2 to 3 seconds.

One aspect of these maneuvers is that they involve low supersonic Mach numbers. A sonic boom will reach the ground only if the aircraft speed exceeds a cutoff Mach number that is usually greater than 1. For level flight at 25,000 feet MSL in the standard atmosphere with ground elevation at 4,000 feet MSL the cutoff Mach number is 1.08. Under standard conditions, Profile 2 booms would not reach the ground, and only part of Profile 1 booms would reach the ground. The atmosphere varies, however, and this variation is important in determining cutoff conditions. A tail wind at altitude reduces the cutoff Mach number, increasing propagation to the ground, while a headwind at altitude increases the cutoff Mach number, reducing propagation to the ground. Variations in the atmosphere were accounted for by analyzing calendar year 2009 wind data at 25,000 feet for Rapid City, SD, the nearest reporting station (NOAA 2009). Table 4.2-1 shows the percent of time that wind speed was in various ranges. These data are based on all 731 upper air soundings conducted in the year.

Table 4.2-1. Distribution of Wind Speed at FL250

Wind Speed, knots	*Percent of Time*
0–10	2.8
10–20	9.0
20–30	12.3
30–40	19.3
40–50	17.6
50–60	11.6
60–70	11.1
70–80	6.3
80–90	4.2
90–100	3.4
100–110	1.1
110–120	0.7
120–130	0.4

Wind direction varies, as does the flight direction for the evasion maneuver. Allowing for this difference in direction, a distribution of head/tail winds was prepared. PCBOOM was run for each head/tail wind

speed range to obtain square miles exposed to various boom overpressures. The areas from each footprint were weighted by the percent time for the wind, to obtain square miles per boom. The final areas were then scaled by 60 operations per year and the area of the airspace to obtain the probability of a boom impacting any particular location in each year. For this analysis, all B-1 supersonic events were assumed to take place in the central portion of the airspace, PR-3, PR-4 and Gap B, and booms were modeled as occurring anywhere in that region. Table 4.2-2 shows the annual probability of boom exceeding various levels for each of the two profiles. For comparison, the probability of fighter boom in the center of the airspace is shown.

Note that the occurrence of B-1 booms is rare, both as compared to fighter booms and on an absolute basis. The probability of a person anywhere on the ground under this airspace experiencing a B-1 boom is about once every six years, as compared to an average of six fighter booms per year toward the center of the airspace. Some B-1 supersonic operations may occur outside of the central portion of PRTC, so actual probabilities would be slightly lower than those presented in Table 4.2-2, and there would be some (at a lesser rate) in the other regions.

Table 4.2-2. Probability (per year) of Sonic Boom at Any Given Location Near the Center of PRTC

PSF	*B-1 Profile 1 (Dive Maneuver)*	*B-1 Profile 2 (Level Acceleration)*	*Fighter Aircraft (Air Combat Maneuvering)*
0	0.1689	0.1433	6.0000
1	0.0999	0.0185	1.1234
2	0.0448	0.0022	0.3876
3	0.0136	0.0006	0.1782
4	0.0086	0.0002	0.0955
5	0.0065	0.0001	0.0565
6	0.0054	0.0001	0.0358
7	0.0050	0.0000	0.0238
8	0.0042	0.0000	0.0165
9	0.0024	0.0000	0.0118
10	0.0014	0.0000	0.0087
11	0.0009	0.0000	0.0065
12	0.0006	0.0000	0.0050
13	0.0004	0.0000	0.0039
14	0.0003	0.0000	0.0031
15	0.0002	0.0000	0.0025
16	0.0000	0.0000	0.0020

The average boom, when a boom is heard, will be 1.6 pounds per square foot (psf) for B-1 Profile 1, 0.7 psf for B-1 Profile 2, and 0.8 psf for fighters. Louder booms would be heard less frequently. Approximately 1,300 acres (2 square miles) could experience a sonic boom of 4.0 psf and smaller acreage could experience a higher focus boom. A boom of 5.0 psf or greater would be heard an average of once every 150 years for B-1 Profile 1 and an average of once every 17 years from fighters. Fighter booms away from the airspace would be less frequent, as discussed in Section 4.2.3.4. The likelihood of significant damage from a sonic boom is thus very low, although it could occur. Any claims from Air Force-related damage would begin by contacting Ellsworth AFB Public Affairs.

Communities in northeast WY, such as Sundance, and west central SD are under the Gateway ATCAA where supersonic training could occur during LFEs.

The cumulative exposure from B-1 supersonic operations is smaller than that from fighters. CDNL for B-1 exposures in Table 4.2-2 is 26 dBC for Profile 1 and 16 dBC for Profile 2. Combining 26 dBC with the 36 dBC fighter exposure yields a total of 36.4 dBC. The cumulative CDNL values in Tables 4.2-4, shown to the nearest dB, are the same for the total environment as for fighters alone.

Expected Supersonic Events

The majority of the estimated 6 sonic booms during the not more than 10 days of LFEs would be primarily the result of fighter aircraft. For the purposes of this analysis, the number of expected sonic booms to be experienced at any given location is rounded up to approximately ten per year, or one per LFE day. Table 4.2-4 lists the maximum CDNL and number of sonic boom events expected to occur each year under each of the proposed airspace units, including sonic booms generated by both B-1 and transient fighter aircraft.

4.2.3.1.5 *NOISE IMPACT ANALYSIS*

Several categories of noise impacts that could potentially be associated with the Proposed Action are discussed below.

Annoyance

Annoyance is a common response to noise. An individual's response to noise is impossible to predict accurately and depends on several acoustic and non-acoustic factors including, but not limited to, how the individual feels about the noise source and the activity the person is engaged in at the time the noise occurs (Newman and Beattie 1985). Extensive social surveys have found that the percentage of exposed *populations* that become "highly annoyed" after being exposed to a particular *time-averaged* noise level is predictable. This relationship has been studied for both the A-weighted DNL metric used to describe subsonic aircraft noise levels and CDNL used to describe impulsive noise events such as sonic booms (Schultz 1978; Finegold *et al.* 1994; Stusnick *et al.* 1992; Committee on Hearing Bioacoustics and Biomechanics 1981). The findings of these studies are summarized in Table 4.2-3. The projected CDNL under the PRTC MOAs is calculated to be 36 dBC.

Table 4.2-3. Relation Between Noise Level Metrics DNL and CDNL and Annoyance

DNL	*CDNL*	*Average Percent Population Highly Annoyed*
45	42	0.83
50	46	1.66
55	51	3.31
60	56	6.48
65	60	12.29

Source: Finegold et al. 1994; Stusnick et al. 1992; Committee on Hearing Bioacoustics and Biomechanics 1981

The Air Force-approved noise models MR_NMAP, PCBOOM, and BOOMAP were used to model noise impacts associated with subsonic and supersonic operations, respectively. Table 4.2-4 shows subsonic and supersonic aircraft noise levels under baseline conditions and the Modified Alternative A. Wherever ATCAA airspace overlies MOA airspace, noise generated in the MOA airspace dominates overall noise levels such that noise generated by aircraft operations in the ATCAA would not quantitatively add to the overall Onset-Rate Adjusted Monthly Day-Night Average Sound Level (DNL_{mr}) in areas beneath the airspace.

Table 4.2-4. Existing and Modified Alternative A Military Aircraft Noise Levels

		Existing[1]				*Modified Alternative A*			
Proposed Airspace	*Existing Special Use Airspace*	*DNL_{mr}*	*Number of events/day SEL_r > 65 dB*	*CDNL*	*Sonic Booms Per Year*	*DNL_{mr}*	*Number of events/day SEL_r > 65 dB*	*Center of Airspace CDNL*	*Sonic Booms Per Year*
PR-1A MOA/ATCAA	None	<45	-	-	-	46[a]	0.1	20	0.63
PR-1B MOA/ATCAA	None	<45	-	-	-	46[a]	0.4		
PR-1C MOA/ATCAA	None	<45	-	-	-	<45[a]	0.1	30	2.43
PR-1D MOA/ATCAA	None	<45	-	-	-	48[a]	1.3		
Gap A MOA/ATCAA	None	<45	-	-	-	<45[a]	0.1	34	3.6
PR-2 MOA/ATCAA	Powder River A MOA/Powder River ATCAA	49	0.6	-	-	47[a]	0.5	36	6
	Powder River B MOA/ Powder River ATCAA	49	0.8	-	-	47[a]	0.5	36	6
	Gateway ATCAA	<45[c]	0.4	-	-	47[a]	0.5	36	6
	None	<45	-	-	-	47[a]	0.5	36	6
Gap B MOA/ATCAA	None	<45	-	-	-	<45[a]	0.1	35	4.8
PR-3 MOA/ATCAA	None	<45	-	-	-	46[a]	0.3	31	3.6
Gap C MOA/ATCAA	None	<45	-	-	-	<45[a]	0.1	34	3.6
PR-4[b] MOA/ATCAA	None	<45	-	-	-	<45[a]	0.4	32	2.4
Gateway East ATCAA	None	<45	-	-	-	<45[c]	<0.1	29	1.2
Gateway West ATCAA	Gateway ATCAA	<45[c]	0.4	-	-	<45[c]	0.3	25	0.6
	None	<45	-	-	-	<45[c]	0.3	25	0.6

Notes: 1. Estimated baseline noise levels under airspace. See Table 3.2-2, Estimated Baseline Noise Levels Under Airspace.
a. Dominated by aircraft operations in the MOA; overlying ATCAA noise contributions do not add to overall DNL_{mr} noise level beneath the SUA.
b. PR-4 High MOA only.
c. Calculated military aircraft noise is below 45 dB, which is similar to the DNL for ambient sound.

Neither the DNL_{mr} nor the CDNL associated with PRTC training would be above 55 DNL or 52 CDNL for any airspace. Decreases in DNL_{mr} would occur in areas beneath existing Powder River MOAs. Increases would occur in areas not located beneath existing MOAs, where noise is estimated to be below DNL 45 dB. A DNL increase in excess of 5 dB would be expected to be noticed by residents and could be perceived as a significant increase in noise by residents or visitors. In areas where the DNL_{mr} is less than 45 dB, noise from individual aircraft over flights would be noticed, but less than 1 percent of the populations would be expected to become highly annoyed (Schultz 1978; Finegold et al. 1994).

Table 4.2-4 compares noise conditions anticipated for the Modified Alternative A with the existing Powder River A and B MOAs (PR-2) and the areas underlying the proposed airspace. Under PR-2, the DNL_{mr} noise level would decrease by 2 dB from 49 dB to 47 dB in areas beneath this currently existing MOA. This decrease in noise level would occur because the total area of airspace across which air operations would be spread consists of a larger volume of airspace than under projected baseline conditions.

The number of overflights per day exceeding Sound Exposure Level (SEL) of 65 dB would decrease by 0.1 from 0.6 to 0.5. This means that 5 out of 10 days there would be overflights which would exceed 65 dB SEL. These overflights would occur randomly and could be anywhere in the airspace. An average approximately one sonic boom during each LFE day could be experienced at any given location beneath the airspace where no sonic booms have been experienced in recent years and CDNL would be 36 dBC. The sonic booms would typically be distant thunder-like sound. The sharp crack-crack experienced by a receptor directly in the line of the air pressure change would be infrequent at any given location. An estimated one to two booms could be experienced at any given location under the airspace during LFEs from fighter and B-1 flight operations. B-1 sonic booms could be heard, on average, once every six years at any given location in the airspace, with an average amplitude of 1.6 psf. Each boom could result in approximately 1,300 acres experiencing an overpressure of 4 psf or greater. Sonic booms could result in annoyance to persons exposed to the boom and focused booms (concentration of sonic boom energy) could result in damage to structures within the area of focus.

Noise levels beneath the Gateway East and West ATCAAs would remain below 45 dB DNL_{mr}. The increased number of aircraft overflights, especially during LFEs, could be noticed by, and may be annoying to, some residents. However, the average noise level would remain below the U.S. Environmental Protection Agency (USEPA) identified level of 55 dB DNL as the threshold below which adverse impacts would not be expected to occur. Single event overflights exceeding 65 dB SEL would decrease to approximately 0.3 per day, or approximately 1 overflight every four days. The number of sonic booms would be approximately one per year and CDNL in each airspace unit would be as shown in Table 4.2-4.

Table 4.2-5 lists the number of overflight events per day with Onset Rate-Adjusted Sound Exposure Level (SEL_r) above 65, 75, and 85 dB that a person located in several representative locations would be likely to hear under baseline conditions and Modified Alternative A. The locations selected for analysis are shown in Figure 3.2-3. The number of events exceeding a SEL_r of 65 dB per day would be between <0.1 and 0.5 at all locations studied, except for location 8, which would be 1.3 events per day. Table 4.2-6 shows how many days would be between overflights at the varying noise thresholds at each representative location. For example, at Inyan Kara, an overflight of 65 dB SEL would be experienced approximately every 2 days under baseline, or existing, conditions and would occur less frequently or approximately once every 4 days under Modified Alternative A.

Table 4.2-5. Average Frequency of Military Aircraft Noise Events at Varying Noise Thresholds (in dB SEL) at Selected Representative Noise-Sensitive Locations Under Modified Alternative A

ID#	General Description	Baseline Airspace	Proposed Airspace	Baseline Number of Events Per Day Exceeding Threshold			Estimated Number of Events Per Day Exceeding Threshold		
				65 dB SEL	75 dB SEL	85 dB SEL	65 dB SEL	75 dB SEL	85 dB SEL
1	Inyan Kara Mountain	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.3	0.1	<0.1
2	Devils Tower National Monument [2]	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.5	0.2	<0.1
3	Little Bighorn Battlefield National Monument [3]	None	PR-1C MOA/ATCAA	n/a	n/a	n/a	0.2	0.1	<0.1
4	Bear Butte	None	Gateway West ATCAA	n/a	n/a	n/a	0.3	0.1	<0.1
5	Thunder Basin National Forest (northern section)	None	PR-2 MOA/ATCAA	n/a	n/a	n/a	0.5	0.2	<0.1
6	Thunder Basin National Forest (southern section)	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.3	0.1	<0.1
7	Black Hills National Forest	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.3	0.1	<0.1
8	Custer National Forest (western section)	None	PR-1D MOA/ATCAA	n/a	n/a	n/a	1.3	0.6	0.3
9	Custer National Forest (central section)	Powder River A MOA	PR-2 MOA/ATCAA	0.6	0.2	<0.1	0.5	0.2	<0.1
10	Custer National Forest (southeastern section)	None	Gateway West ATCAA	n/a	n/a	n/a	0.3	0.1	<0.1
11	Little Missouri National Grassland	None	PR-3 MOA/ATCAA	n/a	n/a	n/a	0.3	0.2	<0.1
12	Grand River National Grassland	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.4	0.2	<0.1
13	Crow Indian Reservation (Crow Agency, MT)	None	PR-1C MOA/ATCAA	n/a	n/a	n/a	0.1	0.1	<0.1
14	Northern Cheyenne Indian Reservation (Lame Deer, MT)	None	PR-1D MOA/ATCAA	n/a	n/a	n/a	0.3	0.2	<0.1
15	Standing Rock Indian Reservation	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.4	0.2	<0.1
16	Cheyenne River Indian Reservation	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.4	0.2	<0.1
17	Hardin, MT	None	PR-1A MOA/ATCAA	n/a	n/a	n/a	0.1	0.1	<0.1
18	Colstrip, MT	None	PR-1B MOA/ATCAA	n/a	n/a	n/a	0.5	0.3	<0.1
19	Broadus, MT [4]	Powder River A MOA	PR-2 MOA/ATCAA	0.6	0.2	<0.1	0.6	0.3	<0.1
20	Ekalaka, MT	None	PR-2 MOA/ATCAA	n/a	n/a	n/a	0.6	0.3	<0.1
21	Baker, MT	None	PR-3 MOA/ATCAA	n/a	n/a	n/a	0.3	0.2	<0.1
22	Elgin, ND	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.4	0.2	<0.1
23	Bowman, ND	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.4	0.2	<0.1

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Table 4.2-5. Average Frequency of Military Aircraft Noise Events at Varying Noise Thresholds (in dB SEL) at Selected Representative Noise-Sensitive Locations Under Modified Alternative A

ID#	General Description	Baseline Airspace	Proposed Airspace	Baseline Number of Events Per Day Exceeding Threshold			Estimated Number of Events Per Day Exceeding Threshold		
				65 dB SEL	75 dB SEL	85 dB SEL	65 dB SEL	75 dB SEL	85 dB SEL
24	Bison, SD	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.4	0.2	<0.1
25	Buffalo, SD	None	Gap B MOA/ATCAA	n/a	n/a	n/a	0.1	<0.1	<0.1
26	Sundance, WY	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.3	0.1	<0.1
27	Belle Fourche, SD	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.3	0.1	<0.1

Notes: 1. Because several of the listed noise-sensitive areas are very large, locations were selected from within the designated areas that are near the center of proposed airspace units.
2. Devils Tower National Monument published aircraft avoidance area is 5 NM horizontally and 18,000 feet AGL
3. Little Bighorn Battlefield National Monument published aircraft avoidance area is 0.75 NM horizontally and 2,000 feet AGL (for Modified Alternative A, avoidance area is raised to 5,000 feet AGL).
4. Broadus, MT published aircraft avoidance area is 3 NM horizontally and 1,500 feet AGL

Table 4.2-6. Number of Days between Overflight Events at Varying Sound Exposure Level (SEL) Thresholds

ID#	General Description	Baseline Airspace	Baseline Number of Days Between Events			Proposed Airspace	Estimated Number of Days Between Overflight Events		
			65 dB SEL	75 dB SEL	85 dB SEL		65 dB SEL	75 dB SEL	85 dB SEL
1	Inyan Kara Mountain	Gateway ATCAA	2	7	rare[1]	Gateway West ATCAA	4	7	rare[1]
2	Devils Tower National Monument	Gateway ATCAA	2	7	rare[1]	Gateway West ATCAA	2	5	rare[1]
3	Little Bighorn Battlefield National Monument	None	n/a	n/a	n/a	PR-1C MOA/ATCAA	5	8	rare[1]
4	Bear Butte	None	n/a	n/a	n/a	Gateway West ATCAA	4	7	rare[1]
5	Thunder Basin National Forest (northern section)	None	n/a	n/a	n/a	PR-2 MOA/ATCAA	2	4	80
6	Thunder Basin National Forest (southern section)	Gateway ATCAA	2	7	rare[1]	Gateway West ATCAA	4	7	rare[1]
7	Black Hills National Forest	Gateway ATCAA	2	7	rare[1]	Gateway West ATCAA	4	7	rare[1]
8	Custer National Forest (western section)	None	n/a	n/a	n/a	PR-1D MOA/ATCAA	1	2	4
9	Custer National Forest (central section)	Powder River A MOA	2	4	33	PR-2 MOA/ATCAA	2	4	80
10	Custer National Forest (southeastern section)	None	n/a	n/a	n/a	Gateway West ATCAA	4	7	rare[1]
11	Little Missouri National Grassland	None	n/a	n/a	n/a	PR-3 MOA/ATCAA	3	6	81

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Table 4.2-6. Number of Days between Overflight Events at Varying Sound Exposure Level (SEL) Thresholds

ID#	General Description	Baseline Airspace	Baseline Number of Days Between Events			Proposed Airspace	Estimated Number of Days Between Overflight Events		
			65 dB SEL	75 dB SEL	85 dB SEL		65 dB SEL	75 dB SEL	85 dB SEL
12	Grand River National Grassland	None	n/a	n/a	n/a	PR-4 MOA/ATCAA	3	5	54
13	Crow Indian Reservation (Crow Agency, MT)	None	n/a	n/a	n/a	PR-1C MOA/ATCAA	8	15	166
14	Northern Cheyenne Indian Reservation (Lame Deer, MT)	None	n/a	n/a	n/a	PR-1D MOA/ATCAA	3	5	962
15	Standing Rock Indian Reservation	None	n/a	n/a	n/a	PR-4 MOA/ATCAA	3	5	54
16	Cheyenne River Indian Reservation	None	n/a	n/a	n/a	PR-4 MOA/ATCAA	3	5	54
17	Hardin, MT	None	n/a	n/a	n/a	PR-1A MOA/ATCAA	8	17	104
18	Colstrip, MT	None	n/a	n/a	n/a	PR-1B MOA/ATCAA	2	4	36
19	Broadus, MT	Powder River A MOA	2	4	33	PR-2 MOA/ATCAA	2	3	30
20	Ekalaka, MT	None	n/a	n/a	n/a	PR-2 MOA/ATCAA	2	3	27
21	Baker, MT	None	n/a	n/a	n/a	PR-3 MOA/ATCAA	3	6	89
22	Elgin, ND	None	n/a	n/a	n/a	PR-4 MOA/ATCAA	3	5	54
23	Bowman, ND	None	n/a	n/a	n/a	PR-4 MOA/ATCAA	3	5	54
24	Bison, SD	None	n/a	n/a	n/a	PR-4 MOA/ATCAA	3	5	54
25	Buffalo, SD	None	n/a	n/a	n/a	Gap B MOA/ATCAA	19	37	620
26	Sundance, WY	Gateway ATCAA	2	7	rare[1]	Gateway West ATCAA	4	7	rare[1]
27	Belle Fourche, SD	Gateway ATCAA	2	7	rare[1]	Gateway West ATCAA	4	7	rare[1]

1. Overflight occurrences described as rare may happen less frequently than once every 100,000 days.

The number of overflight events per day with Maximum Sound Level (L_{max}) above 65, 75, and 85 dB that a person located in several representative locations would be likely to hear under baseline conditions and under Modified Alternative A is shown in Table 4.2-7. At all of the locations studied, the number of events exceeding an L_{max} of 65 dB per day would between <0.1 and 0.6. Table 4.2-8 shows how many days are between overflight events of 65, 75 or 85 dB L_{max} noise level thresholds at each representative location. For example, at Inyan Kara, an overflight of 65 dB SEL would be experienced approximately once every 9 days under the Modified Alternative A scenario.

Table 4.2-7. Average Frequency of Military Aircraft Noise Events at Varying Noise Thresholds (in dB L_{max}) at Selected Representative Noise-Sensitive Locations Under Modified Alternative A

ID#	General Description	Baseline Airspace	Proposed Airspace	Baseline Number of Events Per Day Exceeding Threshold			Estimated Number of Events Per Day Exceeding Threshold		
				65 dB L_{max}	75 dB L_{max}	85 dB L_{max}	65 dB L_{max}	75 dB L_{max}	85 dB L_{max}
1	Inyan Kara Mountain	Gateway ATCAA	Gateway West ATCAA	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
2	Devils Tower National Monument [2]	Gateway ATCAA	Gateway West ATCAA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
3	Little Bighorn Battlefield National Monument [3]	None	PR-1C MOA/ATCAA	n/a	n/a	n/a	0.1	0.1	<0.1
4	Bear Butte	None	Gateway West ATCAA	n/a	n/a	n/a	0.1	<0.1	<0.1
5	Thunder Basin National Forest (northern section)	None	PR-2 MOA/ATCAA	n/a	n/a	n/a	0.2	<0.1	<0.1
6	Thunder Basin National Forest (southern section)	Gateway ATCAA	Gateway West ATCAA	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
7	Black Hills National Forest	Gateway ATCAA	Gateway West ATCAA	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
8	Custer National Forest (western section)	None	PR-1D MOA/ATCAA	n/a	n/a	n/a	0.6	0.24	<0.1
9	Custer National Forest (central section)	Powder River A MOA	PR-2 MOA/ATCAA	0.1	0.1	<0.1	0.2	<0.1	<0.1
10	Custer National Forest (southeastern section)	None	Gateway West ATCAA	n/a	n/a	n/a	0.1	<0.1	<0.1
11	Little Missouri National Grassland	None	PR-3 MOA/ATCAA	n/a	n/a	n/a	0.1	<0.1	<0.1
12	Grand River National Grassland	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.1	<0.1	<0.1
13	Crow Indian Reservation (Crow Agency, MT)	None	PR-1C MOA/ATCAA	n/a	n/a	n/a	0.1	<0.1	<0.1
14	Northern Cheyenne Indian Reservation (Lame Deer, MT)	None	PR-1D MOA/ATCAA	n/a	n/a	n/a	0.1	<0.1	<0.1
15	Standing Rock Indian Reservation	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.1	<0.1	<0.1
16	Cheyenne River Indian Reservation	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.1	<0.1	<0.1
17	Hardin, MT	None	PR-1A MOA/ATCAA	n/a	n/a	n/a	0.1	<0.1	<0.1
18	Colstrip, MT	None	PR-1B MOA/ATCAA	n/a	n/a	n/a	0.2	<0.1	<0.1
19	Broadus, MT [4]	Powder River A MOA	PR-2 MOA/ATCAA	0.2	0.1	<0.1	0.3	<0.1	<0.1
20	Ekalaka, MT	None	PR-2 MOA/ATCAA	n/a	n/a	n/a	0.3	<0.1	<0.1
21	Baker, MT	None	PR-3 MOA/ATCAA	n/a	n/a	n/a	0.1	<0.1	<0.1
22	Elgin, ND	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.1	<0.1	<0.1

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Table 4.2-7. Average Frequency of Military Aircraft Noise Events at Varying Noise Thresholds (in dB L_{max}) at Selected Representative Noise-Sensitive Locations Under Modified Alternative A

ID#	General Description	Baseline Airspace	Proposed Airspace	Baseline Number of Events Per Day Exceeding Threshold			Estimated Number of Events Per Day Exceeding Threshold		
				65 dB L_{max}	75 dB L_{max}	85 dB L_{max}	65 dB L_{max}	75 dB L_{max}	85 dB L_{max}
23	Bowman, ND	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.1	<0.1	<0.1
24	Bison, SD	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.1	<0.1	<0.1
25	Buffalo, SD	None	Gap B MOA/ATCAA	n/a	n/a	n/a	<0.1	<0.1	<0.1
26	Sundance, WY	Gateway ATCAA	Gateway West ATCAA	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
27	Belle Fourche, SD	Gateway ATCAA	Gateway West ATCAA	<0.1	<0.1	<0.1	0.1	<0.1	<0.1

Notes:
1. Because several of the listed noise-sensitive areas are very large, locations were selected from within the designated areas that are near the center of proposed airspace units.
2. Devils Tower National Monument published aircraft avoidance area is 5 NM horizontally and 18,000 feet AGL
3. Little Bighorn Battlefield National Monument published aircraft avoidance area is 0.75 NM horizontally and 2,000 feet AGL. (For Modified Alternative A, the avoidance area would be 5,000 feet AGL.)
4. Broadus, MT published aircraft avoidance area is 3 NM horizontally and 1,500 feet AGL

Table 4.2-8. Number of Days between Overflight Events at Varying Maximum Sounds Level (L_{max}) Thresholds

ID#	General Description	Baseline Airspace	Proposed Airspace	Baseline Number of Days Between Overflight Events			Estimated Number of Days Between Overflight Events		
				65 dB L_{max}	75 dB L_{max}	85 dB L_{max}	65 dB L_{max}	75 dB L_{max}	85 dB L_{max}
1	Inyan Kara Mountain	Gateway ATCAA	Gateway West ATCAA	rare[1]	rare[1]	rare[1]	9	rare[1]	rare[1]
2	Devils Tower [2]	Gateway ATCAA	Gateway West ATCAA	rare[1]	rare[1]	rare[1]	rare[1]	rare[1]	rare[1]
3	Little Bighorn Battlefield National Monument [3]	None	PR-1C MOA/ATCAA	n/a	n/a	n/a	10	10	130
4	Bear Butte	None	Gateway West ATCAA	n/a	n/a	n/a	9	rare[1]	rare[1]
5	Thunder Basin National Forest (northern section)	None	PR-2 MOA/ATCAA	n/a	n/a	n/a	5	55	186
6	Thunder Basin National Forest (southern section)	Gateway ATCAA	Gateway West ATCAA	rare[1]	rare[1]	rare[1]	9	rare[1]	rare[1]
7	Black Hills National Forest	Gateway ATCAA	Gateway West ATCAA	rare[1]	rare[1]	rare[1]	9	rare[1]	rare[1]
8	Custer National Forest (western section)	None	PR-1D MOA/ATCAA	n/a	n/a	n/a	2	4	209
9	Custer National Forest (central section)	Powder River A MOA	PR-2 MOA/ATCAA	9	18	65	5	55	186

continued on next page…

Table 4.2-8. Number of Days between Overflight Events at Varying Maximum Sounds Level (L_{max}) Thresholds

ID#	General Description	Baseline Airspace	Proposed Airspace	Baseline Number of Days Between Overflight Events			Estimated Number of Days Between Overflight Events		
				65 dB L_{max}	75 dB L_{max}	85 dB L_{max}	65 dB L_{max}	75 dB L_{max}	85 dB L_{max}
10	Custer National Forest (southeastern section)	None	Gateway West ATCAA	n/a	n/a	n/a	9	rare[1]	rare[1]
11	Little Missouri National Grassland	None	PR-3 MOA/ATCAA	n/a	n/a	n/a	8	59	250
12	Grand River National Grassland	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	7	49	rare[1]
13	Crow Indian Reservation (Crow Agency, MT)	None	PR-1C MOA/ATCAA	n/a	n/a	n/a	17	112	377
14	Northern Cheyenne Indian Reservation (Lame Deer, MT)	None	PR-1D MOA/ATCAA	n/a	n/a	n/a	10	870	rare[1]
15	Standing Rock Indian Reservation	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	7	49	rare[1]
16	Cheyenne River Indian Reservation	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	7	49	rare[1]
17	Hardin, MT	None	PR-1A MOA/ATCAA	n/a	n/a	n/a	18	69	38
18	Colstrip, MT	None	PR-1B MOA/ATCAA	n/a	n/a	n/a	4	26	60
19	Broadus, MT [4]	Powder River A MOA	PR-2 MOA/ATCAA	6	13	35	4	22	50
20	Ekalaka, MT	None	PR-2 MOA/ATCAA	n/a	n/a	n/a	3	19	44
21	Baker, MT	None	PR-3 MOA/ATCAA	n/a	n/a	n/a	8	54	337
22	Elgin, ND	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	7	49	rare[1]
23	Bowman, ND	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	7	49	rare[1]
24	Bison, SD	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	7	49	rare[1]
25	Buffalo, SD	None	Gap B MOA/ATCAA	n/a	n/a	n/a	44	435	1,398
26	Sundance, WY	Gateway ATCAA	Gateway West ATCAA	rare[1]	rare[1]	rare[1]	9	rare[1]	rare[1]
27	Belle Fourche, SD	Gateway ATCAA	Gateway West ATCAA	rare[1]	rare[1]	rare[1]	9	rare[1]	rare[1]

1. Overflight occurrences described as rare may happen less frequently than once every 100,000 days.

SLEEP DISTURBANCE

Several studies have been carried out on the relationship between aircraft noise and behavioral arousals or awakenings from sleep. The results of these studies have often been contradictory and depend on a number of situation-specific factors, including but not limited to depth of sleep, background noise levels, familiarity with surroundings, and previous exposure to aircraft noise. As recommended by sleep

interference studies, a conservative approach was used in estimating sleep interference impacts for this proposed action.

The USEPA identified an indoor DNL of 45 dB as being necessary to protect against sleep interference at a frequency that would be considered problematic (USEPA 1974). Standard frame homes have an outdoor-to-indoor noise reduction of about 20 dB, so an outdoor sound level of 65 dB DNL is an appropriate lower threshold for this category of impact (Air Force 1999). There are some areas overflown by the proposed PRTC where home construction may be less than standard and may not provide attenuation up to 20 dB. Under the Proposed Action, noise levels would not exceed 65 dB DNL under any of the proposed SUAs.

In locations where the DNL sound level does not exceed 65 dB, individual overflights may still cause awakenings. The probability of awakening can be approximately predicted based on indoor SEL resulting from an aircraft overflight (Federal Interagency Committee on Aviation Noise 1997, Federal Interagency Committee on Noise 1992). When exposed to indoor SEL noise levels of 45 (assumed equivalent to 65 dB outdoor noise level), roughly 1 percent of subjects were awakened. As indicated in Table 4.2-4, areas beneath the proposed airspace would experience between less than 0.1 and 0.4 overflight events exceeding a SEL of 65 dB per day. Table 3.2-1 lists SEL_r associated with aircraft configurations at various overflight altitudes. An indoor SEL of 113 dB would be the highest indoor noise level expected to occur under the Proposed Action. This noise level would occur only directly beneath the aircraft flight path and only as the result of B-1 maneuvers that make up a small portion of the total mission time. Persons affected by indoor SEL of 113 dB would be expected to be awakened. Overflight noise of this intensity would be expected to occur once or twice per mission. The relatively low population density of the ROI (see Table 3.9-4) would make the occurrence of an overflight maneuver impacting a residence rare.

Sonic booms could be experienced under the airspace an average of once per LFE day, as described in Section 4.2.3.1. CDNL would be well below levels considered compatible with sleeping indoors. Individual sonic booms could result in additional awakenings.

Relatively few aircraft sorties occur during late-night hours (10 p.m. to 7 a.m.) when most people are asleep. People sleeping during the day may be exposed to overflight events exceeding a SEL of 65 dB as noted in Table 4.2-4. Each location under the airspace would be expected a noise 65 dB or greater less than once a training day on average.

SPEECH INTERFERENCE

Speech interference associated with aircraft noise is a primary cause of annoyance to individuals on the ground. Noise can interfere with activities that involve listening, such as conversation, watching television, and listening to the radio. Conversation in a normal voice (assumed to be 70 dB) at a distance of 2 meters (6.56 feet) can be held with 95 percent sentence intelligibility in a steady noise environment of 60 dB (USEPA 1981). In noise environments exceeding this level, the speaker and listener must either move closer together or raise their voices in order to maintain sentence intelligibility. Aircraft overflight noise events nearing or exceeding this level may cause a reduction in sentence intelligibility. Typical noise level reduction values are 15 dB with windows open and 25 dB with windows closed, but vary by structure, climate, and noise sources. As an example, an aircraft overflight of 75 dB L_{max} would be perceived as 60 dB L_{max} by persons inside a house with windows open, or as 50 dB L_{max} with windows closed. As shown in Table 4.2-8, overflights of 65 dB L_{max} would occur less than once per week at approximately half of all locations under Modified Alternative A. Appendix I, Section 4 includes an expanded version of Tables 4.2-7 and 4.2-8 that contains data for thresholds of 95 dB L_{max}. Under

Modified Alternative A, relatively infrequent noise events of a brief duration could potentially disrupt speech.

EFFECTS ON LEARNING

It has been demonstrated that chronic exposure of children to high aircraft noise levels, as would occur near an airport, may impair learning (Shield and Dockrell 2008). DNL_{mr} beneath all PRTC airspace units would be low enough that schools would be considered a compatible land use. While intense overflight noise events would occur under the Proposed Action, these events would be infrequent (less than one per day exceeding 65 dB SEL) and would not be expected to affect the ability of students to learn. Teachers have noted that a sudden noise event during a class, whether an overflight or a sonic boom, will disrupt the class and require a few minutes to return to academics. Impacts of noise on children are also discussed in Section 4.10, *Environmental Justice*.

IMPACTS TO HEALTH (AUDITORY AND NON-AUDITORY)

Hearing loss is generally defined as the loss of ability of the ear to hear sounds below a specified level. Hearing threshold shifts can be permanent or temporary. The USEPA has established 70 dB for a 24-hour exposure period as the average noise level standard required to protect 96 percent of the population from a permanent threshold shift (USEPA 1978). Because the DNL is weighted with a 10 dB penalty for late-night events, actual un-weighted noise levels experienced would be lower than the DNL value reported. DNL_{mr} beneath the proposed SUAs (listed in Table 4.2-4) would not exceed 70 dB and would not be over a long duration. No long-term permanent threshold shifts would be expected to occur as a result of implementation of the Proposed Action.

Non-auditory noise-induced health impacts on humans (e.g., cardiovascular problems, birth weight effects, mortality rates) have not been found to occur at time-averaged noise levels of less than 75 dB. No long-term impacts to human health are expected to occur (see additional information on direct safety impacts of noise in Section 4.3.2.7, *Noise Impacts on Safety)*.

LAND USES

Increases in noise levels do not directly affect land use, but land uses could potentially change in an area if noise levels were to make existing land uses untenable or undesirable. After extensive study of several categories of noise impacts (e.g. health, activity interference, annoyance), the USEPA established 55 dB DNL as the threshold below which adverse impacts would not be expected to occur (USEPA 1974). A DNL value of 65 dB is widely used as the threshold above which residences are not considered to be compatible without incorporation of special noise attenuation measures. This threshold is a compromise between acceptable noise and economic practicality. A primary consideration in establishment of this threshold was the USEPA-established goal of maintaining indoor living environments at or below 45 dB. Frame homes with some open windows have an outdoor-to-indoor noise reduction of about 20 dB, so an exterior level of 65 dB means that 45 dB will be achieved indoors. Table 4.2-4 demonstrates that all land uses under the proposed PRTC MOAs would have outdoor DNL values of 48 dB or below. Weather conditions in the ROI lead most residents to keep windows and doors closed through much of the year, so a higher outdoor-to-indoor noise reduction than 20 dB would be expected. Higher levels of outdoor-indoor noise attenuation are achieved in houses with heavier construction or with special acoustic design features. Structural noise attenuation does not provide benefits to people while they are out-of-doors.

Agriculture, rangeland, and open space make up approximately 99% of the area beneath the proposed PRTC. Agriculture (including livestock production) and agriculture-related activities (e.g., harvesting) are considered to be fully compatible with noise levels up to 75 dB DNL (Air Force 1999). Effects of noise on

individual livestock species are discussed in Section 4.6, *Biological Sciences,* and Section 4.9, *Socioeconomics*.

The ROI supports excellent opportunities for hunting, fishing, and tourism. These activities may be temporarily disrupted by aircraft noise, but disruptions would be relatively infrequent. It is not expected that noise would strongly affect the way in which the area is regarded by potential hunters, fishermen, or tourists. All these activities currently occur under the existing Powder River A and B MOAs where B-1 aircraft regularly train. Single event overflights or sonic booms could result in annoyance to individual hunters, fishermen, or other recreationalists. Further discussion of noise and recreational activities is included in Section 4.9, *Land Use.*

NOISE IMPACTS TO SAFETY

Safety issues associated with noise are discussed in Section 4.3, *Safety*. As discussed in this section, noise levels associated with the proposed aircraft training operations, are not expected to result in hearing loss or any other human health and safety impacts.

Horses, cattle, and other large livestock sometimes "spook" at sudden-onset sounds such as the noise created by low-altitude, high-speed aircraft. These reactions can be particularly hazardous to the animals and people in close proximity to the animals, such as while the animals are penned in a relatively small area during branding and weaning operations. In the existing Powder River A/B MOAs, when notified by a rancher that branding or weaning operations are underway the 28 BW establishes temporary avoidance areas to avoid direct overflight. This practice would continue throughout the proposed PRTC airspace. When contacted, Ellsworth AFB would request locations and timing of noise sensitive operations and establish temporary avoidance areas to protect ground assets from low-level overflight impacts. Because sonic booms are affected by meteorological conditions, it is not possible to prevent sonic booms from reaching the ground in a specific area during an LFE day, although advance knowledge of specific branding times could be included in LFE planning and scheduling.

Low-altitude aircraft overflights also have the potential to startle people at sensitive times, such as while they are driving, riding horses, or rock-climbing. Any safety hazard associated with this type of startle event would be difficult to predict and would be highly dependent on situation-specific factors. Safety procedures associated with usage of explosives for mining are designed to prevent inadvertent explosions caused by electronic emissions or vibrations, such as those caused by aircraft overflight. Overpressures in open areas could be sufficient to disturb loose rock or other materials. This could have the potential to impact safety (see Section 4.3). Locations under ATCAAs and not under MOAs, such as Devils Tower National Monument and Bear Butte, would not be subject to low-level overflights.

NOISE IMPACTS TO STRUCTURES

Sonic booms could be experienced at any given location under the proposed airspace an average of approximately once per day during the 10 LFE days per year. There would be a potential for sonic booms to damage structures or other items as summarized in Table 4.2-9. At 1 psf, the probability of a window breaking ranges from one in a million (Hershey and Higgins 1976) to one in a billion (Sutherland 1990). At 10 psf, the probability of breakage is between one in a hundred and one in a thousand (Haber and Nakaki 1989). Damage to plaster is in a comparable range but depends on the condition of the plaster. Adobe faces risks similar to plaster, but assessment is complicated by adobe structures being exposed to weather, where they can deteriorate in the absence of any specific loads (Sutherland 1989). Typical outdoor structures such as buildings, windmills, radio towers, etc., are resilient and routinely subject to wind loads far in excess of sonic boom pressures. Foundations and retaining walls, which are intended to support substantive earth loads, are not typically at risk from sonic booms below 4 psf. Fighter

aircraft flying supersonic between 10,000 and 12,000 feet AGL could produce comparable overpressures (Figure 2.6). Fighter aircraft would fly supersonic below FL180 approximately four percent of the time. Nearly all the B-1 supersonic events above 20,000 feet MSL would be between 15,000 and 20,000 feet AGL. Table 4.2-10 shows probabilities of booms that exceed various overpressures. The probability of a 5 psf boom is about one in 16 years. As demonstrated in Table 4.2-9, such an overpressure has the potential to cause damage to structural and free-standing items such as bric-a-brac. The Air Force follows established procedures for claims against the government in cases where damage is claimed to result from sonic booms or other Air Force activities.

Table 4.2-9. Possible Damage to Structures from Sonic Booms

Sonic Boom Overpressure Nominal (psf)	*Item Affected*	*Type of Damage*
0.5 – 2	Plaster	Fine cracks; extension of existing cracks; more in ceilings; over door frames; between some plaster boards.
	Glass	Rarely shattered; either partial or extension of existing cracks.
	Roof	Slippage of existing loose tiles/slates; sometimes new cracking of old slates at nail hole.
	Damage to outside walls	Existing cracks in stucco extended.
	Bric-a-brac	Those carefully balanced or on edges can fall; fine glass, such as large goblets, can fall and break.
	Other	Dust falls in chimneys.
2 – 4	Glass, plaster, roofs, ceilings	For elements nominally in good condition, failures show that would have been difficult to forecast in terms of their existing localized condition.
4 – 10	Glass	Regular failures within a population of well-installed glass; industrial as well as domestic greenhouses.
	Plaster	Partial ceiling collapse of good plaster; complete collapse of very new, incompletely cured, or very old plaster.
	Roofs	High probability rate of failure in slurry wash in nominally good state; some chance of failures in tiles on modern roofs; light roofs (bungalow) or large area can move bodily.
	Walls (out)	Old, free standing, in fairly good condition can collapse.
	Walls (in)	Internal ("party") walls known to move at 10 psf.
Greater than 10	Glass	Some good window glass will fail when exposed to regular sonic booms from the same direction. Glass with existing faults could shatter and fly. Large window frames move.
	Plaster	Most plaster affected.
	Ceilings	Plaster boards displaced by nail popping.
	Roofs	Most slate/slurry roofs affected, some badly; large roofs having good tile can be affected; some roofs bodily displaced causing gale-end and wall-plate cracks; domestic chimneys dislodged if not in good condition.
	Walls	Internal party walls can move even if carrying fittings such as hand basins or taps; secondary damage due to water leakage.
	Bric-a-brac	Some nominally secure items can fall; e.g., large pictures, especially if fixed to party walls.

Source: Haber and Nakaki 1989

Table 4.2-10. Sonic Boom Peak Overpressures (psf) for B-1, F-16, and F-22 Aircraft at Mach 1.2 Level Flight

Aircraft Type[1, 4]	*Altitude (Feet AGL)*[2]						
	10,000	*15,000*	*16,000*	*21,000*	*25,000*	*30,000*	*40,000*
B-1	10.21	7.21	6.81	5.31	4.51	3.81	3.03
F-16	4.24	2.95	2.78	2.13	1.78	1.48	1.13
F-22[3]	5.37	3.75	3.53	2.71	2.27	1.88	1.44

Notes:
1. Overpressure is at Mach 1.2, straight and level flight; produced using PCBOOM 4 computer program; assumed standard U.S. atmospheric conditions. Boom exposure for fighters was computed with BooMap, which accounts for aircraft maneuvers. B-1 boom exposure was computed using PCBOOM for actual planned maneuvers and accounting for atmospheric variability.
2. Overpressure values provided here are intended to provide a general picture of overpressures resulting from B-1 supersonic flight. Actual overpressure would vary based on maneuvers (climb/descent, turns, accel/decel) and specific weather conditions (winds, vertical temperature / pressure profile). Aircraft maneuvers result in concentration of sonic boom energy ("focus booms") that may exceed overpressure shown here, or defocusing that may result in lower overpressures.
3. F-15, F-22, and F/A-18 overpressures are comparable.
4. B-1 supersonic flight would be limited to 20,000 feet MSL minimum and fighter supersonic flights would be limited to 10,000 feet AGL minimum. Supersonic flights would only be permitted during LFEs.

NOISE IMPACTS TO CULTURAL RESOURCES

Impacts of noise on cultural resources are discussed in Section 4.7, *Cultural and Historic Resources*. Cultural resources, include several categories of historically or culturally-important structures and sites. While many historical structures may have incipient damage and may be more sensitive to intense noise impacts than other structures, these structures are routinely currently exposed to loads resulting from high winds and other natural forces. Sonic boom (an estimated one per day for 10 days per year) or low-level overflights (an estimated 6 to 9 times per year) could produce overpressures of sufficient magnitude to damage historic structures under the airspace. Structures in poor condition may be more susceptible to noise impacts.

Aircraft overflight noise could potentially disrupt Native American tribal or individual activities. Consultation with Native American tribes will continue to identify sensitive locations and times where temporary or seasonal avoidance areas could be identified. Measures presented in the Programmatic Agreement will help forestall potential adverse effects through prior notice, avoidance in time or space where feasible, and training of aircrews in the sensitivities concerning traditional or religious properties (see Appendix N). Additional discussion on this topic can be found at Section 4.7, *Cultural and Historic Resources*.

The natural quiet of a cultural or historic site may be one element of its cultural value. Aircraft overflights may disrupt this natural quiet. Disruptions would be expected to be relatively infrequent and would not be expected to affect the way in which most people perceive the area as a whole. Individuals could see the noise or visual intrusion as an annoyance and an impact upon the experience value of the historic or cultural site.

EFFECTS ON SOCIOECONOMICS

Effects of noise on socioeconomics are discussed in Section 4.9, *Socioeconomics*. Concerns were raised during the EIS process about how aircraft noise would affect the economy and, especially, the tourism industry in the affected area, which centers on hunting, fishing, and sight-seeing. In the highly unlikely event of a sonic boom or low altitude overflight occurring at a critical time in a hunt, the hunter could be annoyed. At levels below 55 dB DNL, aircraft noise would not typically be expected to elicit strong community reaction and is generally not considered to be an important factor in determining people's

attitudes towards the area affected by the noise (Committee on Hearing, Bioacoustics, and Biomechanics 1977).

Startle effects from sudden low-level overflight and associated noise was cited as a concern by participants in the EIS process. B-1 or B-52 low-level flight 2,000 feet AGL or below would overfly one-quarter of a mile each side of the flight path between 2 and 4 percent of the ground area under the MOAs each training day. This means that, on average, any specific location under the airspace could expect to be overflown an estimated 6 to 9 times a year (see Section 4.9.3.1.5). Any given location could be overflown more or less than average during a year. Noise and startle effects would be an infrequent effect and could be perceived as significant by overflown persons. The sudden noise, startle effect, visual intrusion, and uncertainty of low-level overflight are expected to constitute an adverse effect under activated low MOAs.

During the EIS process, members of the public expressed concern that sonic booms (which could occur during LFEs not more than 10 days per year) might interfere with the formation of clouds, thereby reducing rainfall and affecting crop production. Cloud formation depends on the amount of moisture in the air, together with local temperature and pressure at the cloud layer. Aerodynamic loads (lift and drag; pressure on the wings) on an aircraft in flight have a localized effect on temperature and pressure. These loads are sometimes made visible by local condensation. The resulting vapor cloud is actually a condensation cloud in low-pressure expansion regions. The effect is transient, reacting to the local pressure and returning to normal after the aircraft passes. The pressure field of an aircraft (either subsonic or supersonic) does not remove moisture or change atmospheric conditions and aircraft noise under the Proposed Action would not be expected to have any direct or indirect impact on rainfall.

PERFORMANCE EFFECTS RESULTING FROM NOISE-RELATED STRESS

Aircraft overflights that would occur under the Proposed Action would have the potential to cause startle responses in exposed persons. Several studies have been conducted on the relationship between noise-induced stress and performance loss (see Appendix I). These studies have found that intermittent sounds, such as flyover noise, are more likely to disrupt performance than continuous sounds of the same level and that the level of impact is strongly linked to the type of task and the sensitivity of the individual performing the work. A person's sensitivity to noise is affected by several personal factors including conditions such as post-traumatic stress disorder. Noise events would be infrequent under the PRTC airspace with less than 1 event per day exceeding an SEL of 65 dB expected to be experienced at any given location. Although such events could be momentarily startling, they would not be expected to substantially impact performance of a specific task or aggravate conditions leading to sustained increased noise sensitivity.

NOISE IMPACTS TO ANIMALS

The effect of noise on domestic and wild animals was a concern expressed by public commenters. The impact of noise on animals is discussed in Section 4.6, *Biological Sciences,* Section 4.9, *Socioeconomics,* and Section 4.8, *Land Use*.

For domestic animals, public concern generally focuses on adverse effects on the use of, or economic value of, the animals. Approximately 99 percent of the total land area beneath the proposed PRTC is open space, rangeland, or agriculture. Ranchers expressed concern regarding damage that could occur if livestock were panicked by noise, low-level visual intrusion, or sonic booms. Ranchers were particularly concerned about the impact of low-level overflights during calving, branding, weaning, or other penning operations. Stampeding of penned livestock after low-level aircraft overflight has been known to lead to injury, escape of domestic stock animals, and damage to fences (Air Force 1994).

Existing avoidance areas have been established for seasonal ranching activities under the Powder River A and B MOAs. Avoidance areas would be established in the PRTC to reduce the likelihood of physical injury to livestock due to initial reactions to overflight noise. Open communication between ranchers and the Air Force would be important to ensuring that appropriate avoidance procedures are enacted. When the Air Force knows of such activities, the avoidance areas are part of the aircrew briefing described in Section 2.10.4.

A majority of studies conducted to date have shown little or no effect of aircraft noise on the long-term health and productivity of cattle. After compilation of the results of studies of milk production in cows exposed to aircraft overflights, no connection between noise and milk yield was found (Air Force 1994). Studies on spontaneous abortions in cattle have been inconclusive, with the majority of studies indicating no relationship between aircraft noise and spontaneous abortions (Air Force 1994).

Horses may exhibit behavioral reactions to aircraft overflights, but typically habituate to the stimulus over time (Air Force 1994). To date, no linkage has been established between aircraft noise and spontaneous abortions or other long-term health effects in horses (LeBlanc *et al.* 1991).

Studies of aircraft noise effects on weight gain, food intake, and reproduction rates of swine have indicated little or no effect. Exposure of swine to high levels of aircraft noise frequently resulted in increased heart rates, hypertension, and electrolyte imbalances, but these effects typically subsided after the noise levels were reduced (Air Force 1994).

Domestic fowl may panic when exposed to sudden, intense aircraft noise and this panic can lead to bruising and other damage to the birds, which could reduce marketability (Air Force 1994). These effects are more likely to occur when birds are densely crowded and when they are naïve to aircraft noise. Egg productivity has not been found to be affected by aircraft overflight noise, even when the birds were exposed to noise levels of 130 dB (Air Force 1994).

Domestic dogs and cats may become excited or stressed by aircraft overflight noise. However, no permanent effects on dogs or cats are expected to occur as a result of overflights.

Response of wild animals to noise differs markedly between species (Manci *et al.* 1988). It has been found that many species habituate to noise over time (Manci *et al.* 1988). Military aircraft operations in areas where no military aircraft operations had occurred previously may cause behavioral responses in exposed animals (startle response, fleeing the sound source, or becoming temporarily motionless). Responses to overflight noise would be expected to diminish as the exposed animals grow more accustomed to the stimulus. Effects of noise on wildlife, including threatened and endangered species, are described in Section 4.6, *Biological Sciences*.

Areas Not Currently Beneath SUAs: Areas not currently beneath SUAs are typically overflown by aircraft at high altitudes. Low-altitude military overflights on MTRs were frequent during the Cold War but have been infrequent in recent years. Ambient noise levels in these areas are typically low, estimated to be below 45 dB DNL. Under Modified Alternative A, aircraft-generated noise levels beneath portions of PR-2 that are currently within Powder River A/B MOAs would decrease from 49 to 47 dB DNL_{mr}. Noise levels in areas of PR-1A, PR-1B, PR-1C, PR-1D, PR-2, PR-3, and PR-4 MOA/ATCAA would increase from less than 45 dB DNL up to a calculated 46 dB DNL_{mr}. Noise levels beneath Gap A, Gap B, Gap C MOA/ATCAA from aircraft would remain below 45 dB DNL_{mr} as would areas beneath ATCAAs only. Subsonic military aircraft operations in the ATCAAs would occur at such high altitudes that they would not affect the overall DNL_{mr} noise level on the ground. Noise level changes from less than 45 dB DNL to greater than 45 dB DNL could be noticed and could be annoying to some people. However, noise levels would remain below the USEPA identified level of 55 dB DNL. Depending on the airspace, Table 4.2-4 calculates the number of sonic booms experienced at any given location to be approximately

one to two per LFE day, and CDNL would be 36 dBC toward the center of the airspace. Increases in noise levels in these areas could produce annoyance to residents and frequent visitors, but infrequent sonic booms would not be expected to result in impacts to human health.

4.2.3.2 MODIFIED ALTERNATIVE B

Noise impacts of Modified Alternative B would be the same as Modified Alternative A in PR-2 and PR-3. Modified Alternative B would not include creation of the PR-1 MOA complex or the Gap A MOA. Modified Alternative B does include a PR-4 Low MOA as well as the PR-4 High MOA in Modified Alternative A. The inclusion of PR-4 Low MOA would result in increased low-level overflight and associated noise conditions on lands under PR-4.

Aircraft operations in PR-2 and PR-3 and for all the ATCAAs would be the same as described under Modified Alternative A. Supersonic noise levels beneath airspace units would be the same as described in Table 4.2-4. Noise levels beneath each of the PRTC airspace units under Modified Alternative B are displayed in Table 4.2-11. Modified Alternative B noise impacts would be similar in nature but slightly less intense than the impacts that would occur with Modified Alternative A under the PR-1 MOA complex and slightly more intense under the PR-4 MOAs.

Table 4.2-11. Existing and Modified Alternative B Military Aircraft Noise Levels

Proposed Airspace	*Existing Special Use Airspace*	*Existing*[1]				*Modified Alternative B*			
		DNL_{mr}	*Number of events/day SEL_r > 65 dB*	*CDNL*	*Sonic Booms Per Year*	*DNL_{mr}*	*Number of events/day SEL_r > 65 dB*	*Center of Airspace CDNL*	*Sonic Booms Per Year*
PR-1A ATCAA	None	<45	-	-	-	<45[a]	<0.1	20	0.63
PR-1B ATCAA	None	<45	-	-	-	<45[a]	<0.1		
PR-1C ATCAA	None	<45	-	-	-	<45[a]	<0.1	30	2.43
PR-1D ATCAA	None	<45	-	-	-	<45[a]	<0.1		
Gap A MOA/ATCAA	None	<45	-	-	-	<45[a]	0.1	34	3.6
PR-2 MOA/ATCAA	Powder River A MOA/ Powder River ATCAA	49	0.6	-	-	47[a]	0.5	36	6
	Powder River B MOA/ Powder River ATCAA	49	0.8	-	-	47[a]	0.5	36	6
	Gateway ATCAA	<45[c]	0.4	-	-	47[a]	0.5	36	6
	None	<45	-	-	-	47[a]	0.5	36	6
Gap B MOA/ATCAA	None	<45	-	-	-	<45[a]	0.1	35	4.8
PR-3 MOA/ATCAA	None	<45	-	-	-	46[a]	0.3	31	3.6
Gap C MOA/ATCAA	None	<45	-	-	-	<45[a]	0.1	34	3.6
PR-4 MOA/ATCAA[b]	None	<45	-	-	-	46[a]	0.4	32	2.4
Gateway East ATCAA	None	<45	-	-	-	<45[c]	<0.1	29	1.2
Gateway West ATCAA	Gateway ATCAA	<45[c]	0.4	-	-	<45[c]	0.3	25	0.6
	None	<45	-	-	-	<45[c]	0.3	25	0.6

Notes: 1. Estimated baseline noise levels under airspace. See Table 3.2-2, Estimated Baseline Noise Levels Under Airspace.
a. Dominated by aircraft operations in the MOA; overlying ATCAA noise contributions do not add to overall DNL_{mr} noise level beneath the SUA.
b. PR-4 Low and High MOAs.
c. Calculated military aircraft noise is below 45 dB, which is similar to the DNL for ambient sound.

Table 4.2-12 lists the number of overflight events per day with SEL_r above 65, 75, and 85 dB that a person located in several representative locations beneath PRTC would be likely to hear under baseline conditions and Modified Alternative B. The locations selected for analysis are shown in Figure 3.2-3. The number of events exceeding a SEL_r of 65 dB per day would be between <0.1 and 0.6 at all locations studied. The number of events would differ from the number of events under Modified Alternative A in locations located beneath PR-1 ATCAAs, Gap A ATCAAs, and PR-4.

Table 4.2-12. Average Frequency of Military Aircraft Noise Events at Varying Noise Thresholds (in dB SEL) at Selected Representative Noise-Sensitive Locations Under Modified Alternative B

				Baseline Number of Events Per Day Exceeding Threshold			*Estimated Number of Events Per Day Exceeding Threshold*		
ID#	*General Description*	*Baseline Airspace*	*Proposed Airspace*	*65 dB SEL*	*75 dB SEL*	*85 dB SEL*	*65 dB SEL*	*75 dB SEL*	*85 dB SEL*
1	Inyan Kara Mountain	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.3	0.1	<0.1
2	Devils Tower National Monument [2]	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.5	0.2	<0.1
3	Little Bighorn Battlefield National Monument [3]	None	PR-1C ATCAA	n/a	n/a	n/a	<0.1	<0.1	<0.1
4	Bear Butte	None	Gateway West ATCAA	n/a	n/a	n/a	0.3	0.1	<0.1
5	Thunder Basin National Forest (northern section)	None	PR-2 ATCAA	n/a	n/a	n/a	0.5	0.2	<0.1
6	Thunder Basin National Forest (southern section)	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.3	0.1	<0.1
7	Black Hills National Forest	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.3	0.1	<0.1
8	Custer National Forest (western section)	None	PR-1D ATCAA	n/a	n/a	n/a	<0.1	<0.1	<0.1
9	Custer National Forest (central section)	Powder River A MOA	PR-2 MOA/ATCAA	0.6	0.2	<0.1	0.5	0.2	<0.1
10	Custer National Forest (southeastern section)	None	Gateway West ATCAA	n/a	n/a	n/a	0.3	0.1	<0.1
11	Little Missouri National Grassland	None	PR-3 MOA/ATCAA	n/a	n/a	n/a	0.3	0.2	<0.1
12	Grand River National Grassland	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.4	0.2	<0.1
13	Crow Indian Reservation (Crow Agency, MT)	None	PR-1C ATCAA	n/a	n/a	n/a	<0.1	<0.1	<0.1
14	Northern Cheyenne Indian Reservation (Lame Deer, MT)	None	PR-1D ATCAA	n/a	n/a	n/a	<0.1	<0.1	0.1
15	Standing Rock Indian Reservation	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.4	0.2	<0.1
16	Cheyenne River Indian Reservation	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.4	0.2	<0.1
17	Hardin, MT	None	PR-1A ATCAA	n/a	n/a	n/a	<0.1	<0.1	<0.1
18	Colstrip, MT	None	PR-1B ATCAA	n/a	n/a	n/a	<0.1	0.3	<0.1

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Table 4.2-12. Average Frequency of Military Aircraft Noise Events at Varying Noise Thresholds (in dB SEL) at Selected Representative Noise-Sensitive Locations Under Modified Alternative B

ID#	General Description	Baseline Airspace	Proposed Airspace	Baseline Number of Events Per Day Exceeding Threshold			Estimated Number of Events Per Day Exceeding Threshold		
				65 dB SEL	75 dB SEL	85 dB SEL	65 dB SEL	75 dB SEL	85 dB SEL
19	Broadus, MT [4]	Powder River A MOA	PR-2 MOA/ATCAA	0.6	0.2	<0.1	0.6	0.3	<0.1
20	Ekalaka, MT	None	PR-2 MOA/ATCAA	n/a	n/a	n/a	0.6	0.3	<0.1
21	Baker, MT	None	PR-3 MOA/ATCAA	n/a	n/a	n/a	0.3	0.2	<0.1
22	Elgin, ND	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.4	0.2	<0.1
23	Bowman, ND	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.4	0.2	<0.1
24	Bison, SD	None	PR-4 MOA/ATCAA	n/a	n/a	n/a	0.4	0.2	<0.1
25	Buffalo, SD	None	Gap B MOA/ATCAA	n/a	n/a	n/a	0.1	0.0	<0.1
26	Sundance, WY	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.3	0.1	<0.1
27	Belle Fourche, SD	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.3	0.1	<0.1

Notes:
1. Because several of the listed noise-sensitive areas are very large, locations were selected from within the designated areas that are near the center of proposed airspace units.
2. Devils Tower National Monument published aircraft avoidance area is 5 NM horizontally and 18,000 feet AGL
3. Little Bighorn Battlefield National Monument published aircraft avoidance area is 0.75 NM horizontally and 2,000 feet AGL.
4. Broadus, MT published aircraft avoidance area is 3 NM horizontally and 1,500 feet AGL

The days between noise events at representative locations would be comparable for Modified Alternative B as explained for Modified Alternative A (see Table 4.2-6). The Modified Alternative A explanation of noise related environmental consequences considered in Section 4.2.3.1.5 would be comparable for the respective MOAs in Modified Alternative B. This means that discussion of such noise consequences as annoyance, sleep, speech, learning, health, land use, safety, structures, cultural, socioeconomics, performance, and animals, would equally apply to overflown areas under Modified Alternative B as to Modified Alternative A.

4.2.3.3 MODIFIED ALTERNATIVE C

Modified Alternative C would not involve creation of the PR-4 MOAs or the Gap C MOAs. Aircraft operations in SUAs other than beneath PR-4 ATCAA or Gap C ATCAA would be the same as described under Modified Alternative A. Subsonic and supersonic noise levels beneath airspace units would be the same as described in Table 4.2-4. Noise levels beneath each of the PRTC airspace units under Modified Alternative C, are displayed in Table 4.2-13. The average number of overflights exceeding SEL_r 65, 75, and 85 dB per day at several representative locations beneath PRTC are listed in Table 4.2-14. A map showing the representative locations analyzed can be found at Figure 3.2-3. The number of events exceeding a SEL_r of 65 dB per day would be between <0.1 and 0.6 at all locations studied.

Table 4.2-13. Existing and Modified Alternative C Military Aircraft Noise Levels

Proposed Airspace	Existing Special Use Airspace	Existing[1]				Modified Alternative C			
		DNL_{mr}	Number of events/day SEL_r > 65 dB	CDNL	Sonic Booms Per Year	DNL_{mr}	Number of events/day SEL_r > 65 dB	Center of Airspace CDNL	Sonic Booms Per Year
PR-1A MOA/ATCAA	None	<45	-	-	-	46[a]	0.1	20	0.63
PR-1B MOA/ATCAA	None	<45	-	-	-	46[a]	0.4		
PR-1C MOA/ATCAA	None	<45	-	-	-	<45[a]	0.1	30	2.43
PR-1D MOA/ATCAA	None	<45	-	-	-	46[a]	1.3		
Gap A MOA/ATCAA	None	<45	-	-	-	<45[a]	0.1	34	3.6
PR-2 MOA/ATCAA	Powder River A MOA/Powder River ATCAA	49	0.6	-	-	47[a]	0.5	36	6
	Powder River B MOA/ Powder River ATCAA	49	0.8	-	-	47[a]	0.5	36	6
	Gateway ATCAA	<45[c]	0.4	-	-	47[a]	0.5	36	6
	None	<45	-	-	-	47[a]	0.5	36	6
Gap B MOA/ATCAA	None	<45	-	-	-	<45[a]	0.1	35	4.8
PR-3 MOA/ATCAA	None	<45	-	-	-	46[a]	0.3	31	3.6
Gap C MOA/ATCAA	None	<45	-	-	-	<45[a]	0.1	34	3.6
PR-4[b] ATCAA	None	<45	-	-	-	<45[a]	<0.1	32	2.4
Gateway East ATCAA	None	<45	-	-	-	<45[c]	<0.1	29	1.2
Gateway West ATCAA	Gateway ATCAA	<45[c]	0.4	-	-	<45[c]	0.3	25	0.6
	None	<45	-	-	-	<45[c]	0.3	25	0.6

Notes: 1. Estimated baseline noise levels under airspace. See Table 3.2-2, Estimated Baseline Noise Levels Under Airspace.
a. Dominated by aircraft operations in the MOA; overlying ATCAA noise contributions do not add to overall DNL_{mr} noise level beneath the SUA.
b. Does not include PR-4 MOAs.
c. Calculated military aircraft noise is below 45 dB, which is similar to the DNL for ambient sound.

Modified Alternative C noise impacts would be essentially the same under the overflown PR-1 MOA complex, PR-2, PR-3, and associated Gap MOAs as for the Modified Alternative A. There would be less noise under the PR-4 ATCAA with Modified Alternative C because there would be no PR-4 MOAs.

The number of days between noise events at representative locations for Modified Alternative C would be comparable to the number of days between noise events for Modified Alternative A. The environmental consequences for the respective MOAs in Modified Alternative C would be expected to be similar to those considered in Section 4.2.3.1.5 for Modified Alternative A. This means that discussion of such noise consequences as annoyance, sleep, speech, learning, health, land use, safety, structures, cultural, socioeconomics, performance, and animals, would equally apply to overflown areas under Modified Alternative C as to Modified Alternative A.

Table 4.2-14. Average Frequency of Military Aircraft Noise Events at Varying Noise Thresholds (in dB SEL) at Selected Representative Noise-Sensitive Locations Under Modified Alternative C

ID#	General Description	Baseline Airspace	Proposed Airspace	Baseline Number of Events Per Day Exceeding Threshold			Estimated Number of Events Per Day Exceeding Threshold		
				65 dB SEL	75 dB SEL	85 dB SEL	65 dB SEL	75 dB SEL	85 dB SEL
1	Inyan Kara Mountain	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.3	0.1	<0.1
2	Devils Tower National Monument [2]	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.5	0.2	<0.1
3	Little Bighorn Battlefield National Monument [3]	None	PR-1C MOA/ATCAA	n/a	n/a	n/a	0.2	0.1	<0.1
4	Bear Butte	None	Gateway West ATCAA	n/a	n/a	n/a	0.3	0.1	<0.1
5	Thunder Basin National Forest (northern section)	None	PR-2 MOA/ATCAA	n/a	n/a	n/a	0.5	0.2	<0.1
6	Thunder Basin National Forest (southern section)	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.3	0.1	<0.1
7	Black Hills National Forest	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.3	0.1	<0.1
8	Custer National Forest (western section)	None	PR-1D MOA/ATCAA	n/a	n/a	n/a	1.3	0.6	0.3
9	Custer National Forest (central section)	Powder River A MOA	PR-2 MOA/ATCAA	0.6	0.2	<0.1	0.5	0.2	<0.1
10	Custer National Forest (southeastern section)	None	Gateway West ATCAA	n/a	n/a	n/a	0.3	0.1	<0.1
11	Little Missouri National Grassland	None	PR-3 MOA/ATCAA	n/a	n/a	n/a	0.3	0.2	<0.1
12	Grand River National Grassland	None	PR-4 ATCAA	n/a	n/a	n/a	<0.1	<0.1	<0.1
13	Crow Indian Reservation (Crow Agency, MT)	None	PR-1C MOA/ATCAA	n/a	n/a	n/a	0.1	0.1	<0.1
14	Northern Cheyenne Indian Reservation (Lame Deer, MT)	None	PR-1D MOA/ATCAA	n/a	n/a	n/a	0.3	0.2	<0.1
15	Standing Rock Indian Reservation	None	PR-4 ATCAA	n/a	n/a	n/a	<0.1	<0.1	<0.1
16	Cheyenne River Indian Reservation	None	PR-4 ATCAA	n/a	n/a	n/a	<0.1	<0.1	<0.1
17	Hardin, MT	None	PR-1A MOA/ATCAA	n/a	n/a	n/a	0.1	0.1	<0.1
18	Colstrip, MT	None	PR-1B MOA/ATCAA	n/a	n/a	n/a	0.5	0.3	<0.1
19	Broadus, MT [4]	Powder River A MOA	PR-2 MOA/ATCAA	0.6	0.2	<0.1	0.6	0.3	<0.1
20	Ekalaka, MT	None	PR-2 MOA/ATCAA	n/a	n/a	n/a	0.6	0.3	<0.1
21	Baker, MT	None	PR-3 MOA/ATCAA	n/a	n/a	n/a	0.3	0.2	<0.1
22	Elgin, ND	None	PR-4 ATCAA	n/a	n/a	n/a	<0.1	<0.1	<0.1
23	Bowman, ND	None	PR-4 ATCAA	n/a	n/a	n/a	<0.1	<0.1	<0.1
24	Bison, SD	None	PR-4 ATCAA	n/a	n/a	n/a	<0.1	<0.1	<0.1
25	Buffalo, SD	None	Gap B MOA/ATCAA	n/a	n/a	n/a	0.1	0.0	<0.1

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Table 4.2-14. Average Frequency of Military Aircraft Noise Events at Varying Noise Thresholds (in dB SEL) at Selected Representative Noise-Sensitive Locations Under Modified Alternative C

ID#	General Description	Baseline Airspace	Proposed Airspace	Baseline Number of Events Per Day Exceeding Threshold			Estimated Number of Events Per Day Exceeding Threshold		
				65 dB SEL	75 dB SEL	85 dB SEL	65 dB SEL	75 dB SEL	85 dB SEL
26	Sundance, WY	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.3	0.1	<0.1
27	Belle Fourche, SD	Gateway ATCAA	Gateway West ATCAA	0.4	0.1	<0.1	0.3	0.1	<0.1

Notes: 1. Because several of the listed noise-sensitive areas are very large, locations were selected from within the designated areas that are near the center of proposed airspace units.
2. Devils Tower National Monument published aircraft avoidance area is 5 NM horizontally and 18,000 feet AGL.
3. Little Bighorn Battlefield National Monument published aircraft avoidance area is 0.75 NM horizontally and 2,000 feet AGL. (For Modified Alternative C, the avoidance area would be 5,000 feet AGL.)
4. Broadus, MT published aircraft avoidance area is 3 NM horizontally and 1,500 feet AGL.

4.2.3.4 NO-ACTION

Under the No-Action Alternative, the PRTC would not be charted and a large percentage of sorties would continue to be carried out at remote locations. The existing Powder River airspace would remain in place and training sorties would be at projected baseline conditions as the base returns to a peacetime operational tempo. No intentional supersonic operations would take place in the existing Powder River airspace. Unintentional supersonic flight may occur as B-1 aircrews undergo intensive training maneuvers. Pilots quickly reduce speed after becoming aware of having exceeded the speed of sound. Noise conditions under No-Action would be as described in Table 3.2-3. Modified Alternative A and the other action alternatives include baseline or No Action noise conditions for comparison.

4.3 SAFETY

4.3.1 *METHODOLOGY*

Numerous federal, civil, and military laws and regulations govern operational safety. Individually and collectively these laws and regulations prescribe measures, processes, and procedures required to ensure safe operations and to protect the public, military, and property.

PRTC elements with a potential to affect safety are evaluated to determine the degree to which such elements increase or decrease safety risks. Communication, flight, ground, and bird-aircraft strike safety are assessed for the potential to increase risk. The 28 BW capability to manage risk by responding to emergencies is described. Any changes in the uses and handling requirements for explosive materials are identified and addressed. Analysis of flight risks considers Class A mishap rates, Bird/Wildlife Aircraft Strike Hazards (BASH), and projected airspace utilization. Mitigations from Section 2.3.1 have been incorporated into this analysis and reflect information availability, communication, changes in airspace boundaries, training altitudes, aircraft operations, low-altitude training, and defensive countermeasures.

4.3.2 *ISSUES AND CONCERNS*

Safety concerns were expressed during the DEIS review about increasing the amount of airspace used for low altitude military training flights and the limited communication available to general aviation pilots. Some pilots commented that they could not adequately communicate with the FAA during a flight to learn whether the MOA was actively being used for military training. During the public review of the

DEIS, some general aviation pilots expressed the opinion that the existing MOA airspace is unsafe under "see-and-avoid" conditions. Aircraft accidents and the adequacy of disaster response, especially fire response, were noted as concerns during the public review and comment. Potential concerns associated with electronic emissions and wake vortices were also expressed. Concerns were noted about the use of chaff and flares in the proposed PRTC expanded airspace.

4.3.3 *ENVIRONMENTAL CONSEQUENCES*

4.3.3.1 MODIFIED ALTERNATIVE A – THE PROPOSED ACTION

4.3.3.1.1 *COMMUNICATION SAFETY*

There are several areas of the proposed airspace where radio frequency coverage or navigation aids are inadequate. The Air Force has agreed to not activate or train in Low MOAs until adequate communications are established to allow recall of training aircraft from PR-1A, 1B, 1C, 1D, or PR-3 Low MOAs for Modified Alternative A. Issuing a NOTAM at least 2 hours in advance (see Section 4.1.2.2) to announce the activation of a scheduled airspace segment would provide general aviation pilots status updates for a PRTC MOA. General aviation pilots could also view the schedule and status online or call Ellsworth AFB Airspace Management Office prior to departure to determine the status or obtain a pre-flight briefing from the FAA flight services operators.

Based upon the limited airspace radio frequency and radar coverage, public commenters have stated that the PRTC, without communication and radar improvements, has the potential to significantly impact civil aviation safety. Changes to the Modified Alternative A to mitigate safety impacts include greater setbacks from major airports, lower ATCAA altitudes, multiple MOA and ATCAA segments, and expanded widths of Gap MOAs. Limited communication would continue to impact the airspace around the proposed PR-2, PR-3, PR-1B, PR-1D, and the western portion of PR-4. The existing Powder River A and B MOAs (most of the PR-2) do not have adequate communication for ATC to support airborne civil aviation. The Air Force and FAA would continue coordination to enhance the situational awareness of aircraft operators as to whether PRTC low-altitude MOAs (airspace below 12,000 feet MSL) were active. This may include best practices for use of existing data, equipment, and procedures as well as integration of advancements in software and/or equipment.

4.3.3.1.2 *FLIGHT SAFETY*

All 28 BW training in the newly proposed airspace would be reduced by approximately 6 percent from the hours evaluated in the DEIS. The reduced B-1 training hours results from a reduction in Ready Aircrew Program flight requirements and specifically applies to the PR-1, PR-3, and PR-4 MOAs/ATCAAs. Flight safety associated with a Class A safety mishap is directly related to the experience with the training airframes and the expected duration of training within the airspace.

CLASS A MISHAPS

As described in Section 3.3.2, the overall probability of a B-1 Class A mishap is 0.0000084, or one chance in 840,000. This equates to a lifetime mishap rate of 4.28 per 100,000 hours. B-1s were involved in 28 Class A mishaps between 1984 and 2013. The B-1 mishap rate includes the August 2013 loss of an aircraft in Montana. Accident rates for B-52 aircraft are lower, with 101 Class A mishaps from 1955 to 2013. The B-52 has flown over 7 million hours with an accident rate of 1.30 per 1,000,000 hours. Table 4.3-1 presents Class A mishap data associated with the increased training within the proposed PRTC. The increased frequency of mishaps in the larger airspace is the result of mathematical

calculations associated with the additional training use of the airspace during day-to-day and LFE training.

Table 4.3-1. Projected Class A Mishaps for PRTC Modified Alternatives

	Aircraft		
	B-1	***B-52***	***F-16[2]***
Lifetime Mishap Rate per 100,000 Flight Hours[1]	4.28	1.30	3.56
Baseline Annual Hours in Powder River Airspace	875	300	24
Baseline Years Between Projected Mishaps	26.7	256.4	1,170.4
Modified Alternative A Projected Annual Hours	2,247	300	165
Modified Alternative A Years Between Projected Mishaps	10.4	256	170.2
Modified Alternative B Projected Annual Hours	1,829	277	135
Modified Alternative B Years Between Projected Mishaps	12.8	278	208.5
Modified Alternative C Projected Annual Hours	1,915	225	161
Modified Alternative C Years Between Projected Mishaps	12.2	341	174.5

Note: 1. Lifetime through Fiscal Year (FY) 13; B-52 Calendar Year (CY) 55-FY 13, B-1 CY84-FY 13
2. Representative transient aircraft.

Source: Air Force Safety Center 2014

BIRD-AIRCRAFT STRIKE

The increased training flight activity over a larger area would be expected to increase the total number of bird strikes. There would be no expected change in the incidence rate of bird-aircraft strikes other than from the increased amount of training operations. As described in Section 3.3.3.4, an average of 1 to 2 bird strikes occurred in the Powder River training airspace per year between 1999 and 2013 with the majority being in the Powder River B MOA, which would be the southwestern portion of the proposed PR-2 MOA. The PR-3 Low MOA is in the Central and Mississippi flyways and would have a higher potential for bird strikes than the PR-1A, PR-1B, PR-1C, PR-1D or PR-2 MOAs. Based upon the increased training activity described in Section 2.5.2, the estimated average annual bird strikes would be 3 to 6 in the proposed PRTC. Use of the Aviation Hazard Advisory System, the Bird Avoidance Model and pilot briefings prior to sorties (see Section 2.3) would continue to identify avoidance areas and provide a method to minimize risks from bird strikes in any new airspace regardless of the alternative selected.

ATCAA USAGE

For the existing Powder River airspace, there is an existing agreement between Ellsworth AFB and FAA with limits on ATCAA time and altitudes of use. As noted in Section 2.3.1 the modified PRTC proposal includes the ATCAAs not above FL260 to avoid affecting commercial and general aviation overflight. PR-1B and PR-1D ATCAAs for day-to-day training are capped at FL230. During LFEs, special time for training in the ATCAAs from FL180 to FL260 would be coordinated with ARTCC to ensure safe transit by commercial and other aircraft using ATCAAs. The Air Force will coordinate with the FAA to have in-place agreements with the ARTCC similar to those for the existing ATCAAs regarding the timing, altitudes, and duration of LFE training.

SUPERSONIC EVENTS

Supersonic events in and of themselves create no specific flight safety hazard. Commenters during the public review of the DEIS asked whether a supersonic event could impact safety of a light aircraft in flight. The likelihood of an air pressure variation from a sonic boom during the not more than 10 days of LFEs per year actually intersecting an aircraft flying VFR in an active MOA would be so slight as to be not quantifiable. Even if such an extremely unlikely event were to occur, potential pressure changes as high

as 10 psf or more would be within the structural design of an aircraft. Aircraft are regularly exposed to pressure changes in excess of those generated by a supersonic event, for example, a light single-engine Cessna 150 has a wing loading of 10 psf and a twin-engine Cessna 414 has a wing loading in excess of 40 psf. No in-flight impacts would be expected.

AIRPORTS

The Billings airport requires a buffer to the east to allow for low-level approach and higher altitude climbing and descending to ensure safety and avoid encroaching on the Billings Airport operations. The revised proposed PR-1A and PR-1C training airspaces do not have day-to-day activation of the PR-1A or PR-1C High MOAs or ATCAAs to ensure safety and avoid encroaching on the Billings airport operations. Similar MOA boundary adjustments have been incorporated into the mitigations identified in Section 2.3.1 to support the Bismarck and Dickinson, ND and Sheridan and Gillette, WY airports.

Civil aviation operations would not be able to traverse an active MOA flying IFR. Steps to mitigate this potential effect include the High and Low MOA segments—which can be activated separately to allow for civil aviation transit, the multiple MOAs in PR-1, issuing NOTAMs before MOA activation for advanced information, and the agreement to relocate training aircraft to accommodate an IFR arrival or departure under the active MOA. Aircraft could fly VFR using GPS in an activated MOA using see-and-avoid techniques. This is what occurs in the current Powder River A and B MOAs. IFR departures from an airport under the PRTC with an arrival at an airport under the PRTC, such as a flight from Bowman, ND to Colstrip, MT would be accommodated through coordination between the Air Force and air traffic control. The procedures developed would also handle those nonparticipants operating IFR entirely within the PRTC while simultaneously supporting the expeditious completion of the training flight and the return of the activated airspace to the NAS. If pilots sought to convert from VFR to IFR to account for weather or other conditions, they could have difficulty communicating with ARTCC in some of the proposed PRTC. Civil aviation pilots expressed the opinion that such constraints upon their operations and the uncertainty associated with B-1 training schedules and altitudes impact regional civil aviation safety in the PR-1A/B/C/D, PR-3, and PR-4 MOAs. The Air Force changed the aeronautical proposal to provide specific published times of use for the airspace to be used during the morning and late afternoons on Monday through Thursday and on Friday morning. In addition, the scheduled airspace would have NOTAMs issued 2 to 4 hours in advance of military flight operations. Advanced scheduling, NOTAMs, and stacking the PR-1A/B/C/D, PR-3, PR-4, and, for LFEs, segmenting the Gaps with a Low MOA and a High MOA are all designed to reduce the potential for impact on civilian aircraft.

The proposal to expend chaff in the PRTC airspace would not be expected to create any flight safety issues. The only type of chaff which would be permitted would be RR-188, RR-112, RR-179, or equivalent and configured so as to reduce interference with FAA radar. Some improved FAA radars have the ability to detect and track all chaff. Because chaff might be detected by improved FAA radars chaff would be deployed only after receiving clearance from the Frequency Management Authority. The frequency clearance would include specific delivery restrictions to insure chaff deployment was not within 60 NM of an ARTCC radar so as to not interfere with other users of the frequency spectrum.

WAKE VORTICES

The trail of disturbed air that follows an aircraft is called a wake vortex. Larger aircraft, lower altitudes, and longer wingspans produce a greater potential for a wake vortex effect. Aircraft vortices represent a safety issue raised during the EIS process. As aircraft move through the air, they create vortices from their wing tips. These vortices, collectively called wake turbulence, trail immediately behind the aircraft for thousands of feet while diminishing in strength farther from the aircraft.

The strength of wing tip vortices depends upon the amount of lifting force an aircraft is required to generate in order to fly. The heavier the aircraft, the more lifting force required, and therefore the stronger the vortices. At cruising altitudes, wake turbulence directly behind the aircraft can cause handling difficulties for following aircraft, especially when a small aircraft trails a larger aircraft. FAA regulations dictate safe following distances and procedures to avoid wake turbulence, both in flight and during landing or takeoff. For aircraft en route, the FAA Aeronautical Information Manual has specified separation minimums of 5 NM between a Heavy Aircraft (such as a Boeing 757) and any smaller aircraft which is following or crossing behind at the same level or less than 1,000 feet below. No special longitudinal wake turbulence separations based on time are required (FAA 2010a).

Aircraft flying closer to the ground create wake turbulence, which trails behind the aircraft generally moving downward and lessening in intensity. Depending upon a variety of factors, including the wingspan, speed, altitude, and aircraft mass, a wake vortex can vary from a light breeze to a strong, brief wind turbulence and can dissipate quickly near the ground or last for a minute or more at altitude. This creates an interface between flight safety and ground safety.

Nearly all of the proposed PR-2 MOA is the existing Powder River airspace A and B MOAs. There have not been any reports of wake vortex problems from training by B-1 and other aircraft in the existing Powder River A or B MOAs. The B-1 operates for an estimated 15 to 20 minutes at or below 2,000 feet AGL during each training sortie. At this altitude, the B-1 could produce a strong, brief wind turbulence. Most structures are designed to accommodate such turbulence. Rare, rapid turns or a pull-up maneuver by a B-1 flying below 1,000 feet AGL can result in wing vortex wind velocities greater than 27 miles per hour at 22 feet AGL behind and below the aircraft. These infrequent high-energy wing vortices, although extremely improbable, could damage a ranch windmill structure. Structures, objects, persons, wildlife, and livestock in the area underlying the proposed airspace are frequently subject to average winds and wind gusts that match potential B-1 wing vortex wind speeds. The Air Force has a procedure for damage claims which begins by contacting Ellsworth Public Affairs with details of any claim.

4.3.3.1.3 *GROUND SAFETY*

Operations and maintenance procedures conducted by 28 BW personnel at Ellsworth AFB would not change from current conditions. All activities would continue to be conducted in accordance with applicable regulation, technical orders, and Air Force Occupational Safety and Health standards.

CHAFF AND FLARES

One aspect of the proposed PRTC action identified by the public as possibly creating new or unique ground safety issues is the use of defensive flares in the airspace. Currently, expenditure of chaff and flares is not permitted in the existing Powder River MOAs and ATCAAs. Under the Modified Alternative A, defensive chaff and flare training use in the expanded PRTC MOA/ATCAA airspace would be permitted under certain conditions. Chaff, although ejected from the aircraft by a pyrotechnic charge, is not explosive. As described in Appendix C, the composition of chaff is similar to those components found in the earth's crust, and presents no human health or safety risk. Through numerous studies, chaff has never been found to be specifically harmful to domestic animals or wildlife (Appendix C). Chaff residual materials are described in Section 2.8.5. An average of one piece of residual plastic, felt, or wrapper material would fall on 149 acres per year. These residual pieces on the ground would not constitute a safety risk, but could be an annoyance if such a plastic piece were found on the ground and identified.

Use of flares in the proposed PRTC airspace would be conducted in accordance with ACC and Ellsworth AFB regulations. Mitigations for flare use are included in Section 2.3. Use of flares within the PRTC would incorporate the following management practices and mitigations:

- All aircrew/units planning flare employment in the PRTC airspace will contact 28 BW Operations Office for current flare restrictions.
- Current flare restrictions will be briefed to all aircrew planning on employing flares, the day of the sortie, and prior to flight operations in PRTC.
- When not further restricted, minimum altitude for flare release within the boundaries of PRTC airspace in training areas other than government-owned or controlled property would not be below 2,000 feet AGL (ACC supplement to AFI 11-214, 22 December 2005).
- When the 28 BW Operations Office determines fire danger to be very high or extreme (via National Fire Danger Rating System) flare use will be temporarily suspended in the affected PRTC airspace unit. Furthermore, flare use in the PRTC ATCAAs will be discontinued when the National Fire Danger Rating System fire rating is Extreme. The Air Force will select an appropriate and representative U.S. Forest Service station (or stations) underlying or adjacent to the proposed airspace from which to retrieve fire ratings. This method will allow the Air Force to suspend flare use in individual MOAs or ATCAAs as conditions warrant.
- The Air Force will view National Fire Danger Rating System ratings each day prior to operations in which flare use is planned, and it will notify aircrew of any restrictions. Personnel will also reference the National Weather Service Red Flag Warning system during risk management and decision-making; however, no suspensions of activities based on this warning system are mandated.
- Air Force public affairs would work with local fire departments underlying the airspace to educate them on flare deployment and use. This education would include distributing flyers to fire departments describing chaff and flare deployments, residual materials, and dud flares.
- Current flare restrictions will be checked no earlier than 24 hours prior to PRTC entry time. When mission planning is done well in advance, an additional call will be required within 24 hours of airspace entry to ensure the most recent restrictions are attained. The Air Force would continue to cooperate with local fire agencies for mutual aid response to wildland fires.

The burn time of a flare is approximately 5 seconds and the flare would burn out within approximately 500 feet (see Appendix D). Deployment of flares at or above 2,000 feet AGL provides an approximate 1,500-foot margin of safety to keep burning material from contacting the ground. The potential for a flare-initiated fire is very small.

There are four types of flare failures. A failure can occur if a flare does not ignite and remains in the aircraft, does not burn the prescribed duration or temperature, ignites but is not dispersed, or does not ignite after ejection (a dud flare). Historical data on range clean-ups where flare use is intensive in a relatively constrained geographic area (such as Barry M. Goldwater Range in Arizona and Utah Test and Training Range) indicate that of all flares expended, an estimated 0.01 percent were actually found on the ground as duds (Air Force 2001e). Based on expected use, these overall reliability data indicate that up to approximately 2,450 flares proposed for use each year (Section 2.5.6), approximately one dud flare in every three years could fall to the ground somewhere under the entire airspace comprising PRTC.

Instructions will be provided by Ellsworth AFB to fire departments and other organizations within on the identification of a dud flare and a contact at Ellsworth AFB if a suspected dud flare is found. The risk from dud flares is minimal (Air Force 2001e). It is extremely unlikely that a dud flare could fall from an aircraft and strike an individual on the ground. Should such an extremely remote accident occur, it could result in injury or death. With a dud rate on the ground of approximately 0.01 percent, and a

population of fewer than two persons per square mile, the possibility of such an accident is so remote that it is very near zero. Although the risk of combustion of such a dud on the ground is low, it could be ignited by a hot (400 degrees Fahrenheit [°F]) fire or by friction from a strike with something like a power saw or a bullet. Agricultural machinery would not be expected to create a strike force or temperature that could ignite a dud flare, even in the extremely unlikely event of a dud flare being encountered. On a military range, a dud flare is treated as unexploded ordnance. The basic rule for the public to follow if a dud flare were found is to identify its location, do not touch it or experiment with it, and notify a local safety authority of its location. The authority, in turn, will notify Ellsworth AFB which has the personnel and facilities to handle dud flares, should they be encountered

Capability for fire response is located on Ellsworth AFB and communities associated with the airspace. The first responders can be local volunteer fire departments, as was the case in the August 2013 loss of an Ellsworth-based B-1 in Montana. The Ellsworth AFB Fire Department is party to mutual aid support agreements with the nearby communities. Ellsworth AFB and the Montana Bureau of Land Management have a Memorandum of Understanding establishing training temporary flight restrictions to support firefighting activity (BLM-MOU-MT925-1001 approved 7 October 2009). All of these agreements will continue in effect. Air Force personnel will cooperate with local agencies for mutual aid response to fires, and develop an education program for fire departments beneath the airspace to include information on chaff and flares.

Flares proposed for use for defensive training in the PRTC include M-206, MJU-7 A/B, MJU-10/B, and MJU-23/B flares. Table 4.3-2 presents the residual materials deposited on the surface following deployment of each flare type.

Table 4.3-2. Residual Material Deposited on the Surface Following Deployment of One Flare

	Flare Type			
Material	***M-206***	***MJU-7/B***	***MJU-10/B***	***MJU-23/B***
End Cap	One 1 inch x 1 inch x 1/4 inch plastic or nylon	One 2 inch x 1 inch x 1/4 inch plastic or nylon	One 2 inch x 2 inch x 1/4 inch plastic or nylon	One 2 3/4 inch diameter x 1/4 inch thick round plastic disc
Piston	One 1 inch x 1 inch x 1/2 inch plastic or nylon	One 2 inch x 1 inch x 1/2 inch plastic or nylon	One 2 inch x 2 inch x 1/2 inch plastic or nylon	One approximately 2 3/4 inch diameter x 1/2 inch aluminum (or plastic) piston
Spacer	One or two 1 inch x 1 inch felt	One or two 2 inch x 1 inch felt	One or two 2 inch x 2 inch felt	One 1/2 inch thick x 2 3/4 inch diameter rubber shock absorber sealant, two (1/8 inch x 2 3/4 inch diameter) felt discs, up to four 1 inch x 10 inch felt strips
Wrapping	One up to 2 inch x 17 inch piece of aluminum-coated stiff duct-tape type material	One up to 3 inch x 17 inch piece of aluminum-coated stiff duct-tape type material	One up to 4 inch x 17 inch piece of aluminum-coated stiff duct-tape type material	One up to 4 1/2 inch x 20 inch piece of aluminum-coated stiff duct-tape type material
Safe & Initiation Device	N/A	One 2 inch x 1 inch x 1/2 inch nylon and plastic spring device	One 2 inch x 1 inch x 1/2 inch nylon and plastic spring device	One 2 inch x 1 inch x 1/2 inch nylon and plastic spring device

The MJU-23/B is used by the B-1. The majority of the residual flare materials that fall after deployment of a flare have surface area to weight ratios that would not produce any substantial impact when the

residual flare piece fell to the surface. The one item that could fall with enough force to impact an object on the ground is the Safe & Initiation device with a weight of 0.7 ounces. The Safe & Initiation device would strike the earth with approximately the same force as a large hailstone and could cause injury in the extremely unlikely event an individual were struck on an unprotected head with no hat. With the frequency of flare use and the average population density of fewer than two persons per square mile, such an event would be immeasurably unlikely.

The residual materials would not be expected to result in a safety impact. If a rancher or recreationist were to find a piece of residual flare material on the ground, and identified it as a piece of plastic or material from a deployed flare, the individual could be annoyed.

EMERGENCY GROUND ACTIVITY

Any ground safety emergency that involves a life-flight would continue to be supported by relocating military training aircraft from the affected airspace. This is the current policy with the existing Powder River airspace and would be applied to the proposed PRTC.

SUPERSONIC EVENTS

Supersonic overpressures could impact physical items beneath the airspace (Table 4.2-5). Fighter aircraft are proposed to be supersonic at or above 10,000 feet AGL and B-1s at or above 20,000 feet MSL during LFEs. LFEs would be scheduled 1 to 3 days per quarter for not more than 10 days per year. Table 4.2-9 (Section 4.2.3.5) presents the possible damage to structures from overpressures above 4.0 psf. Bric-a-brac balanced on shelf edges, such as on mantles or book cases, could fall and break. If a person were inside or near such damaged or falling objects, the persons could be injured. The random nature of training flights and the infrequent quarterly LFE sonic events would not be expected to cause safety impacts. Public concerns during DEIS review included the desire for fair compensation for property damage. In the event of damage, there is an established procedure for claims which begin by contacting Ellsworth AFB Public Affairs.

RANCH OPERATIONS

Sudden onset sounds can cause reactions to penned livestock. Communication of ranch seasonal branding operations identifies avoidance areas to reduce the potential for impacts.

Horses, cattle, and other large livestock, as well as exotics, such as ostriches, sometimes "spook" and create a safety hazard at sudden-onset sounds, especially sounds accompanied by visual effects created by low-altitude, high-speed aircraft. These reactions can be hazardous to the animals. Range cattle and calves, especially when penned, can be spooked by low flying aircraft or by sudden noise accompanied by a visual stimulus. This is of concern when the animals are penned in a relatively small area, such as during weaning and branding activities. Typically, a sonic boom without any follow-on visual cues is not as likely to cause as much reaction as a sudden loud overflight noise accompanied by a visual stimulus. Should cattle or calves stampede during such an event, the cattle or calves could be seriously injured or killed and fencing could be damaged. The 28 BW coordinates with ranchers beneath the existing Powder River A and B MOAs and seeks to establish temporary avoidance areas around ranches while branding and weaning operations are known to be underway. The success of such avoidance areas is dependent on communication. Ellsworth AFB has a contact program with airspace schedulers and pilot briefings include avoidance areas. This approach, when sensitive ranching operations are scheduled and the locations are known by airspace schedulers, has the potential to mitigate by avoidance impacts to ranching operations.

LOW-LEVEL OVERFLIGHT

During public meetings, commenters expressed concern that the startle effect of low-level high-speed aircraft could affect the safety of livestock, riders on horses, residents, and recreationists. Low-altitude aircraft overflights have the potential to startle people at sensitive times, such as while they are driving, riding horses, or rock-climbing. Any safety hazard associated with this type of startle event would be difficult to predict and would be highly dependent on situation-specific factors. Existing low-level training occurs within the existing Powder River A and B MOAs and there were reports during public hearings of individuals being startled if they had not observed the aircraft before the overflight.

The low-altitude training activity could occur anywhere within a proposed MOA, such as PR-1A/B/C/D, PR-2, or PR-3, during daily published times of use or under the Gap MOAs during LFEs 1 to 3 days per quarter, not more than 10 days per year. Low-altitude training of 2,000 feet AGL or below down to 500 feet AGL could occur in activated airspace during Monday through Thursday and Friday morning published times of use. The uncertainty of whether a low-altitude overflight could occur was identified as an impact by public commenters. The MOA land areas and training time were used to calculate the average annual number of times any specific location could be directly overflown within one quarter of a mile by a military aircraft flying 2,000 feet AGL or below (but not below 500 feet AGL). Any given location under the proposed airspace could have a low-level overflight an average of 6 to 9 times a year (see Section 4.9.3.1.5). This is an annual average and the number of actual overflights experienced by any specific location could be more or fewer. Should an event occur, the resulting safety impacts to a recreationist on a horse that could be spooked or a rancher working cattle could be seen as significant by the individual experiencing the effects of the low-level overflight.

ELECTRONIC EMISSIONS

Safety procedures associated with usage of explosives for mining are designed to prevent inadvertent explosions caused by vibrations or electronic emissions, such as those caused by aircraft overflight. Significant impacts could result from inadvertent and/or premature setting off of mining explosives or otherwise impacting mining operations. As noted in Section 2.3.1, the Air Force is proposing to establish a procedure to avoid low-altitude overflight of, or frequency interference with, known blasting operations such as those associated with construction or mining operations. The radio frequencies and electronic emissions of training aircraft would need to be compared with the mining operations and procedures will need to be developed and implemented regarding stand-off distance, intensity of electronic emissions, radio frequencies used, and low-altitude overflight to prevent significant impacts. Safety impacts to mining operations could be significant without establishing and implementing such procedures.

TOWERS

Section 4.9.3.1 discusses avoidance areas for towers and FAA requirements for structures which exceed specific heights and could pose a hazard to aircraft. Such structures are mapped and avoided by civil and military pilots.

4.3.3.2 MODIFIED ALTERNATIVE B

The Modified Alternative B includes PR-2, PR-3, and PR-4 Low and High MOAs and ATCAAs from FL180 to FL260 (or FL230) for day-to-day operations (up to 240 days per year). For LFEs, occurring typically 1 to 3 days per quarter for not more than 10 days per year, this alternative would include PR-1A/B/C/D and Gap A/B/C ATCAAs.

4.3.3.2.1 *COMMUNICATION SAFETY*

Navigation aids, communication, and recall capability within the PR-2 or PR-3 MOAs would be as discussed for Modified Alternative A. This means the potential for communication safety impacts in PR-2, PR-3, the western portion of PR-4, and the associated Gap MOAs as with Modified Alternative A. Civil aircraft could fly from Miles City to the south and west below FL180 and airports under the PR-1 ATCAAs, such as Colstrip, would not need additional communication. Civil aircraft could transit the area below the PR-1 ATCAAs and Gap A ATCAA using IFR, VFR, and GPS navigation below FL180 even when the ATCAAs were activated. Communication impacts would not be expected in the area under the PR-1A or Gap A ATCAAs.

4.3.3.2.2 *FLIGHT SAFETY*

Modified Alternative B mitigation measures (Section 2.3.1) would be the same as for Modified Alternative A to reduce civil pilot uncertainties. Civilian aircraft would be able to fly VFR using GPS navigation under see-and-avoid conditions in an active MOA. Aircraft flying IFR would incur no undue delay during departure and arrival operations to/from airports beneath PRTC. Training aircraft would relocate to another MOA to allow IFR arrivals/departures. The PR-3 and PR-4 MOAs would be stacked into Low and High to support IFR traffic. Civil aircraft flight safety risks in PR-2, PR-3, and Gap A and B MOAs would be the same as described for Modified Alternative A. Safety risks and potential impacts under PR-4 and associated Gap C Low MOAs would be the same as described for PR-3 and Gap B Low MOAs under Modified Alternative A.

Class A mishap safety risks would approximately the same as those described for Modified Alternative A (see Table 4.3-1). Bird-aircraft strikes would not be expected in the area under the PR-1 or the Gap A ATCAAs because most bird-aircraft strikes occur well below FL180. The number of bird-aircraft strikes in PR-2, PR-3, and PR-4 MOAs and associated Gap MOAs would be comparable to those for Modified Alternative A, or approximately 3 to 6 per year. Bird-aircraft strikes would have the potential to be higher in the PR-4 Low MOA. Continued use of the Aviation Hazard Advisory System, the Bird Avoidance Model and pilot briefings prior to sorties would provide a method to minimize risks from bird strikes under Modified Alternative B.

Flight safety impacts under Modified Alternative B are comparable to those for Modified Alternative A within all PRTC proposed airspaces with the exception that there would be no MOAs under the PR-1 or the Gap A ATCAAs. Civil aircraft would need to communicate to learn activities status of ATCAAs or adjacent MOAs if the pilot sought to enter an active airspace. Emergency procedures for air ambulance, fire, or related emergency activities under Modified Alternative B would be the same as described for Modified Alternative A. These flight safety requirements would apply to areas where Modified Alternative B included low-level MOAs. No special emergency procedures would be expected to apply to areas under the PR-1 or the Gap A ATCAAs.

4.3.3.2.3 *GROUND SAFETY*

Modified Alternative B low-altitude safety risks from overflight would not be expected under the PR-1A/B/C/D, or Gap A ATCAAs. Impacts to recreational or ranching activities under PR-3 and PR-4 MOAs would be as described for Modified Alternative A. Low-altitude safety risks for the proposed PR-2 would be comparable to those experienced under existing conditions. The identification of seasonal ranch activities and the establishment of seasonal avoidance areas could reduce potential impacts to ranch activities as described in Modified Alternative A. Wake vortex effects under PR-2, PR-3, and PR-4 MOAs would be as described for Modified Alternative A. The proposed PR-2 MOA currently has low-level B-1 training and there have not been reports of wake vortex impacts.

Flare usage and chaff and flare residual materials within the PR-2, PR-3, and PR-4 MOAs and the ATCAAs would be under the same conditions and as described for Modified Alternative A. The estimated dud distribution and distribution of residual chaff and flares materials would be approximately the same as described for Modified Alternative A. Flare fire risk would remain extremely low throughout the airspace.

There would be no low-altitude flights or electronic emissions from training aircraft below FL180 under the PR-1 or the Gap A ATCAAs, during day-to-day operations. Military aircraft training at these altitudes would not be expected to cause electronic triggering or surface vibration impacts to mining operations in the Colstrip area or under the PR-1 or the Gap A. Communication with known mining operations would still be required to ensure safety. Infrequent sonic booms above FL180 could still be felt during LFEs under PR-1, or the Gap A, and overpressures of 4 psf could be experienced infrequently (see Section 4.2.3.5).

4.3.3.3 MODIFIED ALTERNATIVE C

Modified Alternative C includes all of the ATCAAs and the PR-1A, PR-1B, PR-1C, PR-1D, PR-2, and PR-3 MOAs from Modified Alternative A. The Gap A and Gap B MOA extension are included in Modified Alternative C. Modified Alternative C does not include a PR-4 MOAs or Gap C MOAs.

4.3.3.3.1 *COMMUNICATION SAFETY*

There would be no increased radio or radar communication or tracking capability within the Modified Alternative C airspace. This means the communication impacts in the PR-1A/B/C/D, PR-2, PR-3 MOAs, and the Gap A and the Gap B MOAs would be same as with Modified Alternative A. Communication and radar coverage have limited ability to contact low-level civil aircraft in the existing Powder River A and B MOAs which constitute most of the proposed PR-2 MOA. Civil aircraft flying from Dickinson to the southeast and from airports under the PR-4 ATCAA, such as Hettinger, could use VFR and GPS navigation below FL180. The Air Force would establish training aircraft recall capabilities prior to the use of the PR-1A, 1B, 1C, 1D, or PR-3 Low MOAs for Modified Alternative C. Communication impacts would not be expected in the area under the PR-4 or Gap C ATCAAs.

4.3.3.3.2 *FLIGHT SAFETY*

Modified Alternative C would not have military training airspace or associated impacts under the PR-4 or Gap C ATCAAs. Modified Alternative C would have the same effects as those described for Modified Alternative A. Class A mishap safety risks would not be discernibly different from those described in Modified Alternative A. Civil aircraft flight safety risks in the PR-1A, PR-1B, PR-2, PR-3, Gap A, and Gap B MOAs would be the same as described for Modified Alternative A. Civilian aircraft would not be able to traverse an activated MOA IFR, although they could choose to fly using VFR under see-and-avoid conditions in activated MOAs. Provisions would be made for IFR arrival and departure from an airport under the active MOA. Safety risks and potential impacts within the MOAs would be the same as described for Modified Alternative A.

Bird-aircraft strikes would not be expected under the PR-4 ATCAA or the Gap C ATCAA because most bird-aircraft strikes occur well below FL180. The number of bird-aircraft strikes in the Modified Alternative C MOAs would be comparable to those for Modified Alternative A, or approximately 3 to 6 per year. Continued use of the Aviation Hazard Advisory System, the Bird Avoidance Model, and pilot briefings prior to sorties would continue to provide a method to minimize risks from bird strikes. Flight safety impacts under Modified Alternative C are comparable to those for Modified Alternative A within

all airspaces except under the PR-4 ATCAA and the Gap C ATCAA where there would be no MOAs (see Table 4.3-1).

Modified Alternative C emergency procedures for air ambulance, fire, or related emergency activities would be treated the same as described for Modified Alternative A.

4.3.3.3.3 *GROUND SAFETY*

Modified Alternative C would not have low-altitude overflight safety risks under the PR-4 or Gap C ATCAAs. Low-altitude safety risks from overflight to residents, recreationalists, or ranchers under the PR-1A, PR-1B, PR-1C, PR-1D, PR-2, PR-3, Gap A, and Gap B MOAs would be as described for Modified Alternative A. The identification of seasonal ranch activities and the establishment of seasonal avoidance areas could reduce potential impacts to ranch activities as described in Modified Alternative A. Wake vortex impacts under the PR-1, PR-2, and PR-3 MOAs and Gap A and Gap B MOAs would be as described for Modified Alternative A. There have been no wake vortex impact claims within the PR A or B MOAs (most of the proposed PR-2).

Flare usage and discharge of chaff and flare residual materials within the PR-1, PR-1C, PR-1D, PR-2, PR-3, Gap A, and Gap B MOAs would be essentially the same as described for Modified Alternative A (see Table 2.8-2). The estimated dud distribution and distribution of residual chaff and flares materials would be approximately the same as described for Modified Alternative A. Flare fire risk would remain extremely low throughout the airspace. The use of flares above FL180 in the PR-4 ATCAA and the Gap C ATCAA and prohibition of their use in an airspace during extreme fire danger as determined by the National Fire Danger Rating System would effectively result in no potential for a flare-caused fire under those ATCAAs.

Modified Alternative C mining impacts and the need to establish safety procedures, especially within the PR-1A/B/C/D MOAs, would be as described for Modified Alternative A. Supersonic event safety impacts would be as described for Modified Alternative A.

4.3.3.4 NO-ACTION ALTERNATIVE

No changes to 28 BW training airspace would occur under the No-Action Alternative. Under the No-Action Alternative, the PRTC would not be charted and a large percentage of sorties would continue to be carried out at remote locations. The existing Powder River airspace would remain in place and sorties flown in the airspace would be at projected baseline conditions with two squadrons of B-1s training to the extent possible in the airspace. Training in the MOAs would be comparable to the training operations described for PR-2 under Modified Alternative A (see Section 2.5).

B-1 and B-52 training would continue to occur in the Powder River A and B MOAs and associated ATCAAs. Low-level overflight effects, communication requirements regarding MOA activation, and other consequences would continue in the existing airspace.

4.4 AIR QUALITY

4.4.1 *METHODOLOGY*

Air emissions resulting from the Proposed Action and the Action Alternatives were evaluated in accordance with federal, state, and local air pollution standards and regulations. Air quality impacts from a proposed activity or action would be significant if they:

- Increase ambient air pollution concentrations above any National Ambient Air Quality Standard (NAAQS);

- Contribute to an existing violation of any NAAQS;
- Interfere with or delay timely attainment of NAAQS; or
- Impair visibility within any federally mandated Federal Class I area.

The approach to the air quality analysis was to estimate the increase in emission levels due to implementation of the Proposed Action and action alternatives.

The air quality impact analysis evaluated both direct and indirect emissions associated with the Proposed Action and action alternatives. There are no construction activities associated with the Proposed Action. The analysis of aircraft emissions associated with the proposed training focuses on aircraft operations that occur below 3,000 feet (914 meters) AGL. Below 3,000 feet AGL is the average depth of the mixing layer where emissions released into this layer could affect ground-level pollutant concentrations. Emissions that are released above the mixing layer generally would not be expected to appreciably affect ground-level air quality.

An action would be addressed for a significant impact to air quality if project emissions would exceed applicable federal, state, and local regulations. For inert pollutants such as particulate matter less than 10 microns in diameter (PM_{10}), the effects are generally limited to a few miles downwind from a source. The effects for ozone (O_3) may extend much farther downwind than for inert pollutants. O_3 is formed in the atmosphere by photochemical reactions of previously emitted pollutants called precursors. O_3 precursors are mainly nitrogen oxides (NO_x) and photochemically reactive volatile organic compounds (VOCs). In the presence of solar radiation, the maximum effect of precursor emissions on O_3 levels usually occurs several hours after they are emitted and many miles from the source.

The potential effects of proposed greenhouse gas (GHG) emissions are by nature global and cumulative. Currently, there are no formally adopted or published National Environmental Policy Act (NEPA) thresholds of significance for GHG emissions. Given the global nature of climate change and the fact that B-1 and B-52 aircraft would expend the same fuel commuting for lesser training, there is no net impact expected to national GHG emissions. Given the global nature of climate change and the current state of the science, it is not useful at this time to attempt to link the emissions quantified for local actions to any specific climatological change or resulting environmental impact.

4.4.2 *ISSUES AND CONCERNS*

Air quality is generally in attainment throughout the four-state region encompassed by the proposed PRTC. Commenters expressed concern with air quality around mining operations such as at Colstrip. Commenters also expressed concern that jet aircraft exhausts could affect visibility. Concerns were also expressed that aircraft emissions could affect public health either independently or in conjunction with other emission generators, such as coal. Questions were also raised about the effects of chaff or flares upon air quality.

4.4.3 *ENVIRONMENTAL CONSEQUENCES*

4.4.3.1 MODIFIED ALTERNATIVE A – THE PROPOSED ACTION

Air quality impacts associated with Modified Alternative A were determined by comparing the net change in emissions between current baseline operations and future proposed operations within the PRTC. Proposed flights within PRTC were evaluated by assuming engines were operating in military mode, which is a higher fuel burning and emitting setting than actually anticipated (see power setting in Table 3.2-1). Modified Alternative A operational data were derived from Section 2.5. The emission

factors used to calculate combustive emissions from proposed aircraft operations were obtained from the *Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations* (Air Force Institute for Environment, Safety, and Occupational Health Risk Analysis 2003). Emission factors for flares were obtained from USEPA AP-42, Chapter 15 Signals and Simulators (USEPA 2009b).

According to USEPA's General Conformity Rule in 40 CFR Part 51, Subpart W, any proposed federal action that has the potential to cause violations in a NAAQS nonattainment or maintenance area must undergo a conformity analysis. A conformity analysis is not required if the Proposed Action or Modified Alternative Action occurs within an attainment area.

Table 4.4-1 presents estimates of the annual criteria pollutant emissions that would occur within each state air basin. Portions of airspace PR-1D overlay the Lame Deer and are in proximity to the Sheridan nonattainment areas for PM_{10} (Section 3.4.3). As quantified in Table 4.4-1, the PM_{10} emissions from the proposed action in Montana or Wyoming would not exceed the applicable general conformity *de minimis* thresholds of 100 tons per year. Therefore, a conformity analysis is not required.

Table 4.4-1. Annual Local Criteria Pollutant Emissions from Modified Alternative A (tons/year)

State	*VOC*	*CO*	*NO_x*	*SO_X*	*PM_{10}*	*$PM_{2.5}$*
MT						
Total Emissions From Proposed Action	0.66	3.40	50.19	4.11	7.28	7.28
Net Change from Existing Conditions	0.42	1.68	23.62	1.93	3.83	3.83
ND						
Total Emissions From Proposed Action	0.11	0.61	9.19	0.75	1.26	1.26
Net Change from Existing Conditions	0.11	0.61	9.19	0.75	1.26	1.26
SD						
Total Emissions From Proposed Action	0.15	0.72	10.57	0.87	1.57	1.57
Net Change from Existing Conditions	0.11	0.48	6.77	0.55	1.08	1.08
WY						
Total Emissions From Proposed Action	0.13	0.64	9.27	0.76	1.39	1.39
Net Change from Existing Conditions	0.02	(0.18)	(3.32)	(0.28)	(0.26)	(0.26)
Total Modified Alternative A	**1.04**	**5.37**	**79.23**	**6.49**	**11.50**	**11.50**
Modified Alternative A Net Change from Baseline	**0.66**	**2.59**	**36.26**	**2.95**	**5.90**	**5.90**
General Conformity Threshold [1]	*100*	*100*	*100*	*100*	*100*	*100*

Note: 1. Based on USEPA's General Conformity Rule.

Section 169A of the Clean Air Act (CAA) provides special protection to air quality within Mandatory Federal Class 1 areas. As indicated in Section 3.1.2, the nearest Mandatory Federal Class 1 areas to Modified Alternative A training operations are (1) Wind Caves National Park, SD, located approximately 30 miles south of the PR-3 MOA and (2) Badlands National Park, SD, located about 42 miles southeast of the PR-3 MOA. Since Modified Alternative A training activities would occur at a substantial distance from these Federal Class 1 areas and would occur intermittently at elevations that are well above ground level, Alterative A would not produce air quality impacts to these Class 1 areas.

Additionally, Airspace PR-1D would overlay the Northern Cheyenne Indian Reservation, MT. The state designates the Reservation as a Prevention of Significant Deterioration (PSD) Class 1 area where any appreciable deterioration of air quality is considered significant. Emissions from proposed training activities have the potential to impair visibility within this pristine area. Visibility impairment could occur from primary emissions of nitrogen dioxide (NO_2) and PM_{10} or secondary formation of visibility reducing particulate matter in the atmosphere due to precursor emissions of VOCs, NO_2, or sulfur dioxide (SO_2). Visibility impairment from primary NO_2 emissions would occur as a brown-colored haze in the lower layer of the atmosphere. This situation usually would occur during the colder months of the

year, when a lack of solar energy prevents the breakup of this pollutant to nitrogen oxide and oxygen. Visibility impairment due to primary PM_{10} emissions usually would occur from aircraft exhaust trails. Visibility impairment due to the secondary formation of nitrate or sulfate particulates in the atmosphere due to emissions of NO_x or SO_2 usually would occur in the warmer months of the year. This effect would take the form of regional haze, which would reduce regional visual range.

To evaluate potential impacts on visibility in the Northern Cheyenne Indian Reservation, emissions within PR-1D from Modified Alternative A were compared to the most recent emission inventories for Big Horn and Rosebud Counties (year 2008) to determine the relative magnitude of proposed emissions and therefore their potential to combine with baseline emissions and contribute to visibility impairment within the project region. This region is used for comparative purposes, as the Reservation is located within both of these counties. In reality, contributors to regional haze within the Reservation occur from a larger areal source of emissions than these two counties.

About 21 percent of PR-1D would overlay the Northern Cheyenne Indian Reservation. Training aircraft would not overfly the reservation below 12,000 feet MSL. For the purpose of this analysis, emissions from training aircraft within the entire PR-1D were calculated. As shown in Table 4.4-2, the proposed training activities within this area would generate a total of 0.03, 2.21, 0.18, and 0.30 tons per year of VOCs, NO_x, SO_2, and PM_{10}. These proposed emissions would equate to no more than 0.007 percent of the total emissions of any pollutant from both Big Horn and Rosebud Counties. As a result, these relatively minimal levels of emissions would not substantially contribute to an increase in visibility impairment within the Reservation. Modified Alternative A would not produce significant impacts to visibility within the Northern Cheyenne Indian Reservation or any Mandatory Federal Class 1 area.

There are no current regulations for GHGs under the CAA that are directly applicable to the proposed action. GHG emissions, discussed below, use draft Council on Environmental Quality (CEQ) guidance to quantitatively consider local GHG emissions. There would be no National emission GHG change with any alternative, including the No-Action Alternative, because B-1 and B-52 flying hours would essentially be the same under all alternatives.

Table 4.4-2. Airspace PR-1D Emissions in Comparison to Regional Emissions - Modified Alternative A (tons/year)

Scenario	*VOC*	*NO_x*	*SO_x*	*PM_{10}*
Airspace PR-1D over Northern Cheyenne Native American Reservation[1]	0.03	2.21	0.18	0.30
Big Horn County [2]	4,925	4,995	602	17,997
Rosebud County [2]	1,782	27,562	15,510	10,551
Combined Counties	**6,707**	**32,557**	**16,112**	**28,548**
Airspace PR-1D Percentage of Combined Counties	**0.0004**	**0.007**	**0.001**	**0.001**

Note: 1. Equates to 21 percent of the total emissions estimated for PR-1D.
2. Source: USEPA 2013b, Greenhouse Emissions Data

Local GHGs emitted would include (1) carbon dioxide (CO_2), (2) methane, and (3) nitrous oxide (N_2O). Table 4.4-3 shows the annual emissions for aircraft combustive emissions from Modified Alternative A and calculates a total carbon dioxide equivalent (CO_2e). These data show that the proposed training under Modified Alternative A would increase local GHG emissions relative to the existing conditions found in Table 3.4-4. B-1 and B-52 aircraft would continue to fly to remote ranges for limited training and the national GHG emissions would not be expected to change. The ratio of annual average local CO_2e emission increases from the operations proposed under Modified Alternative A to the CO_2e emissions associated with net sources in the U.S. in 2011 would be approximately 0.007/5,797 million metric tons, or about 0.0001 percent of the U.S. CO_2e emissions inventory (USEPA 2013b).

Table 4.4-3. Annual Local GHG Emissions from Modified Alternative A (metric tons/year)

State	*CO_2*	*Methane (CH_4)*	*N_2O*	*CO_2e*
MT	10,638	0.30	0.33	10,729
Net Change from Existing Conditions	4,763	0.13	0.14	4,791
ND	1,991	0.06	0.06	2,006
Net Change from Existing Conditions	1,991	0.06	0.06	2,006
SD	2,223	0.06	0.07	2,239
Net Change from Existing Conditions	1,383	0.04	0.04	1,390
WY	1,939	0.05	0.06	1,955
Net Change from Existing Conditions	(869)	(0.02)	(0.03)	(882)
Total Net Change in Local Emissions[1]	**7,268**	**0.20**	**0.21**	**7,305**

Note: 1. No change in National emissions

The estimated GHG emissions from this alternative are included herein for informational purposes. As discussed in Section 3.1.2, the Draft Council on Environmental Quality guidance suggests a quantitative and qualitative assessment be prepared for proposed actions which emit 25,000 metric tons or more of CO_2e on an annual basis. As shown in Table 4.4-3, the estimated local annual emission increases that would result from Modified Alternative A would not exceed 25,000 metric tons per year and there would be no net increase in national GHG emissions. In addition to presenting estimates of GHG emissions that would result from implementation of the Modified Alternative A at Ellsworth AFB, the following consider how climate change may impact the PRTC training operations. For Ellsworth AFB, the projected climate change impact of concern is increased aridity, as documented in *Global Climate Change Impacts in the United States* (USGCRP 2009). This report predicts that the Great Plains region surrounding Ellsworth AFB will experience warmer temperatures and decreasing precipitation. These conditions will produce more frequent extreme events such as heat waves, droughts, scarcities of water supplies, and heavy rainfall. While operations at Ellsworth AFB have already adapted to droughts, high temperatures, and scarce water supplies, exacerbation of these conditions in the future may increase the cost of base operations and could impede operations during extreme events.

Modified Alternative A would emit Toxic Air Contaminants (TACs) and a question was asked during the public review process whether such TACs could potentially impact public health. TACs generally are subsets of VOC and PM_{10} emissions. The data in Table 4.4-1 show that Modified Alternative A would generate an increase of 0.66 tons of VOCs and 5.90 tons of PM_{10} emissions for a combined total of 6.56 tons over an area of 34,000 square miles. Since proposed emissions would occur over such a large region, at various altitudes, and would be intermittent, training aircraft would produce minimal (essentially immeasurable) TACs at any ground level location. As a result, local air emissions caused by Modified Alternative A would not produce impacts to public health.

The Lame Deer PM_{10} nonattainment area is in Rosebud County, MT, south of Colstrip. Rosebud County would be overlaid by about 73 and 30 percent, respectively, of airspaces PR-1B and PR-1D. The increases in PM_{10} emissions in PR-1B and PR-1D due to the proposed PRTC is estimated to be 0.63 and 1.43 tons per year, respectively. Therefore, Modified Alternative A would emit approximately 0.89 tons of PM_{10} per year in Rosebud County. This amount of annual emissions would not be expected to increase the number of PM_{10} exceedance days experienced in the Lame Deer PM_{10} nonattainment area.

The Sheridan PM_{10} nonattainment area is in Sheridan County, WY, which is overlaid by about 12 percent of airspace PR-1D. The total PM_{10} emissions increase in PR-1D due to the proposed PRTC is 1.43 tons per year. Therefore, Modified Alternative A would emit approximately 0.11 tons of PM_{10} per year in Sheridan

County. This amount of annual emissions would not be expected to increase the number of PM_{10} exceedance days experienced in the Sheridan PM_{10} nonattainment area.

Environmental concerns associated with flare use were air quality and ash deposition. Studies on ash components have been performed by measuring residual materials after flares were ignited in a controlled experiment. Constituents from combustion were identified to calculate whether flare emissions or flare ash could result in an environmental impact.

Modern flares proposed for use in PRTC do not contain lead although some earlier flares had lead in the firing mechanism. Some flares contain trace amounts of chromium in the firing mechanism. A statistical model was used to calculate emissions concentrations of chromium to estimate what it would take to achieve a level of toxicity of chromium as a result of flare use. The model calculated that 1.6 million flares would have to be released annually below 400 feet over a 765 square mile training range before the level of chromium emissions would become a health risk (Air Combat Command [ACC] 1997). No location in the world has this combination of flare numbers, altitude, and training area. ACC uses fewer than 400,000 flares annually in all applications worldwide, and the number of defensive flares proposed for the PRTC is approximately 3,300. The number of flares is smaller, the minimum altitude is higher, and the training area is larger for the PRTC than what would be required for flare emissions to constitute a health risk. Flare emissions are not now, nor is it feasible that they could become, a health hazard.

There are also trace quantities of boron in flare ash. The amount of flare ash that would be required to raise the boron concentration to triple the background level of the upper inch of one acre of soil was estimated to annually require flare ash from approximately 4,000 flares. It would be impossible for training aircraft to deposit 4,000 flares on one acre of land in a year (ACC 1997). Flare burning and flare ash are extremely unlikely to result in measurable air quality or physical effects to the environment.

Modified Alternative A would not affect air quality attainment within the four-state region. The analysis purposefully used military power on the engines at all times which results in conservatively higher estimates of projected emissions than could be achieved. Engines do not run at military power during an entire mission. Flare burning emissions were calculated in the total emissions.

Consequently, Modified Alternative A aircraft training activities are not expected to produce emissions that would significantly affect air quality or visibility within the four-state region.

4.4.3.2 MODIFIED ALTERNATIVE B

Air quality impacts associated with Modified Alternative B were based on air quality impacts estimated for Modified Alternative A, with consideration given to the aircraft operations proposed for each alternative. The analysis of aircraft emissions associated with the proposed training focuses on aircraft operations that would occur below 3,000 feet AGL.

Modified Alternative B proposes essentially the same aircraft operations as Modified Alternative A within the PR-2, PR-3, Gap B, and Gap C MOAs. Modified Alternative B does not propose any aircraft operations within the PR-1 or Gap A MOAs. As a result, aircraft emissions associated with Modified Alternative B would not occur in proximity to or substantially impact any air quality nonattainment or Mandatory Federal Class 1 area.

Modified Alternative A does not propose any aircraft operations within the PR-4 MOA. The aircraft operations and resulting emissions proposed for Modified Alternative A in the PR-1 and Gap A MOAs would be similar to those that would occur within PR-4 under Modified Alternative B. Therefore, the total emissions estimated for Modified Alternative A operations in Table 4.4-1 would be nearly identical to those that would occur under Modified Alternative B. These data show that the annual net increases in

emissions produced from Modified Alternative A would not exceed an applicable conformity *de minimis* threshold of 100 tons per year. Therefore, Modified Alternative B also would produce less than significant air quality impacts to criteria pollutant levels within the four-state region.

Similar to the GHG emissions estimated for Modified Alternative A in Table 4.4-2, GHG emissions from the operation of Modified Alternative B would produce less than significant impacts to the environment with respect to climate change.

Similar to Modified Alternative A, since emissions associated with Modified Alternative B would occur over a large region and would be intermittent in nature, they would produce minimal TACs at any ground level location. Modified Alternative B would not be expected to result in significant impacts to public health.

As with Modified Alternative A, Modified Alternative B training activities are not expected to produce emissions that would significantly affect air quality or visibility impacts within the four-state region.

4.4.3.3 MODIFIED ALTERNATIVE C

Air quality impacts associated with Modified Alternative C were based on air quality impacts estimated for Modified Alternative A, with consideration given to the aircraft operations proposed for each alternative. The analysis of aircraft emissions associated with the proposed training focuses on aircraft operations that would occur below 3,000 feet AGL.

Modified Alternative C proposes aircraft operations within airspaces below 3,000 feet AGL that are essentially identical to those proposed for Modified Alternative A. As a result, air quality impacts from Modified Alternative C would be identical to those estimated for Modified Alternative A. Aircraft training activities from Modified Alternative C are not expected to produce emissions that would significantly affect climate change or air quality and visibility within the four-state region.

4.4.3.4 NO-ACTION ALTERNATIVE

The No-Action Alternative would not establish the PRTC. The No-Action Alternative represents continued use of the existing Powder River airspace for training at baseline levels. Use of remote complexes for training would continue to expend a substantial number of flying hours and would be expected to produce levels of GHG and other emissions comparable to those described for Modified Alternative A. No different operational activities would occur due to the No-Action Alternative. Therefore, the No-Action Alternative would not produce any new air quality impacts. No-Action would produce the same level of GHG emissions, as described for Modified Alternative A, B, or C.

4.5 PHYSICAL SCIENCES

4.5.1 *METHODOLOGY*

Physical sciences include topography, geology, soils, and water. In any area of the arid west, any potential effects to water availability and water quality would be of concern to agencies and the public. Adherence to applicable regulations under the various project actions is assessed in this section. Impacts are assessed if there is a potential to reduce water availability to existing users, endanger public health or safety by creating or worsening health hazards or physical resource safety conditions, or to violate laws or regulations adopted to protect or manage water resources. An impact to water resources would be considered significant to monitoring agencies if the impact adversely affected water quality or endangered public health by creating or worsening adverse health hazard conditions or violated established laws or regulations that have been adopted to protect or manage water resources of an area.

The water divisions of the states Wyoming, Montana, North Dakota, and South Dakota and the U.S. Army Corps of Engineers (USACE) are the regulatory agencies that govern water resources in the ROI. State agencies have adopted the USEPA's applicable environmental rules and regulations. The CWA of 1977 regulates pollutant discharges to waters of the U.S.

Protection of unique geologic features and minimization of soil erosion in relation to potential geologic hazards and soil limitations are considered when evaluating impacts to earth resources (soils and geology).

Impacts to soil resources can result from earth disturbance that would expose soil to wind or water erosion. Analysis of physical resources typically includes examination of the potential effects that an action may have on the resource and assessment of the significance of any potential impacts. Analysis of impacts to soil resources examines the suitability of locations for any proposed construction.

4.5.2 *ISSUES AND CONCERNS*

Soils impacts are expected to be minimal under the proposed PRTC action as there are no construction or ground-disturbing activities included in the Proposed Action. Potential impacts to water resources would be highly unlikely given the low occurrence of water bodies in the ROI. Under all alternatives, chaff and flare use would be introduced to areas of the ROI that have not previously had such defensive training. The potential impacts to physical resources from this use are discussed in this section.

4.5.3 *ENVIRONMENTAL CONSEQUENCES*

4.5.3.1 MODIFIED ALTERNATIVE A – THE PROPOSED ACTION

The primary constituents of chaff are silica and aluminum. These are the most common elements in the earth's crust and in soils. The component of chaff that has the potential to affect soil or water chemistry is aluminum, which tends to break down in acidic and highly alkaline environments. Aluminum is the most abundant metallic element in the earth's crust and is a common constituent of soils. Modern chaff is composed primarily of very fine glass fibers thinner than a human hair and coated with aluminum to achieve its radar-reflective properties (Arfsten *et al.* 2002). Chaff also contains trace amounts of iron, copper, magnesium, and zinc. Chaff fibers are coated with stearic acid in order to prevent clumping during deployment (Arfsten *et al.* 2002). Stearic acid (octadecanoic acid) is a saturated fatty acid derived from animal and vegetable fats and oils (Heryanto *et al.* 2007). Stearic acid has been used in the development of drug delivery systems because it is considered to be inert, inexpensive, and biocompatible, as well as of a low toxicity.

Laboratory and field analyses (Air Force 1997a) indicate that the pH of water in the soil or in a water body is the primary factor that determines the stability of the aluminum coating of chaff. The coating is the most soluble and likely to release aluminum if the soil or water pH is less than 5.0 (extremely acidic) or greater than 8.5 (strongly alkaline). In arid conditions such as those found in the ROI, soil pH tends to be neutral to alkaline, and there is usually not enough water in the soils of this region to react with the aluminum (Air Force 1997a). As discussed in Section 3.5.3.3, *Soils*, 99 percent of the soils in the ROI have a pH between 5.0 and 8.5, outside the normal range for chaff coating to release aluminum into the soil. The low percentage of soils in the ROI with a pH within the range to react with the chaff coating aluminum in combination with the low soil water content, results in conditions that would be extremely improbable for detectable aluminum concentrations to be produced from chaff particles that weather on the ground. Analysis to detect chaff concentration in aquatic and soil environments, where chaff has been deployed for decades, was unable to detect any but a few chaff particles. This is because chaff on

the ground rapidly breaks down to silica and aluminum, the two most common elements of the earth's crust, and becomes indistinguishable from native soils (Air Force 1997a).

Confined aquatic habitats could be affected if there were a potential for significant accumulation and decomposition of chaff fibers. Water areas compose less than 0.86 percent (Section 3.8.3) of the ROI to be exposed to chaff and flare release under the Proposed Action. Because chaff would be broadly distributed with low density in any one area, it is unlikely that chaff would be detectable or significantly accumulate within confined water bodies. Water bodies in the ROI are neutral to slightly alkaline in pH similar to soils, and outside the pH range necessary to degrade the aluminum coating. Chaff particles that fell on surface water would be chemically stable and subject to mechanical degradation. No impact to water bodies would be anticipated, even in a highly unlikely event such as an entire clump of undispersed chaff falling into a small, confined water body. Additional discussion of chaff and flare impacts to wetlands is included in *Biological Sciences*, Section 4.6 and Appendices C and D.

Existing chaff mechanically breaks down quickly into silica and aluminum. Under normal pH, the decomposition of aluminum in chaff is extremely slow. Only under very high or low pH could the aluminum in an undispersed clump of chaff become soluble and potentially toxic (Air Force 1997a). Few organisms would be present in water bodies with such extreme pH levels. Given the small amount of diffuse or aggregate chaff material that could possibly reach water bodies and the moderate pH of regional water bodies, water chemistry would not be expected to be affected.

Flares are magnesium which burns quickly to create a target for heat-seeking missiles. The magnesium in flares would be toxic only at extremely high levels, a situation that is unlikely as flare use would not be repeated or concentrated in localized areas (see Section 4.4.3.1). Flare ash would disperse over wide areas; thus, no impact to local soils and water systems is expected from the magnesium in flare ash. The probability of an intact dud flare falling to the ground during training is estimated to be 0.01 percent of flares deployed (Air Force 2001). The probability of an intact flare falling into an aquatic system is much smaller, given the very low proportion of water bodies in the ROI. Therefore, no effect of flares on water quality would be expected.

Chaff and flare plastic and wrapper residual materials are typically inert and not expected to impact soils or water bodies. Section 2.8 describes these residual materials. Overall, no significant impacts to soil and water resources in the ROI are expected from implementation of the Proposed Action.

4.5.3.2 MODIFIED ALTERNATIVE B

Modified Alternative B would expand existing airspace, increase airspace operations, and introduce the use of chaff and flares into new training areas similar to the Proposed Action. Modified Alternative B primarily differs from the Proposed Action, Modified Alternative A, by not including the proposed PR-1A/B/C/D, or Gap A MOAs, which would reduce local low-level training airspace as compared with Modified Alternative A. Chaff and flares would be used for training in the ATCAAs. The total number of chaff bundles and flares deployed annually under Modified Alternative B would be expected to be approximately the same as under Modified Alternative A. Soil and water consequences from chaff and flare use would be as described for Modified Alternative A. Impacts are expected to be similar to those for the Proposed Action and less than significant.

4.5.3.3 MODIFIED ALTERNATIVE C

Modified Alternative C would also expand existing airspace, increase airspace operations, and introduce the use of chaff and flares into new training areas similar to the Proposed Action. This alternative differs from Modified Alternative A in that it would include no PR-4 MOA and no Gap C MOA and result in a

reduction in local low-level training area as compared with Modified Alternative A. The total number of chaff and flares units deployed annually would be expected to be approximately the same as under Modified Alternative A. Impacts would not differ measurably from those of the Proposed Action. Thus, Modified Alternative C is not expected to affect soil or water resources differently from the Proposed Action in any measurable way, and impacts would be less than significant.

4.5.3.4 NO-ACTION ALTERNATIVE

The effects to physical resources under the No-Action Alternative would be the same as current conditions. No defensive chaff and flares training would occur. No changes to physical resources would occur under this alternative.

4.6 BIOLOGICAL SCIENCES

4.6.1 *METHODOLOGY*

Assessing impacts to biological resources and the significance of those impacts is based upon federal and state determinations of: (1) the importance (legal, commercial, recreational, ecological, or scientific) of the resource, (2) the rarity of a species or habitat regionally, (3) the sensitivity of the resource to proposed training activities, (4) the proportion of the resource that would be affected relative to its occurrence in the region, and (5) the duration of the impact. Federal or state agencies consider impacts to biological resources to be greater if priority species or habitats are adversely affected, if substantial effects occur over relatively large areas, and/or if disturbances cause reductions in population size or distribution of a priority species.

4.6.2 *ISSUES AND CONCERNS*

Impacts to biological resources from the Proposed Action and alternatives may result from operational effects from the use of chaff and flares, low-level overflights, sonic booms, and/or bird-aircraft collisions. All effects on wildlife species would be expected to be initially greatest in areas not formerly included within the active airspace, until a period of habituation can occur and the animals begin to associate no threat with overflights and other training activities.

The potential sources of impacts to wildlife from aircraft overflights include the visual effect of the overflying aircraft and the associated noise. Approximately 87 percent of the sortie-operations for the Modified Alternative A would take place at altitudes greater than 2,000 feet AGL, which is higher than the altitudes associated with most documented reactions to visual stimuli by wildlife (Lamp 1989, Bowles 1995). Evaluations of the potential for low-level startle effects and noise effects, along with other potential impacts, are presented below.

4.6.3 *ENVIRONMENTAL CONSEQUENCES*

4.6.3.1 MODIFIED ALTERNATIVE A – THE PROPOSED ACTION

Modified Alternative A incorporates several mitigations to reduce the potential for impact on the environment and human activities (see Section 2.3). Most importantly for biological resources, Modified Alternative A does not include the PR-4 Low MOA area of heavy migratory waterfowl use.

CHAFF

Defensive countermeasures that would be used under all alternatives include the deployment of chaff and flares. Once the chaff reaches the ground, the primary potential effects on wildlife include ingestion

or inhalation of fibers, and direct body contact. Dispersed chaff consists of very fine strands of aluminum-coated silica fibers that are thinner than human hair. In general, chaff is released at high altitudes, drifts over very large areas, and is greatly dispersed before falling to the Earth's surface. Chaff fiber deposition would be estimated to average approximately 0.0049 ounce (0.14 grams) per acre per year. Winds at the deployment altitude of chaff would affect drift and deposition. In rare cases, a bundle of chaff may fall to the ground without being dispersed.

Chaff fibers are comprised of aluminum-coated silica fibers and contain trace amounts of iron, copper, magnesium, and zinc. See Section 4.5, *Physical Sciences*, for a discussion on the activity of aluminum in soils and water bodies. Application of chaff at rates described above would not result in a measurable increase in elemental aluminum in the soils. There is no evidence of chaff affecting vegetation, and, under current condition of the soils, mobility within the soils and increased vegetation uptake of aluminum is not expected to occur. Aluminum is one of the most abundant materials in the earth's crust and the addition of aluminum from chaff would not have a measurable effect on the abundance or availability of aluminum in soils or vegetation.

Analyses of chemical components of chaff indicate that chaff fibers may only be toxic in large amounts under certain conditions. Under project alternatives, these chemicals would be deposited in the environment at rates that are not only sub-toxic but also undetectable. A study completed in 1977 for the U.S. Navy found no evidence that chaff was acutely toxic to six species of aquatic organisms within the Chesapeake Bay (Arfsten *et al*. 2002). Chaff fibers are not expected to dissolve in fresh water bodies unless they fall into acidic waters. Even in this case, concentrations of aluminum would not be expected to become toxic. Because chaff would be broadly distributed with low density across the ROI, it is unlikely that chaff would be detectable or significantly accumulate within a particular wetland. Given this and the mild pH (neither excessively acid nor excessively alkaline) in regional water bodies, water quality for biological resources would not be expected to be adversely affected by the increased use of chaff within the ROI. For further discussion of activity of aluminum in soils see Section 4.5.

Ingestion of chaff by either ranch animals or wildlife is expected to also be negligible. Several studies have been conducted on cattle and goats that showed they would avoid eating clumps of chaff that were placed directly into their food, and only consumed chaff when coated with molasses and thoroughly mixed with food. Those animals that did ingest the chaff showed no signs of health effects (Barrett and MacKay 1972). It has been suggested that ingestion of chaff by waterfowl could be possible, with possible health effects including blockage or reduced function of the gizzard. However, no data on ingestion of chaff by waterfowl is available and no known deaths of waterfowl have occurred from ingesting chaff (Air Force 1997a). Given that the chaff deposition is expected to be approximately 0.0049 ounces per acre annually from training operations, adverse effects from ingestion are not expected and impacts would be less than significant.

Inhalation of chaff fibers is not expected to have negative effects on terrestrial wildlife. Studies on inhalation of chaff fibers by humans and livestock demonstrated that chaff fibers are too large for inhalation and are expelled through the nose or swallowed (Air Force 1997a). Based on calculations of the application rate of chaff under the proposed action and alternatives, the probability of an individual animal (livestock or wildlife) or person encountering single filaments or fragments of chaff or groups of filaments is highly unlikely.

External contact with chaff is not expected to be significant due to the flexible nature and softness of the chaff fibers. Studies conducted at Nellis AFB in 1997 reported finding no difference in animal abundance and nesting activity in areas where chaff were present. Chaff was not found in rodent burrows or in nesting material of bird nests (Air Force 1997a).

FLARES

Toxicological studies on flare residual materials indicate that no chemical effects are expected for biological resources. The amount of magnesium dispersed from flares (as the combustion product magnesium oxide) is too small to result in levels that would be associated with acute exposure (Air Force 1997a; see Section 4.4.3.1, *Air Quality*). The concentration of flare ash residue at any given location would be undetectable under normal circumstances due to dispersal of the minimal amount of residue produced by a burning flare deployed in the airspace. No impacts would be expected to state-listed species dependent on small aquatic habitats, including the northern redbelly dace and the northern leopard frog, which are found in bogs, small ponds, and lakes.

The probability of a dud flare hitting the ground is extremely low (estimated rate of 0.01 percent of flares deployed). Given that wetlands occur on less than one percent of the project area, the likelihood of an intact dud flare landing in a wetland is even lower. If this event did occur, there would be minimal to no effects of the metallic magnesium from the flare on the wetland. Magnesium is already a significant natural component of the earth and the amount from a flare would be comparably insignificant (Air Force 1997a). Due to the low concentrations of flare residue and the extremely low probability of flare residue coming in contact with wildlife, flare releases are expected to have minimal and less than significant effects on wildlife.

CHAFF AND FLARE RESIDUAL MATERIALS

Pieces of plastic, Mylar, and/or paper fall to the earth with each bundle of chaff or flare deployed. The average deposition of chaff and flare residual materials would be approximately one piece per 149 acres annually. Residual materials are inert and are not likely to be seen by species as food. Some species of bird and rodents (e.g., pack rats) often select shiny material for their nests. Studies conducted at Nellis AFB in 1997 reported finding no difference in animal abundance and nesting activity in areas where chaff and flare residual materials were present. Flare residual materials were not found in rodent burrows, pack rat nests, or in nesting material of bird nests (Air Force 1997a). Behavioral responses from wildlife as a result of the presence of chaff and flares are also not expected to be significant. Flares would not be released below 2,000 feet AGL and would likely not be a visible intrusion, even at night, to nocturnal wildlife on the ground. While defensive flares released at night can be bright, the light usually lasts approximately 5 seconds.

AIRCRAFT OVERFLIGHT AND SONIC BOOM NOISE

Low-level flights and infrequent supersonic events create noise and may startle species on the ground. An estimated 2 to 4 percent of the land area under the proposed PRTC would be overflown at or below 2,000 feet AGL each training day (see Section 4.9.3.1.5). Any given location within the proposed airspace could experience approximately one sonic boom per day during the not more than 10 days of LFEs per year (see Section 4.2.3.5). Supersonic activity would be the same under all alternatives. Additional information on noise levels and effects can be found in Section 4.2, *Noise*. Section 4.8, *Land Use*, addresses effects of noise on livestock. The majority of studies have been conducted on domestic animals because of noise damage claims for injury or losses in domestic livestock (Manci *et al*. 1988).

Potential general issues related to noise effects on wildlife or livestock include the following:

- Possible startle response injury due to trampling or uncontrolled running or flight
- Increased expenditure of energy, particularly during critical periods
- Decreased time spent on life functions (e.g., seeking food or mates)

- Temporary masking of auditory signals from other animals of the same species, predators, or prey (e.g., noise could prevent an animal from hearing the approach of a predator)
- Damage to eggs or nestlings if a bird is startled from its nest
- Temporary exposure of eggs or young in nest to environmental conditions or predation if a parent flees
- Temporary increased risk of predation if startled animals flee from nests, roosts, or other protective cover
- Site abandonment

Studies addressing the effects of overflight noise and sonic booms on wildlife suggest that impacts vary depending on the species as well as a number of other factors such as duration and frequency of flights, type of aircraft, flight speed, proximity, etc. Natural factors which affect reaction include season, group size, age and sex composition, on-going activity, motivational state, reproductive condition, terrain, weather, and temperament (Bowles 1995). Individual animal response to a given noise event or series of events also can vary widely due to a variety of factors, including time of day, physical condition of the animal, physical environment (such as whether the animal is restrained or unrestrained), the experience of the individual animal with noises, and whether or not other physical stressors (e.g., drought) are present (Manci *et al*. 1988). Therefore, it is difficult to generalize effects of noise across species. Studies suggest that overflight noise from military aircraft, including sonic booms, could elicit startle responses from individual animals and may cause physiological and/or behavioral responses possibly affecting an animal's fitness or survivability.

Noises that are close, loud, and sudden and that are combined with a visual stimulus produce the most intense reactions. Rotary-wing aircraft (helicopters) generally induce the startle effect more frequently than fixed-wing aircraft (Gladwin *et al*. 1988; Ward *et al*. 1999). Animals under newly proposed MOAs are expected to be temporarily more sensitive to noise due to lower previous exposure than animals under the existing Powder River MOAs. Some species habituate to repetitive noises, especially noise associated with overflight of fixed-wing aircraft, better than other species (Conomy *et al*. 1998; Krausman *et al*. 1998, Downing 2006).

Studies have primarily focused on avian species and large ungulates such as elk and pronghorn. Findings would also be applicable to domestic animals. Increased heart rate, as well as startle responses (such as moving, running or flushing), have been observed in species such as elk, pronghorn, raptors, and certain species of waterfowl (Downing 2006; Manci *et al*. 1988). Such reactions have been especially noticed with low-level rotary wing aircraft flights. While such responses have been observed, little information is available on indirect or long term effects on the vigor or survivability of free-ranging wildlife populations due to overflight noise compared to other environmental factors. Ellis *et al.* (1991) examined behavioral and reproductive effects of several raptor species to low-level flight. They found no incidents of reproductive failure and that site re-occupancy rates were high the following year. Bald eagle behavioral responses varying from altering posture to taking flight and/or departing the area have been associated with closely-approaching aircraft (Grubb and Bowerman 1999). However, no evidence of reduced reproductive success in bald eagles exposed to overflights or other military noise has been reported (Fraser *et al*. 1985, Grubb and Bowerman 1999). Palmer *et al*. (2003) detected only subtle effects on parental behavior of peregrine falcons from jet aircraft overflights and found no evidence that nest attendance patterns were negatively affected.

Sound exposure levels (SEL) above 90 dB may be detrimental to mammals and are associated with a number of behaviors such as retreat from the sound source, freezing, or a strong startle response

(Manci *et al*. 1988). Although not directly applicable to the PRTC, Harrington and Veitch (1992) studied the effects of low-level jet overflight on woodland caribou calf survival and found that mortality rates were significantly higher in groups exposed to the flights. Increased use of low-altitude aircraft in remote areas in Alaska occupied by ungulate populations has focused attention on possible effects of aircraft disturbance on wildlife (Klein 1973 in Manci *et al*. 1988). Such disturbance is most detrimental in treeless terrain where escape cover is lacking.

Simulated sonic boom experiments with turkeys did not reveal any reaction other than a few seconds of head alert behavior.

Studies of large ungulates include observations of flight distances and other behavior of caribou in Alaska. Results were recorded in relation to altitude and angle of fixed-wing aircraft and helicopter approach, intensity and frequency of sound, and external factors such as weather and terrain. Running and panic occurred when the aircraft was at altitudes of 200 feet or less, and such reactions decreased as flight altitudes increased. Above 500 feet, no panic response was observed. The minimum altitude for training in the proposed PRTC is 500 feet, with most (87 percent) of training hours above 2,000 feet AGL. Groups of fewer than 10 animals responded less strongly to the aircraft than larger groups. Groups consisting primarily of cows, calves, and yearlings tended to show a stronger response to the aircraft than groups of bulls. Calef *et al*. (1976 in Manci *et al*. 1988) demonstrated that unfamiliar noise stimuli increased the incidence of miscarriages and lowered the birth rates of caribou and, therefore, recommended that aircraft fly above a minimum altitude of 500 feet during summer and fall migrations, and 1,000 feet at other times.

Studies on pronghorn response to overflight by jet aircraft and helicopters have suggested rapid habituation to overflight after initial responses, which include running for short distances (Workman *et al.* 1992, Bayless *et al.* 2004). In the Bayless *et al.* (2004) study, which included day and night exposures to nearby helicopter activity, movements in response to overflight during nighttime hours were less than movements in response to overflight during daylight, suggesting a visual component to the reaction in addition to noise.

In many studies, animals exhibited continually decreasing responses to increased noise exposure, suggesting habituation. Reactions of captive elk, pronghorn, and bighorn sheep to the impulse noise of sonic booms decreased with exposure (Workman *et al.* 1992). For pronghorn, initial responses were an increased heart rate (that returned to normal within 1½ minutes), running for short distances, and increased alertness. By the third exposure to a sonic boom, the animals' heart rate response had decreased by half and they did not run. Aircraft noise has the potential to be most detrimental during periods of stress, especially during winter, during gestation, and during calving (DeForge 1981). Wildlife management agencies regularly use helicopters and fixed-wing aircraft for radio tracking, monitoring, and surveying wild ungulate populations.

The greater sage-grouse, recently added as a federal candidate species for listing, is of concern in western states that support mature sagebrush habitat. The species also occurs on U.S. Forest Service (USFS) and Bureau of Land Management (BLM) sensitive lists. Likely because the species is showing historic declines and is a popular game bird, much research has been conducted on the potential effects of oil and gas development, which is increasing in the region. Effects of noise, in particular aircraft noise, on greater sage-grouse have been minimally studied. Related research on other upland game birds includes observations on the behavior of four wild turkey (*Meleagris gallapavo*) hens on their nests during real and simulated sonic booms (Lynch and Speake 1978 cited in Manci *et al*. 1988). Simulated sonic booms were produced by firing 5-centimeter mortar shells, 300 to 500 feet from the nest of each hen. Recordings of

pressure for both types of booms measured 0.4 to 1.0 psf at the observer's location. Turkey hens exhibited only a few seconds of head alert behavior at the sound of the sonic boom. No hens were flushed off the nests, and productivity estimates revealed no effect from the booms. Twenty brood groups were also subjected to simulated sonic booms. In no instance did the hens desert any poults (young birds), nor did the poults scatter or desert the rest of the brood group. In every observation, the brood group returned to normal activity within 30 seconds after a simulated sonic boom.

Aircraft overflight noise and sonic booms have the potential to affect breeding behavior of sage-grouse; however, no specific research has been completed on these effects. Sage-grouse are known to select their leks (communal breeding display areas) based on good acoustic properties, and depend on auditory communication for mating behavior (Braun 2006). Most sage-grouse leks were established decades ago and are used year after year. Impacts, if any, would depend on the season and altitude of low-level flights, the time of day, and loudness of the sonic booms, if any. Periods of greatest activity in the lek sites is in the very early morning when overflights are unlikely to take place. Sage-grouse studies on the effects of oil and gas development have shown that light traffic disturbance (1 to 12 vehicles per day) during the breeding season might reduce nest-initiation rates and increase distances hens moved from leks for their nest site selection (Lyon and Anderson 2003). In a heavily-cited dissertation, Holloran (2005) found that declines in the number of displaying male sage-grouse were positively correlated with proximity of leks to gas-field-related sources of disturbance, increased levels of development surrounding leks, increased traffic volumes within 3 kilometers of leks, and increased potential for greater noise intensity at leks. He also found that nesting and brooding females avoided areas with active drilling rigs and producing wells. Holloran suggested that a lag period occurs between when an individual sage-grouse is affected by an anthropogenic disturbance and when survival probabilities are influenced, suggesting negative fitness consequences for females subjected to noise and activity from natural gas development during the breeding or nesting periods. Naugle *et al*. (2006) found that by 2005, active sage-grouse leks, and large and medium-sized leks, were more often found outside or adjacent to coalbed natural gas fields than within coalbed natural gas fields. Potential project-related noise such as overflights and sonic booms differ from oil and gas effects as they would be more random, not sustained, infrequent, and not fixed in location. The potential for impacts to sage-grouse from overflight, if any, would likely differ from those associated with on-the-ground human activity, vehicle use, and industrial noise associated with oil and gas development cited above, but have not been studied.

Currently, supersonic flights are not permitted within the existing Powder River airspace and rarely would aircraft inadvertently achieve supersonic speeds. As a result, wildlife under the airspace rarely experience sonic booms although they regularly experience thunder, which has the same noise characteristic as a sonic boom. Supersonic activity above 20,000 feet MSL for B-1s or above 10,000 feet AGL for other transient aircraft could produce sound levels in the 0.5 psf range over broad areas and in the 4 psf range in smaller areas (see Section 4.2.3.5). An estimated one sonic boom per LFE day (up to 10 days per year) could be experienced at any given location under the airspace. This would produce very infrequent, if any, startle effects. Many studies have shown that wildlife have the ability to habituate to noise and become tolerant to overflights (Downing 2006). Operation activities occurring in new areas may affect the behavior of sensitive species that occur within the airspace during the initial exposures. However, any behavioral effects would likely be short term and unlikely to reach the level at which take of an individual could occur.

Bird- and Other Wildlife-aircraft Strikes

One potential impact on birds, including migratory birds, within the training airspace is the possibility of bird-aircraft collisions, or strikes. Discussion of the safety aspects of bird-aircraft strike hazards is included in the Section 3.3.3.4, *Safety*. As explained in Section 3.6.3.2, the eastern project area occurs

under the convergence of the Central and the Mississippi flyways for migratory birds, which increases the chance for bird-aircraft strikes during the spring and fall migration seasons in the ROI. Studies have demonstrated that 95 percent of migratory birds fly at altitudes less than 10,000 feet, with the majority of them occurring below 3,000 feet. Most aircraft collisions occur during low-altitude flight, especially around airfields (where low-altitude flight is most frequent) and over water bodies (which attract large numbers of migratory birds). Approximately 87 percent of the time spent in the airspace on sortie-operations under the Modified Alternative A would take place at altitudes greater than 2,000 feet AGL and water bodies are relatively scarce in the ROI. Although migratory birds such as geese, swans and some raptors have been known to fly at altitudes above 10,000 feet AGL during migration (Lincoln *et al*. 1998), the chance of collision is very low due to the low density of birds and aircraft. This expectation is borne out by the extremely low frequency of bird-aircraft strikes recorded in the ROI, described below.

Bird-aircraft strike data recorded from 1999 through 2007 indicates that Ellsworth-based aircraft experienced 11 bird strikes in the existing Powder River A and B MOAs during that 9-year period. Of these, 41 percent occurred during July, August and September. PR-3 and PR-4 MOAs overlie the Mississippi and Central Flyways (Figure 3.2-6) and PR-1A/B/C/D MOAs overlie more diverse environment than the PR A and PR B MOAs. There is a greater potential for bird-aircraft strikes in the proposed MOAs than in the existing Powder River A and B MOAs. The migratory birds within the region are protected by the Migratory Bird Treaty Act. If a migratory bird species is involved in a bird-aircraft strike, it would be considered an incidental taking during military training, which is exempt from any permitting requirement by Section 315 of the Fiscal Year (FY) 03 National Defense Authorization Act. These rare bird-aircraft strikes would not be expected to adversely affect any species on the population or regional level, and the potential for aircraft collisions with listed species are so low as to be discountable.

FIRE POTENTIAL

Wildfires from any cause can impact wildlife. Fire danger is discussed in Chapter 3.3.3.3. The potential for a defensive training flare-initiated wildfire to affect wildlife habitat is considered minimal for a number of reasons. Once flares are released they burn out within 5 seconds and within approximately 500 feet of the release altitude. Deployment of defensive flares would be limited to above 2,000 feet AGL and would be discontinued when extreme fire conditions exist on the ground below an airspace segment. Altitude restrictions for flare use are expected to result in complete flare combustion more than 1,500 feet above the ground. Any residual materials, such as plastic end caps, would not have the ability to cause a fire. Occasionally flares may not ignite and the dud flare could fall to the ground (approximately 0.01 percent of the flares deployed). The magnesium within the flare is quite stable and it would take a hot fire (in excess of 400°F) to ignite a dud flare, although a dud flare could be ignited by a strike with a power saw or a bullet.

If a wildland fire were to occur as a result of an Air Force activity, a loss of canopy and/or understory vegetation would likely occur depending on the severity of the fire, land condition at the time, and if and how soon fire control can respond. Recovery of the vegetation would depend on the plant species burned, season, and severity. Vegetation types such as grasslands naturally have a fairly frequent fire regime, and therefore are composed of species that can and do recover quickly from fires. Woodlands and shrubland communities recover over longer time periods depending on severity of the fire and climatic conditions (especially precipitation and temperature regimes) available following fire. Although project-related fires would be expected to be very infrequent, loss of plant cover could increase erosion and sedimentation downslope in some areas. Bare ground as a result of fires can allow the spread of invasive non-native plant species such as annual grasses (e.g., cheatgrass), depending on the nature of the vegetation burned and the presence of invasive species in surrounding areas. Post-fire conditions of

erosion, sedimentation, or invasion of non-native species are generally unfavorable for wildlife and reduce productively of habitats to support species.

A wildland fire may result in direct effects on wildlife and livestock, including displacement from important habitat or range. The degree of effect varies by the severity of the fire, the season of the fire, and the type of habitat that was burned. Fires temporarily decrease available cover and foraging habitat, and fires started during breeding season could adversely affect ground nesting birds and interrupt breeding rituals for resident species. As previously stated, the potential for wildland fires as a result of Air Force activity is minimal and not considered a significant risk to wildlife habitat quality or quantity in the ROI.

In summary, most wildlife, including mammals and birds, would be expected to habituate to a level of overflights and sonic booms, although the increase in active airspace and frequency of overflights could temporarily affect the behavior of some wildlife species in the newly proposed MOAs. Sonic booms and chaff and flare use would continue from aircraft training and would not have significant effects as described above. Overall, Modified Alternative A would not be expected to adversely affect vegetation or wildlife resources, and impacts would be less than significant.

THREATENED, ENDANGERED, AND OTHER SPECIAL STATUS SPECIES

Table 3.6-4 summarizes the distribution and status of listed, proposed, and candidate species for protection under the federal Endangered Species Act (ESA). Appendix L summarizes the distribution and status of other species identified as sensitive by state resource management agencies and federal land management agencies within the ROI.

Table 4.6-1 summarizes the distribution and status of candidate, proposed, and listed threatened and endangered species under the federal ESA and summarizes the ESA effects determination for each based on the analysis in this chapter. A brief summary of the rationale for the effects determination is also provided. Minimal to no effects on these species are expected from training flights based on the analysis presented in this chapter. The Air Force received concurrence from USFWS in 2010 (USFWS 2011b, and presented in Appendix E, *Public Involvement and Agency Correspondence*) on their determination of "may affect, not likely to adversely affect," federally listed threatened and endangered species based on the findings contained in Sections 3.6.3 and 4.6.3 of the DEIS for the PRTC.

Since publication of the DEIS, Sprague's pipit, a secretive resident songbird inhabiting prairies and alkaline meadows, has been identified as a candidate species for protection under the ESA. Additionally, the red knot, a long-distance migrant shorebird known to stop over and feed in aquatic habitats in the ROI during migration, has been proposed for listing as threatened under the ESA.

In June 2014 the Air Force submitted an updated letter (see Appendix E) that contained ESA determinations for five recently listed species, which have been added to Table 4.6-1. The USFWS concurred with these determinations by letter in July 2014 (see Appendix E). Potential impacts on the greater sage-grouse, a candidate species that may be listed in the near future, are discussed extensively in this section. Although no specific mitigations were mandated due to the current listing status as a candidate species, the USFWS and the Air Force discussed potential impacts and mitigations extensively in order to prepare for a potential listing in 2015. To reduce the potential for impacts on this candidate species, the Air Force will establish voluntary, reasonable, and temporary avoidance measures during early morning hours of lek attendance. The USFWS has identified this as between sunrise and 10:00 a.m. local time from early March through mid-May in identified core habitat areas. This is the time during which the greater sage-grouse is especially sensitive to disturbance. Additionally the USFWS and the Air Force are considering annual meetings to discuss more specific impact avoidance or minimization

measures if necessary. The Air Force will revisit its determination concerning the greater sage-grouse and consult with the USFWS if the species is listed.

Table 4.6-1. Summary of Potential Effects on Federally Listed, Proposed, or Candidate Species Known to Occur or with Potential to Occur under the Proposed PRTC Airspace

Common Name	*Status*	*Expected Occurrence and Habitat*	*Effects Determination*
Birds			
Piping plover	T	Potential during migration, nesting occurs along Missouri and Cheyenne rivers and may occur along Moreau River. Uses sandbars, islands, shorelines.	Rare migrant in ROI. The potential for a bird-aircraft strike is so low as to be discountable. Chaff and flare use would not adversely affect the species. Behavioral response to infrequent low-level overflights would be insignificant and not be expected to reach the level at which take would occur. Effects determination: The project **may affect, but is not likely to adversely affect the piping plover.**
Whooping crane	E	Potential during migration. Uses sloughs, marshes, rivers, lakes, ponds, croplands, and pastures.	Powder River 4 Low MOA (500 feet AGL up to but not including 12,000 feet AGL) has been eliminated from Modified Alternative A. For Modified Alternative B, the 28 OSS would avoid use of the proposed Powder River 4 Low MOA when notified by USFWS that whooping cranes are present in the area (generally for a 2-day to 6-day period when whooping cranes are in the area during Spring and Fall Migration) (USFWS 2011b). Effects determination: The project **may affect, but is not likely to adversely affect the whooping crane.**
Interior least tern	E	Potential during migration, nesting occurs along Missouri and Cheyenne rivers and may occur along Moreau River. Uses sandbars, islands, shorelines.	Rare migrant in ROI. The potential for a bird-aircraft strike is so low as to be discountable. Chaff and flare use would not adversely affect the species. Behavioral response to infrequent low-level overflights would be insignificant and not be expected to reach the level at which take would occur. Effects determination: The project **may affect, but is not likely to adversely affect the interior least tern.**
Yellow-billed cuckoo	C	Cottonwood –riparian areas	Possible resident in riparian cottonwood habitat in the westernmost part of the ROI. The potential for a bird-aircraft strike is so low as to be discountable. Chaff and flare use would not adversely affect the species due to the wide dispersion and low density of chaff fibers and the low likelihood of project-related fire. Behavioral response to infrequent low-level overflights would be insignificant and not be expected to reach the level at which take would occur. Effects determination: The project **may affect, but is not likely to adversely affect the western yellow-billed cuckoo.**
Red knot	PT	Potential during migration. Long-distance migrants flying more than 9,300 miles from south to north in spring and repeat in reverse every autumn. Stopover habitat includes aquatic areas where easily digested foods can be readily consumed. Breeding occurs outside of the ROI in the central Canadian Arctic from northern Hudson Bay to the southern Queen Elizabeth Islands.	Rare migrant in ROI. The potential for a bird-aircraft strike is so low as to be discountable. Chaff and flare use would not adversely affect the species due to the wide dispersion and low density of chaff fibers and the low likelihood of project-related fire coupled with the species' use of wetland habitats. Behavioral response to infrequent low-level overflights would be insignificant and not be expected to reach the level at which take would occur. Effects determination: The project **may affect, but is not likely to adversely affect the red knot.**

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Table 4.6-1. Summary of Potential Effects on Federally Listed, Proposed, or Candidate Species Known to Occur or with Potential to Occur under the Proposed PRTC Airspace

Common Name	*Status*	*Expected Occurrence and Habitat*	*Effects Determination*
Sprague's pipit	C	Uses medium to intermediate height prairie. Also known to utilize alkaline meadows around the edges of alkaline lakes. Ground nester that breeds and winters on open mixed-grassland habitat.	Resident in ROI. The potential for a bird-aircraft strike is so low as to be discountable. Chaff and flare use would not adversely affect the species due to the wide dispersion and low density of chaff fibers, the low likelihood of project-related fire. Behavioral response to infrequent low-level overflights would be insignificant and not be expected to reach the level at which take would occur. Effects determination: The project **may affect, but is not likely to adversely affect Sprague's pipit.**
Greater sage-grouse	C	Dependent upon large stands of mature sagebrush year round for foraging and cover. Flat, open grassland needed for breeding (leks). Historically occurred across the entire ROI; populations in eastern portion of range have subsided.	Resident in ROI. The potential for a bird-aircraft strike is so low as to be discountable. Chaff and flare use would not adversely affect the species due to dispersion/low density of chaff fibers and very low likelihood of a project-related fire in sage grouse habitat. Behavioral response to infrequent low-level overflights would be insignificant and not be expected to reach the level at which take would occur, peak breeding activity is peak at very early morning hours, when project flight activity would be minimal. Effects determination: The project **may affect, but is not likely to adversely affect the greater sage-grouse**.
Mammals			
Black-footed ferret	E, N/E in MT, WY, SD	Historical occurrence across ROI. All current populations have been re- introduced; suitable habitat includes prairie dog towns >80 acres or any towns part of a >1,000 acre complex of prairie dog colonies	Resident in ROI. Chaff and flare use would not adversely affect the species due to dispersion of chaff and low likelihood of project-related fire. Behavioral response to infrequent low-level overflights would be insignificant and not be expected to reach the level at which take would occur. Effects determination: The project **may affect, but is not likely to adversely affect the black-footed ferret**.
Northern long-eared bat	PE	Historical occurrence within the ROI. Species range includes 39 states. Roost in caves, mines, and both live and dead trees.	Possible occurrence in ROI. The potential for a bat-aircraft strike is so low as to be discountable. Chaff and flare use would not adversely affect the species. Behavioral response to infrequent low-level overflights would be insignificant and not be expected to reach the level at which take would occur. Effects determination: The project **may affect, but is not likely to adversely affect the Northern long-eared bat**.
Canada lynx	T	Historical occurrence documented along the western border of Sheridan County, outside of the ROI. Live in subalpine/coniferous forests. Critical habitat limited to western Wyoming.	Canada lynx is not known to be resident within the ROI and therefore the effects determination is **no effect of the project on Canada lynx**. Should the Canada lynx enter the ROI the following would apply: Chaff and flare use would not adversely affect the species. Behavioral response to infrequent low-level overflights would be insignificant and not be expected to reach the level at which take would occur. Effects determination should the Canada lynx enter the project ROI: The project **may affect, but is not likely to adversely affect the Canada lynx** should it enter the ROI.
Fish			
Topeka shiner	E	Historical occurrence only. All current populations are found in small streams within eastern SD, within the Big Sioux, Vermillion, and James River watersheds	Since the Topeka shiner is not present within the ROI, the effects determination is **no effect of the project on Topeka shiner.** Chaff and flare use would not adversely affect the species' historic habitat due to dispersion; behavioral response to low-level overflights is not known or expected in fish.

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Table 4.6-1. Summary of Potential Effects on Federally Listed, Proposed, or Candidate Species Known to Occur or with Potential to Occur under the Proposed PRTC Airspace

Common Name	*Status*	*Expected Occurrence and Habitat*	*Effects Determination*
Pallid sturgeon	E	Historical occurrence within the ROI. Large-river ecosystems and associated floodplains, backwaters, chutes, sloughs, islands, sandbars, and main channel waters.	Since the pallid sturgeon is not present within the ROI, the effects determination is **no effect of the project on pallid sturgeon**. Chaff and flare use would not adversely affect the species' historic habitat due to dispersion; behavioral response to low-level overflights is not known or expected in fish.
Plants			
Ute ladies'-tresses	T	Historical occurrence across ROI. Primarily associated with stream terraces, floodplains, oxbows, seasonally flooded river terraces, subirrigated or spring-fed abandoned stream channels and valleys, and lakeshores.	Chaff and flare use would not adversely affect the Ute ladies'-tresses historic habitat due to dispersion of chaff, very low likelihood of a flare reaching the ground and starting a fire and lack of susceptibility of the habitat to unlikely range fire. Behavioral response to low-level overflights is not known or expected in plants. Effects determination: **The project may affect, but is not likely to adversely affect the Ute ladies'-tresses.**

Note: 1. Federal Listing as E=endangered; PE=Proposed Endangered; T=threatened; PT=proposed threatened; C=candidate; N/E=Nonessential Experimental, referring to reintroduced populations

Sources: USFWS 2006; USFWS 2007; USFWS 2008a; USFWS 2014a; USFWS 2014b; USFWS 2014c; USFWS 2014d; USFWS 2014e; USFWS 2014f; WYNDD 2003; Montana Sage Grouse Work Group 2005; SD Wildlife Division, Department of Game, Fish and Parks 2008; McCarthy and Kobriger 2005

4.6.3.2 MODIFIED ALTERNATIVE B

Modified Alternative B would expand existing airspace assets, increase airspace operations, allow supersonic activity, and introduce the use of chaff and flares into the training area similar to the Modified Alternative A. Potential biological effects would be similar to and generally comparable to those described for Modified Alternative A. Modified Alternative B differs from the Modified Alternative A by not including PR-1A/B/C/D or Gap A MOAs. This would result in less local low-level training overflight in the more varied terrain on the western end of the proposed PRTC. Modified Alternative B also differs by including the PR-4 Low MOA, which is not included in Modified Alternative A. The PR-3 and PR-4 Low MOAs would include low-level flights over the confluence of the Central and Mississippi Flyways. This has the potential for Modified Alternative B to have somewhat increased bird-aircraft strikes when compared with Modified Alternative A or C. The frequency of low-level flight by B1-B aircraft would be about the same for Modified Alternative A and Modified Alternative B, but the geographic distribution would be different, with PR-1A/B/C/D and GAP A MOAs experiencing low-level overflight under Modified Alternative A but not under Modified Alternative B; the PR-4 and GAP C MOAs would experience low-level overflight under Modified Alternative B but not under Modified Alternative A (or Modified Alternative C). Low level overflight by B-1s would be the same in PR-2 and PR-3 MOAs under both alternatives. The PR-1A/B/C/D and GAP A MOAs overlie a greater proportion of shrubland habitat, including greater sage grouse habitat, compared to PR-4, which mainly overlies cropland and grassland habitat with stopovers for migratory waterfowl along the Central Flyway. For Modified Alternative B, the 28 OSS would work with the USFWS to avoid use of the proposed PR-4 Low MOA when notified by USFWS that whooping cranes are present in the area (generally for a 2-day to 6-day period when whooping cranes are in the area during spring and fall migration) (USFWS 2011b). As discussed under the Modified Alternative A, although most wildlife, including mammals and birds, would be expected to habituate to a level of overflights and sonic booms, the increase in active airspace and frequency of flights could affect the behavior of some wildlife species in the newly proposed MOAs.

Sonic booms and chaff and flare use would continue from aircraft training in the ATCAA. Overall, Modified Alternative B would not be expected to adversely affect vegetation or wildlife resources and impacts would be less than significant, although the effects upon migratory birds could be slightly greater than Modified Alternative A or C.

4.6.3.3 MODIFIED ALTERNATIVE C

The total MOA airspace included for Modified Alternative C is smaller than that for the Modified Alternative A. The more varied terrain to the west would be overflown at low altitudes and consequences would be comparable to those described for Modified Alternative A. Modified Alternative C does not include PR-4 MOA and Gap C MOA. The biological resources present would be generally very similar to those described for the Modified Alternative A. There would not be low-level overflight in flyways to the east side of the proposed airspace where a greater concentration of migratory waterfowl habitat is present. Potential impacts would be similar to those described for Modified Alternative A with regard to the PR-4 and Gap C MOAs where no low-level training would occur. Any adverse effects to vegetation or wildlife resources from Modified Alternative C would be less than significant.

4.6.3.4 NO-ACTION ALTERNATIVE

The No-Action Alternative would not create the PRTC or expand training airspace. As a result, conditions would remain the same as those described in Section 3.6, *Existing Conditions* for the biological resources present in the ROI. This would include continued low-level training in the Powder River A and B MOAs which represent most of the proposed PR-2 MOA.

4.7 CULTURAL AND HISTORIC RESOURCES

4.7.1 *METHODOLOGY*

Impact analysis for cultural resources focuses on assessing whether the PRTC modified alternatives have the potential to affect cultural resources that are eligible for listing in the National Register of Historic Places (NRHP) or have traditional religious and cultural significance for Native Americans. Under Section 106 of the National Historic Preservation Act (NHPA), the Air Force has initiated consultation with the State Historic Preservation Officers (SHPO) and Tribal Historic Preservation Officers, to identify historic properties (i.e., cultural resources that are eligible for listing on the NRHP) located in the area, to assess whether the proposed airspace change would adversely affect the resources, and to notify the SHPOs or Tribal Historic Preservation Officers of any adverse effects.

Direct impacts may occur by physically altering, damaging, or destroying all or part of a resource; altering characteristics of the surrounding environment that contribute to the resource's significance; introducing visual or audible elements that are out of character with the property or alter its setting; or neglecting the resource to the extent that it deteriorates or is destroyed. Direct impacts can be assessed by identifying the types and locations of proposed activity and determining the exact location of cultural resources that could be affected. Indirect impacts generally result from increased use of an area, may be removed in time from the undertaking, and are harder to quantify.

Impacts to cultural resources are evaluated for lands beneath the proposed PRTC airspace, and especially the proposed low-level training MOA airspace in portions of several counties in Wyoming, Montana, North Dakota, and South Dakota. The proposed PRTC is an airspace action and has no proposed ground disturbance; this EIS focuses on those cultural resources potentially affected by visual and noise intrusions.

Depending on the proposed airspace, visual and noise intrusions could include an estimated 6 to 9 low-level overflights per year over any given location, an estimated one sonic boom per day at any given location during the not more than 10 days of LFEs per year, and an average of one piece of chaff or flare residual plastic or wrapping materials per 149 acres per year. Cultural resources potentially affected include significant historic sites such as National Historic Landmarks or properties listed on, or eligible for listing on, the NRHP that qualify because of setting or feeling; historic architectural resources or archaeological resources with standing structures (such as historic ranches or forts) that could be affected by vibrations; national historic trails; and traditional cultural resources that are associated with places that require isolation or quiet. The Air Force recognizes that hundreds of other cultural resources, some documented and some not yet discovered, exist under the airspace. Aircraft operations have the potential to affect historic structures and districts where setting is an important criterion for significance and where noise vibrations from sonic booms or low-level overflights could adversely impact those types of resources. These resources are typically found on the NRHP or State Register. Accordingly, if NRHP-listed properties are not affected by the project elements, then non-listed resources are unlikely to be affected.

Prehistoric and historic archaeological sites lacking standing structures are not included for the most part, as they are generally surface or even subsurface deposits that would not be directly affected by visual or noise intrusions associated with training aircraft. Some prehistoric archaeological sites could contain natural structures such as rock shelters or caves. These structures often house petroglyphs or pictographs, which are etched or painted onto the rock surfaces. Studies have found that these types of natural formations are affected more by erosion than by sonic booms (Battis 1983).

4.7.2 *ISSUES AND CONCERNS*

Concerns mentioned by the general public and Native American tribes during the EIS process include disturbance to traditional or sacred sites, interference with religious ceremonies, and visual or noise effects to sites and sacred areas from overflights and chaff and flares. Correspondence with potentially affected tribes is contained in Appendix N.

Elements under the proposed PRTC include creation of new airspace, flying at low altitudes in specified MOAs, use of supersonic speed above specified altitudes in the airspace during not more than 10 days of LFEs annually, and release of defensive chaff and flares. Under the Proposed Action, B-1 supersonic flight would be permitted above 20,000 feet MSL and would be permitted by transient fighters above 10,000 feet AGL. Supersonic flight operations would be permitted during LFEs only, not to exceed 10 days per year. The release of defensive flares and chaff would be permitted within all MOA and ATCAA airspaces, but flare use could be restricted under specified fire danger conditions. Current training operations in the existing Powder River airspace do not permit supersonic flight or the release of chaff and flares.

4.7.2.1 VISUAL INTRUSIONS

Visual intrusions can include aircraft overflights that transit the viewshed of a historic property. Intangible qualities (e.g., quietude and isolation) of some traditional historic properties may be affected by overflights, although such effects are temporary and infrequent. No physical changes occur to the properties on the land surface. An observer standing at any given location in the 21.8 million acres underlying the proposed PRTC would likely see an average of 9 flights per day at all altitudes. Low-altitude overflights of 2,000 feet AGL or below within specified MOAs are estimated to occur 6 to 9 times per year on average at any given location.

Within PR-1 (for day-to-day operations under Modified Alternatives A and C and for LFEs for all alternatives, and excluding the Northern Cheyenne Reservation and specified other properties), PR-2, PR-3, and PR-4 MOAs (for Modified Alternative B), aircraft would be flying for a few minutes at an altitude as low as 500 feet AGL (except for avoidance areas described in Section 2.3). Visual effects to any overflown historic property would be sporadic and temporary, given the infrequency of flights, the speed of the aircraft in transit, the size of the proposed airspace, and the dispersal of historic properties. In terms of historical precedent, as recently as the 1990s, Air Force bombers flew on low-altitude MTRs that traverse much of the proposed PRTC airspace; additionally, military aircraft currently train in the existing Powder River MOA/ATCAA airspace, which is essentially the same as PR-2. During NEPA scoping meetings for PRTC on the reservations, a tribal elder confirmed the earlier use and stated the tribe had had no problems with the training flights at the time. At low altitudes (e.g., 2,000 feet AGL or below), the aircraft's visual presence could adversely affect the character and feeling associated with a historic property.

Training aircraft at altitudes from 12,000 to 26,000 feet MSL present a small visual footprint . Overflights of the Northern Cheyenne, Standing Rock, and Cheyenne River Indian Reservations would not occur below 12,000 feet MSL. These areas, while preserving a considerable natural ambience and quietude, are not designated as wilderness lands, and have been and continue to be overflown by commercial and private aircraft.

Figure 4.7-1 presents the visual effect of a B-1 aircraft to an observer at a spot under the proposed airspace. The typical person has focused vision within an area represented by a 45- to 60-degree cone. Using a 55 degree cone of focused vision for this analysis, a 146-foot-long B-1, flying at 12,000 feet MSL, would occupy only 0.03 percent of the horizontal plane of that cone of vision. At 18,000 feet MSL, it would occupy 0.01 percent. In this representation, the notional human figure is shown to scale with respect to the depicted surrounding terrain, perceived distance from the reader, and size of the depicted aircraft, standing on the Northern Cheyenne Reservation under PR-1D, with the B-1 overhead and the ground surface at 3,785 feet MSL (the average ground surface elevation in the Northern Cheyenne Reservation). The aircraft would appear slightly smaller at both altitudes shown over the Standing Rock and Cheyenne River Reservations as the average ground surface elevations are lower (2,250 and 2,475 feet MSL, respectively). Based on this analysis, visual intrusion caused by transit of PRTC training aircraft at or above 12,000 feet MSL above these reservations would not be expected to diminish the qualities of any traditional cultural properties that make them suitable for listing on the NRHP.

During Government-to-Government consultations, questions were raised about tribal sovereignty and airspace over tribal lands. As explained in Section 1.6, Congress has charged the FAA with administering all navigable airspace. The FAA has exclusive jurisdiction over all navigable airspace associated with the U.S., including airspace over tribal lands, private property, and public property.

During tribal ceremonies, overflights at any altitude can be seen as an unwelcome visual intrusion. During Government-to-Government consultations, tribal members regularly cited their concerns that low-level overflights would intrude upon their ceremonies and vision quests. Air Force representatives assured the tribal members that, when told of a specific location, the Air Force would establish reasonable avoidance areas for reasonable time periods to reduce or eliminate any intrusion and protect the privacy of participants. As detailed in the Programmatic Agreement, summarized in Section 4.7.2.4, developed by the Air Force in consultation with the SHPOs from Wyoming, Montana, North Dakota, and South Dakota, the Advisory Council on Historic Preservation (ACHP), the National Park Service (NPS), the Crow, the Northern Cheyenne, the Cheyenne River Sioux, and the Standing Rock Sioux, the Air Force has agreed to specific avoidance protocols and will continue to consult with the signatories and invited signatories during the term of the Programmatic Agreement (see Appendix N).

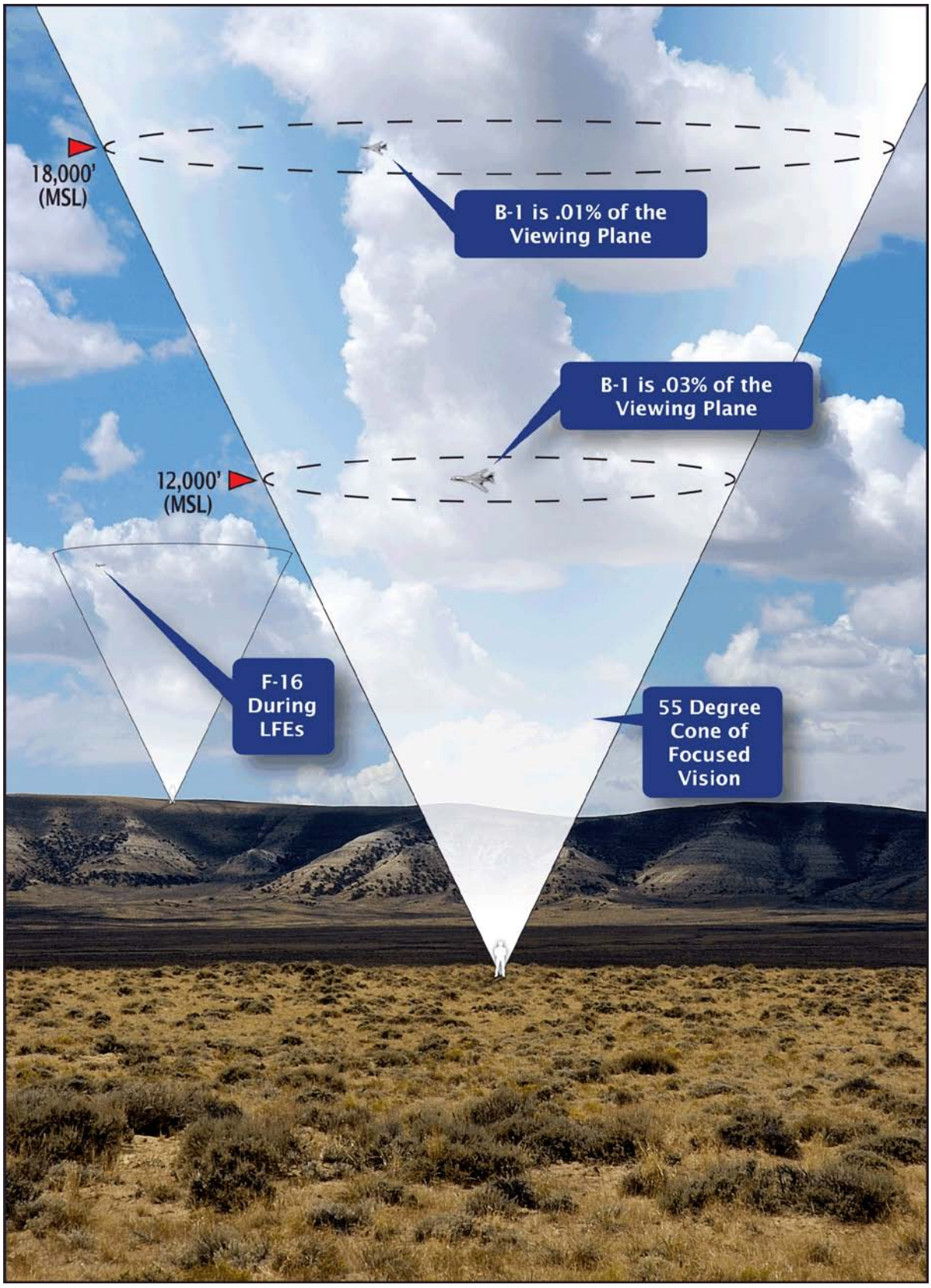

Figure 4.7-1. Representation of Aircraft Overflight during PRTC Use

The release of chaff and flares could have a visual effect from residual materials which remain on the ground or land on structures or at sacred sites. Studies have shown that chaff and its residual materials do not pose a significant threat to the visual integrity of archaeological and architectural resources (GAO 1998). Chaff does not accumulate to any great degree and the fibers, if found, were often mistaken for natural elements such as animal fur or plant material. Each chaff fiber is thinner than a human hair and is composed of two naturally abundant materials, aluminum and silica. Chaff fibers quickly become indistinguishable from soil due to mechanical breakdown from wind, sediment erosion, rain, or snow. The residual materials from flares and chaff are described in Section 2.7.6. Chaff residual plastic materials typically measure 1 inch by 1 inch. Flare residual plastic materials, usually red or blue in color, are typically 2 inch by 2 inches.

Overall, chaff and flares are unlikely to adversely affect cultural resources. The amount of chaff (0.00377 ounces per acre per year) and the estimated one piece of residual materials per 149 acres per year that fall to the ground do not collect in quantities great enough to adversely affect the NRHP status of archaeological or architectural resources. Impacts to traditional cultural resources are more difficult to assess and no studies have been conducted on traditional cultural resources with regard to chaff and flare residual materials. Chaff or flare residual materials have been identified by ranchers on their property. When a plastic chaff or flare piece is found and identified in conjunction with a cultural resource, the residual materials would not have an adverse effect on the traditional cultural properties, but the individual finding the piece may be annoyed.

Defensive flares deployed from aircraft would pose, at most, a minimal visual intrusion as they burn out quickly (within a few seconds). Flares would not be deployed below 2,000 feet AGL, and most flares would be deployed at much higher altitudes. The deployment altitude would make the flares difficult to detect by people on the ground during daylight hours. At night, a flare would be visible for a few seconds, and, if multiple flares are deployed, flares can appear to be a blinking light as successive flares are deployed and burn out. The infrequency of flare usage combined with the infrequency of B-1 overflights during darkness would make the sighting of flares a rare occurrence and limit the potential for visual intrusion.

4.7.2.2 NOISE INTRUSIONS

SUBSONIC

Experimental data and models (Battis 1988, Sutherland 1990, King 1985, King *et al.* 1988) show that damage to architectural resources, including adobe buildings, is unlikely to be caused by subsonic noise and vibrations from aircraft overflights. Subsonic, noise-related vibration damage to structures requires high dB levels generated at close proximity to the structures and in a low frequency range (USFS 1992, cf. Battis 1983, 1988). Aircraft must generate a maximum sound level (L_{max}) of at least 120 dB to potentially result in structural damage (Battis 1988) and, even at 130 dB, structural damage is unlikely (refer to Appendix I). Sutherland (1990) found that the probability of damage to a poorly constructed or poorly maintained wood frame building is less than 0.3 percent even when the building is directly under a large, high-speed aircraft flying only a few hundred feet AGL.

SUPERSONIC

The proposed PRTC includes supersonic training flights during not more than 10 days per year of LFEs, which would typically be scheduled for 1 to 3 days per quarter. During LFEs, transient fighter aircraft could exceed supersonic speeds at altitudes above 10,000 feet AGL with the majority occurring above 18,000 feet MSL or higher (Table 2.8-1). B-1 bomber supersonic flight would be permitted only above 20,000 feet MSL. Supersonic training flights would only be authorized during LFEs and could result in a

location toward the center of the airspace experiencing an average of approximately one sonic boom per day during the 1 to 3 days of LFEs per quarter. Sonic booms could be described as ranging from the sound of distant thunder to a sharp double crack.

Sonic booms can be associated with structural damage. Most damage claims are for brittle objects, such as glass and plaster. Table 4.2-9 summarizes damage that could occur at various overpressures. There is a large degree of variability in damage experience, and much damage depends on the pre-existing condition of a structure. Breakage data for glass, for example, spans a range of two to three orders of magnitude at a given overpressure. At 1 psf, the probability of a window breaking ranges from one in a million (Hershey and Higgins 1976) to one in a billion (Sutherland 1990). These damage rates are associated with a combination of boom load and glass condition. At 10 psf, the probability of breakage is between one in a hundred and one in a thousand. Laboratory tests of glass (White 1972) have shown that properly installed window glass did not break at overpressures below 10 psf, even when subjected to repeated booms.

Damage to plaster occurs at similar ranges to glass damage. Plaster has a compounding issue in that it will often crack due to shrinkage while curing, or from stresses as a structure settles, even in the absence of outside loads. Sonic boom damage to plaster often occurs when internal stresses are high from these factors. Some degree of damage to glass and plaster should thus be expected whenever there are sonic booms, but usually at the low rates noted above.

Minimal effects are expected to rock art on boulders, caves or rock shelters. A study by Battis (1983) examined rock shelters, canyon walls, and cliff lines, many with petroglyphs, within the Valentine MOA in Texas. During this study, seismic and acoustic sensors were used to record the effects of sonic booms in similar locations and compare the results to the likelihood of damage to rock art sites in the Valentine MOA. The study found that these types of natural formations are not affected any more by noise vibrations, either subsonic or by sonic booms, than by natural erosion, wind, or seismic activity (Battis 1983).

The effects of noise on cultural resources may also be related to setting. Noise and startle effect impacts to Native American traditional cultural resources may be related to interference with ceremonies and other traditional activities at sacred sites. Undisturbed habitats, resources, and settings are considered to be critical to religious practices (NPS 1994). The Air Force is committed to continuing consultation with the affected tribes to identify scheduling and/or avoidance areas to reduce the potential for environmental impacts (see Section 4.7.2.4).

4.7.2.3 TRIBAL RESERVATIONS OVERFLOWN

Under the Modified Alternative A, Modified Alternative B, and Modified Alternative C, tribal lands would be overflown at varying altitudes. Many of the cultural resources and traditional cultural properties, identified by state in Section 3.7, are highly valued by Native Americans. Table 4.7-1 presents the acres that would be overflown for each reservation under each PRTC proposed airspace component. The percentage of each proposed MOA/ATCAA over each reservation in Table 4.7-1 was calculated based on reservation boundaries. This means that any privately owned land within the reservation boundaries was counted as potentially overflown reservation acreage for the purpose of Table 4.7-1.

Table 4.7-1. Reservation Acres Overflown by Proposed Airspace Components

Proposed MOA/ ATCAA	*MOA/ ATCAA Acres Overflown*	*Reservation Acres Overflown*							
		Crow		*Northern Cheyenne*		*Standing Rock*		*Cheyenne River*	
		Reservation Acres Overflown	Percent of MOA Over Reservation	Reservation Acres Overflown	Percent of MOA Over Reservation	Reservation Acres Overflown	Percent of MOA Over Reservation	Reservation Acres Overflown	Percent of MOA Over Reservation
PR-1A	489,470	103,233	21.1						
PR-1B	781,812								
PR-1C	435,828	432,864	99.3	33	0.0				
PR-1D	2,117,379	69,650	3.3	446,226	21.1				
PR-2	5,264,371								
PR-3	2,909,778								
PR-4	3,379,595					763,745	22.6	66,264	2.0
Total	**15,378,233**								

Table 4.7-2 includes the estimated annual number of overflight hours at the different operational altitudes derived from Tables 2.5-6, 2.5-7, and 2.5-8 for Modified Alternative A and from the corresponding tables for Modified Alternatives B and C.

Table 4.7-2. Reservation Annual Hours Overflown by Altitude for Modified Alternatives

Day to Day (DtD) plus LFE Annual Total	*Crow Reservation*	*Northern Cheyenne Reservation*	*Standing Rock Reservation*	*Cheyenne River Reservation*
Modified Alternative A				
2,000 feet AGL and below	9.29	0.00	0.00	0.00
2,000 feet AGL to 12,000 feet MSL	4.44	0.00	0.00	0.00
12,000 feet MSL to FL180	1.30	1.62	28.93	2.51
FL180 to FL260	31.51	60.06	104.16	9.04
DtD+LFE Annual Total	**46.54**	**61.68**	**133.09**	**11.55**
Modified Alternative B				
2,000 feet AGL and below	0.00	0.00	18.87	1.64
2,000 feet AGL to 12,000 feet MSL	0.00	0.00	7.50	0.65
12,000 feet MSL to FL180	0.00	0.88	2.83	0.25
FL180 to FL260	31.51	18.43	104.80	9.09
DtD+LFE Annual Total	**31.51**	**19.31**	**134.00**	**11.63**
Modified Alternative C				
2,000 feet AGL and below	9.28	0.00	0.00	0.00
2,000 feet AGL to 12,000 feet MSL	4.44	0.00	0.00	0.00
12,000 feet MSL to FL180	1.30	1.62	0.00	0.00
FL180 to FL260	31.51	60.06	104.16	9.04
DtD+LFE Annual Total	**46.53**	**61.68**	**104.16**	**9.04**

As noted in Section 4.7.2.1, Air Force bombers have flown over or near the reservations in past decades, though not recently. High-altitude commercial flights continue to fly over the reservations today, and both general and emergency aviation occur, often at low altitudes. Responding to concerns expressed by tribes, the Air Force modified the proposed undertaking, increasing the floor for PRTC operations to 12,000 feet MSL over the Cheyenne River, Northern Cheyenne, and Standing Rock Reservations. As explained in Sections 4.7.1 and 4.7.2, PRTC operations at this altitude would not be expected to have noise or visual adverse effects on historic properties in those reservations. Although sonic booms will be

heard on the reservations, supersonic flight would be limited to LFEs, which would occur up to 3 days quarterly, not to exceed 10 days per year and only above specified altitude floors. In addition, a portion of the Crow Reservation lies under an area where supersonic activity would not be permitted. During Government-to-Government consultations, the Crow Tribe agreed to work with the Air Force to minimize the potential effects of low-level overflight by implementing a process of advance notification and short-term avoidance, wherever feasible for training requirements. Therefore, the potential for adverse effects to traditional cultural properties from auditory and visual intrusion would be minimized. This process is stipulated in the Programmatic Agreement for PRTC (see Appendix N).

Physical effects to historic properties from the use of chaff and flares are minimal to nonexistent, including over the reservations. Over the vast size of the airspace the amount of dispersed chaff during a year would be difficult to detect on the ground surface. No adverse effects would occur from this activity. Flares from defensive maneuvers are intense and at night visible for considerable distances, but are momentary, not unlike an occasional meteor. In addition, flares could not be used below the higher of the floor of the airspace or 2,000 feet AGL, nor could they be used during specified fire danger conditions. Given these characteristics and limitations, the visual effects would not change the characteristics of traditional cultural properties that make them eligible for the NRHP. Although afterburners are used briefly in most training flights, the momentary increase in noise and brightness imposes no enduring change in the integrity of historic properties and would be unlikely to result in permanent change to the feelings of association or feeling of tribal members for their traditional or religious places. In summary, the Air Force has reasonably determined per 36 CFR 800.5(b) and 36 CFR 800.6(b)(2), in light of its consultations, that modifying the undertaking and adopting mitigations in the Programmatic Agreement would avoid or resolve adverse effects to historic properties on tribal lands or traditional cultural properties.

4.7.2.4 PROGRAMMATIC AGREEMENT

In compliance with Section 106 of the NHPA, the Air Force, SHPOs and ACHP developed a Programmatic Agreement that avoids or resolves adverse effects that could result from the proposed action, through stipulations concerning avoidance, minimization or mitigation of adverse effects to historic properties, religious ceremonies and important tribal events under the PRTC (refer to Appendix N). Proposed stipulations in the Programmatic Agreement will help forestall potential future adverse effects through prior notice, avoidance in time or space where feasible, and training of aircrews in the sensitivities concerning traditional or religious cultural properties (see Appendix N).

The *Programmatic Agreement among 28th Bomb Wing, Ellsworth Air Force Base, the State Historic Preservation Offices of Montana, North Dakota, South Dakota and Wyoming, and the Advisory Council on Historic Preservation Regarding the Proposed Development, Implementation and Operation of the Powder River Training Complex* (Programmatic Agreement) (see Appendix N) is among consulting parties comprised of signatories (28 BW, SHPOs from Wyoming, Montana, North Dakota, and South Dakota, and the ACHP) and invited signatories (FAA, NPS, and Crow Tribe). The Cheyenne River Sioux Tribe, Northern Cheyenne Tribe and Standing Rock Sioux Tribe have also been invited to sign; this invitation remains open during the effective period of the agreement.

The Programmatic Agreement includes stipulations to avoid, minimize or mitigate adverse effects to historic properties under the PRTC by instituting specific protocols for the Great Sioux War Battlefield properties in Wyoming, Montana, North Dakota, and South Dakota, including Little Bighorn Battlefield National Monument, Deer Medicine Rocks and Wolf Mountains Battlefield/Where Big Crow Walked Back and Forth, and sensitive rock art throughout the area of potential effect, including the Tongue River Valley, Chalk Buttes, Slim Butte, and South Cave Hills. Other stipulations in the agreement require

the Air Force to work cooperatively with other federal and state agencies, tribal governments, and the public to minimize potential adverse effects to historic properties in the PRTC from routine operations or from LFEs. In addition, the Programmatic Agreement stipulates the Air Force will continue to consult with the tribes on appropriate ways to avoid, minimize, or mitigate adverse effects to historic properties, religious ceremonies, and events important to the tribes.

There are also stipulations to avoid, minimize or mitigate adverse effects to historic properties, religious ceremonies, and important tribal events under the PRTC by consulting with tribes regarding reasonable temporary or seasonal avoidance areas and dates for training objectives. Under the agreement, both 28 BW and invited signatory tribes are appointing liaisons to serve as points of contact to facilitate and coordinate communication regarding training operations, historic properties and other areas of mutual concern, and to provide awareness training for military trainers and aircrews operating in the PRTC.

Additional stipulations call for the Air Force to develop and implement procedures for consulting parties to request avoidance of specific portions of the PRTC for specific dates. The agreement requires the 28 BW to notify consulting parties prior to LFE supersonic operations. Also specified is the integration of the stipulations from the Programmatic Agreement into the 28 BW's Integrated Cultural Resources Management Plan. Additional stipulations also include monitoring and reporting procedures, confidentiality requirements, and handling and notification procedures for post review discovery, damage claims, injuries or complaints. The Programmatic Agreement is valid for five years from the date of execution and may be revised and extended through continued consultation with the signatories and invited signatories. Execution of the Programmatic Agreement concludes Section 106 NHPA consultation; however, the Air Force and consulting parties will continue to consult as specified in the Programmatic Agreement.

4.7.3 *ENVIRONMENTAL CONSEQUENCES*

4.7.3.1 MODIFIED ALTERNATIVE A – THE PROPOSED ACTION

Impacts to cultural resources could occur from an increase in noise, both subsonic and supersonic noise. The low-level overflights would have a startle effect and a noise effect, due to the low altitude and speed of training aircraft. For Modified Alternative A, any given location toward the center of the airspace could experience an average of approximately one sonic boom per day for up to 10 days per year during the 1 to 3 days of quarterly LFE. The booms could be experienced as a sharp "crack-crack" or more often, as distant thunder. The potential for damage is presented in Table 4.2-9. The types of structures most susceptible are glass and adobe or similar plaster-type materials. Historic standing structures within the land beneath the affected airspace consist primarily of wood or log buildings with no window glass and some adobe or earth block structures. The infrequency and the random nature of the sonic booms suggest that structural damage to historic structures would not be expected.

Tables 3.7-2 through 3.7-10 provide a summary of all cultural resources that were documented as of Fall 2013 during the background research of areas that underlie the airspace associated with the MOAs of Modified Alternative A. Two hundred forty-one NRHP properties lie in this area; these include historic districts, archaeological sites, ranches, bridges, dams, and a variety of other structures (see Table 4.7-3). Each of these properties currently being overflown by training aircraft is listed as "existing" in Tables 3.7-2 through 3.7-10. None of these properties is currently subject to sonic booms. Neither the noise nor the visual presence of these overflights has affected the NRHP-eligibility status of the resources that are currently being overflown.

Nine other types of cultural resources have been identified beneath the proposed airspace for Modified Alternative A (Table 4.7-3); in some cases these categories overlap with the NRHP properties. There are

two National Monuments beneath the affected airspace; Devils Tower is beneath the Gateway ATCAA, and the Little Bighorn Battlefield is beneath the proposed PR-1C MOA. There are also five National Historic Landmarks: Deer Medicine Rocks, Wolf Mountains Battlefield/Where Big Crow Walked Back and Forth, Bear Butte, the Frawley Ranch, and the Deadwood Historic District. All but Deer Medicine Rocks, Wolf Mountains Battlefield/Where Big Crow Walked Back and Forth, and the Little Bighorn Battlefield are currently overflown by an ATCAA with a floor of 18,000 feet MSL. The Little Bighorn Battlefield National Monument has a charted 0.75 NM avoidance square around the north and south portions (Custer Battlefield and Reno-Benteen Battlefield). Each is charted with a minimum altitude of 2,000 feet AGL. Under the Programmatic Agreement, a designated area of the Little Bighorn Battlefield National Monument would have a designated noise avoidance area which would not be overflown below 5,000 feet AGL from 1 hour prior to 1 hour after Park hours of operation. This designated area of the Little Bighorn Battlefield National Monument could also be subject to further restrictions when special events are coordinated with 28 BW. Deer Medicine Rocks NHL is located on private land near the northern boundary of the Northern Cheyenne Reservation where there would be no overflight below 12,000 feet MSL. A similar restraint would be observed for Deer Medicine Rocks NHL. Bear Butte NHL lies under the boundary edge of an existing ATCAA. Consequently, training operations proposed for that ATCAA as part of PRTC would be subject to the same limitation of not flying below 18,000 feet MSL over the Bear Butte NHL. Aircraft arriving or departing Ellsworth AFB are not subject to the limitation of an ATCAA, but 28 BW has adopted, as a special consideration, a restriction that these aircraft must avoid Bear Butte NHL by 2 NM laterally and fly over it above 10,000 feet MSL. Wind Cave, SD is outside the proposed PRTC. With the described restrictions in place, the effects of overflights on Bear Butte, Devils Tower and the Deadwood Historic District would be negligible.

Other sites that are eligible for the NRHP but have not yet been listed are also present beneath the affected airspace; these properties include battlefields, prairie churches, and a variety of other sites with standing structures. There are 22 ghost towns beneath the affected airspace, 26 historic ranches, and 1 historic trail. The Tongue River Valley Cultural Landscape also underlies the proposed airspace of Modified Alternative A. The northern portion of the Tongue River Valley borders the Northern Cheyenne Reservation where there would be no flights below 12,000 feet MSL. Flights crossing the southern part of Tongue River Valley could fly at or below 2,000 feet AGL, but such flights would be brief in duration, as aircraft would fly across the valley rather than along its length.

Seven traditional cultural properties have been directly identified beneath Modified Alternative A airspace. In addition to these seven, a number of other battlefield sites, archaeological sites, and landscape areas have been identified as being probable sacred areas.

Table 4.7-3. Cultural Resources Under Modified Alternative A MOAs

Resource Type	*Total Number of Resources*[1]	*WY*	*MT*	*ND*	*SD*
NRHP Listed Sites	241	14	36	16	175
National Monuments	2	1	1	0	0
Ghost Towns	22	3	0	5	14
Historic Ranches	26	1	5	1	19
Historic Trails	1	1	0	0	0
Traditional Cultural Properties	7	4	2	0	1
Cultural Landscapes	1	0	1	0	0
National Historic Landmarks	5	0	2	0	3
State Register	3	0	0	0	3

Note: 1. Some resources are counted in more than one category.

Low-level overflights (at or below 2,000 feet AGL) in the PR-1A/B/C/D, PR-3, PR-4, and, during LFEs in the associated Gap MOAs, could impact the setting of cultural properties and cultural resources which have not previously been affected by MOA training. Some of these properties and resources were historically overflown for MTR training (compare Figure 3.1-4 and Figure 3.7-1). PR-2 is essentially the same as the existing Powder River MOAs, which currently have low-altitude training overflights. B-1 aircraft flying level at 500 feet AGL could result in SELs in the 108-117 dB range outdoors (Table 3.2-1) and 88-97 dB indoors with windows closed. When a B-1 performs a "fly up" maneuver as part of training to safely climb in an emergency, the afterburners are engaged to produce a brief SEL of 133 dB over the location where the B-1 performed the fly up maneuver. During training, B-1s perform this maneuver away from buildings. The numbers of overflights exceeding 65, 75, and 85 dB SEL_r at representative locations under PRTC are shown in Table 4.7-4. Refer to Figure 3.7-1 for a map showing the representative locations listed in Table 4.7-4. Noise levels exceeding 65 dB SEL would occur once in 5 to 10 days. While certain frequencies (such as 30 hertz for window breakage) may be of more concern than other frequencies, conservatively, only sounds lasting more than one second above a sound level of 130 dB are potentially damaging to structural components (Committee on Hearing, Bioacoustics, and Biomechanics 1977). It is possible, but unlikely, that architectural or archaeological resources would be physically damaged by an average at any given location of 6 to 9 low-level overflights per year and very unlikely that a resource would experience noise associated with a fly up maneuver. Sonic boom effects would be infrequent, approximately one per LFE day (10 LFE days per year), and random. These effects could be felt at any given location under the Modified Alternative A airspace. In the extremely unlikely event that the high overpressure of a sonic boom damaged a historic structure, a claim to repair the structure would start by contacting Ellsworth AFB Public Affairs, as stipulated in the PA.

Table 4.7-4. Number of Overflights Exceeding 65, 75, and 85 dB SEL_r at Representative Culturally-Sensitive Locations[1] Under PRTC Under Baseline Conditions and Modified Alternative A

ID#	*General Description* [1]	*Baseline Airspace*	*Baseline # Events Per Day Exceeding*			*Proposed Airspace*	*Proposed # Events Per Day Exceeding*		
			65 dB SEL	*75 dB SEL*	*85 dB SEL*		*65 dB SEL*	*75 dB SEL*	*85 dB SEL*
1	Inyan Kara Mountain	Gateway ATCAA	0.4	0.1	<0.1	Gateway West ATCAA	0.3	0.1	<0.1
2	Devils Tower National Monument [2]	Gateway ATCAA	0.4	0.1	<0.1	Gateway West ATCAA	0.5	0.2	<0.1
3	Little Bighorn Battlefield National Monument [3]	None	n/a	n/a	n/a	PR-1C MOA/ATCAA	0.2	0.1	<0.1
4	Bear Butte	None	n/a	n/a	n/a	Gateway West ATCAA	0.3	0.1	<0.0
13	Crow Reservation (Crow Agency, MT)	None	n/a	n/a	n/a	PR-1C MOA/ATCAA	0.1	0.1	<0.1
14	Northern Cheyenne Reservation (Lame Deer, MT)	None	n/a	n/a	n/a	PR-1D MOA/ATCAA	0.3	0.2	<0.1
15	Standing Rock Indian Reservation	None	n/a	n/a	n/a	PR-4 MOA/ATCAA	0.4	0.2	<0.1
16	Cheyenne River Reservation	None	n/a	n/a	n/a	PR-4 MOA/ATCAA	0.4	0.2	<0.1

Notes: 1. Because several of the listed noise-sensitive areas are very large, locations were selected from within the designated areas that are near the center of proposed airspace units.
2. Devils Tower National Monument published aircraft avoidance area is 5 NM horizontally and 18,000 feet AGL
3. Little Bighorn Battlefield National Monument published aircraft avoidance area is 0.75 NM horizontally and 2,000 feet AGL. (For Modified Alternative A, the avoidance area would be 5,000 feet AGL.)

As described in Section 4.9.3.1.5, any given location under low MOAs could experience an average of 6 to 9 low-level overflights per year and an average of approximately one sonic boom per LFE day, for a maximum of up to 10 days total per year. The change in setting created by intermittent noise from low-altitude overflights and sonic booms could have an adverse effect on traditional cultural properties and cultural landscapes. Altitude restrictions and avoidance areas stipulated in the PA contribute to resolution of potential adverse effects on these properties. With the PA, the Air Force has established reasonable temporary and seasonal avoidance areas, has instituted a process to modify the avoidance area if necessary, and plans to continue consultation with the consulting parties.

NATIVE AMERICAN CONCERNS AND ENVIRONMENTAL CONSEQUENCES

Portions of the Crow, Cheyenne River, and Standing Rock Reservations are under the Modified Alternative A airspace and the Northern Cheyenne Reservation is entirely under the proposed MOA airspace for Modified Alternative A. The potential for a change in setting created by increased noise due to low-altitude overflights was identified during Government-to-Government consultations as having a potentially significant impact to Native American Reservations. The Northern Cheyenne, Standing Rock, and Cheyenne River Reservations expressed concern over noise and startle effects to domestic stock animals during calving season. Potential financial loss is a concern to all the tribes. The Northern Cheyenne also expressed concern over the economic welfare of the tribe, which it said could be adversely impacted by increased noise. Through the consultation process, several tribes requested periods of avoidance for calving season as well as for tribal and individual ceremonies. Part of the consultation process included the 28 BW working with the tribes to identify periods and locations of avoidance to reduce noise and visual impacts on religious ceremonies for all tribes potentially affected by overflight of training aircraft. In addition to traditional cultural properties, cultural landscapes, archaeological sites, and natural sites (such as rivers) are all locations where religious ceremonies are held.

Many of the mitigations listed in Section 2.3.1 are specifically designed to address Native American concerns and to reduce the potential for environmental consequences to cultural properties and Native American populations. Modified Alternative A does not include low-altitude overflights at or below 2,000 feet AGL over the Standing Rock, Cheyenne River, or Northern Cheyenne Reservations. Training flights in airspace over these reservations would be above 12,000 feet MSL (approximately 8,000 to 10,000 feet AGL per Section 4.7.2.1). Modified Alternative A does not include a PR-4 Low MOA over the Standing Rock and Cheyenne River Reservations and includes a 12,000-foot MSL avoidance area over the Northern Cheyenne Reservation. Modified Alternative A altitude restrictions over these reservations remove startle, noise, or uncertainty effects of training aircraft at or below 2,000 feet AGL. Altitude restrictions of 12,000 feet MSL, as well as other mitigations identified in Section 2.3.1, are designed to reduce or avoid impacts.

Overflights above 12,000 feet MSL could have visual (see Section 4.7.2.1) and noise (see Section 4.2.3.1.5) effects to tribal ceremonies. As explained in Section 2.3.1 and the Programmatic Agreement, the Air Force is committed to continued Government-to-Government consultations to address tribal concerns and identify reasonable avoidance areas for tribal ceremonies. Individual ceremonies could still be affected by training aircraft overflight. Overflights above 12,000 feet MSL would not be expected to adversely affect land uses or diminish the qualities of traditional cultural properties that make them eligible for listing in the NRHP (see Sections 4.7.2.1 and 4.7.2.2).

Some mitigations identified in Section 2.3.1, such as the daily avoidance of the designated area of the Little Bighorn Battlefield National Monument site and coordination to identify and avoid locations and

times sensitive to the Crow Tribe, are specifically designedto address and reduce environmental consequences to cultural and tribal resources on the portions of the Crow Reservation underneath the PR-1A, PR-1C, and PR-1D Low MOAs. An estimated annual 6 to 9 low-altitude flights at or below 2,000 feet AGL would be experienced on portions of the Crow Reservation. The infrequent low-level overflights at or below 2,000 feet AGL, if experienced by an observer, could adversely affect the character and feeling associated with a historic property or the experience of a tribal member during a ceremony. The low-level flights could be perceived as an adverse effect by an individual. However, mitigation measures identified in the Programmatic Agreement will resolve potential adverse effects on the Crow Reservation under NHPA and 36 CFR 800.6(b)(2).

Additional altitude restrictions and avoidance areas stipulated in the Programmatic Agreement (see Section 4.7.2.4 and Appendix N) are designed to avoid, minimize, or mitigate potential adverse effects on resources of concern to the tribes. With the Porgrammatic Agreement, the Air Force has established reasonable temporary and seasonal avoidance areas, and has instituted a consultation process to modify the avoidance areas if necessary, and to continue consultation with the tribes and other consulting parties. The Air Force has reasonably determined per 36 CFR 800.5(b), in light of its consultations, that modifying the undertaking and adopting mitigations as described in the Programmatic Agreement (refer to Appendix N) would avoid potential adverse effects to historic and traditional cultural properties on the Northern Cheyenne, Standing Rock, and Cheyenne River reservations. The Air Force values its relationship with all tribes, and will continue to consult on the PRTC action as well as other matters of known or potential interest to tribes.

4.7.3.2 MODIFIED ALTERNATIVE B

Modified Alternative B includes a PR-4 Low MOA for regular training and a Gap C Low MOA for LFEs only. Modified Alternative B does not include PR-1 and Gap A Low or High MOAs. Table 4.7-5 shows the types and numbers of potentially affected cultural resource properties under the MOAs in Modified Alternative B airspace.

Table 4.7-5. Cultural Resources Under Modified Alternative B MOAs

Resource Type	*Total Number of Resources*[1]	*WY*	*MT*	*ND*	*SD*
NRHP Listed Sites	207	13	3	16	175
National Monuments	1	1	0	0	0
Ghost Towns	22	3	0	5	14
Historic Ranches	22	1	1	1	19
Historic Trails	1	1	0	0	0
Traditional Cultural Properties	6	4	1	0	1
Cultural Landscapes	0	0	0	0	0
National Historic Landmarks	3	0	0	0	3
State Register	3	0	0	0	3

Note: 1. Some resources are counted in more than one category.

Properties and portions of the Standing Rock and Cheyenne River Reservations under PR-4 would be under a Low MOA from 500 feet AGL to 12,000 feet MSL. Under Modified Alternative B, any given location under the PR-4 Low MOA could experience an annual average of 6 to 9 low-altitude overflights at or below 2,000 feet AGL. These areas could experience uncertainty, startle, noise, or visual effects associated with low-altitude overflights at or below 2,000 feet AGL. Modified Alternative B would not have training flights over the Crow Reservation, the Northern Cheyenne Reservation, the Little Bighorn

Battlefield National Monument, Deer Medicine Rocks NHL, and the Tongue River Cultural Landscape under the PR-1 and Gap A ATCAAs below 18,000 feet MSL. An average of one sonic boom per day for the 10 LFE days per year could be experienced at any given location in conjunction with the LFE airspace.

High-altitude overflight of Devils Tower, Bear Butte, the Frawley Ranch, and the Deadwood Historic District occur under the existing conditions and would continue to occur under Modified Alternative B. The effects of overflight for these sites would be as described for Modified Alternative A. The number of overflights exceeding 65, 75, and 85 dB SEL_r at representative culturally-sensitive locations under Modified Alternative B is shown in Table 4.7-6. Overflight noise exceeding 65 dB SEL would occur between 0.2 times per day (2 out of 10 days) and 0.4 times per day (4 out of 10 days) on average. The effect of overflights above 18,000 feet MSL in an ATCAA would be negligible on traditional cultural properties, including Wolf Mountains Battlefield/Where Big Crow Walked Back and Forth NHL and Deer Medicine Rocks NHL.

Modified Alternative B mitigations included in Section 2.3.1, would contribute to resolution of potential adverse effects on historic properties or other cultural resources. The Air Force will continue Government-to-Government consultation with the tribes to identify reasonable temporary and seasonal avoidance areas.

Table 4.7-6. Number of Overflights Exceeding 65, 75, and 85 dB SEL_r at Representative Culturally-Sensitive Locations[1] Under PRTC Under Baseline Conditions and Modified Alternative B

ID#	General Description [1]	Baseline Airspace	Baseline # Events Per Day Exceeding			Proposed Airspace	# Events Per Day Exceeding		
			65 dB SEL	75 dB SEL	85 dB SEL		65 dB SEL	75 dB SEL	85 dB SEL
1	Inyan Kara Mountain	Gateway ATCAA	0.4	0.1	<0.1	Gateway West ATCAA	0.3	0.1	<0.1
2	Devils Tower National Monument [2]	Gateway ATCAA	0.4	0.1	<0.1	Gateway West ATCAA	0.5	0.2	<0.1
3	Little Bighorn Battlefield National Monument [3]	None	n/a	n/a	n/a	PR-1C MOA/ATCAA	<0.1	<0.1	<0.1
4	Bear Butte	None	n/a	n/a	n/a	Gateway West ATCAA	0.3	0.1	<0.1
13	Crow Reservation (Crow Agency, MT)	None	n/a	n/a	n/a	PR-1C ATCAA	<0.1	<0.1	<0.1
14	Northern Cheyenne Reservation (Lame Deer, MT)	None	n/a	n/a	n/a	PR-1D ATCAA	<0.1	<0.1	0.1
15	Standing Rock Indian Reservation	None	n/a	n/a	n/a	PR-4 MOA/ATCAA	0.4	0.2	<0.1
16	Cheyenne River Reservation	None	n/a	n/a	n/a	PR-4 MOA/ATCAA	0.4	0.2	<0.1

Note: 1. Because several of the listed noise-sensitive areas are very large, locations were selected from within the designated areas that are near the center of proposed airspace units.
2. Devils Tower National Monument published aircraft avoidance area is 5 NM horizontally and 18,000 feet AGL.
3. Little Bighorn Battlefield National Monument published aircraft avoidance area is 0.75 NM horizontally and 2,000 feet AGL.

Native American Concerns and Environmental Consequences

Modified Alternative B would overfly the four reservations identified in Section 4.7.3.1. The Northern Cheyenne and Crow Reservations would not be overflown below 18,000 feet MSL (FL180). Modified Alternative B includes the PR-4 Low and High MOAs. This means that the western portion of the

Standing Rock Reservation and a small portion of the Cheyenne River Reservation would be affected by low altitude overflights of 2,000 feet and below with associated changes in noise and setting. The change in setting created by increased noise from lower altitude overflights, startle effects, and very infrequent sonic boom noise would be as described for Modified Alternative A. If Modified Alternative B were selected, the Air Force would work with agencies and tribes to expand the Programmatic Agreement and implement mitigations to address the potential for low-level overflights to adversely impact at least four traditional cultural properties, as well as other areas where traditional ceremonies are held.

Concerns and consequences over domestic stock animals similar to those discussed under Modified Alternative A would also apply to Modified Alternative B in areas of low-altitude overflight at or below 2,000 feet AGL. Additional Government-to-Government consultation would be required for Modified Alternative B.

Many of the mitigations listed in Section 2.3.1 are specifically designed to address the Native American concerns and to reduce the potential for environmental consequences to cultural properties and Native American populations. Altitude restrictions, avoidance areas, or other mitigations would be identified through subsequent NHPA Section 106 consultations to address and resolve potential adverse effects to these properties (see Section 4.7.2.4). The Air Force will continue consultations with agencies and tribes to establish reasonable temporary and seasonal avoidance areas, and institute a process to modify the avoidance areas. The Air Force values its relationship with all tribes, and will continue to consult on the PRTC action as well as other matters of known or potential interest to tribes.

4.7.3.3 MODIFIED ALTERNATIVE C

Under Modified Alternative C, there would be no PR-4 or Gap C MOAs. The PR-4 and Gap C ATCAAs would be established for training above 18,000 feet MSL. Table 4.7-7 shows the types and numbers of affected properties under the MOAs in Modified Alternative C airspace.

Table 4.7-7. Cultural Resources Under Modified Alternative C MOAs

Resource Type	*Total Number of Resources*[1]	*WY*	*MT*	*ND*	*SD*
NRHP Listed Sites	213	14	36	5	158
National Monuments	2	1	1	0	0
Ghost Towns	21	3	0	4	14
Historic Ranches	23	1	5	1	16
Historic Trails	1	1	0	0	0
Traditional Cultural Properties	7	4	2	0	1
Cultural Landscapes	1	0	1	0	0
National Historic Landmarks	5	0	2	0	3
State Register		0	0	0	3

Note: 1. Some resources are counted in more than one category.

Under Modified Alternative C, the effects of noise and change in setting would be minimal for the Standing Rock and Cheyenne River Reservations. These reservations would only be subject to high-altitude overflight (above 18,000 feet MSL). High-altitude ATCAA overflight noise effects to Devils Tower, Bear Butte, the Frawley Ranch, and the Deadwood Historic District would be as described for Modified Alternative A, including avoidance distances. An estimated average of one sonic boom per LFE day could be experienced at any given location under the airspace during the 10 LFE days per year.

Table 4.7-8 presents the projected number of overflights exceeding 65 dB SEL to be 0.4 per day (4 out of 10 days) on average at several culturally-sensitive locations selected for analysis.

Table 4.7-8. Number of Overflights Exceeding 65, 75, and 85 dB SEL_r at Representative Culturally-Sensitive Locations[1] Under PRTC Under Baseline Conditions and Modified Alternative C

ID#	*General Description* [1]	*Baseline Airspace*	*Baseline # Events Per Day Exceeding*			*Proposed Airspace*	*Proposed # Events Per Day Exceeding*		
			65 dB SEL	*75 dB SEL*	*85 dB SEL*		*65 dB SEL*	*75 dB SEL*	*85 dB SEL*
1	Inyan Kara Mountain	Gateway ATCAA	0.4	0.1	<0.1	Gateway West ATCAA	0.3	0.1	<0.1
2	Devils Tower National Monument [2]	Gateway ATCAA	0.4	0.1	<0.1	Gateway West ATCAA	0.5	0.2	<0.1
3	Little Bighorn Battlefield National Monument [3]	None	n/a	n/a	n/a	PR-1C MOA/ATCAA	0.2	0.1	<0.1
4	Bear Butte	None	n/a	n/a	n/a	Gateway West ATCAA	0.3	0.1	<0.1
13	Crow Reservation (Crow Agency, MT)	None	n/a	n/a	n/a	PR-1C MOA/ATCAA	0.1	0.1	<0.1
14	Northern Cheyenne Reservation (Lame Deer, MT)	None	n/a	n/a	n/a	PR-1D MOA/ATCAA	0.3	0.2	<0.1
15	Standing Rock Indian Reservation	None	n/a	n/a	n/a	PR-4 ATCAA	0.4	0.2	<0.1
16	Cheyenne River Reservation	None	n/a	n/a	n/a	PR-4 ATCAA	0.4	0.2	<0.1

Note: 1. Because several of the listed noise-sensitive areas are very large, locations were selected from within the designated areas that are near the center of proposed airspace units.
2. Devils Tower National Monument published aircraft avoidance area is 5 NM horizontally and 18,000 feet AGL
3. Little Bighorn Battlefield National Monument published aircraft avoidance area is 0.75 NM horizontally and 2,000 feet AGL. (For Modified Alternative C, the avoidance area would be 5,000 feet AGL.)

Essentially as described for Modified Alternative A, altitude restrictions, avoidance areas and other stipulations in the Programmatic Agreement, as well as mitigations included in Section 2.3.1, would be applied to resolve potential adverse effects on historic properties and other cultural resources for Modified Alternative C also. The temporary and seasonal avoidance areas and process to modify the avoidance area established by the Air Force through the Programmatic Agreement will remain in force, and the Air Force will continue consultation with the consulting parties.

Native American Concerns and Environmental Consequences

Portions of the Crow, Cheyenne River, and Standing Rock Reservations are under the Modified Alternative C airspace and the Northern Cheyenne Reservation is entirely under the proposed MOA airspace for Modified Alternative C. Government-to-Government consultations identified the concerns described under Modified Alternative A. Part of the consultation process included the 28 BW working with the tribes to identify periods and locations of avoidance to reduce noise and visual impacts on religious ceremonies for all tribes potentially affected by overflight of training aircraft. In addition to traditional cultural properties, cultural landscapes, archaeological sites, and natural sites (such as rivers) are all locations where religious ceremonies are held.

Many of the mitigations listed in Section 2.3.1 are specifically designed to address Native American concerns and to reduce the potential for environmental consequences to cultural properties and Native American populations. Modified Alternative C does not include any PR-4 MOAs over the Standing Rock or Cheyenne River Reservations. Overflights over these reservations would be above 18,000 feet MSL

(FL180). Modified Alternative C includes a 12,000-foot MSL avoidance area over the Northern Cheyenne Reservation. Modified Alternative C would not include low-altitude overflights at or below 2,000 feet AGL over the Standing Rock, Cheyenne River, or Northern Cheyenne Reservations. Modified Alternative C altitude restrictions over these reservations remove any startle, noise, or uncertainty effects of training aircraft at or below 2,000 feet AGL. Training above 18,000 feet MSL, and other mitigations identified in Section 2.3.1, are designed to reduce or avoid impacts on tribal lands. Overflights above 18,000 feet MSL would not be expected to adversely affect land uses or diminish the qualities of traditional cultural properties that make them eligible for listing in the NRHP.

Overflights above 12,000 feet MSL over the Northern Cheyenne Reservation could have visual (see Section 4.7.2.1) and noise (see Section 4.2.3.1.5) effects to tribal ceremonies. As required by the Programmatic Agreement and explained in Section 2.3.1, the Air Force is committed to continued Government-to-Government consultations to address tribal concerns and identify reasonable avoidance areas for tribal ceremonies. Individual ceremonies could still be affected by training aircraft overflight. Overflights above 12,000 feet MSL would not be expected to adversely affect land uses or diminish the qualities of traditional cultural properties that make them eligible for listing on the NRHP (see Sections 4.7.2.1 and 4.7.2.2).

Portions of the Crow Reservation under the PR-1A, PR-1C and PR-1D Low MOAs would be overflown at low altitude at or below 2,000 feet AGL an estimated average of 6 to 9 times per year. Some mitigations identified in Section 2.3.1, such as the daily avoidance of the designated area of the Little Bighorn Battlefield National Monument site and coordination to identify and avoid locations and times sensitive for Crow Tribe ceremonies, would have the potential to address and resolve effects to cultural and tribal resources from infrequent low-level overflights at or below 2,000 feet AGL. If such a low-level overflight were experienced by an observer, the overflight could adversely affect the character and feeling associated with an historic property or the experience of a tribal member during a ceremony. Although the low-level overflights could be perceived as an adverse effect by an individual, mitigation measures identified in the Programmatic Agreement will resolve potential adverse effects on the Crow Reservation under NHPA and 36 CFR 800.6(b)(2).

Additional altitude restrictions, avoidance areas and other measures stipulated in the Programmatic Agreement (see Section 4.7.2.4 and Appendix N), as described for Modified Alternative A, would be applied to Modified Alternative C. These measures are designed to avoid, minimize, or mitigate potential adverse effects on resources of concern to the tribes. The Air Force has reasonably determined per 36 CFR 800.5(b), in light of its consultations, that modifying the undertaking and adopting mitigations as described in the Programmatic Agreement (refer to Appendix N) would avoid potential adverse effects to historic and traditional cultural properties on the Northern Cheyenne, Standing Rock, and Cheyenne River reservations. The Air Force values its relationship with all tribes, and will continue to consult on the PRTC action as well as other matters of known or potential interest to tribes.

4.7.3.4 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, there would be no changes in airspace activities within the existing Powder River airspace and the PRTC would not be established. There would be no change in visual or noise intrusions which currently occur to existing properties listed in Table 3.7-2 and summarized in Table 4.7-9. No Native American Reservations are located under the existing Powder River A or B MOAs.

Aircraft would continue to fly over these areas and avoidance procedures in effect would continue. The No-Action Alternative would result in no changes to cultural resources.

Table 4.7-9. Cultural Resources Under No-Action Alternative Affected Airspace

Resource Type	*Total Number of Resources*[1]	*WY*	*MT*	*ND*	*SD*
NRHP Listed Sites	96	12	0	0	84
National Monument	1	1	0	0	0
Ghost Towns	14	3	0	0	11
Historic Ranches	11	1	0	0	10
Historic Trails	1	1	0	0	0
Traditional Cultural Properties	5	4	1	0	0
Cultural Landscapes	0	0	0	0	0
National Historic Landmarks	2	0	0	0	2
State Register	2	0	0	0	2

Note: 1. Some resources are counted in more than one category.

4.8 LAND USE

4.8.1 *METHODOLOGY*

During the EIS process participants from many rural areas explained that they consider visual and noise qualities important to that use of the land. Of particular concern to some reviewers was the possibility of sudden overflights or sonic booms at any time and the potential effect of such training activities. Project-relevant land use values fall under the broad categories of regional landscape character and land uses including ranching, farming, recreation, and the experience of rural communities.

Land use and recreational resources are evaluated to determine if any proposed project activity would preclude or alter the suitability of an area for ongoing or intended land uses. In general, land use impacts would occur if project activities were (1) inconsistent or noncompliant with applicable land use plans and policies, (2) preventing or displacing continued use or occupation of an area or severely diminishing its attributes for ongoing uses, or (3) incompatible with affected areas to the extent that public health or safety is threatened.

Recreation resources would be affected if there were a change in access or availability of recreation sites or activities, or a change in the qualities of an area and thereby reducing the recreational opportunities.

The proposed PRTC would not place restrictions on land use. Any restrictions on towers or tall structures would be established by local agencies and the FAA (see Section 3.3.3.2). Noise from aircraft operations is the primary source of impact on land use and recreation. The following factors are considered in evaluating noise impacts on land use.

4.8.2 *ISSUES AND CONCERNS*

General issues for land use and recreation expressed during the EIS process include:

- Potential effects from aircraft noise and, during LFEs, sonic booms (particularly on small residential communities and rural quiet of isolated residences, ranching operations, tourism, hunting and fishing, and other livelihoods) and non-commercial recreational pursuits (see also Section 4.2).

- Potential for the proposal to displace existing or planned land uses, or to significantly alter or degrade conditions that are intrinsic to the viability of current and planned uses.
- Changes or disruption to aviation access (see also Sections 4.1 and 4.9).
- Potential effects of noise on wildlife to have indirect effects on hunting (see also Section 4.6).
- Potential effects on ranching and agriculture from flare-caused fires (see also Sections 4.3 and 4.6).
- Potential effects on ranching viability from cattle ingestion of chaff (see also Section 4.6).

Specific issues for land use and recreation identified early in the EIS process:

- Potential incompatibility between current wind farm operations and anticipated development with low-level flights and chaff (see also Sections 4.1, 4.3, 4.9 and 5.0).
- Effects on hunting, specifically on sage grouse (see also Section 4.6).
- Effects of aircraft noise on quiet rural areas and life style (see also Section 4.2).
- Effect of noise and startle effects on recreational quality and opportunity in Custer National Forest, Little Bighorn Battlefield National Monument, or Devils Tower National Monument (see also Section 4.7).
- Effects of noise and startle effects on ranching operations, particularly, seasonal calving, calf weaning, and roundup (see also Sections 4.2 and 4.9).
- Impacts of low-level flight and startling noise on persons living under affected airspace (see also Sections 4.2 and 4.7).
- Interference with sleep of night-shift workers who sleep during the day (see also Section 4.2).
- Potential occupational, personal, and recreational safety concerns when animals react to sudden onset noise low-level flight operations and supersonic events (for example, cattle stampeding or running into fencing, horses throwing riders or bolting) (see also Sections 4.2, 4.3, and 4.9).
- Effects on private general aviation operations and on the activities and occupations of the residents (see also Sections 4.1 and 4.9).
- Potential incompatibility between low-level operations with recreational flying, such as sky divers, gliders, and parasailing (see also Section 4.1).
- Potential effect of proposed training operations on the ability of counties to implement the goals and objectives of their land use plans.
- Potential impacts on crop farming of the U.S. Department of Agriculture's Conservation Reserve Program.

Issues covered elsewhere in this EIS:

- Flight safety for VFR and IFR air operations for private and commercial purposes; affecting weather modification operations (cloud seeding), crop spraying, and fire suppression throughout the region (see Sections 4.1 and 4.3).
- Effects on property values and disclosure requirements for properties underlying affected airspace (see Section 4.9).

- Potential disruption in weather modification programs in western North Dakota (see Section 4.1).
- Potential for fire safety risks in oil and gas production areas (see Section 4.3).
- Potential effects of noise on wildlife populations (see Sections 4.2 and 4.6).
- Potential effects of noise on domestic animal productivity (see Sections 4.2 and 4.6).
- Potential safety risk from dud flares igniting due to ground disturbing activity (e.g., plowing, excavations for construction) (see Section 4.3).
- Potential safety risks from wake turbulence on civilian aircraft (see also Section 4.3).
- Potential safety issues from sonic booms or other impulse noise on sensitive electronic equipment at power plants and coal mines (Colstrip, MT) (see Section 4.3).

As a result of public and agency review comments on the original Air Force proposed action, the Air Force incorporated a series of mitigations into a revised proposal. Mitigation measures, summarized in Section 2.3, are proposed to reduce potential impacts to expressed land use concerns.

4.8.2.1 NOISE EFFECTS ON COMMUNITIES AND RESIDENTIAL LAND USES

Section 4.2 addresses effects of noise on people, including sleep, interference with speech and communicating, and a variety of factors that affect health, and social and economic functions. These intrusions contribute to annoyance. The Air Force revised proposal has specified published times of use to be morning and afternoon-evening hours on Monday through Thursday and Friday morning hours. This would provide information to individuals desiring to know when a low-level overflight could occur. As described in Section 4.2, studies have correlated average noise levels with community annoyance as a percentage of the affected population (see 14 CFR part 150, Table 1; FAA Order 1050.1E, App. A, p. A-15). Using this information, several agencies adopted guidelines with 65 DNL as a criterion for compatibility with residential land uses. Some commenters during the EIS process noted that more sporadic noise exposure may cause greater annoyance due to the unpredictability of the overflights. There has been some investigation to determine if dose/response data on annoyance developed in urban contexts is generally similar in rural environments (Air Force 1992). The majority of these studies have been done in conjunction with sightseeing overflights of National Parks. Typically, rural environments have low ambient noise levels, and an average of 6 to 9 low-level overflights per year or the not more than 10 days per year when LFEs with a sonic boom could introduce momentary disruption between the ambient sound and the incidental noise event. A low ambient noise combined with a short, high noise could heighten the reaction of individuals to noise.

Aircraft low-level overflights, noise, and chaff or flare residual materials could be annoying intrusions, but are not likely to change any land uses under the proposed airspace.

The amount of change in noise level is another way to evaluate impact of noise more broadly over a large area. While human perception of, and reaction to, noise can vary, in general, most people can detect a 3 dB change. Even below 65 DNL, a 3 dB change can be perceived as a degradation of the noise environment (Federal Interagency Committee on Noise 1992).

Startle effects are experienced when a loud noise occurs in a context where not expected and when there is no visible or audible warning. Low-flying military aircraft and sonic booms can startle humans and animals. Unpredictability of flight operations in MOAs may "increase people's annoyance because they do not know when the overflights will occur, making affected persons even more prone to 'startle effects'" (Air Force 1992). Startle effects to animals can affect ranching operations; for example, cattle could stampede if startled during specific ranching operations such as calf weaning and branding.

4.8.2.2 NOISE EFFECTS ON RECREATIONAL LAND USE

Reactions to noise in recreational settings vary. A study by the USFS found that visitors to wilderness areas did not generally notice high-altitude aircraft noise intrusions, although, startle effects from low-flying high-speed aircraft were noticed and reported as annoying by some visitors (USFS 1992). Visitors varied on whether aircraft overflights were a positive or detrimental factor to their outdoor experience. Recreational opportunity is classified by the BLM as a combination of the type of challenge provided, in part based on the degree of isolation and remoteness. Quiet and naturalness is an intrinsic part of some recreational experiences. Changes to quiet settings could constitute an effect on the range of recreational opportunities in an area or region, but would not be expected to change the land use of the area.

During the EIS process, several individuals expressed concern that noise could interfere with hunting activities and have a secondary effect on motels and restaurants. During the expected 10 annual days of LFEs any area under the airspace could experience approximately one sonic boom per day. During regular training there could be a low-level overflight of a military aircraft at 2,000 feet AGL or below calculated at an average for any given location of 6 to 9 times per year. If such an event occurred at exactly the time a hunter was preparing to shoot, it is possible for an animal to be startled. Should such a noise cause the hunter to miss an opportunity, the hunter would likely be annoyed. Some animals or birds (such as pheasants and sage grouse) may be susceptible to noise and scatter when a sudden loud noise occurs. Also, a sudden noise can be undesirable for the quality of the outdoor experience to some hunters. While these isolated events can happen, behavior of game animals and their reproduction and populations are not significantly affected by noise (see Section 4.6). Hunting is a viable local land use under the existing Powder River airspace in Wyoming, Montana, and South Dakota and in other parts of the U.S. where low flying military overflights occur. The fact that hunting can and does coexist with infrequent and random low-level overflights does not reduce the perceived significance of the impact to residents or visitors under the proposed PRTC.

Startle effects could affect other recreation. Startle effects could cause a safety risk for rock climbers or other physically challenging tasks requiring a high degree of concentration. The wide distribution of low-level overflight, the fact that such overflight would not normally be scheduled from Friday noon through the weekend, the premier rock climbing locations under the ATCAAs as opposed to under the MOAs, and the scheduling of day-to-day training and the advance publication of LFE dates when supersonic events could be anticipated all contribute to a low possibility of overflight or sonic boom impacts on recreational land uses.

4.8.2.3 AIRCRAFT NOISE AND LAND USE

The primary impact of sonic booms or low-level overflight on human populations would be annoyance. In response to concerns expressed early in the EIS process, the Air Force revised the aeronautical proposal to schedule supersonic training only during an LFE of 1 to 3 days per quarter for not more than 10 days per year to reduce the uncertainty of the sonic boom occurrence. A calculated average total of 6 sonic booms could be experienced toward the center of the airspace during the 10 annual days of

LFEs. For the purpose of this EIS, this number is rounded up to approximately one sonic boom experienced at any given location associated with the airspace per LFE training day. Sonic booms may be experienced as a loud crack-crack or be heard as distant, low, rolling thunder.

There are few studies that can help predict annoyance or land use effects from sonic booms. Sonic boom noise may combine with noise exposure from other sources (including subsonic aircraft noise) to cause annoyance. Humans tend to respond to the high frequency sounds in a sonic boom, while structures tend to respond to the low frequencies which cause shaking. Shaking can have a visible and audible component that can be disturbing to persons, and can cause physical damage (such as broken household items) as described in Section 4.2. Most community annoyance is experienced within the primary boom envelope from short duration, high overpressure booms. Guidelines correlate C-weighted measurements of impulsive noise (CDNL) with community annoyance and result in equivalents to A-weighted standards for compatibility. A 65 DNL equates to about 60 CDNL as a guideline for residential compatibility. The projected CDNL in the main areas subject to sonic booms is calculated to be less than 38 dBC. This is below any level of quantified impact (see Section 4.2).

Low-level overflights, like other sudden unexpected sounds, can startle and disturb sleep. Similar effects on recreational experiences could occur as low-level aircraft operations are experienced. Table 4.9-3 provides the calculated frequency of low-level overflights for all the modified alternatives. Low-level overflight (2,000 feet AGL or below) by a training aircraft within one-quarter mile of any particular location could occur on average 6 to 9 times per year, although any specific area could be overflown more or less frequently. Infrequent low-level overflights or infrequent sonic booms would not be expected to change land use, but they could be annoying to individuals who experienced the startle event.

4.8.3 *ENVIRONMENTAL CONSEQUENCES*

4.8.3.1 MODIFIED ALTERNATIVE A – THE PROPOSED ACTION

Modified Alternative A includes (1) modification to existing MOA/ATCAA airspace, (2) creation of new airspace consisting of MOA/ATCAA, (3) authorization for supersonic operations during LFEs (not more than 10 days per year) in the new and existing airspace above 10,000 feet AGL for transient fighters and above 20,000 feet MSL for B-1s, and (4) authorization for defensive chaff and flare use in new and modified airspace.

LAND USE UNDER EXISTING AIRSPACE

For more than 20 years, land under the existing Powder River airspace has been overflown by a variety military aircraft, mostly operating out of Ellsworth AFB, but also from other regional military installations. Currently, the areas underlying the existing Powder River airspace experience an average of about 1,300 sorties per year (Table 2.5-4). The Powder River airspace overlies mostly private land in Montana and mostly federal land in Wyoming, including portions of the Thunder Basin Grassland and Black Hills National Forest. The land under the Powder River airspace is primarily rangeland with a small amount of forest.

The existing Powder River airspace includes active coal, oil, and gas production areas. The operations and maintenance associated with resource extraction fields brings daily noise associated with vehicles, trucks, and other equipment. Oil and gas well sites frequently have continuous noise from pumps and generators. Noise is localized around well and distribution facility sites. In some of the forest areas, timber harvesting equipment generates intermittent noise, also in localized areas in the ROI. Noise from

all of these activities is either intermittent and/or localized. The background noise level of the natural surroundings prevails in most locations of the ROI.

Average noise levels in the existing Powder River MOAs of approximately 49 dB DNL could decrease imperceptibly to 47 dB DNL in the modified PR-2 MOA/ATCAA as training aircraft were distributed throughout the proposed PRTC. Existing land uses have become compatible with the military flight training. DNL would not reach levels which would affect land use compatibility as noted in Appendix I, Table I-4.

The Air Force has established operating procedures to avoid low altitude overflight of specific land use locations considered to be sensitive to aircraft noise or otherwise require avoidance of aircraft overflights. The types of locations addressed by these special operating procedures include residences, ranches, private and commercial airstrips, communication towers, and communities. In some cases procedures include seasonal adjustments to avoid specific sensitive times such as cattle calving and branding operations.

The Bighorn Battlefield memorializes the U.S. Army's 7th Cavalry and the Sioux and Cheyenne in one of the Indians last armed efforts to preserve their way of life.

Concerns were raised during the EIS process about specific activities including current and anticipated land uses for wind turbine sites and development, communication towers, and other tall objects. The proposed PRTC would not change the use of public or private land. Any existing or new tall structures, such as wind energy generators or communication towers, would be charted by the FAA on sectional aeronautical charts and avoided by aircraft. These guidelines would continue to apply and would not be altered by the proposed PRTC. Larger communities would have a 1,000-foot vertical avoidance above the highest obstruction and a radius of 2,000 feet (14 CFR Part 91.119). The existing 5 NM avoidance of Devils Tower National Monument, which is under an ATCAA, would continue in effect. In general, most productive land uses are compatible with training operations at or above 500 feet, particularly with coordination during the planning of new proposals, or coordination for special avoidance of particular activities (such as calving and branding times for ranchers), crop dusting, or events such as the annual Sturgis Biking convention.

LAND USE UNDER PROPOSED PRTC

The proposed PRTC would enlarge the footprint of land under military training airspace from the existing Powder River airspace. Table 4.9-2 presents airspace-specific areas overflown. A similar spectrum of land uses occurs on areas underlying the Powder River airspace as under the proposed PRTC described in Section 3.8. The PR-1A/B/C/D, PR-3, PR-4 MOA/ATCAAs, and associated Gap MOA/ATCAAs overlie a combination of tribal, public and private land uses, including large areas of national forest and grasslands. The Little Bighorn Battlefield National Monument is under the PR-1A MOA. Cattle ranching, dispersed recreation and hunting, and other resource productive uses, are the predominant land uses.

The Grand River National Grasslands are part of the Dakota Prairie Grasslands and are publicly owned lands administered by the USDA USFS.

Residents mostly live in small, widely separated, communities, with scattered individual homes and farms and a few larger communities. Public concerns for land use included the potential

impact of noise from low-level overflight and supersonic flight on existing land uses. Noise can cause individual annoyance, and it can cause sleep disturbance and interference in communication. Noise under the MOAs would go from ambient levels of below 45 dB DNL to an aircraft calculated 45 to 48 DNL_{mr} under the PR-1A/B/C/D, PR-3, and PR-4 MOAs. These projected noise levels are compatible with land uses listed under existing compatibility guidelines used by the FAA or the DoD (see Appendix I). The FAA recognizes that there are settings where the 65 dB DNL standard may not apply. Special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within national parks, national wildlife refuges, and historic site, including traditional cultural properties. See Section 4.7 for specific discussion of noise impacts on cultural properties. The projected DNL levels are below the 55 dB DNL_{mr} identified by USEPA as being protective of public health and welfare (USEPA 1974). There would not be a noticeable change from existing conditions under ATCAAs not associated with MOAs except for infrequent sonic booms during LFEs.

Modified Alternative A would have an average of one sonic boom experienced at any given location under the airspace each day during the 1 to 3 days of quarterly LFEs (for a total of not more 10 days per year). The Proposed Action would not change general land use patterns, ownership, land management or activities in these areas. Under Modified Alternative A, about 513 projected overflights by individual aircraft operating in low altitude MOAs (under 2,000 feet AGL) may cause single events as loud as about 130 dB SEL (for a B-1 at 500 feet AGL). Given the size of the proposed airspace, overflight of any particular location would be sporadic and is estimated to be, on average, 6 to 9 times per year, although any given location could experience more or less low-level overflights than average. Approximately 2 to 4 percent of the land areas under the activated MOAs would be overflown each training day within one-quarter mile by a military aircraft 2,000 feet AGL or below (see Section 4.9.3.1.5).

Low-level overflights from fast-moving military aircraft can startle persons or animals on the ground and have caused animals, especially penned ranch animals, to stampede or bolt. While proposed military operations represent a change for areas not under the PRTC, existing areas under the Powder River airspace and other areas in the western U.S. have supported and sustained ranching and other livestock land uses with military operations for decades. This indicates that military training and ranching are not intrinsically incompatible. Intermittent noise startle events would not change the basic suitability of the current land uses.

Ellsworth AFB has and would continue to work with noise sensitive land uses such as residences, ranches, farms, and communities to identify avoidance areas and reduce noise levels of single event overflights. Public concerns were expressed about the effects of aircraft noise on ranching land uses, particularly when calves are weaned in the spring and being handled in confined areas, such as being corralled in the fall. The Air Force, with information from ranchers, has identified seasonal low-level overflight restrictions at selected locations under the existing Powder River airspace. Comparable restrictions would be briefed to pilots when the Air Force was made aware of the need for land use avoidance areas under the proposed PRTC.

Agriculture and ranching land uses in the region are supported by aviation activities such as crop and herd monitoring and cloud seeding programs. Fire suppression and general aviation operations also regularly occur. To some degree, the economic activity of commercial land uses relies on aviation activities. Early in the EIS process, it was noted that aviation is used for routine access by ranchers to aid in efficient operations. Avoidance of specific locations, scheduled MOA activation, and stacking of MOAs so that ATC could support IFR traffic are part of the Air Force's revised proposal to reduce potential impacts of the proposed PRTC on commercial operations that are important to regional land uses. Issuing a NOTAM at least 2 hours in advance of activating a Low MOA (see Section 4.1.2.2) and coordination with military operators can help with deconfliction of low-level training when crop dusting activities are scheduled.

Operations that are less flexible and more intensive, such as firefighting, could require real-time deconfliction (including temporary altitude limits or relocation of training military aircraft) to ensure safety. Potential issues of flight safety for these operations are addressed in Sections 4.1, *Airspace/Air Traffic* and 4.3, *Safety*. Low-altitude agricultural applications could be affected by a low-altitude flight of a military training aircraft. Most general aviation could continue using "see-and-avoid" procedures in an active MOA.

A concern noted by participants in the EIS process was the potential incompatibility of low-level flight with land dedicated to wind farms due to the height and electromagnetic emissions of the wind turbines. With industry interest and incentives to develop wind energy in portions of the proposed PRTC area, future development is likely to continue in underlying areas. Like other tall structures, existing and future structures must be officially charted with the FAA and avoided by appropriate vertical and lateral distances. As a precaution for proposed night operations and other commercial and private flight, tall structures are required to have lights that warn of their presence. Overflights at altitudes would avoid the physical structure and electromagnetic emissions of wind turbines. The Proposed Action would not inhibit the development of future wind farms or other industrial land uses.

Implementation of the proposed PRTC would not conflict with ongoing and future implementation of County plans and other federal resource management agency plans. Notwithstanding, communication and coordination between Ellsworth AFB planners, county planners and commissioners, and energy developers on the siting and approval of new projects is recommended so that future incompatible situations can be factored into siting decisions. Most compatibility issues are surmountable through engineering design and mutually-compatible siting solutions. Some locations elsewhere in the United States with similar concerns are developing regional and local review processes that engage the military in early risk assessment of energy development and infrastructure proposals (or management plans) as a means to identify alternatives that provide for the broadest range of stakeholder satisfaction.

Public concern was expressed that residential land uses could be impacted by late aircraft overflights after 10 p.m. with the potential to disturb sleep, depending on the location and sound exposure level of particular events. Under current (and proposed) operations, night flying in the PRTC would not occur after midnight, since the home airfields are not active after 12:30 a.m. Isolated incidents that disturb sleep may occur. The percentage of operations projected for after 10 p.m. (about 17 percent) and the dispersion of these operations over the PRTC, would result in an average of less than one after 10 p.m. low-level overflight below 2,000 feet AGL per year at any given location throughout the airspace, although specific locations could experience more or fewer overflights. Such disturbance would not be expected to regularly cause disruption to sleep patterns or otherwise impact residential land uses (see Section 4.2).

Rural residents of the area expressed concern with potential changes in the peace and quiet that is part of the regional land use. Overall, average noise levels in the PRTC would increase from below 45 dB DNL_{mr} to an aircraft-calculated DNL_{mr} of 47 dB. Average noise would remain below the 55 dB DNL, the threshold established by USEPA below which adverse impacts would not be expected to occur (USEPA 1974). Low-level overflights and infrequent sonic booms during LFEs may result in annoyance and could lessen an experience of recreation. Low-level overflight (2,000 feet AGL or below) within one-quarter mile of any particular location by a training aircraft would average 6 to 9 times a year although specific areas could be overflown more or less frequently. The suddenness and unpredictability of infrequent overflights during scheduled MOA activation and an average of one sonic boom per day during the not more than 10 days of LFEs per year could be seen as an impact to local land uses by some persons.

Recreational activities such as four-wheeling, horseback riding, fishing, hunting, hiking, and climbing typically occur in remote landscapes, including national grasslands, where the primary noise sources are

either natural or from recreational activities. Sudden and intense noise could result in disruptions to the expected dominant land use. Reactions vary depending upon individual expectations and the context in which aircraft-caused noise occurs. These incidences are not likely to be persistent and would have only temporary impacts on any given experience. These events are not expected to change visitor habits or recreational land uses overall, but such intermittent overflight could be annoying to some residents and visitors.

Public lands and private lands support recreation, camping, off-road vehicle activities, and hunting. Highly valued or frequently visited special recreation areas or developed sites can be identified. Table 3.8-4 identifies some of the larger areas and important recreational attractions with special status under the proposed PRTC (such as the Little Bighorn Battlefield National Monument, several national and state wildlife areas, recreation areas and parks). Many people enjoy recreational activities during the weekend, and military flight training is scheduled in morning and late afternoons on weekdays, so there would normally be no effect on weekend recreation activities. Under Modified Alternative A, portions of special use areas under PR-4 (see Table 3.8-4) would experience little appreciable change in noise due to the 12,000 feet AGL minimum altitude of the MOA.

Hunting is an important land use. Effects on wildlife would be imperceptible and game populations would not be affected. A low overflight could startle an animal or hunter and possibly result in a less successful hunt, but the likelihood is very low. If such an event occurred, the hunter would likely be annoyed. The overall behavior of game animals would not be expected to change from infrequent startle effects that hunting would be impacted. Based on experience under the existing Powder River A and B MOAs, it is unlikely that hunters would modify or cease their hunting activities as a result of any action alternative.

Other recreational pursuits were identified during public meetings, with concerns that they may be incompatible with low-level military aircraft operations. Recreational aviation, parasailing, and paragliding operate in the lower altitude strata of the proposed low-level MOAs. This would not be a concern with areas underlying PR-4 over South and North Dakota because of the higher minimum altitude of the MOA. The Air Force would provide published times of use for training missions in MOAs and would issue a NOTAM for MOA activation even during published times of use. The public would have access to information about low-level MOA activation during published times of use and/or NOTAMs available to the public via https://pilotweb.nas.faa.gov. Local recreationists would be able to learn about MOA activation. This would help define the time when civil aviation operations may either select to not fly or fly using "see and avoid" procedures. Military training would normally not be scheduled after noon on Friday to Monday morning. Scheduling would result in an inherent deconfliction with weekend recreation. The proposed PRTC would not change the use of public or private land.

Land uses on tribal lands underlying the proposed PR-1A/B/C/D, and PR-4 MOAs are similar to the land uses on surrounding lands. Effects on persons and uses would be similar to those described above. Specific sensitive uses and activities on tribal lands are addressed in Section 4.7.

SUPERSONIC OPERATIONS AND AIRCRAFT NOISE

Under this alternative the number of supersonic flights in areas underlying the proposed PRTC would go from none to approximately one per LFE day toward the center of the airspace during the 1 to 3 days quarterly when an LFE was scheduled. This means that for 1 to 3 days per quarter, not to exceed 10 days per year, individuals at any given location associated with the MOAs and ATCAAs could experience an average of one sonic boom per day. Most proposed MOA/ATCAA areas would experience a total number of about 1 to 6 booms per year, with the centroid of operations occurring under PR-2 and Gap B MOAs. The sound of booms could vary from distant thunder to a loud double crack. The primary effect

on humans is annoyance, startle effects, and sleep disturbance, particularly at locations near the center of the boom energy. Although infrequent sonic booms would not cause hearing or health impairment, even infrequent sonic booms can be annoying. The schedule for LFEs would be provided to local news media by Ellsworth Public Affairs so that residents and visitors could be aware of the LFE training activity and the potential for sonic booms.

Even very infrequent sonic booms may cause annoyance for land uses and activities where quiet is desirable, such as dispersed outdoor recreation including hiking and hunting. Because of their infrequency, sonic booms may be startling but should have a minimal effect on the overall quality of recreational opportunities or experiences. LFE training and associated supersonic events would not be expected to occur on weekends when more people are recreating.

Sonic booms produce results similar to those of low-level, high speed subsonic aircraft operations and can startle livestock, especially if accompanied by a visual cue, and cause them to stampede or disperse. This could reduce ranching efficiency and result in accidents. A sonic boom is affected by aircraft speed, aircraft altitude, aircraft attitude, and meteorological conditions. There is no way for a specific location to avoid experiencing a sonic boom if aircraft are performing supersonic maneuvers in an overlying, or even nearby, MOA or ATCAA. Cattle reproduction, weight gain, or milk production should not experience any appreciable declines from an estimated one sonic boom for 1 to 3 days per quarter, not to exceed 10 days per year. Effects of sonic booms would not be common, but due to the large area over which sonic boom sounds propagate, avoidance of specific underlying locations and activity is not a feasible method to reduce impacts. For example, if a noise-sensitive ranching activity was underway during an LFE, a sonic boom may occur, depending on weather conditions and aircraft operating factors. Communication of LFE schedules well in advance can help residents plan and avoid performing conflicting land use activities when LFEs could result in sonic booms. Advanced warning of potential sonic booms also allows people to anticipate disturbance, which tends to reduce annoyance and disruptions.

Vibrations from infrequent sonic booms during LFEs can cause indoor items such as bric-a-brac, plates, and dishes to rattle. Items on ledges could fall and break. This may be disconcerting for home dwellers but would not impact land use. In rare instances, sonic booms can cause windows to break or otherwise damage structures (see Section 4.2). The Air Force has a standard process for parties seeking compensation for specific damages caused by training operations. Sonic booms during LFEs, while annoying, would not be expected to change any land use under the proposed airspace.

CHAFF, FLARES, AND LAND USE

The proposed use of chaff and flares in PRTC represents a new activity. Modern chaff is comprised of silica and aluminum, the two most common elements in soil. Chaff is not toxic in the environment and would not harm crops or rangeland (Air Force 1997a). The effects of chaff on cattle and domestic livestock are addressed in Section 4.6. Domestic animals avoid ingesting chaff or clumps of chaff fibers (Air Force 1997a). Chaff fibers are very small, disperse and break down quickly, and do not affect ground activities or land uses. Chaff would not be deployed within 60 miles of ATC radars to reduce any possibility of chaff affecting ATC.

One public concern for range land use is any potential for flare-caused fires. Fire can damage crops, rangelands, timber, and/or ranch or other infrastructure. National grasslands, forests, and agricultural areas under the airspace are vulnerable to fire. The effect of fire in ecological systems is addressed in Section 4.6. Altitude restrictions on flare release above 2,000 feet AGL are designed to have flares burn out a minimum of 1,500 feet above the ground surface. Flare use would be discontinued in a MOA where an extreme fire danger existed. The possibility of a flare-caused fire is remote. There is an

extremely remote possibility that a dud flare could fall to the ground under the training airspace. A dud flare would require a heat source in excess of 400°F to cause it to ignite and would not be expected to ignite if run over by farm equipment. Locating a dud flare on the ground would be extremely remote. An estimated one dud flare in three years would be expected to reach the ground somewhere under the entire proposed PRTC airspace. As noted in Section 4.3, *Safety*, a dud flare should not be handled and safety personnel should be notified in the extremely unlikely event that a dud flare was found. Safety risks from flares are addressed in Section 4.3. These remote risks would not affect land uses in the region.

During release, defensive chaff and flares deposit residual materials in the ground. Such residual materials consist of wrappers and plastic or felt caps which are small and widely dispersed. At the rate of use described in Section 2.5, an estimated chaff or flare residual plastic, paper, or wrapper piece would be deposited an average of one piece per 149 acres per year. An estimated average of 0.0049 ounce per acre of chaff would be deposited annually. The visibility or effect of this plastic, felt, or wrapping material would be negligible given the patterns of human activity in the underlying areas. Residual materials, if found and identified, could be seen as an annoyance by a rancher, recreationist, or other persons finding the materials.

Overall, chaff and flare use, given altitude restrictions proposed and the distribution of use, would not be expected to impact land use.

4.8.3.2 Modified Alternative B

Modified Alternative B does not include the PR-1A/B/C/D and associated Gap A MOAs. This results in no low-level overflights over sensitive land uses under PR-1A, PR-1B, PR-1C, or PR-1D. The PR-1A/B/C/D ATCAAs would have a minimum operating altitude of 18,000 feet MSL. The Modified Alternative B PR-4 Low MOA would have a floor of 500 feet AGL.

Modification to Powder River Airspace

Effects on modifications to existing airspace would be the same as described for Modified Alternative A.

Establishment of the PRTC Airspace

Modified Alternative B would have similar effects as described for Modified Alternative A, except that lands underlying PR-1A/B/C/D MOAs would not experience low-altitude overflights and areas under PR-4 Low MOA would experience low-altitude overflights.

Areas under PR-1 A/B/C/D, which include the Northern Cheyenne Reservation, portions of the Crow Indian Reservation, the Little Bighorn Battlefield National Monument, and other sites, would experience minimal noise from training operations operating above 18,000 feet MSL. The predicted average noise level would be similar to current ambient conditions. The projected average number of events exceeding SEL of 65 dB in Modified Alternative B airspace would be as described for Modified Alternative A. Table 4.9-1, Table 4.9-2, and Table 4.9-3 provide overflight areas and calculated overflight frequency for the Modified Alternative B. The potential for loud startling events would be unlikely under the PR-1A/B/C/D ATCAAs. Recreational activities in portions of Thunder Basin National Grassland and Black Hills and Custer National Forests would not experience low-level overflights under Modified Alternative B. Potential impacts to residential land uses on the Crow and Northern Cheyenne Reservations would be lower under Modified Alternative B than under Modified Alternative A or Modified Alternative C where low-level MOAs overfly residential portions of the reservations (see Section 4.7).

Residential uses in small communities under PR-4 Low MOA along Highway 21 in North Dakota (including Mott, Elgin, and Carson), Hettinger on US 12, Bison, Meadow, Lodgepole, and Lemmon in South Dakota, and portions of the Standing Rock Indian and Cheyenne River Sioux Reservations would experience low-level overflights. Assuming random overflight, Table 4.9-3 shows an estimated 4 to 7 low-level overflights annually (at 2,000 feet AGL or below) could affect any given location underlying PR-4. Average noise levels of about 46 and 47 DNL_{mr} (see Table 4.2-11) are generally considered compatible with most land uses, even though single events could startle persons doing outdoor activities, particularly when unexpected (see Sections 4.8. 2.1, 4.8.2.2, and 4.8.3.1, *Land Use Under Proposed PRTC*). Areas supporting recreation in this area that may experience infrequent low overflights include Grand River, Cedar River, and Dakota Prairie National Grasslands, Pretty Rock National Wildlife Refuge, several state-managed game production areas, Lake Tschida (reservoir), and three state recreation areas. Predicted noise should have little impact on land use and recreation, although some persons may experience occasional disturbing events.

Noise and land use effects in the remainder of the proposed PRTC would be the same as described for Modified Alternative A in Section 4.8.3.1.

SUPERSONIC OPERATIONS

Supersonic operations would be essentially the same and have the same effects as described for Modified Alternative A. Supersonic events would be slightly less in areas under PR-1A/B/C/D ATCAAs since LFE supersonic fighter operations would be limited to above FL180 over this area. LFE operations in PR-2, PR-3, and PR-4 MOAs and ATCAAs would introduce a small number of supersonic events (occurring above 10,000 feet AGL) in underlying areas. Table 4.2-11 indicates that between 2 to 6 sonic booms could affect underlying areas. Effects would be similar to those described in Section 4.8.2.3 and 4.8.3.1, *Supersonic Operations*, with slightly less intense boom events underlying the PR-1 ATCAA and slightly more intense events affecting small communities (listed above) and special use areas under PR-4 Low MOA. Because of the structure of supersonic airspace under this alternative, the centroid of supersonic operations and effects would shift eastward, focused more under PR-3 and PR-4 MOAs (see Figure 4.2-1).

CHAFF AND FLARE USE

Land use and recreation would experience similar effects from chaff and flare use as described for Modified Alternative A in Section 4.8.3.1, *Chaff and Flare Use*. Modified Alternative B would involve use of chaff and flares in PR-4 Low MOA above 2,000 feet AGL (with no flare use when fire hazards are extreme). Similar effects as described in Section 4.8.3.1 would extend over this area, with minimal impacts to land use and recreation.

4.8.3.3 MODIFIED ALTERNATIVE C

Under Modified Alternative C, the PR-4 and the associated Gap C MOAs would not be established. The PR-4 and Gap C ATCAAs would have a minimum operating altitude of 18,000 feet MSL.

MODIFICATION TO POWDER RIVER AIRSPACE

Effects on modifications to existing airspace would be the same as described for Modified Alternative A.

ESTABLISHMENT OF THE PRTC AIRSPACE

Modified Alternative C effects would be similar to Modified Alternative A described in Sections 4.8.2.1, 4.8.2.2, 4.8.2.3, and 4.8.3.1. Land use impacts under the proposed PR-1A/B/C/D, PR-2, PR-3, and associated Gap MOAs would be as described for Modified Alternative A.

Areas underlying PR-4 MOA or the Gap C MOA would not experience low-altitude overflight. Land use under PR-4, which includes mostly private land in North Dakota and South Dakota and portions of the Standing Rock and Cheyenne River Reservations, would experience a minimal increase in average noise from training aircraft operating above 18,000 feet. The predicted average noise level would be similar to current ambient conditions. The projected average number of low-level events exceeding a SEL of 65 dB in any given airspace would approximately as described for Modified Alternative A, with the exception that there would be no low-level training flights under the PR-4 ATCAA and Gap C ATCAA. Table 4.9-1, Table 4.9-2, and Table 4.9-3 provide overflight areas and calculated overflight frequency for the Modified Alternative C. Recreational activities in portions of Grand River National Grassland and other special use areas under PR-4 listed in Table 3.8-4 would not experience low-level overflights under Modified Alternative C. Water fowl hunting in Grant and Adam Counties, ND, would not be impacted by Modified Alternative C.

Potential impacts to crop dusting operations would be less under either Modified Alternative C or Modified Alternative A than under Modified Alternative B since there would be no low-level overflight below the PR-4 ATCAA where agricultural land uses are prevalent. Agricultural applications and general aviation operations below FL180 would not be affected under the PR-4 ATCAA. Potential impacts to Standing Rock and Cheyenne River tribal areas are less under Modified Alternative C or Modified Alternative A than under Modified Alternative B. Potential impacts to Crow and Northern Cheyenne tribal areas would be as described for Modified Alternative A (see Section 4.7).

Land use effects in the remainder of the proposed PRTC would be the same as described for Modified Alternative A.

SUPERSONIC OPERATIONS

Supersonic operations would be essentially the same and have the same effects as described for Modified Alternative A above. The possibility of supersonic events could be slightly less in areas under the PR-4 ATCAA since LFE supersonic fighter operations would be limited to the AATCAs.

CHAFF AND FLARE USE

Chaff and flare use would be essentially unchanged from the discussion for Modified Alternative A.

4.8.3.4 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, conditions would continue as described for the Powder River airspace. Conditions for land use and recreation would not change.

4.9 SOCIOECONOMICS

4.9.1 *METHODOLOGY*

The socioeconomic impact analysis examines the potential effects of the proposed airspace modifications, low-altitude overflight, supersonic flight, and chaff and flare use on the social and economic resources of the ROI. These social and economic resources are defined in terms of resident population and economic activity. Under the proposed airspace modifications, Air Force personnel and operations and maintenance procedures would not be expected to change from baseline conditions. Potential secondary socioeconomic effects of the action alternatives have been evaluated for airspace use, noise conditions, and fire hazard in the affected area. The potential physical and biological effects of the airspace modifications, changes in use, and chaff and flare use were evaluated to determine their potential impacts on human and livestock populations, economic pursuits, and land values in the ROI.

4.9.2 *ISSUES AND CONCERNS*

Issues and concerns involving socioeconomic resources were identified during the public environmental review process. These concerns are related to economic factors including agricultural and mining industry and development, potential property damages, property values, and restrictions on safe flight by general aviation. Public concern was expressed regarding potential detrimental environmental conditions associated with the proposed airspace modifications that could impact the economy or land values in the affected area. There was concern that noise events or fire hazard could negatively impact agriculture or the recreation industry, including hunting and fishing. Concerns were raised regarding potential hazards to activities associated with oil, gas, and coal extraction and wind power generation. Concerns were expressed that military training use would constrain general aviation flight through the airspace and local airports under the airspace.

4.9.3 *ENVIRONMENTAL CONSEQUENCES*

Based on the issues and concerns noted above, potential socioeconomic impacts were evaluated relative to three elements: (1) modifications in airspace use; (2) noise disturbances from overflights and sonic booms; and (3) flare-caused fire hazard. Other resource analyses in this EIS, specifically airspace management, noise, safety, physical, biological resources, and land use address aspects of these and other issues. This section reviews the potential consequences which may result in social or economic impacts within the region.

4.9.3.1 MODIFIED ALTERNATIVE A – THE PROPOSED ACTION

4.9.3.1.1 *AIRSPACE MODIFICATIONS*

Modified Alternative A expands the existing Powder River airspace by establishing new MOAs and ATCAAs as described in Tables 2-10 and 2-11. Flight activity, in terms of the number of hours flown, would increase under Modified Alternative A with between four and eight training aircraft flying in the proposed airspace. Normally, the proposed PR-1A/B/C/D, PR-2, PR-3, and PR-4 MOAs would be scheduled and announced by NOTAM 2 hours in advance from Monday through Thursday from 7:30 a.m. to 12:00 p.m. local time and again from 6:00 p.m. to 11:30 p.m. The same airspace units would be scheduled and announced by NOTAM 2 hours in advance from 7:30 a.m. to 12:00 p.m. on Fridays. The airspaces could be scheduled at times other than the published times of use, which would be announced by NOTAM 4 hours in advance. Training time would be distributed in a large volume of airspace. Approximately 17 percent of the average daily flight hours would be 2,000 feet AGL or below. For the Modified Alternative A, the 17 percent would not apply to PR-4 because Modified Alternative A does not include a low MOA in PR-4.

Supersonic operations would only be scheduled during LFEs, once per quarter for not more than 10 days per year. B-1 supersonic operations would be limited to 20,000 feet MSL and above. Fighter supersonic operations would be limited to 10,000 feet AGL and above (Table 2.8-1). The social or economic impacts of sonic booms and low-level overflight would be directly related to the frequency, the location, and the intensity of the boom or overflight and the activity beneath the sonic boom or overflight. Section 4.9.3.1.5 discusses sonic boom effects. The infrequent sonic booms and the daily average low-level overflight within one-quarter mile below 2,000 feet AGL of approximately 2 to 4 percent of the airspace each training day would not be expected to affect the regional economy. This analysis is described in more detail in Section 4.9.3.1.5 and in Table 4.9-3.

Defensive countermeasures including chaff and flares would be authorized throughout the airspace. Chaff dispensing would be restricted to 2,000 feet AGL and higher over the existing Belle Fourche ESS.

Flares would be restricted to 2,000 feet AGL and above in training areas and discontinued in a MOA during periods of extreme fire danger as rated by the National Fire Danger Rating System. For additional discussion of these issues, also see Section 4.1, *Airspace and Range Management*, and Section 4.3, *Safety*. Socioeconomic effects of chaff and flare use are discussed in Section 4.9.3.1.6.

Property Values

During the public review process, concerns were expressed that property owners underneath the proposed PRTC MOAs would be required by law to disclose that their property is under a MOA during real estate transactions. According to Wyoming, Montana, North Dakota, and South Dakota state laws, there is no requirement for property owners to disclose military or commercial airspace over their properties. The state of Montana has a law that applies to property in the vicinity of take-off and landing approaches for airports that govern zoning and building restrictions for safety purposes, however, this law applies only to designated "airport affected areas" that are typically within a few miles of an airport (MT Code 67-7-201). The states of Montana and South Dakota have laws that require real estate licensees (such as realtors or real estate brokers) to disclose any knowledge of an "adverse material fact" to potential buyers. The definition of an adverse material fact for each state typically involves disclosing whether past environmental hazards which are required by law to be disclosed (i.e., lead-based paint, asbestos), or factors that present a health risk, or material defect on the property (MT Statute 37-51-102, South Dakota Real Estate License Law 36-21A-125). The state of Wyoming lists specific factors that must be disclosed by real estate licensees including any significant damage to the property from water, fire, or infestation, defects in the structural or utility systems of the property, and the presence of any hazardous or regulated materials (State of WY Senate File SF0158).

There is little to suggest that airspace modifications under the Modified Alternative A would impact land values in the affected area. Interviews with property appraisers in Carter, Custer, and Powder River counties, Montana under the existing Powder River airspace revealed that the existence of the Powder River A or B MOAs is not used in determining the value of a property. The complex nature of property valuation factors makes any estimation of the potential effects of airspace modifications on land values highly speculative. Ranching operations, communities, and private airports all exist and function under the existing Powder River A and B MOAs. Other socioeconomic factors, such as business activity, employment, interest rates, and land scarcity (or availability) are much more likely to affect property values than training airspace. Neither the training flight activity under the existing Powder River airspace nor the training flight activity under the expanded PRTC is expected to affect the value of property under the airspace.

4.9.3.1.2 *Civil Aviation in MOAs*

The proposed PRTC MOAs would not prohibit civil aviation use because MOAs are joint use airspace. While MOAs are active, civil and military pilots operate under VFR see-and-avoid rules. Aircraft flying IFR would incur no undue delay during departure and arrival operations to/from airports beneath the PRTC. Training aircraft would relocate to another MOA to allow IFR arrivals/departures. When the MOAs are inactive, civil pilots will be able to transit the airspace IFR. During public meetings, pilots expressed concern that they did not feel safe within the existing MOAs under see-and-avoid rules and requested improved communications when military training aircraft were in the vicinity. Section 3.1 explains that there is limited communication or radar coverage below FL180 in some of the area. PRTC alternatives do not include any improved communication or tracking systems. The Air Force would not use PR-1A, 1B, 1C, 1D, or PR-3 Low MOAs for Modified Alternative A unless recall capabilities of the training aircraft were in place. The Air Force would notify ATC when entering or leaving an active MOA. Civil pilots

would have to review NOTAMs and communicate with ATC prior to and during a flight in order to learn the activation status of an airspace scheduled for training.

Tables 3.1-3 and 3.1-4 list public airports and private airfields under the proposed PRTC airspace. The facilities, as well as the magnitude and nature of their operations are described. Each public airport under the proposed PRTC would have an avoidance area of at least 3 NM in diameter and an altitude of 1,500 feet AGL established in accordance with FAA Order 7400.2K. Areas requiring additional avoidance distance or not covered by standing guidance will be evaluated individually between the 28 BW and that organization needing avoidance. All military aircraft maintain contact with Ellsworth AFB and Ellsworth AFB maintains contact with ATC to allow for deconfliction with civil aviation emergencies.

Airports directly below or in close proximity to the proposed PRTC have the potential to be impacted through the activation and use of MOAs and low-altitude military operations. IFR flights would be given priority arriving at or departing from an airport under an activated MOA. Military training operations could result in civil aircraft ground holds or re-routing of commercial traffic which would increase costs in terms of fuel consumption and flight delays. The Gap MOAs and ATCAAs are on existing Victor Airways and are designed to serve as transit corridors for commercial and general aviation. The Gap MOAs and ATCAAs would only be scheduled for military operations during LFEs for a total of not more than 10 days per year. Many pilots in the region fly point to point and do not use Victor Airways as demonstrated by in Appendix A. Re-routing to the Gap MOAs could increase civil aviation delays and fuel costs. FAA has noted that the airports likely to experience adverse economic impacts from the proposed airspace are small public airports and associated fix-based operators under the airspace that rely heavily on transient traffic for their revenues. The Air Force revised aeronautical proposal includes published times of use, MOA stacking to support IFR traffic, and setbacks from airports, such as the Billings and Bismarck Airports, to avoid adverse impacts to traffic patterns.

The significance of impacts to civil aviation would be dependent on the amount of time that the MOAs are active and the ability for civil aviation to coordinate flight schedules with military flight operations. In response to comments from the public and the FAA, the Air Force revised the proposal and has multiple MOA segments. This segmentation allows the Air Force to move training aircraft from one airspace to another in response to FAA needs, and allows IFR arrival and departure traffic in an airspace segment. The Air Force would train at or below 2,000 feet AGL in the Low MOAs for 15 to 20 minutes before transiting to higher airspace. When the Low MOA is no longer being used by the Air Force for training it would be inactivated to allow IFR traffic. Likewise, the proposed ATCAAs from FL180 to FL260 would be scheduled and activated by the FAA.

Public airports under the proposed airspace would have designated avoidance areas of 3 NM and 1,500 feet AGL. If the Low MOA is active, pilots originating in the airspace could fly VFR through the activated MOA until reaching altitude in an inactive MOA or in an ATCAA. Pilots could depart or arrive IFR and the training would be temporarily suspended to support the IFR flight. Pilots would need to maintain contact with ATC in order to know the status of the MOAs and ATCAAs during flight planning. Pilots who are not comfortable transiting an active MOA VFR may choose to hold on the ground until such a time as the MOAs are inactive or weather permits transit VFR. Table 2.5-1 presents the published times of use and the expected daily use of the different MOA airspaces. The NOTAM announcement of MOA activation, the planned use of the Low MOA in a respective airspace early in a mission, and the segmentation of MOAs to permit release of a Low MOA as soon as a mission allows all provide for reduced ground hold time by a civil aircraft if that pilot decided to not fly see-and-avoid and chose not to depart or arrive at an airport by flying IFR. The ground hold could be minutes, or even none, depending on the MOA activation status. For the purpose of this EIS, and using the higher potential activation times from Table 2.5-1, an estimated ground hold of up to 4 hours was used for analysis of

potential impacts. Rescheduling or ground holds of up to 4 hours could be seen as an adverse impact to business decisions by pilots not willing to fly see-and-avoid and not willing to depart or arrive flying IFR.

Private airfields under Modified Alternative A airspace would be affected in much the same way public airports are affected. It would not be possible to transit an active MOA flying IFR. A training aircraft would be temporarily relocated to other active airspace to provide IFR arrival and departure from airports under the airspace. Civil aircraft pilots, including ones associated with low-level agricultural applications, would need to decide to fly VFR see-and-avoid in an active MOA where a military aircraft could be randomly flying below 2,000 feet AGL and, as low as 500 feet AGL. This could result in delays estimated to be up to 4 hours for airfields under an activated airspace or comparable delays to pilots outside the airspace who could not transit the airspace IFR and chose not to transit the airspace VFR. The proposed PR-1, PR-3, PR-4, and ATCAAs are stacked with low and high MOAs to allow civil aircraft to transit IFR through the airspace in inactive MOAs or ATCAAs even if the military is training in a MOA or ATCAA above or below the inactive airspace. Pilots would need to contact ATC prior to flights for information on the active airspace.

Aerial applications (crop dusting) for agriculture are conducted well below 500 feet and applicators typically fly under 1,000 feet AGL. Frequently, such applications are performed during times of light wind to reduce dispersion of the materials being deposited. Aerial applicators often fly near maximum gross weight. The inability of an aerial applicator to know where or at what altitude a training bomber could overfly the area scheduled for application could affect business decisions. Although some applicators could elect to perform all transit to and from an application at altitudes below 500 feet, most applicators would be expected to fly higher than 500 feet AGL when transiting to or from a field. The uncertainty of low-level bomber overflight could affect the ability of such aerial applicators to safely perform their jobs and could be seen by them as a significant socioeconomic impact. Airspace scheduling and issuing a NOTAM at least 2 hours in advance of airspace activation (see Section 4.1.2.2) would reduce uncertainty. The proposed PRTC airspace would have published times of use on FAA Aeronautical Charts and on websites. The proposed airspace would be scheduled for use, a NOTAM would be issued to announce airpace activation, and information would be available to the flying public. Actual training usage would be activated by the ARTCC and, when a mission is completed, the airspace would be released.

Pilots have also expressed that adverse impacts to civil aviation are likely during LFEs when the entire proposed PRTC would be active to accommodate additional training aircraft. Up to 4 hours of training during an LFE day could be seen as significant by local airports under, and pilots seeking to transit, the airspace. See Section 4.1.3 for more details. The civil aviation community and airports would be notified of PRTC activity in four ways: (1) published times of use, available via FAA charts and publications; (2) scheduled activity available via web sites such as http://sua.faa.gov; (3) via NOTAMs available in the preflight weather briefing at 1-800-WXBRIEF, https://pilotweb.nas.faa.gov, and/or through pilot contact with Flight Service; and (4) in the case of LFEs, through media releases provided by the Air Force. As soon as the training mission was completed, the Air Force would notify ATC that the MOA could be used for IFR traffic. This would allow for civilian pilots flying IFR to adjust their flight patterns as required.

Tables 4.1-3 and 4.1-4 summarize the civilian flight operations from public airports and private airfields potentially affected by Modified Alternative A, Modified Alternative B, or Modified Alternative C. The Air Force modified proposal includes published times of use for MOA activation during the week (Monday through Friday). There would be multiple FAA channels for information, including websites, phones, and published information to provide civil aviation pilots with scheduling information and with the status of an airspace. All PRTC activity will be announced to the public via NOTAM to provide the civil aviation community with increased flexibility to plan and execute flights.

The daily number of civil aircraft at public airports estimated to be potentially affected by Modified Alternative A, Modified Alternative B, or Modified Alternative C is presented in Table 4.9-1. Private airfields do not provide the FAA with annual operation numbers, which are published. Estimates of civil aircraft operations at private airfields under the proposed airspace were made by calculating the public airport published operations per based aircraft. Table 4.9-1 combines the available data from the FAA, public airports, and private airfields.

Table 4.9-1 presents the civil operations which could be impacted daily by military training if all the day-to-day airspace segments were activated. Table 4.9-1 also presents the potential daily civil operations impacted if all the LFE airspaces were activated. The degree of impact would depend upon pilot choices, the PRTC alternative, and the ability of FAA to provide for IFR traffic. PRTC MOAs have published times of use that total 10 hours per day on Monday through Thursday and 4.5 hours on Friday mornings. The airspace would have NOTAMs issued at least 2 hours in advance of flight operations (see Section 4.1.2.2). IFR arrival and departure traffic would be accommodated. IFR through traffic and VFR pilots who elected to not fly see-and-avoid in an active MOA, could see a re-routing or other delay of up to 4 hours. During LFEs, the impact could be a delay of up to 4 hours with no realistic diversion possible. Such delays could be perceived as an impact by civil aviation operators under the proposed PRTC.

Table 4.9-1. Estimated Daily Civil Operations Potentially Affected by PRTC Modified Alternatives[5]

Proposed Airspace	*Modified Alternative A*			*Modified Alternative B*			*Modified Alternative C*			*No-Action*	
	MOA[1]	*ATCAA[2]*	*LFE[3]*	*MOA[1]*	*ATCAA[2]*	*LFE[3]*	*MOA[1]*	*ATCAA[2]*	*LFE[3]*	*Day-to-Day[2]*	*LFE[4]*
PR-1	18	0	17	0	0	5	18	0	17		
PR-2	24	8	16	24	8	16	24	8	16	24	
PR-3	38	5	22	38	5	22	38	5	22		
PR-4	6	7	7	45	7	27	28	7	4		
Gap A			3			3			3		
Gap B			10			10			10		
Gap C			3			5			2		
Daily Total	**86**	**20**	**78**	**107**	**20**	**88**	**80**	**20**	**74**	**24**	**N/A**

Notes: 1. From Tables 4.1-3 and 4.1-4; MOAs include Low and/or High (see Table 2.5-1).
2. ATCAA day-to-day traffic derived from Table 3.1-2 and assumed vectored IFR or above active airspace.
3. LFE schedule of up to 4 hours/day projected to be ½ day-to-day published times of airspace activation.
4. LFE cannot be accomplished in existing airspace.

Table 4.9-2 provides the calculated area overflown by each airspace unit and identifies which airspace units are within Modified Alternative A, Modified Alternative B, and Modified Alternative C. The area overflown is given in acres, square statute miles, and square nautical miles.

Table 4.9-2. Estimated Area Overflown by PRTC Modified Alternatives[1]

Airspace Unit	*Modified Alternative A*	*Modified Alternative B*	*Modified Alternative C*	*Acres Overflown*	*Square Miles Overflown*	*Square Nautical Miles Overflown*
PR-1A Low MOA	DtD		DtD	489,470	765	578
PR-1A High MOA	LFE		LFE	489,470	765	578
PR-1A ATCAA	LFE	LFE	LFE	489,470	765	578
PR-1B Low MOA	DtD		DtD	781,812	1,222	922
PR-1B High MOA	DtD		DtD	781,812	1,222	922

continued on next page…

Table 4.9-2. Estimated Area Overflown by PRTC Modified Alternatives[1]

Airspace Unit	*Modified Alternative A*	*Modified Alternative B*	*Modified Alternative C*	*Acres Overflown*	*Square Miles Overflown*	*Square Nautical Miles Overflown*
PR-1B ATCAA	DtD	LFE	DtD	781,812	1,222	922
PR-1C Low MOA	DtD		DtD	435,828	681	514
PR-1C High MOA	LFE		LFE	435,828	681	514
PR-1C ATCAA	LFE	LFE	LFE	435,828	681	514
PR-1D Low MOA	DtD		DtD	2,117,379	3,308	2,498
PR-1D High MOA	DtD		DtD	2,117,379	3,308	2,498
PR-1D ATCAA	DtD	LFE	DtD	2,117,379	3,308	2,498
PR-2 Low MOA	DtD	DtD	DtD	5,224,119	8,163	6,164
PR-2 High MOA	DtD	DtD	DtD	5,224,119	8,163	6,164
PR-2 ATCAA	DtD	DtD	DtD	5,264,371	8,226	6,211
PR-3 Low MOA	DtD	DtD	DtD	2,909,778	4,547	3,433
PR-3 High MOA	DtD	DtD	DtD	2,909,778	4,547	3,433
PR-3 ATCAA	DtD	DtD	DtD	2,909,778	4,547	3,433
PR-4 Low MOA		DtD		3,379,595	5,281	3,987
PR-4 High MOA	DtD	DtD		3,379,595	5,281	3,987
PR-4 ATCAA	DtD	DtD	LFE	3,379,595	5,281	3,987
Gap A L/H MOA, ATCAA	LFE	LFE	LFE	606,959	948	716
Gap B L/H MOA, ATCAA	LFE	LFE	LFE	1,084,512	1,695	1,280
Gap C L/H MOA, ATCAA	LFE	LFE	LFE	429,039	670	506
Gateway West ATCAA	DtD	DtD	DtD	2,444,926	3,820	2,885
Gateway East ATCAA	LFE	LFE	LFE	1,818,582	2,842	2,146

1. Day-to-day (DtD) and Large Force Exercise (LFE) hours as described in Section 2.5.1.

Scheduling civil aviation flights around military training, communicating with ATC regarding a MOA's status, and flying IFR in an inactivated MOA would reduce potential delays. Ground delays would have the potential to affect economic activity through increased travel time. The extent of travel time increased would be related to when the MOA would be inactivated after military training aircraft left the MOAs. The ground delays would be somewhat alleviated due to the Air Force's ability to specify published times of use (available to the public via http://sua.faa.gov/sua), which pilots could use to plan their own flights or plan detours around the MOAs. However, unforeseen circumstances such as weather or mechanical difficulties could require military training to be conducted outside of the published times of use. The Air Force would notify the public at least 2 hours in advance through NOTAMs of when the airspace would be active. Civilian pilots would need to contact ATC prior to or during transit of the airspace to be aware of the status of the airspace.

Uncertainty regarding where a low-level bomber could be within a MOA could affect decisions to traverse a MOA. Delays and uncertainty would be expected to produce local impacts to airport access, and pilots would be annoyed by IFR rerouting or an unwillingness to transit an active MOA using VFR. Impacts could occur to public airports and private airfields under the airspace that are dependent on transient traffic for revenues. Active MOAs could encourage private pilots to re-route around the active airspace and avoid public airports or private airfields under the active airspace. Approximately 60 percent of the day-to-day civilian MOA traffic would be affected Monday through Thursday. On Friday mornings, approximately 20 percent of the civilian traffic could be affected. During LFE's,

approximately 30 percent of the daily traffic would be affected with no work-arounds except delay or fly see-and-avoid in an active MOA.

During the DEIS public review process, concerns were expressed about whether the proposed airspace could prevent or interfere with emergency flight operations such as firefighting or air ambulances. Under positive ATC, emergency flights, including fire and medical aircraft are given priority over military operations. Under specific situations, the FAA can establish Temporary Flight Restrictions to temporarily restrict access for civil and military aviation in specified areas. These situations include hazardous conditions, such as fires, special events, or general warnings. These emergency procedures are applied to the current Powder River airspace. Pilots are notified of Temporary Flight Restrictions through NOTAMs and pilots are restricted access unless under specified conditions, such as firefighting aircraft. These Temporary Flight Restrictions would allow firefighting aircraft unimpeded access to the airspace above a fire to conduct prolonged firefighting operations. No impacts would be expected other than increased communication.

For non-emergency flights, such as fire reconnaissance, USFWS surveys, Angel flights, and cloud seeding, the pilot could coordinate with Ellsworth AFB to work to deconflict military operations. Weather modification flights need to respond rapidly to cloud formation and other meteorological conditions. Notification to Ellsworth AFB of the seasonable possibility of cloud seeding operations and notification of when and where cloud seeding was occurring would permit the Air Force to deconflict training missions.

Civil aviation and public airports have the potential to be impacted by the proposed expansion of airspace by requiring additional communication from private pilots to determine when the MOAs are active. The extent of potential impacts would be dependent on scheduling, the duration of the ground holds, and the amount of time that the MOAs were active. If all the airspace were activated, the airspace use and related activities associated with the PRTC Modified Alternative A could result in delay, uncertainty, or other impacts to an estimated 86 civil operations daily during Monday through Thursday and approximately one-third that number on Friday morning (see Table 4.9-1). Civil operations would include a takeoff, landing, or transit through a proposed airspace. In addition to the directly affected flights from airports and airfields under the proposed airspace, there are airports and airfields on the periphery of, or near, the airspace which could also be impacted. Tables 3.1-3 and 3.1-4 identify the public airports and private airfields under and near the proposed PRTC, and Table 3.1-6 presents the reported operations from the public airports listed as near the proposed airspace. Airport operations data do not specify the number of flights from the airports which would potentially be traversing the airspace and would be impacted, to some degree, by activated PRTC MOAs. The estimated 86 daily operations should be seen as a quantifiable and reasonable estimate of the total number of daily civil aircraft operations impacted if all the day-to-day airspaces were activated. The change in airspace use for military training could be seen by civil airspace users as an adverse impact on the human, social, or economic resources of the region.

4.9.3.1.3 *CIVIL AVIATION IN ATCAAS*

Potential impacts to Victor Airways and to Jet Routes are described in Section 4.1.4.3. In response to FAA-identified potential impacts to commercial, charter, and business aviation, the Air Force has revised the aeronautical proposal to include ATCAAs, from FL180 to FL260. The Air Force would work with the FAA to activate only the airspace required to conduct adequate training. The remaining airspace would be available for civil and commercial aviation under ARTCC direction. Table 4.9-1 includes the estimated number of ATCAA flights that would be involved in IFR transit of the FL180 to FL260 airspace block for the entire proposed PRTC.

LFE impacts could include re-routing around the activated airspace and such re-routing or other schedule effects potentially could be seen as substantial economic impacts to commercial carriers and other high altitude traffic.

4.9.3.1.4 *ENERGY RESOURCE DEVELOPMENT*

Public review of the DEIS included concerns that the proposed airspace modifications could interfere with energy resource development, particularly oil and gas exploration, coal mining, or the development of wind farms. Concerns were expressed during the EIS process that the proposed airspace expansions would interfere with proposals by private and state entities to develop wind farms underneath the proposed airspace. In 2007, the Department of Defense released a letter stating that the DoD would not oppose the development of wind farms or other sources of renewable energy that would not impact military readiness or training. The Air Force would coordinate with the FAA and other regulatory agencies to evaluate wind farm proposals under the proposed airspace on a case-by-case basis. If there were a concern about a wind farm proposal, the Air Force would raise those concerns to the appropriate authority. Concerns have been expressed, for example, when wind farms have been proposed in the approach pattern of military airfields. The Air Force would not have the final decision in any wind farm proposals.

Wind farms, towers and other obstructions over 200 feet tall are required to have warning lights installed per FAA regulations. General flight rules state that low-level flight operations would occur at least 200 feet above the highest obstruction within the flight area. With a floor of 500 feet AGL, low-level flights from the B-1s would occur 500 feet above the highest obstruction within the area. For example, if there is a wind farm or other towers underneath the proposed airspace that extend to 400 feet then low-level flight operations at that area would occur not lower than 900 feet AGL.

Altitude overflight restrictions would be established over community airports and over tall structures, such as the power plant stacks at Colstrip. The minimum overflight above a public airport would be 1,500 feet AGL for a 3-NM radius circle centered on the airfield.

The effects of very infrequent sonic boom overpressure during LFEs or low altitude overflight upon mining operations or major construction projects could impact features of the operations. In most cases, the mining operations would be impacted by overpressures below 5 psf. The overpressure effects would be rapidly dissipated underground. Sonic boom or low-altitude flight overpressure effects upon surface mining would depend upon the focus of the sonic boom or overflight and the distance from the mining operations. Overpressure effects from sonic booms could vary from the sound of distant thunder to a sharp crack-crack with enough overpressure to loosen unstable soils and raise dust. Atmospheric effects, as well as aircraft speed and altitude (turning, descending), all contribute to the intensity of a sonic boom and even determine if it will be felt at ground level. In the unlikely event that a focused boom was directly experienced at a mining operation, the effect could be dust and/or loosening of unstable surface materials. Communication regarding overflights scheduling and mine operations would be required to reduce the potential for surface mining impacts although sonic booms cannot be specifically directed away from a sensitive location.

Coordination and communication will be required to ensure that mining economics and safety are not impacted by the B-1 or transient fighter electronic capabilities.

Electronic capabilities in B-1 and transient fighter aircraft could be at frequencies and levels to cause concern to mining operations. Mining requires frequent blasting with electronically triggered explosives. Mining operations could be significantly impacted if a

B-1 or other aircraft were to exercise certain frequencies which interfered with mine blasting. The only way to avoid such a significant risk to safety and mining economics would be for the Air Force and mining operators to ascertain the electronic frequencies involved and abstain from using those frequencies where they could affect mining operations. Such interactions to identify the potential for, and to implement procedures to avoid, such impacts do not exist under the current Powder River A and B MOAs and would require additional communication, procedures, and avoidance areas where existing and potential mining and blasting operations could occur.

4.9.3.1.5 *NOISE DISTURBANCES*

The total number of training sorties is projected to be distributed throughout the proposed PRTC. The relatively low acoustical effects can be attributed to the dispersion of training flights into a large volume of airspace. Average noise levels would be slightly reduced from projected baseline conditions in the PR-2 MOA which is approximately the same as the existing Powder River A and B MOAs. Most receptors in the expanded PRTC would experience higher levels of noise. Animals and humans in these areas are expected to be temporarily more sensitive to noise due to lower previous exposure. Animals and humans under the expanded PRTC would be exposed to higher noise levels than currently experienced under PR-1A/B/C/D, PR-3, and PR-4 MOAs/ATCAAs. For a more detailed discussion, see Sections 4.2, *Noise* and 4.6, *Biological Sciences*.

During public hearings on the DEIS, several participants expressed concern that the low-level overflights and supersonic activity would significantly impact their lives. The typical human response to noise effects associated with aircraft overflights is annoyance. The USEPA has identified a DNL of 55 dB to be a level protective of the public health and welfare. This represents a threshold below which adverse noise effects are generally not expected. Noise levels for Modified Alternative A are below this level. There are changes in the predicted noise levels in areas under the proposed PRTC. The average annual noise level in those areas could increase to 47 dB DNL and is likely to be noticeable. Although this is below the USEPA-identified level, the sudden and unexpected nature of even infrequent low-level or supersonic events during LFEs could cause surprise and annoyance.

Areas currently under the Gateway ATCAA would experience infrequent sonic booms from supersonic training in the expanded Gateway ATCAA.

Low-altitude subsonic overflights or infrequent higher-altitude sonic booms could result in short-term negative impacts to wildlife, livestock, or humans (e.g., increased heart rate, flight, potential injury). During public review, individuals expressed concerns that the startle effect of low-altitude subsonic overflights or sonic booms would adversely affect economic activity, especially ranching during calving or when ranchers are working with concentrations of cattle such as weaning and branding. Impacts could include injury to animals, damage to infrastructure, and time to round up the livestock. As presented in the mitigations in Section 2.3 and discussed in Section 4.3, *Safety*, the 28 BW currently coordinates and would expand its coordination with ranchers under the existing Powder River A and B MOAs to identify areas with large concentrations of cattle, particularly during calving, weaning, and branding operations, and to establish temporary avoidance areas for low-level overflights. Such avoidance areas minimize startle effects from overflights. Under the proposed airspace expansion, communication with the 28 BW would be important for ranchers to coordinate temporary avoidance areas. The nature of sonic booms is that the location where a sonic boom could be experienced is dictated by a variety of factors, including meteorology. Any given location under the airspace could experience average of one sonic boom per LFE day. Public commenters during the EIS process expressed the opinion that they would

consider the sudden onset noise of a low-level overflight or a sonic boom to be a significant impact. During scoping, early in the EIS process, the estimated number of low-level overflights or sonic booms per year had not yet been calculated. It would not be possible to prevent sonic booms in a sensitive area if an aircraft were performing supersonic maneuvers at altitude during an LFE, although the Air Force would provide advance notice of the 1 to 3 days per quarter (not to exceed 10 days per year), when LFEs would be conducted. This advance notice would help with knowledge of when a sonic boom could occur.

Concern was expressed at public hearings that noise conditions may negatively affect wildlife and livestock. Animals have demonstrated that they can habituate to loud, regular noises such as sonic booms. The levels of noise anticipated as a result of PRTC could startle penned individual livestock but are not expected to result in biological effects that would impair overall animal populations. Low-level overflights with sudden noise accompanied by a visual stimulus can result in reactions by wild and domestic animals. Should a sonic boom or low-level overflight result in a hunter losing an opportunity, the hunter would be expected to be annoyed. Should a sonic boom or low-level overflight result in a livestock stampede with damage to fences and the livestock, a rancher could suffer economic loss and potentially be placed in harm's way.

Supersonic training in the Gateway East ATCAA or Gateway West ATCAA during LFEs could result in very infrequent sonic booms being experienced in the cities of Sturgis and Deadwood, SD, under the southeast portion of the ATCAA and Belle Fourche and Spearfish, SD, and Sundance, WY, under the ATCAA. Other small communities are also under the ATCAA. B-1 bombers would train at supersonic speeds within the Gateway ATCAA at altitudes above 20,000 feet MSL and fighters could go supersonic above 18,000 feet MSL in the ATCAAs during LFEs only because the proposed Gateway ATCAAs would begin at 18,000 feet MSL. In the proposed MOA airspace, fighters would be authorized to go supersonic down to 10,000 feet AGL.

The sonic booms during LFEs would be infrequent with approximately one calculated to be experienced at any given location associated with the PRTC each LFE day. These supersonic flights would not be expected to detrimentally impact the region's economy. The infrequent sonic booms could be annoying and, in the case of a focused boom, could result in property damage. The nature of sonic boom creation and the atmospheric effects which determine where or whether a sonic boom reaches the ground make it impossible for an aircraft performing a supersonic maneuver to avoid a sonic boom occurring at any particular location. The sonic boom would typically be experienced as thunder, but approximately 1,300 acres could experience an overpressure of four psf or greater which have the potential for window or other damage. The Air Force has established procedures for damage claims which begin by contacting Ellsworth AFB Public Affairs.

The extent of area affected by a daily average low-level flight below 2,000 feet AGL was estimated using the Chapter 2.0 tables of time by altitude and an assumption of 240 days of flying per year. B-1 and B-52 would be 2,000 feet AGL or below for each action alternative each day as presented in Table 4.9-3. The estimated daily area affected by low-level overflight is presented in Table 4.9-3.

Table 4.9-3 means that, on average, an area within a MOA could be subject to fewer than 6 to 9 low-level startle effect overflights per year. For the purpose of this EIS, the average annual number of low-level overflights is assumed to be 6 to 9. The actual number of low-level overflights over a specific area could not be precisely calculated due to the random nature of aircraft training. Any specific area could be overflown at low-level, more or less frequently than the estimated 6 to 9 times per year used in this EIS. Figure 3.2-1 demonstrates the random nature of B-1 training in the existing Powder River A and B MOAs from FAA traffic data. The random looping tracks within the PR-A/B MOAs are B-1 training aircraft, and the straight lines represent other transiting aircraft within the airspace. The figure shows

that low-level overflights are generally not along the edges of the airspace. The existing Powder River A and B MOAs, which constitute nearly all the proposed PR-2 MOA and represent the No-Action Alternative, have an estimated 7 to 9 times per year when, on average, any given location would be overflown within one quarter of a mile from an aircraft at or below 2,000 feet AGL. Pilots performing low-level training are briefed to avoid communities, noise-sensitive areas, and, to the extent possible, farm or ranch buildings.

Table 4.9-3. Estimated Percent of Each MOA Area Impacted by Low-Level Overflight of 2,000 Feet AGL and Below

	PR-1A	*PR-1B*	*PR-1C*	*PR-1D*	*PR-2*	*PR-3*	*PR-4*	*Total*
MOA Low Altitude (including Gap MOA) (NM^2)	577.51	1,090.94	257.11	2,519.38	7,443.39	3,939.38	3,987.50	19,815.23
Annual B-1 Hours 2,000 AGL and below	12.47	20.53	6.28	47.26	159.46	79.67	53.69	379.36
Annual B-52 Hours below 2,000 AGL	0.35	0.57	0.15	1.23	13.80	2.30	13.80	32.20
Annual Fighter Hours below 2,000 AGL	0.51	0.94	0.43	2.57	5.02	3.08	0.32	12.87
Daily B-1 Hours 2,000 AGL and below	0.0519	0.0856	0.0262	0.1969	0.6644	0.3319	0.22	1.5807
Daily B-52 Hours below 2,000 AGL	0.0015	0.0024	0.0006	0.0051	0.0575	0.0096	0.06	0.1342
Daily Fighter Hours below 2,000 AGL	0.0021	0.0039	0.0018	0.0107	0.0209	0.0128	0.00	0.0536
Daily Area Estimated Impacted by B-1 (NM^2)	14.0239	23.0997	7.0671	53.1727	179.3903	89.6259	60.4013	426.7807
Daily Area Estimated Impacted by B-52 (NM^2)	0.2661	0.4250	0.1112	0.9257	10.3500	1.7250	10.3500	24.1529
Daily Area Estimated Impacted by Fighters (NM^2)	0.5744	1.0592	0.4845	2.8859	5.6522	3.4603	0.3600	14.4765
Total Area Potentially Impacted Average Day (NM^2)	**14.8644**	**24.5838**	**7.6628**	**56.9843**	**195.3924**	**94.8112**	**71.1113**	**465.4101**
Percent Area Affected per Day (%)	**0.0257**	**0.0225**	**0.0298**	**0.0226**	**0.0263**	**0.0241**	**0.02**	**0.0235**
Average Times Any Given Location Overflown/Year	**6.18**	**5.41**	**7.15**	**5.43**	**6.30**	**5.78**	**4.28**	**5.64**

NM^2 = square nautical miles

Notes:
1. Modified Alternative A and Modified Alternative C consist of PR-1 MOA A/B/C/D (Low and High), PR-2 MOA (Low and High) PR-3 (Low and High), and Gap A/B/C MOAs (Low and High). Modified Alternative A also has PR-4 MOA (High).
2. Modified Alternative B consists of PR-2, 3, 4 MOAs (Low and High), Gap B/C MOAs (Low and High)
3. Modified Alternatives A and C do not have PR-4 MOA (Low); Modified Alternative B does not have the PR-1 A/B/ C/ D MOAs and the adjacent GAP A MOA.

The low population density of 0.2 to 4.0 persons per square mile under the proposed low-level airspace and the infrequent number of annual events make it highly unlikely that flight activity associated with PRTC would result in significant social or economic impacts to the region. It is likely that there would be specific cases of an individual or animal being startled by an overflight or sonic boom at a specific time and place. Supersonic events would only be scheduled during the not more than 10 days annually when LFEs would be conducted. A low-level overflight would be difficult to predict given the rural nature of the area, the random and dispersed nature of flight operations, and the large airspace area. An individual startled by a low-level overflight or sonic boom could see the overflight as an impact. The

duration of supersonic flight would be brief and not be expected to have any effect on other aircraft flying the region. Speculation regarding potential injury to humans as a result of startle reaction to sonic boom has not been supported by any documented incidents or studies.

Outdoor structures such as water towers, wind turbines, and radio towers are routinely subject to wind loads far in excess of sonic boom overpressures and are sufficiently resilient to withstand the anticipated overpressure. Section 4.3.3 provides additional discussion of general aviation and towers within the airspace. No impacts to elevated ground structures, wind farms, oil and gas, or mining are expected. Wake vortex impacts to stock windmills could occur. In the event of property damage due to Air Force activity, individuals would be able to contact Ellsworth AFB Public Affairs for established procedures to file damage claims.

The potential for impacts to concentrations of livestock during branding or weaning can be reduced by communicating with Ellsworth AFB to identify a temporary avoidance area over the location.

Overflight noise and startle effects, although annoying, are not expected to significantly impact regional economics. This is especially the case if specific economic activities, such as ranch branding operations and mining operations, can be communicated in advance and an avoidance area can be identified and briefed to pilots as part of the training mission described in Section 2.10.3. Public comments suggest that the low overflight and sonic boom impacts to the social and economic features of the community are as likely to be from the uncertainty that such an overflight could occur at any time as from the actual noise. The fact that such a low-level event could occur at any time and at any given location, even infrequently, was identified as a significant potential impact by some public commenters. The Air Force proposal has published times of use (weekday hours) for MOA activation when low-level events could occur.

4.9.3.1.6 *CHAFF AND FLARE USE*

Under Modified Alternative A, chaff and flare use would be authorized in the PRTC airspace. More discussion of chaff and flares may be found in Sections 4.3, *Safety*, 4.5, *Physical Sciences*, 4.6, *Biological Sciences*, and Appendices C and D.

Chaff is very fine silica strands coated with aluminum and cut to lengths to reflect radar. Through numerous studies, chaff fibers have never been found to be specifically harmful to wildlife, domestic animals, or humans. Chaff dispenses widely when ejected from aircraft and can travel for long distances before settling to the ground. Once settled to the surface of the earth, chaff breaks down to constituent parts of silica and aluminum, the two most common elements in soil. Chaff is highly unlikely to accumulate in quantities that would result in any negative impact to surface conditions on land or water. It is highly unlikely that chaff residual materials would accumulate in sufficient quantities to affect property values or land uses. On average there would be one plastic, felt, or wrapper piece of chaff or flare residual material deposited on 149 acres per year. It is unlikely that a piece of residual material would be found. As noted in Section 4.8.3.1, some individuals could express annoyance if a chaff or flare end cap or other residual material were found on their property or at a recreation location, but this is not expected to affect land values or regional economics.

Flares are designed to be fully consumed before reaching the ground. Under Modified Alternative A, flare use would occur throughout the proposed PRTC. The risk of fire as a result of flare use is minimal due to the low failure rate of flares and procedures that require flare use above 2,000 feet AGL. During extreme fire conditions, flares would not be authorized in a MOA.

Fire of any cause is a serious concern in the arid areas under the proposed airspaces. Flare initiated fires would not be expected to occur in the region although the use of flares minimally increases fire risk. Any fires of a natural or non-natural source may adversely affect vegetation, injure wildlife or livestock, and destroy property such as fences or buildings. Any potential loss of forage, livestock, or infrastructure due to fire could result in economic impacts to affected landowners. The Air Force follows established procedures for claims in the unlikely event that an Air Force-caused fire should occur and subsequently damage livestock or infrastructure.

Fire is an ever present concern in the arid west. There are minimum deployment altitude restrictions of 2,000 feet AGL, and no flare use during extreme fire conditions. Flare deployment restrictions are described in Section 2.3.1.

4.9.3.2 MODIFIED ALTERNATIVE B

Modified Alternative B would establish the PRTC ATCAAs in the same manner as Modified Alternative A. There would not be PR-1A/B/C/D, or a Gap A MOA. The consequences discussed under Modified Alternative A for property values, supersonic flights, chaff and flares, low-altitude noise disturbances, and high-altitude civil aircraft overflights would all be applicable for PR-2, PR-3, PR-4 and associated Gap MOAs and ATCAAs. Under Modified Alternative B, PR-1A/B/C/D ATCAAs would be included, but there would be no training airspace below FL180.

The estimated civil aircraft annual operations and estimated workday operations by public airports under the Modified Alternative B MOAs are presented in Table 4.9-1. Table 4.9-2 includes FAA data and private airfields to identify a total of 107 average daily flights in MOAs under the Modified Alternative B airspace if all airspaces were active. The impact could be a delay of up to 4 hours, require a diversion, or require a civilian pilot to fly see-and-avoid in an active MOA. IFR arrivals and departures would be given priority over training aircraft. If pilots could not transit an active MOA IFR or were unwilling to transit an active MOA VFR, pilots could incur the delay. Alternatively, a pilot could use a Gap MOA corridor or otherwise divert around an active MOA. These impacts could be viewed as significant by pilots operating under the PR-2, PR-3, PR-4, and associated Gap MOAs.

As presented in Table 4.9-2, Modified Alternative B would not have low-level overflight under the PR-1A/B/C/D or Gap A ATCAAs, and this area would not be subject to low-level startle impacts. This would apply to ranching and mining operations, such as at Colstrip, under the PR-1A, PR-1B, PR-1C, or PR-1D ATCAAs. Mining operations under the PR-1A, PR-1B, PR-1C, or PR-1D ATCAAs would not be expected to be impacted by electronic emissions from military training aircraft flying above FL180. Coordination to learn radio frequencies and potential explosive risks would be required to avoid safety risks to mining economics.

The airports under the PR-1A, PR-1B, PR-1C, or PR-1D ATCAAs or pilots using the Gap A ATCAAs corridor below FL180 would not be impacted by a MOA or by low-altitude flights in the area beneath the proposed PR-1A, PR-1B, PR-1C, or PR-1D ATCAAs. The effect on civil aircraft pilots seeking to fly above FL180 would be a requirement to contact ARTCC and learn the status of the ATCAAs.

Table 4.9-3 estimates the daily area impacted by low-level flights for the Modified Alternative B. For the purpose of this EIS, on average, any given location under the airspace would be subject to low-level overflights approximately 6 to 9 times per year. Because the flight training pattern is random, actual low-level overflight could occur more frequently or not at all at any specific location. Most of the proposed PR-2 MOA is within the currently overflown Powder River A and B MOAs.

The potential for impacts to public airports or private airfields underneath the proposed PR-2, PR-3, and Gap MOAs, would be essentially the same as those airspaces described for Modified Alternative A. Under PR-4, the effects of Modified Alternative B would be greater than those discussed under Modified Alternative A as a result of training within the PR-4 Low MOA.

4.9.3.3 MODIFIED ALTERNATIVE C

Modified Alternative C would expand the existing Powder River airspace over the same surface as Modified Alternative A. Modified Alternative C would not establish the PR-4 MOA or Gap C MOA. PR-4 ATCAA and Gap C ATCAA would begin at 18,000 MSL and extend up to FL260. The remaining components of the PRTC would be the same as described for Modified Alternative A. Modified Alternative C consequences to property values, supersonic flights, chaff and flares, low-altitude noise disturbance, and high-altitude civil aircraft overflights would be essentially the same as discussed for Modified Alternative A. There would not be low-altitude training flights under the PR-4 and the Gap C ATCAAs.

Potential impacts to civil aviation and public airports below the proposed PR-1A/B/C/D, PR-2, PR-3, and associated Gap MOAs would be as described for Modified Alternative A. The number of daily operations potentially impacted if the Modified Alternative C airspace were active during the published times of use would be 80 civil operations (see Table 4.9-1). The impact would depend on the number of flights seeking to fly IFR in an active MOA or unwilling to fly VFR in an active MOA. There could be a delay of up to 4 hours or a required diversion. A pilot could divert using a Gap MOA corridor or otherwise divert around an active MOA during day-to-day operations although the Gap MOAs would be unavailable during LFEs. These delays and diversions are likely to be viewed as significant impacts by pilots operating in the PR-1, PR-2, PR-3, and associated Gap MOAs.

Table 4.9-2 presents which airspace sections would be within Modified Alternative C and gives the area impacted. Table 4.9-3 presents the area overflown by low-level training aircraft. Most of the proposed PR-2 is currently overflown by B-1 aircraft as part of the Powder River A and B MOAs. It is impossible to predict what area would be overflown by random training aircraft. An average location under the Modified Alternative C airspace is assumed for this EIS to be subject to low-level overflights approximately 6 to 9 times per year. Actual low-level overflight could occur more frequently or not at all during any given year.

4.9.3.4 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, the Air Force would continue to use the current configuration of the existing Powder River airspace. The existing Powder River MOAs and ATCAA overlie portions of Custer County, Powder River County, and Carter County, MT; Butte County and Harding County, SD; and Campbell County, Crook County, and Weston County, WY. Flight activity and noise levels would not change from projected baseline conditions. No-Action low-level overflights would be, on average, approximately 7 to 9 per year. No-Action daily civil operations impacted are projected to be 24 (see Table 4.9-2). There would be no supersonic or chaff and flare training. The socioeconomic effects would essentially continue to be as described for the PR-2 MOA under Modified Alternative A without supersonic flight or chaff and flare training.

4.10 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN

4.10.1 *METHODOLOGY*

The environmental justice analysis is in accordance with the *Interim Guide for Environmental Justice Analysis with the Environmental Impact Analysis Process* (Air Force 1997b). Executive Order (EO) 12898, Section 1-101 requires each Federal agency, "to the greatest extent practicable and permitted by law," to "identify …and address…, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations." EO 13045 further states that a federal agency "shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks."

The minority and low-income communities and youth population under the proposed airspace were quantified based on census block-group data. These numbers were compared with county and state demographic data to determine whether any disproportionate low-income, minority, or youth population concentrations were located in potentially affected areas.

Environmental justice analysis addresses adverse environmental impacts. For purposes of environmental justice analysis, "adverse" means the impact would have a negative effect on human health or the environment that is significant, unacceptable, or above generally accepted norms (Air Force 1997b). Consequently, potential disproportionately high and adverse impacts to minority or low-income populations are assessed only when adverse environmental consequences to the general human population are anticipated. The same is true for protection of children from health and safety risks, as the potential for such risks would be driven by adverse environmental impacts.

Health and safety factors of the proposed action were analyzed to determine the potential for adverse environmental impacts that could affect the human population and have the possibility of environmental justice concerns. In addition, potential environmental health or safety hazards were examined to assess potential special risks to children. If adverse impacts to the human population are expected, these impacts are analyzed further to determine the potential for disproportionately high effects to environmental justice populations or special health and safety risks to children.

Affected Areas

Environmental justice data for the community of comparison (COC) by county are presented in Table 3.10-1 (in Chapter 3). The data show that the overall minority population ranges by state aggregated COC counts from 8.7 to 34.0 percent. Table 4.10-1 presents environmental justice data for the affected area, census tracts under or partially under the proposed PRTC airspace by county and state. Total population for the affected area is estimated to be 89,099 persons, based on block-group data from Census 2010, the most recent detailed data available. The minority population for the affected area is estimated to be 14,347 persons, representing 16.1 percent of the total affected population. Native Americans are concentrated in counties in which reservation lands are located, primarily Big Horn (71.68 percent minority) and Rosebud (54.54 percent) counties in Montana. Native Americans typically represent 86 to 96 percent of the minority population within the affected counties where the minority population is greater than 10 percent of the county's population.

Table 4.10-1. Environmental Justice Data for Affected Areas Under the Proposed PRTC Airspace (by County)

Counties with Land Area Under the Affected Airspace	*2010 Affected Population*	*Affected Minority Population*		*Affected Low-Income Population*		*Affected Youth Population*	
		Number	*Percent*	*Number*	*Percent*	*Number*	*Percent*
MT[1]	***20,205***	***9,100***	***45.04%***	***4,137***	***20.48%***	***5,992***	***29.66%***
Big Horn	7,486	5,366	71.68%	1,993	26.62%	2,540	33.93%
Carter	1,160	28	2.41%	155	13.39%	203	17.50%
Custer	820	23	2.83%	89	10.88%	183	22.32%
Fallon	2,445	82	3.36%	212	8.68%	574	23.48%
Powder River	1,743	98	5.62%	220	12.65%	363	20.83%
Rosebud	6,402	3,492	54.54%	1,447	22.61%	2,101	32.82%
Treasure	149	11	7.24%	21	14.08%	28	18.79%
ND[1]	***10,238***	***744***	***7.27%***	***1,131***	***11.05%***	***2,145***	***20.95%***
Adams	2,343	77	3.29%	202	8.64%	446	19.04%
Billings	21	0	1.53%	2	8.83%	4	19.05%
Bowman	3,151	112	3.55%	223	7.09%	676	21.45%
Golden Valley	144	6	3.99%	16	11.15%	35	24.31%
Grant	1,934	56	2.88%	240	12.39%	363	18.77%
Hettinger	1,249	36	2.86%	157	12.61%	244	19.54%
Morton	258	8	3.02%	26	9.90%	56	21.71%
Sioux	570	434	76.25%	234	41.17%	207	36.32%
Slope	562	15	2.75%	30	5.27%	113	20.11%
Stark	6	0	2.98%	1	12.52%	1	16.67%
SD[1]	***45,798***	***3,760***	***8.21%***	***6,658***	***14.54%***	***10,151***	***22.16%***
Butte	10,109	750	7.42%	1,512	14.96%	2,527	25.00%
Corson	848	445	52.52%	250	29.52%	270	31.84%
Harding	1,255	58	4.62%	160	12.77%	292	23.27%
Lawrence	21,531	1,547	7.19%	2,985	13.86%	4,211	19.56%
Meade	9,070	750	8.26%	1,304	14.37%	2,185	24.09%
Pennington	0	0	11.09%	0	9.43%	0	0.00%
Perkins	2,836	94	3.32%	382	13.47%	608	21.44%
Ziebach	149	116	78.33%	65	43.52%	58	38.93%
WY[1]	***12,859***	***743***	***5.78%***	***907***	***7.05%***	***3,201***	***24.89%***
Campbell	3,839	376	9.80%	278	7.24%	1,111	28.94%
Crook	7,025	286	4.08%	546	7.77%	1,674	23.83%
Sheridan	1,620	60	3.68%	50	3.10%	342	21.11%
Weston	375	21	5.70%	33	8.93%	74	19.73%

Notes: 1. Total of affected populations within state.
Source: U.S. Census Bureau 2010b

The population in the affected area is 14.4 percent low-income overall, with poverty rates generally similar to or higher than respective county levels in the COC. Counties with a relatively high or high incidence of poverty include Big Horn (26.62 percent) and Rosebud (22.61 percent) in Montana, Sioux (41.17 percent) in North Dakota, and Ziebach (43.52 percent) in South Dakota. By comparison, the highest poverty rate in the Wyoming COC counties was in Weston County with 8.93 percent.

Children under the age of 18 years comprise 24.1 percent of the population within the affected area. Counties with high percentage youth population include Big Horn (33.93 percent youth) and Rosebud (32.82 percent) in Montana, Sioux (36.32 percent) in North Dakota, and Ziebach (38.93 percent) in South Dakota, and Campbell (28.94 percent) in Wyoming.

PRTC Airspace

Environmental justice data for each PRTC airspace element are presented in Table 4.10-2. The affected area data are presented by airspace element to facilitate aggregation of the data by modified alternative. The state and county profiles of the region in which the project area is located provide the context within which the environmental justice analysis was conducted. The majority of the potentially affected minority population resides on lands under the proposed PR-1 MOAs. Environmental justice populations are highest under the proposed PR-1A, PR-1C, and PR-1D MOAs. The Gateway West ATCAA is above FL180 and is effectively a portion of the existing airspaces. No change in overflight effects are expected in areas beneath Gateway West.

Table 4.10-2. Environmental Justice Data by PRTC Airspace

Proposed PRTC Airspace	*2010 Affected Population*	*Affected Minority Population*		*Affected Low-Income Population*		*Affected Youth Population*	
		Number	*Percent*	*Number*	*Percent*	*Number*	*Percent*
Gap A Low/High MOA, Gap A ATCAA (10 days/year)	1,057	85	8.01%	97	9.18%	274	25.89%
Gap B Low/High MOA, Gap B ATCAA (10 days/year)	814	30	3.64%	99	12.22%	177	21.71%
Gap C Low/High MOA, Gap C ATCAA (10 days/year)	1,091	41	3.75%	108	9.89%	214	19.63%
Gateway East ATCAA (10 days/year)	3,327	258	7.76%	540	16.21%	780	23.44%
Gateway West ATCAA (240 days/year)	43,092	2,992	6.94%	5,644	13.10%	9,429	21.88%
Powder River 1A Low MOA (240 days/year)High MOA, PR-1A ATCAA (10 days/year)	3,322	1,807	54.40%	727	21.90%	989	29.78%
Powder River 1B Low/High MOA, ATCAA (240 days/year)	3,254	609	18.72%	343	10.54%	729	27.27%
Powder River 1C Low MOA (240 days/year)High MOA, PR-1C ATCAA (10 days/year)	2,491	2,138	85.82%	704	28.25%	887	35.59%
Powder River 1D Low/High MOA, ATCAA (240 days/year)	8,158	4,500	55.16%	1,893	23.20%	2,653	32.52%

continued on next page…

Table 4.10-2. Environmental Justice Data by PRTC Airspace

Proposed PRTC Airspace	*2010 Affected Population*	*Affected Minority Population*		*Affected Low-Income Population*		*Affected Youth Population*	
		Number	*Percent*	*Number*	*Percent*	*Number*	*Percent*
Powder River 2 ATCAA (240 days/year)	7,802	469	6.01%	863	11.06%	1,910	25.80%
Powder River 2 Low/High MOA (240 days/year)	7,662	462	6.03%	850	11.09%	1,874	24.46%
Powder River 3 Low/High MOA, ATCAA (240 days/year)	6,792	233	3.44%	539	7.94%	1,504	22.14%
Powder River 4 Low (Alt B only)/High MOA, ATCAA (240 days/year)	7,899	1,186	15.01%	1,303	16.49%	1,785	22.59%

Source: U.S. Census Bureau 2010b

4.10.2 *ISSUES AND CONCERNS*

Issues and concerns related to Environmental Justice were expressed during the public review process, as well as during outreach and Government-to-Government consultations with each of the Native American tribes with portions of reservations located underneath the proposed airspace. Concerns expressed included disruption of spiritual and cultural ceremonies from the audible and visual effects from overflights, including noise, sonic booms, aircraft sightings, contrails, air quality, interference with civil aviation, and effects of chaff and flares on livestock and sacred sites. Concern was also expressed that noise levels and low overflights would interfere with economic development efforts on the reservations, such as building new business ventures including development of a coal power plant and a casino.

4.10.3 *ENVIRONMENTAL CONSEQUENCES*

4.10.3.1 MODIFIED ALTERNATIVE A – THE PROPOSED ACTION

This section addresses the potential for Modified Alternative A to have disproportionately high and adverse effects on minority or low-income populations and children from the effects from overflights such as noise, sonic booms, aircraft sightings, and contrails. Air Quality (Section 4.4), Safety (Section 4.3), Socioeconomics (Section 4.9), and Cultural and Historic Resources (Section 4.7) address potential interference with civil aviation and effects of chaff and flares on livestock and cultural resources. Noise levels and low overflight effects are addressed in Section 4.2 and this section (Section 4.10). Contrails, or condensation trails, are an existing condition above the proposed PRTC airspace. Contrails are visible water vapor trails from aircraft engines associated with specific meteorological conditions and produced by high-altitude aircraft overflight. Commercial overflights of the four-state region are the primary contributors to these temporary artificial clouds. Overflight of military training aircraft could create condensation trails depending on flight altitude and meteorological conditions. Although contrails could be seen as an intrusion into an otherwise clear sky, such contrails, whether formed by commercial or military aircraft overflight, would not have an adverse effect upon tribal or other lands under the proposed airspace. Section 4.4 (*Air Quality*) discusses the effects of other aircraft emissions.

Native Americans typically represent 86 to 96 percent of the minority population within the affected counties where the minority population is greater than 10 percent of the county's population. The

predominant minority populations affected are Native Americans living on reservations. Reservation economic development efforts or new business ventures, such as development of a coal power plant or other facility, would not be adversely affected by Modified Alternative A, Modified Alternative B, or Modified Alternative C training operations. There is an existing coal power plant under the proposed PR-1B MOA and that plant, or any other plant, would be mapped and avoided by low-level overflights to ensure safety. There would be no constraints on construction of facilities under the proposed airspace other than those established by existing regulations, such as safety lighting on tall structures. Businesses, such as Native American ranching or casinos, would be compatible land uses under the less than 45 dB DNL_{mr} noise levels associated with flight operations within the proposed PRTC (see Section 4.8).

Section 4.7 *Cultural Resources* identified the potential for adverse noise impacts to cultural landscapes and traditional cultural properties under the proposed PRTC, and especially under the portions of the airspace subject to low-level overflight. Under the airspace proposed for the Modified Alternative A, the affected population is 89,099 persons including affected populations on four Native American reservations: Crow, Northern Cheyenne, Standing Rock, and Cheyenne River (see Section 3.10). Under the Modified Alternative A, the affected minority population is 14,348 and 12,860 persons live below the poverty line. The environmental analysis in this EIS addresses each of the issues and concerns identified during the public review process, as well as outreach and Government-to-Government consultations. Low-level overflights at or below 2,000 feet AGL, the potential for such overflights, and the related noise and startle effects are identified as adverse effects that would result from implementing PRTC.

Discussion of mitigation measures in Section 2.3.1 explains that the Northern Cheyenne, Standing Rock, and Cheyenne River Reservations would not be overflown at low level. There would be no PR-4 Low MOA and there would be an altitude floor of 12,000 feet MSL over the Northern Cheyenne Reservation. The 2010 population under the PR-1 MOAs is 17,225 persons, of whom 9,054 persons are minority and 3,667 persons live below the poverty level. Within the PR-1 MOAs outside the Northern Cheyenne Reservation, which would not be overflown below 12,000 feet MSL, there are an estimated 12,316 persons, of whom 4,560 are minority, 1,391 live below the poverty level, and 2,788 are children. Minority persons potentially affected by an annual average estimated 6 to 9 low-altitude overflights at any given location include the population within portions of the Crow Reservation under the PR-1 MOAs. Low-altitude overflights are those where the training aircraft is 2,000 feet AGL or below and an observer would be within one-quarter of a nautical mile on either side of the aircraft flight track.

Noise conditions on the four reservations would not exceed 48 dB DNL_{mr}, as explained in Section 4.2. Tables 4.2-5 through 4.2-8 for Modified Alternative A and corresponding tables for Modified Alternatives B and C show some variation in the number of specific noise events at different noise-sensitive locations. In general, the number of SEL noise events in the 65 dB range is somewhat higher on the Cheyenne River Reservation because the higher flying training aircraft produce enough engine noise to be heard over a larger area. The number of SEL noise events in the 85 dB range would be somewhat higher on the Crow Reservation because low flying training aircraft at or below 2,000 feet AGL produce higher noise events over a smaller area. Section 4.2 describes the noise effects on persons and animals. Persons living on the Northern Cheyenne Reservation and western portions of the Standing Rock and Cheyenne River Reservations would experience aircraft above 12,000 feet MSL. Such higher-altitude aircraft overflights could be seen and heard and viewed as annoying, but such noise and visual intrusions would not be expected to have a negative effect on human health or the environment that is significant, unacceptable, or greater than generally accepted norms. The uncertainty of low-level overflights and the actual average of 6 to 9 low-level overflights per year at 2,000 feet AGL or below

within one-quarter mile of the aircraft flight track at any given location under the Low MOAs are identified as an adverse impact, if not mitigated, to the general human population under the proposed airspace. PR-1C Low MOA would be subject to low-level overflights and has an estimated 2,138 minority residents and 353 non-minority residents. Residents under PR-1C could incur an adverse impact from low-level overflight and associated uncertainty. Since the minority residents represent 85.82 percent of the population affected under the MOA, and the impact would be an adverse effect, if not adequately or acceptably mitigated, under the *Air Force Interim Guide for Environmental Justice Analysis with the Environmental Impact Analysis Process* (Air Force 1997b), there would be the potential for disproportionately high and adverse effects to the minority population on the portion of the Crow Reservation under PR-1C without implementation of identified mitigation measures.

Beneath the MOA airspace proposed in the Modified Alternative A there are eight traditional cultural properties, as well as battlefield sites, archaeological sites, and landscape areas that have been identified as probable sacred sites. Some of these areas are located on the four Native American reservations, and throughout the year many Native Americans visit these and other sacred sites for spiritual ceremonies, vision quests, or other cultural activities. The largest of these ceremonies typically occur during the warmer months, from May through September, depending on the practices of the individual tribes. If these ceremonies were to be conducted during the 10 days per year when a sonic boom could be heard or at a location and time when one of the average of 6 to 9 times per year when low-level overflights at or below 2,000 feet AGL were to occur, sudden noise or startle effects could disrupt activities at sacred sites and disturb participating tribal members. Impacts are associated with low level training flights at or below 2,000 feet AGL, and these impacts include uncertainty and startle effects (see Section 4.9.3.1.5), as well as noise effects (see Section 4.2.3.1.5) and visual effects (see Section 4.7.2.1).

Overflights below 12,000 feet MSL would not occur over the Northern Cheyenne, Standing Rock, or Cheyenne River Reservations. Any visual or audible intrusion into cultural sites, including those located on tribal reservations, or during the ceremonies conducted by Native Americans, could be disruptive and perceived as an annoyance. Overflights above 12,000 feet MSL over the Northern Cheyenne, Standing Rock, or Cheyenne River Reservations, or an average of one sonic boom per day from flights during the 10 days per year of LFEs would not have the same intensity of a startle effect, uncertainty, or short intense noise associated with low-altitude overflights at or below 2,000 feet AGL. Mitigation measures developed through outreach and Government-to-Government consultations address these effects by requiring advance notification of LFEs and methods of discussing scheduling adjustments. Overflights above 12,000 feet MSL, although seen and heard, would not be expected to have a disproportionately high and adverse effect on human health or the environment.

Adverse startle, noise, and uncertainty effects would be associated with an average of 6 to 9 low-level overflights at or below 2,000 feet AGL per year. Portions of the Crow Reservation would be under Low MOAs and would be overflown at or below 2,000 feet AGL. Table 4.10-2 identifies portions of the Crow Reservation beneath the PR-1C MOA which are 85.82 percent minority population. Table 4.10-2 also identifies the affected minority populations, nearly all on portions of the Crow Reservation, as 54.40 percent under PR-1A and 55.16 percent under PR-1D. The PR-1A, PR-1C, and PR-1D MOAs overlie portions of the Crow Reservation that have a minority population in excess of 50 percent. If there is an adverse impact not adequately or acceptably mitigated, such as by the proposed mitigations in Section 2.3.1 and mitigations required by the Programmatic Agreement, there would be a potential for a disproportionately high and adverse effect on that population (Air Force 1997b).

The Air Force is continuing Government-to-Government consultations and has committed to coordinating flight schedules and establishing temporary avoidance areas for ceremonies performed at

identified sacred sites at specific times of year for all tribes (see Appendix N). Flying at higher altitudes or avoiding particular areas during specific time periods would reduce the noise and visual disturbances of ceremonies by military training. Advance coordination between the Air Force and the tribes on the scheduling of LFEs could address potential impacts from sonic booms on the larger ceremonies conducted under the airspace. There is the potential that small or individual ceremonies could be disturbed and the potential exists for such disturbance to be perceived as an adverse impact to these Native American participants.

The Modified Alternative A incorporates mitigation measures (see Section 2.3.1) which reduce the potential impacts to areas of high minority populations, low-income populations, and youth populations in the affected counties. The youth population under the PR-1A, PR-1C, and PR-1D MOAs is proportionately higher than under other proposed MOAs. As discussed in Section 4.2.3.7, no long-term impacts are expected to occur as a result of noise levels under the proposed airspace. Additionally, with noise levels at or below 48 dB DNL_{mr}, schools are a compatible land use. While infrequent low-level overflights at or below 2,000 feet AGL may temporarily disrupt classrooms on the Crow Reservation, these overflights are not expected to have health effects on children. No other health or environmental conditions have been identified which could adversely impact children.

The greatest proportion of minorities, low income, and youth populations are located under the proposed PR-1 MOAs. Modified Alternative A would exclude overflights below 12,000 feet MSL over the Northern Cheyenne Reservation under portions of PR-1D, and disproportionately high and adverse impacts to minority persons on the Northern Cheyenne Reservation would not be expected. At any given location within the portions of the Crow Reservation under PR-1A, PR-1C, and PR-1D, there would be the potential for disproportionately high and adverse effects to minority populations from the uncertainty, startle effect, and noise produced by an estimated average of 6 to 9 low-level overflights per yearif adequate or acceptable mitigations are not applied.

The mitigations identified in this EIS and committed to in the Programmatic Agreement would result in impacts that are not significant in the context of NEPA and that have been resolved under NHPA. Consequently, Modified Alternative A with the specified mitigations would not result in disproportionately high and adverse human health or environmental effects in the context of environmental justice.

4.10.3.2 MODIFIED ALTERNATIVE B

Modified Alternative B would include low-level overflights of the western one-third of the Standing Rock Reservation and the northwest corner of the Cheyenne River Reservation under the proposed PR-4 Low MOA. Table 4.10-2 identifies these areas under the proposed PR-4 Low MOA as having a minority population of 15.01 percent as compared with minority populations in excess of 50 percent under PR-1A, PR-1C, and PR-1D Low MOAs. There would not be any PR-1 MOAs and the Crow or Northern Cheyenne Reservation lands would not be overflown below FL180 (18,000 feet MSL). High-altitude visual effects or infrequent sonic booms during LFEs could be seen as an intrusion, although no adverse effects would be expected to occur to the Crow or Northern Cheyenne Reservations.

Under PR-4 there would be an estimated annual average of 6 to 9 low-level flights over any given location on the ground and an average of one sonic boom a day during the 10 days of LFEs per year. Such intrusions could be perceived as adverse effects to sites which are culturally or spiritually significant to Native Americans located on or near reservations and to ceremonies being conducted by Native Americans at these sites. Infrequent low-level overflights at or below 2,000 feet AGL within the PR-4 MOA have the potential for adverse effects comparable to those described for PR-1A, PR-1C, and PR-1D with Modified Alternative A. Without changes to flying protocols, areas overflown on the

Standing Rock and Cheyenne River Reservations would experience a change in the noise and visual setting that could have an adverse effect on sacred sites and spiritual ceremonies conducted by Native Americans on the reservations as described in Section 4.7.3.2. Mitigations outlined in Section 2.3.1 would be applied to Modified Alternative B to reduce the potential impacts to minority populations on tribal reservation lands, although additional mitigations would likely need to be identified through continued consultations.

Any visual or audible intrusion into cultural sites, including those located on tribal reservations, or during the ceremonies conducted by Native Americans, could be disruptive and perceived as an annoyance. The Air Force is continuing Government-to-Government consultations and has committed to coordinating flight schedules with affected tribes to avoid ceremonies at these sacred sites at specific times of year. Establishing temporary avoidance areas and/or restricting flight to higher altitudes during specified time periods could reduce the disturbance to the sacred sites and ceremonies. Advance coordination between the Air Force and the tribes on the scheduling of the 10 days of LFEs per year (one to three days per quarter) could address potential impacts from sonic booms during the largest ceremonies conducted under the airspace. Modifications to the flying protocol (see Section 2.3) would reduce the potential for disturbances to identified locations and larger ceremonies. There is the potential that individual or smaller ceremonies would be disturbed, and such disturbances could be perceived as an adverse effect.

Under Modified Alternative B, there would be potential adverse effects to low-income and minority populations, as compared to Modified Alternative A or C, where adverse effects would be mitigated to less than significant under NEPA and resolved under NHPA. Modified Alternative B, though, would not result in disproportionately high human health or environmental effects in the context of environmental justice.

No long-term impacts are expected to occur on children as a result of noise levels under Modified Alternative B. Schools would be considered a compatible land use and infrequent low-level overflights may temporarily disrupt learning. No other health or environmental conditions have been identified which could adversely impact children.

4.10.3.3 MODIFIED ALTERNATIVE C

Standing Rock and Cheyenne River Reservations would not be overflown below 18,000 feet MSL. There would be no PR-4 MOAs, and there would be an altitude floor of 12,000 feet MSL over the Northern Cheyenne Reservation. As described for Modified Alternative A, Modified Alternative C would not have the potential for disproportionately high and adverse impacts to minority or low-income populations on the Standing Rock, Cheyenne River, or Northern Cheyenne Reservation. As explained for Modified Alternative A, there would be a potential for disproportionately high and adverse efffects to minority or low-income populations residing on portions of the Crow Reservation under the PR-1A, PR-1C, and PR-1D Low MOAs. Any given location on portions of the Crow Reservation under the proposed PR-1A, PR-1C, and PR-1D MOAs would be estimated to experience an annual average of 6 to 9 low-level overflights per year with associated consequences as described for Modified Alternative A. Impacts associated with low-level training flights at or below 2,000 feet AGL include uncertainty and startle effects (see Section 4.9.3.1.5), as well as noise effects (see Section 4.2.3.1.5) and visual effects (see Section 4.7.2.1). Section 4.7.3.3 identified the change in cultural landscapes as a result of the noise and visual effects of the low-level overflights and sonic booms as a potential adverse effect. Many of the traditional cultural properties and other cultural sites are located under the PR-1 MOAs. Mitigations as outlined in Section 2.3.4 would reduce potential effects to tribal reservation lands and locations such as Little Bighorn Battlefield National Monument. Sacred sites under the proposed airspace and spiritual ceremonies

conducted by Native Americans on reservations under the proposed airspace could be perceived as being adversely affected by training overflights at any altitude.

The Air Force is continuing Government-to-Government consultations and has committed to coordinating flight schedules with affected tribes to avoid ceremonies at identified sacred sites at specific times of the year. Advance coordination between the Air Force and the tribes on scheduling LFEs could address potential impacts from sonic booms on the larger ceremonies conducted under the airspace. There is the potential that small or individual ceremonies could be disturbed and the potential exists for such disturbance to be perceived as an adverse effect to these Native American cultural resources.

Impacts under the PR-1 MOAs of Modified Alternative C would be effectively the same as those for Modified Alternative A. As discussed above for that alternative, the mitigations identified in Section 2.3.1 and committed to in the Programmatic Agreement would result in impacts that are not significant in the context of NEPA and that have been resolved under NHPA. Consequently Modified Alternative C with the specified mitigations would not result in disproportionately high and adverse human health and environmental effects in the context of environmental justice.

4.10.3.4 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, there would be no disproportionately high and adverse effects upon environmental justice population. The Air Force would continue to use the existing Powder River airspace, which does not directly affect Native American reservations or other areas where the populations of concern may be disproportionately represented.

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5.0 CUMULATIVE EFFECTS AND OTHER ENVIRONMENTAL CONSIDERATIONS

5.1 CUMULATIVE EFFECTS

Council on Environmental Quality (CEQ) regulations stipulate that the cumulative effects analysis in an Environmental Impact Statement (EIS) should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 Code of Federal Regulations [CFR] 1508.7).

The first step in assessing cumulative effects involves defining the scope of other actions and their interrelationship with the proposed action or alternatives (CEQ 1997). The scope must consider other projects that coincide with the location and timetable of the proposed action and other actions. Cumulative effects analyses evaluate the interactions of multiple actions.

5.1.1 *PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS*

Table 5.1-1 summarizes the past, present, and reasonably foreseeable actions within the region which could interact with the proposed Powder River Training Complex (PRTC). In many cases, these actions are outside the area under the PRTC.

Each action in Table 5.1-1 is explained in the notes, and the status is described where appropriate. A number of the projects are Bureau of Land Management (BLM) management and planning actions. The energy exploration and development, both fossil fuels and renewable sources such as wind, has been a stimulus to economic activity within the region.

In addition to these projects, there have been general trends in the area toward larger farming operations, growth in larger established communities, and decline of smaller communities. Recreational uses, which are likely to continue to grow into the foreseeable future, include hunting and fishing, with many hunters and fishermen coming to the region in search of game.

As illustrated in Figure 1-3, the existing Powder River airspace has threat emitters and simulated targets which are typically located on former intercontinental ballistic missile sites. Should funding become available, it is reasonably foreseeable that additional threats which add realism to training could be located under the proposed PRTC airspace.

5.1.2 *CUMULATIVE EFFECTS*

The cumulative effects of establishing the PRTC airspace have been referred to throughout this EIS. The following analysis examines the incremental impacts of the PRTC action when added to the actions set forth in Table 5.1-1 and whether the effects of the actions together would result in potentially significant impacts not identified when the Proposed Action or alternatives are considered separately.

Figure 5.1-1 shows the locations of major projects proposed within the PRTC region that are included in Table 5.1-1.

Table 5.1 - 1. Past, Present, and Reasonably Foreseeable Actions in the ROI (Page 1 of 13)

Report #	Action	Notes	Status
BUREAU OF LAND MANAGEMENT RESOURCE MANAGEMENT PLANS (RMPs)			
1	Fortification Creek RMP Amendment	The Bureau of Land Management (BLM) Buffalo Field Office (BFO) proposed to amend its 1985 RMP with an associated Environmental Assessment (EA) for the Fortification Creek Area (FCA) (Campbell and Johnson Counties, Wyoming). Existing land use decisions were evaluated to determine whether they are still relevant given the mixed ownership pattern and other management challenges with the FCA. The BLM prepared an RMP Amendment and EA to evaluate the existing conditions and address issues that presented management challenges, particularly oil and gas exploration and development in the 100,000-acre Fortification Creek area.	Potential expanded regional mineral development. Proposed Fortification Creek Area RMP/EA and Finding of No Significant Impact (FONSI) released in March 2011. Decision of Record (DR) released August 2011. Issues identified for the Fortification Creek amendment and DR include: The Selected Modified Alternative is a performance-based approach where BLM has defined elk protection and reclamation performance standards for industry to achieve with their development plans. The citizen-proposed Area of Critical Environmental Concern (ACEC) will not be established as the performance standards will ensure the important and relevant resource values are conserved. The pace of coal bed natural gas (CBNG) development will be based on the performance standards and the geographic phases, following an orderly "bolt-on" approach, where new infrastructure will expand from, and tie into existing infrastructure. Overhead power lines will be allowed on BLM surface land within road corridors. Existing lease stipulations for steep slopes, erosive soils, elk habitat, archaeological/paleontological resources, visual resources will remain. Legal challenge to BLM's decisions filed in 2013 by Powder River Basin Resource Council, Wyoming Outdoor Council, and National Wildlife Federation. Cross Motion for Summary Judgments are pending. Copies of the DR and approved RMP (Amended) are available online at: www.blm.gov/wy/st/en/info/NEPA/documents/bfo/fortification_creek.html

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Table 5.1-1. Past, Present, and Reasonably Foreseeable Actions in the ROI (Page 2 of 13)

Report #	Action	Notes	Status
BUREAU OF LAND MANAGEMENT RMPS (CONT'D)			
2	Miles City Field Office RMP	Encompassing eastern Montana (3 million surface acres and 12 million acres of federal minerals within Carter, Custer, Daniels, Dawson, Fallon, Garfield, McCone, Powder River, Prairie, Richland, Roosevelt, Rosebud, Sheridan, Treasure, Wibaux and portions of Big Horn and Valley counties, Montana), resources are managed under two separate RMPs; the Big Dry Resource Management Plan and the Powder River Resource Management Plan. Due to recent land use changes, changing resource conditions, changes in use of public land, and new environmental concerns, the BLM is preparing this updated Resource Management Plan by combining the Big Dry and Powder River Plans into one comprehensive plan.	Potential expanded regional mineral development. The RMP is being implemented following an Environmental Impact Statement (EIS) Record of Decision on 30 December 2008. http://www.blm.gov/rmp/mt/milescity/index.htm
3	North Dakota RMP	The North Dakota Resource Management Plan will provide future direction for approximately 58,000 surface acres and over 4.1 million acres of mineral estate (subsurface acres) in the state. As of 2013, an EIS is being prepared as part of the planning process. The purpose of the plan is to establish guidance, objectives, policies, and management actions for BLM-administered public lands for the next 10 to 15 years.	The BLM has received public input about development of federal coal and BLM management of public lands and minerals in North Dakota. http://www.blm.gov/mt/st/en/fo/north_dakota_field/rmp.html
4	South Dakota RMP	EIS in process as of 2013. The RMP and EIS encompass an area including portions of 32 of the 66 counties within South Dakota. The plan will fulfill the needs and obligations set forth by the National Environmental Policy Act, the Federal Land Policy and Management Act, all other acts, laws and regulations associated with land management planning, and BLM management policies.	The BLM has received public input about development of federal coal and BLM management of public lands and minerals in South Dakota. Draft RMP/EIS released for a 90 day public review on June 14, 2013. http://www.blm.gov/mt/st/en/fo/south_dakota_field/rmp.html

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Table 5.1 - 1. Past, Present, and Reasonably Foreseeable Actions in the ROI (Page 3 of 13)

Report #	Action	Notes	Status
RMPs for Oil and Gas Development			
5	Oil and Gas RMP Supplemental EIS Amendment for Billings, Powder River and South Dakota (1992)	Supplement to the Montana Statewide Oil and Gas Environmental Impact Statement and Amendment of the Powder River and Billings Resource Management Plans (Draft Supplemental EIS). The document was prepared by the BLM as a result of U.S. District Court issued orders (December 2006). Related documents: (November 2007) Supplemental Air Quality Analysis to the Draft Supplement to the Montana Statewide Oil and Gas Environmental Impact Statement and Amendment of the Powder River and Billings Resource Management Plans (Supplemental Air Quality Analysis). The document was prepared by the BLM to assess the level of coal bed natural gas (CBNG) development that would require mitigation to reduce the potential for impacts to air quality. The comments received on the Supplemental Air Quality Analysis will be considered in the preparation of the Final Supplement to the Montana Statewide Oil and Gas Environmental Impact Statement and Proposed Amendment to the Powder River and Billings RMPs (Final Supplemental EIS).	Proposed expanded regional mineral development. Record of Decision on Supplemental EIS issued December 2008. Topics addressed in the EIS include Phased CBNG development, the inclusion of the proposed Tongue River Railroad in the cumulative impact analysis, and a discussion on how private water well mitigation agreements help alleviate the impacts of methane migration and groundwater drawdown. The Draft Supplemental EIS analyzed three new alternatives (F, G and H) to consider phased CBNG development. Under Alternative F, the BLM would limit the number of Federal applications for permit to drill (APD) approved each year cumulatively and in each fourth-order watershed. The BLM would also limit the percentage of disturbance within identified crucial wildlife habitat. Further, the BLM would place a limit on the volume of untreated water discharged to surface waters from Federal CBNG wells within each fourth-order watershed. Under Alternative G, development of CBNG on Federal leases in the Billings and Powder River RMP areas would be done following the same management actions as described under Alternative F. However, while the BLM would limit the number of Federal APDs approved each year cumulatively, development would be limited to a low range of predicted wells based on the Statewide Document's Reasonably Foreseeable Development scenario.

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Table 5.1-1. Past, Present, and Reasonably Foreseeable Actions in the ROI (Page 4 of 13)

Report #	Action	Notes	Status
RMPs for Oil and Gas Development (Cont'd)			
5 (cont.)	Final Oil and Gas RMP/EIS Amendment for Billings, Powder River and South Dakota (1992) (continued)	The Powder River and Billings RMP areas comprise approximately 1.5 million acres of BLM-managed surface and 5 million acres of BLM-managed mineral estate. There are approximately 3.2 million acres of BLM-managed oil and gas. The Powder River RMP area includes Powder River and Treasure Counties, and portions of Big Horn, Carter, Custer, and Rosebud Counties. The Billings RMP area includes Carbon, Golden Valley, Musselshell, Stillwater, Sweet Grass, Wheatland, and Yellowstone Counties and the remaining portion of Big Horn County. The Supplemental EIS supplements the 2003 Montana Statewide Final Oil and Gas Environmental Impact Statement and Proposed Amendment of the Powder River and Billings Resource Management Plans (Statewide Document).	Alternative H, the BLM's preferred alternative, contained three key components. First, a phased development approach would be implemented where a CBNG proposal would be reviewed against four filters or screens to determine if the proposal needed to be modified. Second, this alternative would include extensive requirements that an operator must meet when submitting a project Plan of Development (POD). Third, mitigation measures, and subsequent modifications to existing operations via adaptive management, would be considered and applied to each POD, as appropriate. The BLM has initiated activities to coordinate and consult with the Montana Governor. Prior to the issuance of the Record of Decision and approval of the proposed land use plan amendment, the Governor will be given the opportunity to identify any inconsistencies between the Proposed Supplemental EIS/Amendment and state or local plans and to provide recommendations in writing during the 60-day consistency review period required by the BLM land use planning regulations (43 CFR 1510.3-2).
6	Buffalo Oil and Gas Leasing EA and possible Buffalo RMP amendment	In response to rulings made by the Interior Board of Land Appeals (IBLA) and the U.S. Tenth Circuit Court of Appeals, the BLM proposed to examine land use allocations for oil and gas leasing made and in the context of new information regarding CBNG. www.blm.gov/wy/st/en/info/NEPA/bfodocs/rmp-og.html	Proposed expanded mineral development. EA and FONSI were published 4 March 2008. Leasing is considered during the RMP revision in progress. Web site: www.blm.gov/wy/st/en/info/NEPA/bfodocs/rmp-og.html

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Table 5.1 - 1. Past, Present, and Reasonably Foreseeable Actions in the ROI (Page 5 of 13)

Report #	Action	Notes	Status
RMPs for Oil and Gas Development (Cont'd)			
7	Buffalo Field Office RMP	The BLM is revising the RMP for the Buffalo Field Office. It will provide future direction for approximately 800,000 surface acres and 4.8 million acres of mineral estate managed by the BLM in Campbell, Johnson, and Sheridan counties in north-eastern Wyoming. This area contains vast deposits of oil, gas, and coal, and provides a variety of resources such as wildlife habitat and rangelands for livestock grazing.	Draft RMP and supporting EIS released for a 90 day public review on June 28, 2013. The Draft RMP/EIS includes a series of management actions, within four management alternatives, designed to address management challenges and issues raised early during the EIS process, including: energy development (coal, oil and gas, renewable energy, and uranium); wildlife habitat management, including that of the Greater Sage-Grouse; livestock grazing; air quality; special management areas including areas of critical environmental concern; and travel management. Copies of the Draft RMP/EIS are available online at: http://www.blm.gov/wy/st/en/programs/Planning/rmps/buffalo/docs.html
8	Inventory of Assessed Federal Coal Resources and Restrictions to Their Development	The report found that the Powder River Basin, which straddles Wyoming and Montana, contains 550 billion short tons of total coal resources, or nearly 58 percent of the 957 billion short tons assessed or analyzed to date on all Federal lands. The Interior Department Bureau of Land Management currently has under lease or lease application about 11.6 billion short tons of coal in the basin, which are not included in the 550 billion tons of Federal coal studied. (The report can be accessed at: http://cleanenergyaction.files.wordpress.com/2013/10/fed-report-on-coal-resources-aug-2007.pdf	Report finalized in August 2007. Potential for additional regional mining operations.

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Table 5.1-1. Past, Present, and Reasonably Foreseeable Actions in the ROI (Page 6 of 13)

Report #	Action	Notes	Status
RMPs for Oil and Gas Development (Cont'd)			
9	Fortification Creek Area (FCA) Plan of Development Proposal (POD)	The BLM Buffalo Field Office is requesting public comments on the FCA POD. Under the proposal, BLM is preparing EAs for seven CBNG PODs in the FCA of the Powder River Basin (PRB). The 100,000-acre FCA is located approximately 25 miles northwest of Gillette. Special resource values in the area include: an isolated elk herd and its habitat, high visual quality, a 12,000 acre wilderness study area (WSA), steep slopes with erosive soils, and cultural, historic, and or paleontological values. As part of the continuing development of CBNG resources in the PRB, development is now being proposed in the leased areas of the FCA, which include all the federal minerals outside the WSA. Seven PODs, proposed by six different companies, include a total of 158 CBNG wells to be drilled along with installation of associated facilities. The surface disturbance for these PODs is estimated to be approximately 350 acres. Along with the individual PODs, the companies have submitted 4 maps of the FCA showing an estimate of total known development planned for the area. They have worked together to identify common primary access and utility corridors. BLM will use these maps and additional information supplied by the companies to conduct the cumulative effects analysis for the EAs. There is a section of state land in the center of the WSA that also has been leased by the state for oil and gas development. In order for the company to access that lease, they must obtain a Right-of-Way across public land.	Plans underway. Potential for additional regional mining operations. On 31 May 2012, BLM released a Decision of Record, FONSI, and EA, approving the Yates Petroleum Corporation Queen B Plan of Development, a site-specific 16-well drilling decision that implements the management approach BLM adopted through the FCPA RMPA. Legal challenge to BLM's decisions filed in 2013 by Powder River Basin Resource Council, Wyoming Outdoor Council, and National Wildlife Federation. Cross Motion For Summary Judgments are pending.

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Table 5.1-1. Past, Present, and Reasonably Foreseeable Actions in the ROI (Page 7 of 13)

Report #	Action	Notes	Status
RMPs for Oil and Gas Development (Cont'd)			
10	Dakota Prairie Grasslands, Medora Ranger District; North Dakota; North Billings County Range Allotment Management Plan Revisions	The Medora Ranger District, Dakota Prairie Grasslands, proposes to continue grazing on 43 allotments in a manner consistent with direction set forth in the Dakota Prairie Grasslands Land and Resource Management Plan (Grasslands Plan) and applicable laws. The EIS lays the groundwork for revising the Allotment Management Plans for the 43 allotments. Site-specific resource objectives, allowable grazing strategies, and adaptive management tools set forth in the Draft ROD for the Final Environmental Impact Assessment issued in December 2013. The purpose of this action is to develop Allotment Management Plans for permitted domestic livestock grazing using management that is consistent with the Grasslands Plan direction and to maintain, meet, or move towards desired resource conditions within a 10-20 year timeframe following the decision. There is an overall need for greater management flexibility to meet Grasslands Plan resource goals and objectives and to cope with fluctuations in environmental and social conditions including, but not limited to, annual changes in weather; to be responsive to permittee requests for reasonable operational adjustments; and to respond to unforeseen issues.	Continuing activity. Draft ROD for the Final Environmental Impact Assessment issued in December 2013, Final ROD expected early 2014. Copies of the Draft ROD are available online at http://data.ecosystem-management.org/nepaweb/nepa_project_exp.php?project=23278.

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Table 5.1-1. Past, Present, and Reasonably Foreseeable Actions in the ROI (Page 8 of 13)

Report #	Action	Notes	Status
RMPs for Oil and Gas Development (Cont'd)			
11	Federal Department of Transportation Tongue River Railroad	The Tongue River Railroad was first proposed in 1983 between Miles City and Decker for a distance of 130 miles. The railroad would cross the coal-rich Powder River Basin along the Montana-Wyoming border. In October 2009, federal officials announced federal approval of the final 17-mile stretch of the line near Decker that had not been included in prior approvals. Other sections had been approved in 1986 and 1996. Permits from state and federal agencies are still needed, including rights of way through private and public property. In December 2012, TRRC filed a supplemental application, in which the preferred alignment was changed from the 83-mile Tongue River Alternative to the 42-mile Colstrip Alternative. The new preferred Colstrip Modified Alternative would generally parallel Greenleaf Road (S-447) rather than follow Roe & Cooper Creek. The new rail line could boost Montana coal production by about 12 million tons annually. The railroad also projects hauling 12 to 16 million tons of Wyoming coal annually, destined primarily for Midwestern power plants.	Although the railroad is controversial, the Tongue River Railroad is moving closer to development with the obtaining of permits, and the initiation of the preparation of an EIS in 2012. The project is undergoing planning, route adjustments, and permitting. • EIS Scoping has been completed • The field surveys have been completed • Draft EIS is expected in Spring 2015
12	Otter Creek Coal Reserves	The Otter Creek coal reserves proposed for strip mining are located southeast of Ashland in south central Montana. Coal reserves are estimated at approximately 1.3 billion tons. In Spring 2010, the State of Montana contracted with Arch Coal Inc. to develop the coal reserves. In April 2009 the Northern Cheyenne Tribe entered into a settlement agreement which removed some litigation to development of the coal deposits. Otter Creek could eventually be an operation nearly the size of Colstrip. Potential environmental effects are expected to include soils, water, and air quality impacts as well as socioeconomic growth in the region. Public concern has been expressed that the agricultural way of life and some cultural resources could be irreversibly altered by coal development and transport. The agreement with the tribes states that any company that mines the state tracts must give hiring preference to tribal members. As part of the settlement, Montana's Congressional delegation promised the tribe $10 million per year for seven years to offset mining impacts.	Preliminary development plans have been prepared. Lease agreements have been signed. • 2012, Otter Creek Coal filed with the Montana Department of Environmental Quality an application for a surface coal mining permit. • 2015, Draft EIS is expected in Spring 2015 Additional lawsuits have been filed in Spring 2010 to challenge the project. For the purpose of this EIS, a strip mine to excavate Otter Creek coal reserves would be a reasonably foreseeable project within the ROI.

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Table 5.1-1. Past, Present, and Reasonably Foreseeable Actions in the ROI (Page 9 of 13)

Report #	Action	Notes	Status
MILITARY			
13	Base Realignment and Closure (BRAC) beddown and flight operations of Remotely Piloted Aircraft (RPA) at Grand Forks AFB, ND	In accordance with 2005 BRAC decisions and the Total Force Integration Plan, Phase II, the Air National Guard would plan for and establish an operational Predator squadron at Hector International Airport, North Dakota with 8 Primary Mission Aircraft Inventory MQ-1s. Furthermore, Air Combat Command (ACC) would support the 119th Fighter Wing's RPA mission by activating an active duty associate unit at Grand Forks Air Force Base (AFB). This unit (to stand up in FY 09/2) will provide maintenance support for the 8 MQ-1 aircraft and Predator Launch and Recovery operations at Grand Forks. ACC would establish Grand Forks AFB as the second Global Hawk Main Operating Base (MOB) in FY11 (as reflected in the Total Force Integration Plan, Phase II) by activating an active duty unit with end-state manpower estimated at 393 personnel (81 officers, 304 enlisted, and 8 contractors). Approximately eight RQ-4 aircraft are currently slated for Grand Forks.	Proposed airspace designation northeast of Powder River Training Complex (PRTC) to create training area for Grand Forks AFB-based RPAs. Final EIS released to the public in June 2010 to convert portions of the Devils Lake MOA to Restricted Areas or other airspace designation to support RPA training.
14	Proposed White Elk Military Operations Area (MOA)	On 4 November 2011, the United States Air Force signed the ROD for the White Elk MOA as a result of findings in the Final EIS dealing with airspace over White Pine and Elko Counties, Nevada. The ROD states the Air Force decision to select the White Elk MOA on the western edge of the Utah Test and Training Range (UTTR) beneath the existing Currie/Tippet Air Traffic Control Assigned Airspace (ATCAA) would improve local training. The proposed MOA would extend from 14,000 feet mean sea level (MSL) up to but not including 18,000 feet MSL while the existing ATCAA extends from 18,000 feet MSL to 58,000 feet MSL. The proposal includes additional training operations in proposed MOA and existing ATCAA, authorization of chaff and flares in the MOA and ATCAA, and authorization of supersonic operations in the existing ATCAA.	Proposed airspace designation southwest of PRTC to create additional training capabilities for military aircraft based at Hill AFB. The Final EIS and ROD were completed in 2011.

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Table 5.1-1. Past, Present, and Reasonably Foreseeable Actions in the ROI (Page 10 of 13)

Report #	Action	Notes	Status
MILITARY (CONT'D)			
15	Beddown of a Second B-52 Flying Squadron at Minot AFB	The Air Force evaluated the stand up of a new operational B-52 squadron and beddown at Minot AFB to support conventional and strategic missions. Adding an additional squadron to Minot AFB significantly increases the base's ability to support both missions while maintaining constant levels of operational readiness.	Beddown has been completed at Minot AFB. New squadron of B-52 aircraft is included in baseline and alternative analysis for PRTC.
16	Siting of Threat Emitter Sites to Enhance Training in PRTC	Although threat emitters are not proposed as part of PRTC, it is reasonably foreseeable that, if funds become available, the Air Force would propose to lease 15-acre parcels under the airspace on which to locate features to enhance training realism. Threat emitters and simulated targets could be developed under the proposed PRTC airspace comparable to those in Figure 2-7. These sites are designed to realistically simulate a battlefield environment and successfully accomplish mission training. Locations for these sites would be approximately 15 to 20 miles apart, where possible, and either under or near the MOAs/ATCAAs. Emitter or simulated target sites would consist of a 15-acre barbed wire fenced area with a 1- to 2-acre fenced smaller area to secure electronic equipment. The degree of construction or development would depend on the type of site, utility requirements, safety and security parameters, and existing conditions. Siting near existing roads and power lines would reduce costs and disturbance to environmental resources. An existing cleared area on a rise, such as a former ballistic missile site, would improve the range of any emitters while reducing the extent of clearing or other disruption to the existing environment. A site on a rise typically avoids biologically sensitive lowlands or wetlands and provides the transmitter with a full line of sight into the training airspace, thereby improving its effectiveness as a training aid.	At this time, the Air Force cannot identify the number, nature, or location of any candidate sites. Doing so would be premature since the final PRTC airspace structure would dictate the appropriate locations for these training assets. Should a decision be made to implement the PRTC and pursue additional emitter and/or simulated target sites, the Air Force would undertake National Environmental Policy Act (NEPA) analysis tiered to this EIS. The Air Force would also conduct the required real estate and NHPA process for all sites. Ellsworth AFB formerly performed a Minuteman Intercontinental Ballistic Missiles mission that included a number of 15-acre remote sites dispersed under the area of the proposed PRTC airspace. Such sites would be expected to receive initial consideration as possible threat emitter and/or simulated target locations.

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Table 5.1-1. Past, Present, and Reasonably Foreseeable Actions in the ROI (Page 11 of 13)

Report #	Action	Notes	Status
PUBLIC AIRPORTS			
17	Hardin Airport Relocation, Hardin, Montana (MT)	Construction is underway to develop a new public airport in Hardin, Big Horn County, MT approximately 2.5 miles west of Hardin and south of Interstate 90. The project includes a new 4,490 foot runway, aircraft taxiway, parking apron, airport beacon, Precision Approach Path Indicator, hangar access, taxi lane, and an entrance road. This public airport will replace the existing Hardin airport which is inadequate for current and projected air traffic and does not comply with current Federal Aviation Administration (FAA) standards. The relocated airport is expected to meet FAA standards and be eligible for additional state and federal funding.	Construction is expected to be completed sometime in 2014. The new airport will host private jets and smaller planes, but no heavy traffic. Improvements to airport would facilitate additional aircraft traffic.
18	Bowman County Airport Complex, Bowman, North Dakota (ND)	Construction is underway to develop a new public airport in Bowman County, ND, about four miles east of Bowman. The complex is expected to be finished sometime in 2015, and will replace the existing Bowman Municipal Airport. The new airport will have a 5,700-ft runway, about a 20 percent increase from the current airport's runway, and will feature more hangers and a larger, county-owned facility for housing aircraft. The new expanded airport is anticipated to take a load off some of the other airports in the area that are overloaded from Oil Patch activity.	Expected to be finished sometime in 2015. Improvements to airport capacity would facilitate additional aircraft traffic.
FEDERAL ENERGY REGULATORY COMMISSION (FERC)			
19	Grasslands Expansion, Williston Basin Interstate Pipeline Co. PF03-3	Construct three new compressors stations and add compression at the Manning compressor station in Dunn County, North Dakota, and construct a supply lateral in southeastern Montana.	Under review; representative of ongoing upgrades to regional mineral development.

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Table 5.1-1. Past, Present, and Reasonably Foreseeable Actions in the ROI (Page 12 of 13)

Report #	Action	Notes	Status
FERC (CONT'D)			
20	Baker Storage Field Well Abandonment, Williston Basin Interstate Pipeline Company, CP05-391	Abandonment of three existing natural gas storage injection/withdrawal wells in the Baker Storage Field, Fallon County, Montana.	Completed in 2006; representative of ongoing changes to regional mineral development.
21	Spearfish Hydroelectric Project City of Spearfish, South Dakota P-12775	On Spearfish Creek, in Lawrence county, South Dakota. The project occupies United States lands within the Black Hills National Forest administered by the U.S. Forest Service.	In process; representative of ongoing community improvements within region.
OTHER			
22	Keystone XL Pipeline	Proposed 875-mile pipeline project that would extend from Morgan, MT, to Steele City, Nebraska (NE), and would consist of new 36-inch-diameter pipeline and related facilities for transport of Western Canadian Sedimentary Basin and Williston Basin crude oil. TransCanada Keystone Pipeline, LP has applied for a Presidential Permit that, if granted, would authorize the construction, connection, operation, and maintenance of the facilities at the border between the United States and Canada.	Supplemental EIS completed in January 2014, awaiting the National Interest Determination by the Secretary of State before it can be granted a Presidential Permit that authorizes the proposed pipeline to cross the United States-Canadian border at Morgan, MT. Copies of the Final Supplemental EIS are available online at http://keystonepipeline-xl.state.gov/finalseis/index.htm
23	MDU Wind Farm in Baker, MT	The Diamond Willow wind farm is located southeast of Baker, MT. The 121 feet long blades will begin to turn with wind of 6 miles per hour (mph) or 7 mph. As soon as they are turning at a consistent rate, they start producing energy, which goes into the power grid. The blades reach capacity at wind speeds of about 25 mph.	Wind farms are mapped on FAA-prepared sectional aeronautical charts and are avoided by aircraft. Diamond Willow wind farm began operation in 2010.

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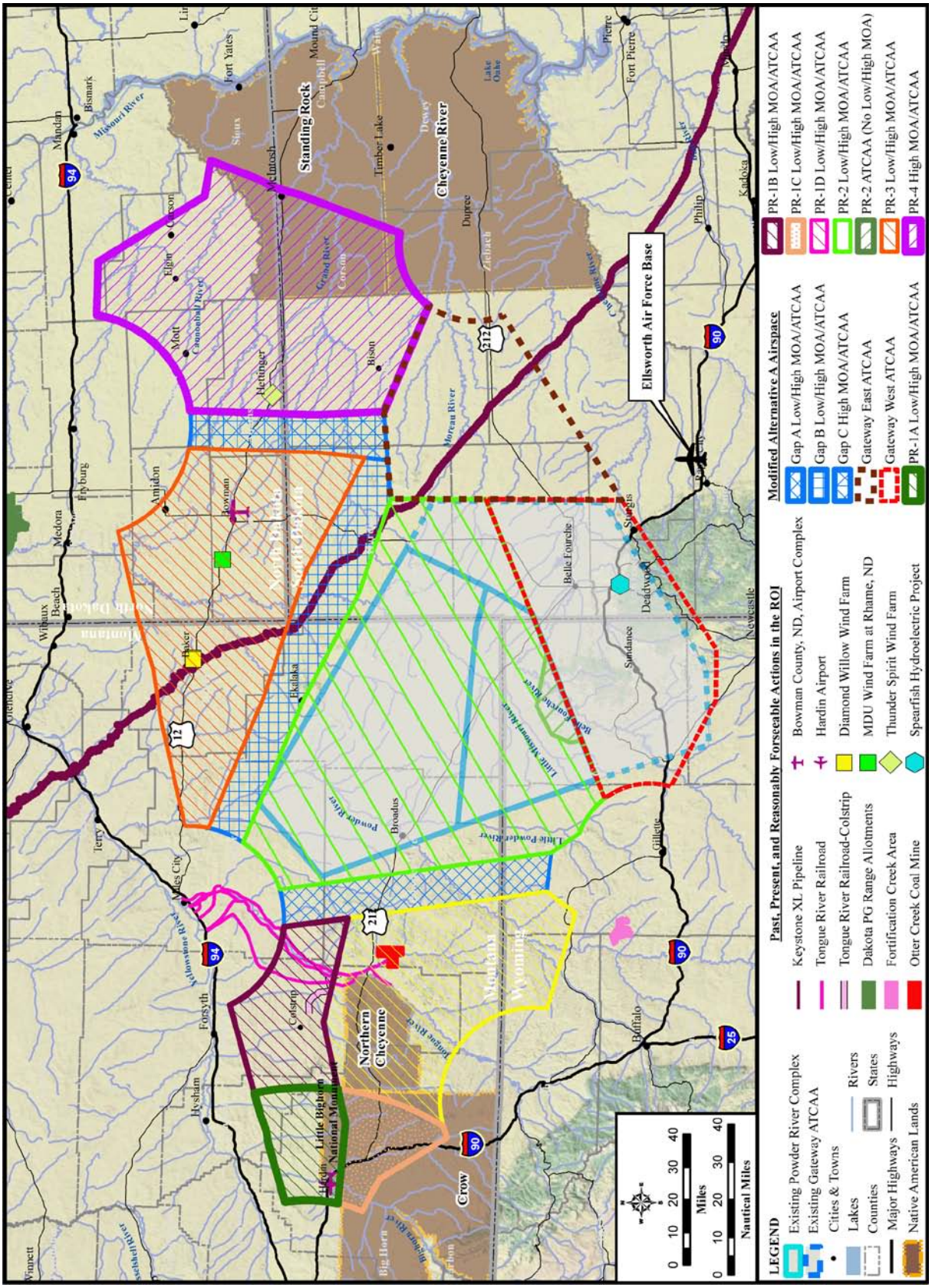
Table 5.1-1. Past, Present, and Reasonably Foreseeable Actions in the ROI (Page 13 of 13)

Report #	Action	Notes	Status
OTHER (CONT'D)			
24	MDU Wind Farm at Rhame, ND	The wind farm is a 19.5 megawatt wind project with 13 turbines in southwestern ND's Bowman County	MDU Wind farm began operation in 2010.
25	Thunder Spirit Wind Farm near Hettinger, ND	Thunder Spirit Wind plans to build a 150-megawatt project starting just 2 miles northeast of Hettinger. Plans are for 75 towers, and encompassing a 42-square mile area in the rural crop and pasture countryside.	Permitting in process; construction could begin as early as Spring 2014. Representative of ongoing changes to regional wind energy development.
26	Great Lakes Airlines	Received Department of Transportation approval and is taking over the Essential Air Service carrier flights in Montana. These would all be existing flights to Glasgow, Glendive, Havre, Lewistown, Miles City, Sidney and Wolf Point.	Existing flights included in data used for airspace analysis in the PRTC EIS.
27	Ekalaka Water and Sewer System improvements	Improved water and sewer systems for Ekalaka.	Constructed facilities improve prospects for community growth.
OUTSIDE OF REGION OF INFLUENCE (ROI), BUT RAISED DURING THE EIS PROCESS			
28	Avalanche Hazard Reduction	Avalanche Hazard Reduction by Burlington Northern Santa Fe Railroad in Glacier National Park and Flathead National Forest Montana	Final EIS issued 24 July 2008.
29	South Dakota bombing range cleanup	Officials from the Oglala Sioux Tribe and Ellsworth Air Force Base have signed a plan to finish cleanup of 2,486 acres of the 15-mile-wide, 40-mile-long Badlands Bombing Range that lies about 55 miles southeast of Ellsworth AFB. The cleanup of the ranges has been an ongoing process spanning several decades. A completion date has not yet been finalized.	Continuing action; no bombing range associated with proposed PRTC.
30	Ellsworth AFB Remotely Piloted Aircraft Ground Station	The Air Force announced on June 21, 2010 that Whiteman AFB, Missouri, and Ellsworth AFB, South Dakota, will host ground control stations for MQ-1 Predator and MQ-9 Reaper remotely piloted aircraft, respectively. Each base will add a total of 280 personnel, both civilian and military. Ellsworth operations were in place by 2012.	Construction of new facility analyzed under a separate action. No aircraft were beddown at Ellsworth AFB. No new or changes to airspace are proposed.


Standing Rock
Cheyenne River
Ellsworth Air Force Base
Northern Cheyenne
Little Bighorn National Monument
Crow
Powder River
Little Powder River
Little Missouri River
Belle Fourche River
Moreau River
Grand River
Cheyenne River
Missouri River
Yellowstone River
Bighorn River
Little Bighorn River
Rosebud River
Bismarck
Mandan
Fort Yates
Timber Lake
Mobridge
Pierre
Fort Pierre
Kadoka
Philip
Bison
Hettinger
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Amidon
Bowman
Medora
Beach
Wibaux
Hebron
Glendive
Baker
Hysham
Forsyth
Miles City
Terry
Broadus
Gillette
Buffalo
Sundance
Belle Fourche
Newcastle
Deadwood
Sturgis
Rapid City
Lead
Hot Springs
Edgemont
Custer
Hayes
Isabel
Timber Lake
Dupree
Lake Oahe
Lake Sharpe
Lake Francis Case
Lake Andes
Lake Mitchell
Lake Corsica
Lake Kampeska
Lake Traverse
Lake Oscoe
Lake Tschida
Lake Sakakawea
Lake Audubon
Lake Nelson
Lake Ilo
Lake Tobacco Garden
Lake Metigoshe
Lake Darling
Lake Ashtabula
Lake Alice
Lake Ellsworth
Lake Williams
Lake Sheyenne
Lake Ashtabula
Lake Elsie
Lake Tewaukon

5.1.2.1 AIRSPACE/AIR TRAFFIC

PRTC action alternatives would not prohibit general aviation use or development under the proposed airspace. The cumulative actions listed in Table 5.1-1 represent activities which currently take place in the region of influence (ROI), including energy resource development and airport development. The proposed airport relocation in Hardin, Montana (MT), represents replacement for an existing airport. The relocated airport would have a designated avoidance area of 3 nautical miles (NM) and 1,500 feet above ground level (AGL). The proposed airport relocation in Bowman, North Dakota (ND) represents replacement for an existing airport. The relocated airport would have a designated avoidance area of 3 NM and 2,000 feet AGL. The additional B-52 squadron has been included throughout the EIS as a baseline condition. Cumulative potential effects upon other airspace users or potential users have been included throughout this EIS and include impacts to airspace access and impacts to time-sensitive deliveries as a result of the inability to fly Instrument Flight Rules (IFR) through an active Military Operations Area (MOA). Approximately 2- to 4-hour delays or re-routing could impact time-sensitive deliveries to existing or proposed mining, transportation projects, industrial development, oil/gas pipeline construction, or agricultural operations. All other impacts to civil aviation and air traffic would be the same as those described in Section 4.1.

5.1.2.2 NOISE

Infrequent sonic booms during not more than 10 days of Large Force Exercises (LFEs) per year would not be expected to interfere or cumulatively affect other ongoing or proposed projects. Aircraft training overflight noise is expected to be random and would not cumulatively interact with construction sites. Noise levels under the proposed airspace would not impact energy resource development efforts. The Burlington Northern Santa Fe Railroad study involving avalanche hazard reduction was raised as a concern during the Environmental Impact Statement (EIS) process, however, the project area is outside of the proposed PRTC and would not be impacted by PRTC flight operations or noise. All other potential noise impacts would be as described in Section 4.2. No cumulative impacts are anticipated.

5.1.2.3 SAFETY

With the mitigations incorporated into Modified Alternative A as described in Section 2.3.1, limited communication and radar coverage would continue below 12,000 feet mean sea level (MSL) in some of the proposed airspace which impact safe civil aircraft operations and airports. This level of overflight and potential startle effect is not expected to significantly alter or cumulatively affect safety of any development plan of resources within the region. The Air Force would coordinate with future mining, rail line, or oil/gas pipeline construction, or other blasting operations as described in Section 4.3 to avoid potentially significant impacts from electromagnetic interference. Temporary avoidance areas would be established over construction sites where tall cranes or helicopters would be used during construction. Permanent avoidance areas would be mapped for tall structures such as wind generation equipment or tall smokestacks. All other potential safety impacts would be as described in Section 4.3. No cumulative impacts are anticipated.

5.1.2.4 AIR QUALITY

Mineral excavation, oil/gas pipeline, and transportation projects, both construction and operation, could result in air quality impacts. The proposed PRTC would result in small increases in air emissions from aircraft training operations. Air quality impacts associated with proposed PRTC would primarily occur from combustive emissions from aircraft training operations. Regarding criteria pollutant emissions from project alternatives, proposed project operations would emit these pollutants across an

approximately 34,000 square mile area. Due to this large area of operation, the flight altitude, and the intermittent nature of the emissions, any aircraft emissions would be well diluted when they approach ground level. Minor construction activities would be expected for the development of threat emitter sites. The emissions associated with constructing emitters are considered negligible. Siting criteria would include being near power for electricity to run the threat emitters, so no air quality effects from generators would be anticipated. Emissions of criteria pollutants from other existing and future sources and projects would occur in the region. The combination of emissions from these reasonably foreseeable projects in the ROI and the proposed PRTC would not substantially contribute to or produce cumulative impacts on regional air quality that would result in violations of any National Ambient Air Quality Standard (NAAQS), including in the Lame Deer, MT and Sheridan, Wyoming (WY), nonattainment areas. PRTC training would not produce emission quantities which could contribute to any cumulative effects on visibility within the Federal and State Prevention of Significant Deterioration (PSD) Class I areas (see Section 3.4.2).

The potential effects of proposed greenhouse gas (GHG) emissions are by nature global and cumulative impacts, as individual sources of GHG emissions are not large enough to have an appreciable effect on climate change. Coal excavation and combustion has been identified as a potential cumulative impact from projects within the ROI. GHG emissions associated with the PRTC operations activities would be from combustive emissions during aircraft training operations. As described in Section 4.4.3, the proposed training activities would be conducted somewhere else within the United States if PRTC were not available. Since local GHG emission increases from the project alternatives would equate to such a minimal amount of the overall U.S. GHG emissions inventory, there would be no net change in the national GHG emissions. Therefore, GHG emissions from the operation of the proposed PRTC Modified Alternative A would not be expected to result in significant impacts to the environment and would not contribute to potential cumulative GHG emissions in conjunction with any past, present, and reasonably foreseeable actions in the ROI.

5.1.2.5 PHYSICAL SCIENCES

Mineral excavation, and construction of oil/gas pipelines, wind turbine tower complexes, and a transportation line could impact large amounts of soil and water resources. Separate environmental analyses, prepared for the projects, will document impacts and mitigations. No surface disturbance is proposed as part of PRTC. Chaff and flare plastic and wrapper residual materials are typically inert and not expected to impact soils or water bodies. PRTC is not expected to impact ongoing or future energy resource development and resource management under the airspace. The locations of the reasonably foreseeable threat emitters would be determined by the final configuration of the airspace to improve training. Existing Minutemen missile sites and previously cleared areas will be considered, which would reduce new construction impacts and soil disturbance. Additional land clearing necessary on these sites will depend on the type of site, utility requirements, and safety and security parameters required (e.g., access road, additional fencing, parking). Emitter sites consist of a 15-acre barbed wire fenced area, with a smaller 1 to 2 acre chain link fenced area inside to secure electronic equipment. Wetlands, wildlife refuges, and other special natural areas will be avoided during site selection of new emitter sites. Potential construction of emitter sites would not be expected to have an impact on soils or water resources. Any applicable permits would be obtained if land near or upstream of wetlands needed to be disturbed. Construction would follow U.S. Army Corps of Engineers (USACE) regulations if in the vicinity of wetlands to reduce likelihood of disturbances. New construction would occur in accordance with established Best Management Practices to avoid, reduce, or minimize adverse effects to soil and water resources. Therefore, no cumulative impacts from PRTC or from reasonably foreseeable actions in the ROI would be anticipated.

5.1.2.6 BIOLOGICAL SCIENCES

Mineral excavation and construction of oil/gas pipelines, wind turbine tower complexes, and a transportation line could impact biological resources. Separate environmental documentation would address potential direct and indirect impacts of these large-scale energy projects. Potential construction of emitter sites would not be expected to have a cumulative impact in conjunction with large scale mining projects based on the relatively small size of the emitter sites and the need for sites to be on an open rise where they could project out as far as possible. Emitters would be located to avoid environmentally sensitive areas and would not be expected to cumulatively contribute to disturbance of biological resources.

As discussed in Section 4.6, chaff and flares are not anticipated to adversely impact wildlife, domestic animals, or vegetation. No other surface disturbing activity is anticipated under the proposal. Low-level flights and infrequent supersonic events create noise and startle effect to species on the ground. Infrequent low-level overflight and sonic booms may affect the behavior of sensitive species that occur within the airspace during the initial exposures. However, any effects would likely be short term and unlikely to significantly adversely affect the populations. Impacts to ranching operations including grazing from past, present, and reasonably foreseeable actions would be the same as those described under Section 4.6. The PRTC is not expected to contribute to any cumulative biological impacts within the ROI.

5.1.2.7 CULTURAL RESOURCES

Any project in the PRTC ROI that involves ground-disturbing activities has the potential to adversely affect cultural resources, including those on tribal lands. Such projects include mineral excavation (oil, gas, or coal development), and construction of pipelines, wind turbine tower complexes, transportation facilities, and radar emitter sites. These projects are subject to National Environmental Policy Act (NEPA) compliance and Section 106 NHPA consultation prior to project start, and would require separate analyses to assess their direct and indirect impacts. The PRTC does not include any ground-disturbing activity that could adversely impact historic structures or archaeological sites (see Table 4.7-3).

Four Native American reservations could potentially be impacted by overflight. The Crow and Northern Cheyenne Reservations underlie portions of the proposed PRTC airspace. Low-level overflights, sonic booms, or visual intrusions have the potential to interfere with cultural or spiritual practices or ceremonies and may be perceived as an adverse impact that could cumulatively contribute to adverse impacts from past, present, and reasonably foreseeable mining actions and construction activities. Modified Alternatives A, B, and C incorporate mitigations that resolve or avoid overflight impacts to reservation lands; a Programmatic Agreement identifies sensitive cultural and historic areas and establishes a process to resolve low-level overflight impacts. This Programmatic Agreement has been signed by the Air Force; the Advisory Council on Historic Preservation (ACHP); the State Historic Preservation Offices (SHPOs) of Montana, North Dakota, South Dakota, and Wyoming; the Federal Aviation Administration (FAA); the National Park Service; and the Crow Tribe. The invitation to the Northern Cheyenne, Standing Rock Sioux, and Cheyenne River Sioux Tribes to sign remains open.

5.1.2.8 LAND USE

Large-scale mineral excavation, construction of oil/gas pipelines, wind turbine tower complexes, and a transportation line would change some land uses from agricultural to industrial. This will affect both land use and land ownership, especially in portions of the Powder River Basin. The creation and modification of the Powder River airspace is not expected to have any adverse impacts on land use or ownership nor would PRTC contribute to any cumulative impacts of mineral development. The Air Force has established operating procedures to avoid low altitude overflight of specific land use locations

considered to be sensitive to aircraft noise or otherwise require avoidance of aircraft overflights. The types of locations addressed by these special operating procedures include residences, ranches, private and commercial airstrips, communication towers, and communities. The PRTC would not change the use of public or private land. Any existing or new tall structures, such as wind energy generators, communication towers, or smokestacks would be charted by the FAA on sectional aeronautical charts and avoided by aircraft. The locations of threat emitters included as a reasonably foreseeable action in Table 5.1-1 would be dependent on the final configuration of the PRTC. The incremental effects of PRTC would not be expected to create any significant or adverse cumulative effect to land use in the ROI. Low-level overflight and associated startle effects could diminish the quality of the recreational experience. The fact that recreational hunting continues throughout the area overlain by the existing Powder River airspace A and B MOAs suggests that the actual cumulative impact from low-level military aircraft overflight is less than the perceived uncertainty of impacts. Recreational land use, ranching operations, wind energy operations, oil, gas, and coal exploration/extraction are not expected to experience any limitations or negative impacts under implementation of an action alternative.

5.1.2.9 SOCIOECONOMICS

Substantial construction projects in the ROI would alter employment patterns in areas of mineral development or transportation projects. Construction projects, including the Keystone XL Pipeline, and additional large-scale mining would contribute to regional employment while changing the nature of the economy. Implementation of a PRTC action alternative is not expected to adversely impact energy resource development projects including oil, gas, coal, or wind energy developments, airport development, or ranching operations. Temporary avoidance areas would be established over construction sites where tall cranes or helicopters would be used in the construction. Permanent avoidance areas would be mapped for tall structures such as smokestacks or wind generation towers. The Air Force would coordinate with any energy resource development projects as described in Section 4.3 to avoid the risk of significant impacts from electromagnetic emissions. Future airport development would be possible under the proposed airspace and the new airports would be afforded the same avoidance areas and procedures as the existing airports as described in Section 4.9. Civilian aircraft operations could be affected as described for airspace, with some potential for civilian flight delay to transit active MOAs IFR and 2- to 4-hour delays at public airports and private airfields under active MOAs. Pilots could fly see-and-avoid in an active MOA. Ranchers, lessees of grazing allotments, and construction managers would have the opportunity to coordinate with the Air Force for temporary avoidance areas during sensitive times such as calving and weaning or construction as described in Section 4.9. The low population density of 0.2 to 4.0 persons per square mile under the proposed low-level airspace and the relatively small number of annual supersonic events make it highly unlikely that flight activity associated with PRTC would contribute to any significant social or economic changes or impacts to the region. Hunting and other recreation activities would continue throughout the proposed PRTC area. Potential socioeconomic and airspace impacts from the beddown of the RPA mission at Grand Forks would occur outside of the PRTC region of interest. No contribution from PRTC to regional cumulative socioeconomic impacts is anticipated.

5.1.2.10 ENVIRONMENTAL JUSTICE

Large-scale construction projects could change the economy of the area, particularly under the proposed PR-1B MOA. Agreements regarding mining construction and operation jobs for tribal members could improve economic opportunities for minority and low income populations. Low-level overflights may have a disproportionate impact on the Native American reservations located beneath the proposed airspace. The cumulative effect of past, present and reasonably foreseeable construction projects could

incrementally change employment opportunities and reduce the number of minority persons who also represent low income populations. Cumulative health or safety impacts to children are not anticipated beyond the infrequent disruption of sonic booms or low-level overflights.

5.2 OTHER ENVIRONMENTAL CONSIDERATIONS

5.2.1 *RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY*

CEQ regulations (Section 1502.16) specify that environmental analysis must address "…the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity." Special attention should be given to impacts that narrow the range of beneficial uses of the environment in the long-term or pose a long-term risk to human health or safety. This section evaluates the short-term benefits of the proposed alternatives compared to the long-term productivity derived from not pursuing the proposed alternatives.

A short-term use of the environment is generally defined as a direct consequence of a project in its immediate vicinity. Short-term effects could include localized disruptions and higher noise levels in some areas. Under PRTC, short-term uses of the environment would result in airspace impacts and very short-term startle effects. No substantial construction project is proposed. Depending on their location, humans and animals cumulatively experience somewhat increased levels of noise in some areas. Humans and animals would be exposed to low-level overflights an estimated 6 to 9 times per year and an estimated one sonic boom per day during 1 to 3 days of quarterly LFE operations not more than 10 days per year. Aircraft average noise levels would be below the USEPA-identified level of 55 dB. The relatively low acoustical effect can be attributed to the dispersion of training flights into a large volume of airspace. The military training that occurs in the PRTC airspace results in noise effects that are transitory in nature. Noise effects would be short-term and would not be expected to result in permanent damage or long-term changes in wildlife and livestock productivity or habitat use.

The PRTC proposal largely involves changes in airspace and would not impact the long-term productivity of the land. Cumulative use of chaff and flares would not negatively affect the long-term quality of the land, air, or water. Airspace changes are procedural and do not affect long-term productive use of natural resources.

5.2.2 *IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES*

NEPA CEQ regulations require environmental analyses to identify "...any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented" (40 CFR Section 1502.16). Primary irreversible effects result from permanent use of a nonrenewable resource (e.g., minerals or energy). Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., disturbance of a cultural site) or consumption of renewable resources that are not permanently lost (e.g., old growth forests). Secondary impacts could result from environmental accidents, such as accidents or fires. Natural resources include minerals, energy, land, water, forestry and biota. Nonrenewable resources are those resources that cannot be replenished by human means, including oil, natural gas, and iron ore. Renewable natural resources are those resources that can be replenished by human means, including water quality, lumber, and soil quality.

For PRTC, most impacts are short-term, temporary, and not irreversible. Short-term reactions of wildlife or livestock could include temporary shifts in habitat use or activity, but long-term habituation is expected. Military training necessarily involves consumption of nonrenewable resources, such as jet

fuel for aircraft. With PRTC, training operations would use comparable fuel volumes to produce improved local training as compared with the No-Action Alternative. Military energy consumption under No-Action would be expected to be comparable to any of the action alternatives since training aircraft commuted to remote ranges for less productive training.

LFE training during a continuous 4-hour time period could result in between 74 and 88 civilian flights being affected by a delay of up to 4 hours. This delay would occur if civilian pilots chose to not schedule around the 30 day advance LFE notice, could not depart or arrive IFR, or were unwilling or unable to fly see-and-avoid in an active MOA. No irreversible or irretrievable effects are expected for cultural resources or other natural resources, including land and water.

Secondary impacts to natural resources could occur in the unlikely event of an accident and/or fire. However, while any fire can have short-term impacts to agricultural resources, wildlife, and habitat, the fire's effects are not irreversible in a natural environment. Any increased risk of fire hazard due to PRTC operations would be very low.

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8.0 GLOSSARY

Above Ground Level (AGL): Altitude expressed in feet measured above the ground surface.

Aerial Refueling Tracks: Refueling operations are performed in designated aerial refueling tracks, anchors, or FAA approved airspace.

Aerospace Expeditionary Forces: Deployed US Air Force wings, groups, and squadrons committed to a joint military operation

Air Force Instruction (AFI): Air Force Instructions implementing United States laws and regulations, and providing policy for Air Force personnel and activities.

Air Combat Command (ACC): The Air Force Command that operates combat aircraft assigned to bases within the contiguous 48 states, except those assigned to Air National Guard and the Air Force Reserve Command.

Air Force Global Strike Command: The Air Force Command that operates the nuclear capable aircraft and intercontinental ballistic missiles within the contiguous 48 states.

Air-to-Air Training: Air-to-air training prepares aircrews to achieve and maintain air superiority over the battlefield and defeat enemy aircraft. Air-to-air training often includes some aircraft playing the role of adversaries, or enemy forces. Air-to-air training activities include advanced handling characteristics, air combat training, low-altitude air-to-air training, and air intercept training. This training also requires the use of defensive countermeasures.

Air-to-Ground Training: Air-to-ground training employs all the techniques and maneuvers associated with weapons use and includes low-and high-altitude tactics, navigation, formation flying, target acquisition, and defensive reaction. Training activities include surface attack tactics, different modes of weapons delivery, electronic combat training, and the use of defensive countermeasures.

Air Traffic: Aircraft operating in the air or on an airport surface, exclusive of loading ramps and parking areas.

Air Traffic Control (ATC): A service operated by appropriate authority to promote the safe, orderly, and expeditious flow of air traffic.

Air Traffic Control Assigned Airspace (***ATCAA):*** Procedural airspace established by letter of agreement between the user and ATC, within positive control (Class A) airspace, of defined vertical and lateral limits, for the purpose of providing air traffic segregation between the specified activities conducted within the assigned airspace and other IFR traffic. ATCAAs are not charted.

Clean Air Act (***CAA):*** This Act empowered the United States Environmental Protection Agency to establish standards for common pollutants that represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety to protect public health and safety.

Candidate Species: A species for which the United States Fish and Wildlife Service has sufficient information regarding the biological vulnerability of and threat(s) to that species to warrant a proposal to reclassify it as threatened or endangered (Formerly Category 1 Candidate species).

C-Weighted Day-Night Sound Level (CDNL): C-Weighted Day-Night Sound Level is day-night sound levels computed for areas subjected to sonic booms. These areas are also subjected to subsonic noise assessed according to the Onset-Rate Adjusted Monthly Day-Night Average Sound Level (DNL_{mr}).

Chaff: Chaff is the term for small fibers of aluminum-coated mica packed into approximately 150 gram bundles and ejected by aircraft as a self-defense measure to reflect hostile radar signals.

Controlling Agency: Air route traffic control centers that provide air traffic service to aircraft operating on Instrument Flight Rules (IFR) flight plans within controlled airspace, and principally during the en route phase of flight. Air traffic controlling agencies ensure separation of all aircraft operating under IFR.

Council on Environmental Quality (CEQ): The Council is within the Executive Office of the President and is composed of three members appointed by the President, subject to approval by the Senate. Members are to be conscious of and responsive to the scientific, economic, social, esthetic, and cultural needs of the nation; and to formulate and recommend national policies to promote the improvement of quality of the environment.

Day-Night Average Sound Level (DNL): Day-Night Average Sound Level is a noise metric combining the levels and durations of noise events and the number of events over an extended time period. It is a cumulative average computed over a 24-hour period to represent total noise exposure. DNL also accounts for more intrusive nighttime noise, adding a 10 dB penalty for sounds after 10:00 P.M. and before 7:00 A.M. DNL is the FAA's primary noise metric. FAA Order 1050.1E defines DNL as the yearly day/night average sound level.

Decibel (dB): A sound measurement unit.

Defensive Countermeasures: Coordination of maneuvers and use of aircraft defensive systems designed to negate enemy threats. Those maneuvers (which include climbing, descending, and turning) requiring sufficient airspace to avoid being targeted by threat systems. Aircraft use sophisticated electronic equipment to jam air and ground radar-tracking systems and dispense chaff and flares to confuse hostile radar and infrared sensors.

Distance Measuring Equipment (DME): A transponder-based radio navigation technology that measures distance by timing the propagation delay of Very High Frequency or Ultra High Frequency radio signals.

Endangered Species: The Endangered Species Act of 1973 defined the term "endangered species" to mean any species (including any subspecies of fish or wildlife or plants, and any distinct population segment of any species or vertebrate fish or wildlife which interbreeds when mature) that is in danger of extinction throughout all or a significant portion of its range.

Environmental Justice: Pursuant to EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, review must be made as to whether a federal program, policy, or action presents a disproportionately high and adverse human health or environmental effect on minority and/or low-income populations.

Environmental Night: The period between 10 p.m. and 7 a.m. when 10 dB is added to aircraft noise levels due to increased sensitivity to noise at night.

Fiscal Year: U.S. Government accounting year beginning 1 October through 30 September.

Flight Level: The Flight Level refers to the altitude above MSL. FL230, for example, is approximately 23,000 feet MSL.

Instrument Flight Rules (IFR): A standard set of rules that all pilots, civilian and military, must follow when operating under flight conditions that are more stringent than visual flight rules. These conditions include operating an aircraft in clouds, operating above certain altitudes prescribed by Federal Aviation

Administration regulations, and operating in some locations like major civilian airports. Air traffic control agencies ensure separation of all aircraft operating under IFR.

Instrument Route (IR): Routes used by the Department of Defense and associated Reserve and Air Guard units for the purpose of conducting low-altitude navigation and tactical training in both IFR and VFR weather conditions below 10,000 feet MSL at airspeeds in excess of 250 knots indicated airspeed.

Jet Route: A route designed to serve aircraft operations from 18,000 feet mean sea level (MSL) up to and including flight level 450. The routes are referred to as "J" routes with numbering to identify the designated route; e.g., J-151.

Large Force Exercise (LFE): An LFE is a highly sophisticated training exercise that simulates full-scale battlefield scenarios, and requires enough airspace to provide assembly, transition, ingress, egress, and maneuver areas. Such training exercises employ a full range of combat tactics, equipment, and personnel.

Low-altitude (or low-level): As defined in this EIS, low-altitude or low-level means an aircraft flying at or below 2,000 feet AGL down to 500 feet AGL (military aircraft, except for helicopters, are not authorized to train below 500 feet AGL). The low-altitude area overflown is defined in this EIS as that area within one-quarter of a nautical mile of the aircraft centerline of travel for the distance the aircraft is at or below 2,000 feet AGL.

Maximum Sound Level (L_{max}): L_{max} is the highest sound level that occurs during a single aircraft overflight. For an observer, the noise level starts at the ambient noise level, rises up to the maximum level as the aircraft flies closest to the observer, and returns to the ambient level as the aircraft recedes into the distance. FAA Order 1050.1E defines L_{max} as a single event metric that is the highest A-weighted sound level measured during an event.

Mean Sea Level (MSL): Altitude expressed in feet measured above average sea level.

Military Operations Area (MOA): Airspace below 18,000 feet MSL established to separate military activities from instrument flight rule traffic and to identify where these activities are conducted for the benefit of pilots using visual flight rules.

Military Training Airspace: Special Use Airspace and Airspace for Special Use used by military aircrews to practice flight activities necessary to maintain combat readiness. Military training airspace associated with PRTC includes the Powder River MOAs, ATCAAs, Gateway ATCAA, and surrounding MTRs and Aerial Refueling Areas.

Military Training Route (MTR): A Military Training Route is a corridor of airspace with defined vertical and lateral dimensions established for conducting military flight training at airspeeds in excess of 250 nautical miles per hour.

Mitigation: CEQ Sec. 1508.20 defines “Mitigation” to include:

(a) Avoiding the impact altogether by not taking a certain action or parts of an action.
(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
(c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
(e) Compensating for the impact by replacing or providing substitute resources or environments.

Nautical Mile (NM): Equal to 1.15 statute miles.

National Environmental Policy Act (***NEPA):*** The National Environmental Policy Act of 1969 directs federal agencies to take environmental factors into consideration in their decisions.

National Historic Landmark: NHLs are places that "possess exceptional value or quality in illustrating and interpreting the heritage of the United States" and include battlefields, architectural or engineering masterpieces, ruins, and historic towns and communities.

National Historic Preservation Act (***NHPA):*** The NHPA of 1966, as amended, established a program for the preservation of historic properties throughout the United States.

Notice to Airmen (NOTAM): A notice containing information (not known sufficiently in advance to publicize by other means) concerning the establishment, condition, or change in any component (facility, service, or procedure of, or hazard in the National Airspace System) the timely knowledge of which is essential to personnel concerned with flight operations.

Onset-Rate Adjusted Monthly Day-Night Average Sound Level (DNL_{mr}): Onset Rate-Adjusted Monthly Day-Night Average Sound Level is the measure used for subsonic aircraft noise in military airspace (MOAs or Warnings Areas). This metric accounts for the fact that when military aircraft fly low and fast, the sound can rise from ambient to its maximum very quickly. Known as an onset-rate, this effect can make noise seem louder due to the added "surprise" effect. Penalties of up to 11 dB are added to account for this onset-rate. Noise levels are interpreted the same way for DNL_{mr} as they are for DNL. (See DNL above).

Ordnance: Any item carried by an aircraft for dropping or firing, including but not limited to, live or inert bombs, ammunition, air-to-air missiles, chaff, and flares.

Performance Data Analysis and Reporting (PDARS): A collaboration between FAA Office of System Capacity and NASA Aviation Safety Program, and is networking and analysis tools for Air Traffic Control (ATC) radar data.

Restricted Areas: A restricted area is designated airspace that supports ground or flight activities that could be hazardous to non-participating aircraft.

See-and-avoid: When weather conditions permit, pilots operating IFR or VFR are required to observe and maneuver to avoid other aircraft. Right-of-way rules are contained in FAR Part 91.

Sonic Boom: A sonic boom is the impulsive noise created when a vehicle flies at speeds faster than sound.

Sortie: A sortie is a single flight, by one aircraft, from takeoff to landing.

Sortie-Operation: The use of one airspace unit (e.g., Military Operations Area or Air Traffic Control Assigned Airspace) by one aircraft. The number of sortie-operations is used to quantify the number of uses by aircraft and to accurately measure potential impacts; e.g. noise, air quality, and safety impacts. A sortie-operation is not a measure of how long an aircraft uses an airspace unit, nor does it indicate the number of aircraft in an airspace unit during a given period; it is a measurement for the number of times a single aircraft uses a particular airspace unit.

Sound Exposure Level (SEL): Sound Exposure Level (SEL) accounts for both the maximum sound level and the length of time a sound lasts. It provides a measure of the total sound exposure for an entire event. FAA Order 1050.1E defines SEL as a single event metric that takes into account both the noise level and duration of the event and referenced to a standard duration of one second.

Special Activity Airspace (SAA): Any airspace with defined dimensions within the National Airspace System wherein limitations may be imposed upon aircraft operations. This airspace may be restricted areas, prohibited areas, military operations areas, Air Traffic Control Assigned Airspace, and any other designated airspace areas.

State Historic Preservation Office (SHPO): State department responsible for assigning protected status for cultural and historic resources.

Statistical Exceedance Level: The sound level exceeded x percent of the time. L_{10} is the level exceeded 10 percent of the time, L_{90} is the level exceeded 90 percent of the time, etc.

Temporary Flight Restrictions (TFR): A TFR is a geographically-limited, short-term, airspace restriction. Temporary flight restrictions often encompass major sporting events, natural disaster areas, air shows, space launches, and Presidential movements.

Threatened Species: A species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Traditional/Cultural Resource: Cultural and traditional resources are any prehistoric or historic district, site or building, structure, or object considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes.

Transient Aircraft: Aircraft not permanently assigned to 28 BW or 5 BW, including F-16s, F-15s, F-22s, and RC-135s, that sometimes use the existing Powder River airspace and are expected to use the proposed PRTC.

Victor Airway: A Victor Airway is a special kind of Class E airspace. The routes connect radio navigation beacons called very high frequency omni-directional range (VOR) stations that radiate a signal in all directions. These stations are usually located at or near airfields. North-south Victor Airways have odd numbers while east-west airways have even numbers. These federal or Victor Airways are used by both Instrument Flight Rules and Visual Flight Rules aircraft. The airspace extends from 1,200 feet AGL to 18,000 feet MSL. The width of the Victor corridor depends on the distance from the navigational aids (such as VORs). When VORs are less than 102 NM from each other, the Victor airway extends 4 NM on either side of the centerline (8 NM total width). When VORs are more than 102NM from each other, the width of the airway in the middle increases. The width of the airway beyond 51NM from a navaid is 4.5 degrees on either side of the center line between the two navaids (at 51NM from a navaid, 4.5 degrees from the centerline of a radial is equivalent to 4NM). The maximum width of the airway is at the middle point between the two navaids. This is when 4.5 degrees from the center radial results in a maximum distance for both navaids.

Visual Flight Rules (VFR): A standard set of rules that all pilots, both civilian and military, must follow when not operating under instrument flight rules. These rules require that pilots remain clear of clouds and avoid other aircraft. See instrument flight rules.

Visual Routes (VR): Routes used by military aircraft for conducting low-altitude, high-speed navigation, and tactical training. These routes are flown under Visual Flight Rules.

VHF Omnidirectional Radio Range (VOR): **A** type of radio navigation system for aircraft. These are ground-based radio navigational aids scattered around the country A VOR station transmits a signal that the receiver can use to calculate its position relative to or from the station (see Victor Airway).

Wetland, Jurisdictional: A jurisdictional wetland is a wetland that meets all three United States Army Corps of Engineers' criterion for jurisdictional status: appropriate hydrologic regime, hydric soils, and facultative to obligate wetland plant communities under normal growing conditions.

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Powder River

Powder River Training Complex
Ellsworth Air Force Base, South Dakota
Environmental Impact Statement

Final

November 2014

Appendices

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APPENDIX A
AERONAUTICAL PROPOSAL AND AIRSPACE OPERATIONS

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PROPOSED ESTABLISHMENT
Of
Powder River Training Complex Military Operations Areas
North & South Dakota, Montana, Wyoming

AIRSPACE STUDY 14-AGL-06NR

SUMMARY: The Federal Aviation Administration (FAA) is considering a request by the United States Air Force (USAF) to expand the Powder River Training Complex (PRTC) Military Operations Areas (MOA). This circular includes background on the USAF's request, a description of the proposed training airspace, and an invitation for public comment. We solicit your input regarding aeronautical impacts of the proposal before making a final determination.

BACKGROUND: The 28th Bomb Wing (28th BW), at Ellsworth Air Force Base (AFB), South Dakota, is the proponent for this proposal. The unit operates the B-1 Lancer, the USAF's only supersonic, all weather, day-night conventional heavy bomber. An additional user of the PRTC would be the 5th BW at Minot AFB, North Dakota. The unit operates the B-52, a subsonic heavy bomber also capable of all weather, day-night operations. For both units, on-going aircraft upgrades, advanced munitions, next-generation air and surface threats, and evolving tactics require expanded special use airspace (SUA) to properly train aircrews.

The current military airspace structure was designed to meet the cold war-type mission model. Threat arrays were unsophisticated compared to modern surface-to-air missiles and 5th generation adversary fighter aircraft. Munitions were mostly unguided and employed from short ranges. Tactics were designed around single aircraft penetrating adversarial airspace at low altitude. Missions were largely pre-planned with little real-time coordination involved.

Doctrine for modern air warfare has changed dramatically. The payload, extended range & loiter times, communications, and precision targeting capabilities of America's heavy bomber force now make them ideal platforms for Close Air Support, Time Sensitive Targeting, Forward Airborne Controller, Non-Traditional Intelligence, Surveillance & Reconnaissance, and Destruction of Enemy Air Defenses missions. Sophisticated threats result in defenses driving multi-ship formations, complex tactics, and integrated countermeasures. Weapons can be employed from well beyond visual range with great precision.

As a result of these changes, the existing Powder River A & B MOAs no longer provide a robust training environment necessary to maximize lethality and enhance survivability of the B-1 and B-52 fleets. Crews must fly to Nevada or Utah to find SUA that has the size, simulated threat arrays & targets, and terrain characteristics to meet current training requirements. The proposed PRTC, by enabling more local training, would have saved an estimated $21 million in flying hour costs for Fiscal Year 2013. More importantly, the shorter sortie durations would allow an aircraft to fly more than one mission per day, effectively doubling the training capacity of crews at Ellsworth and Minot.

Nearly all combat operations today require coordinated employment among many different aircraft. Large Force Exercises (LFE) combining multiple types of aircraft could be employed together against simulated threat aircraft at realistic ranges by linking some or all of the proposed MOAs. Typically, these LFEs would consist of multiple bombers, fighters, air refueling tankers, command & control aircraft, and ground forces for fully integrated training scenarios. The proponent estimates LFEs will occur approximately 10 days per year for 4 hours per day.

CONCEPT OF OPERATIONS: The PRTC would consist of four primary MOAs (Powder River 1, 2, 3, 4) separated by corridors, or Gap MOAs (Gap A, B, C). A map is attached as graphical depiction of the PRTC and for reference.

Gap MOAs are designed as an option for non-participating aircraft to transit between active primary MOAs in the case when two adjacent primary MOAs are active simultaneously. Gap MOAs would only be activated for **military** use during LFEs, and not scheduled for normal day-to-day military training.

Powder River 1-4 MOAs would be available for use 0730-1200 and 1800-2330 Mountain Time, Monday-Thursday, and 0730-1200 Mountain Time on Friday, other times by NOTAM. Estimated actual usage would vary between 3 to 6 hours per day, depending on which MOA is in use, approximately 240 days per year. Please refer to the individual MOA descriptions for more detailed information.

Proposed altitudes are generally from 500 feet AGL to, but not including Flight Level 180 (FL 180). Most MOAs in the PRTC are segmented into different altitude blocks to use only the airspace needed for the training event and maximize access of non-participating aircraft to airspace not used for training. Please refer to the MOA descriptions for specific stratification of the segmentation.

The PRTC excludes airspace within 3 nautical miles (3-NM) and 1,500 feet above ground level (AGL) from all public use airports within its proposed boundaries. Please refer to the individual MOA descriptions for which airports would have airspace exclusions.

Supersonic flight is proposed during LFEs **only** and with the following restrictions:
Bombers – No supersonic flight below 20,000 feet mean sea level (MSL).
Fighters – No supersonic flight below 10,000 feet AGL.

Chaff and flares would be employed in accordance with USAF directives. The proposed minimum release altitude for flares is 2,000 feet AGL.

PROPOSAL: Detailed descriptions of the MOAs are listed below. Refer to the enclosed map for a graphical presentation of the proposal.

Powder River 1A Low MOA, Montana

Boundaries: Beginning at Lat. N45°55'56" Long. W107°44'15";
to Lat. N46°00'42", Long. W107°22'33";
to Lat. N46°01'35", Long. W107°16'56";
to Lat. N46°03'09", Long. W107°11'15";
to Lat. N46°04'54", Long. W107°02'59";
Clockwise along BIL VORTAC, 68 DME arc;
to Lat. N45°42'43", Long. W107°00'42";
to Lat. N45°40'30", Long. W107°13'42";
to Lat. N45°41'48", Long. W107°44'07";
Counter Clockwise along BIL VORTAC, 38 DME arc;
to the point of beginning.

Designated altitudes: 500 feet AGL to, but not including 12,000 feet MSL. Except 1,500 feet AGL within a 3-NM radius of the following airport: Fairgrounds Airpark, MT.

Times of use: 0730-1200 and 1800-2330 Mountain Time, Monday-Thursday; 0730-1200 Mountain Time, Friday; other times by NOTAM. Estimate of expected area use is 3 hours per day, approximately 240 days per year.

Controlling agency: FAA, Salt Lake ARTCC.

Using agency: U.S. Air Force, 28th BW, Ellsworth AFB, SD.

Powder River 1A High MOA, Montana

Boundaries: Beginning at Lat. N45°55'56" Long. W107°44'15";
to Lat. N46°00'42", Long. W107°22'33";
to Lat. N46°01'35", Long. W107°16'56";
to Lat. N46°03'09", Long. W107°11'15";
to Lat. N46°04'54", Long. W107°02'59";
Clockwise along BIL VORTAC, 68 DME arc;
to Lat. N45°42'43", Long. W107°00'42";
to Lat. N45°40'30", Long. W107°13'42";
to Lat. N45°41'48", Long. W107°44'07";
Counter Clockwise along BIL VORTAC, 38 DME arc;
to the point of beginning.

Designated altitudes: 12,000 feet MSL to, but not including FL 180.

Times of use: By NOTAM, (LFE Only *)

Controlling agency: FAA, Salt Lake ARTCC.

Using agency: U.S. Air Force, 28th BW, Ellsworth AFB, SD.

Powder River 1B Low MOA, Montana

Boundaries: Beginning at Lat. N46°04'54", Long. W107°02'59";
to Lat. N46°11'59", Long. W106°29'32";
Counter Clockwise along MLS VORTAC, 25 DME arc;
to Lat. N45°57'58", Long. W105°59'23";
to Lat. N45°40'57", Long. W105°55'50";
to Lat. N45°47'00", Long. W106°35'30";
to Lat. N45°42'43", Long. W107°00'42";
Counter Clockwise along BIL VORTAC, 68 DME arc;
to the point of beginning.

Designated altitudes: 500 feet AGL to, but not including 12,000 feet MSL. Except 1,500 feet AGL within a 3-NM radius of the following airport: Colstrip Airport, MT.

Times of use 0730-1200 and 1800-2330 Mountain Time, Monday-Thursday; 0730-1200 Mountain Time, Friday; other times by NOTAM. Estimate of expected area use is 3 hours per day, approximately 240 days per year.

Controlling agency FAA, Salt Lake ARTCC.

Using agency U.S. Air Force, 28th BW, Ellsworth AFB, SD.

Powder River 1B High MOA, Montana

Boundaries: Beginning at Lat. N46°04'54", Long. W107°02'59";
to Lat. N46°11'59", Long. W106°29'32";
Counter Clockwise along MLS VORTAC, 25 DME arc;
to Lat. N45°57'58", Long. W105°59'23";
to Lat. N45°40'57", Long. W105°55'50";
to Lat. N45°47'00", Long. W106°35'30";
to Lat. N45°42'43", Long. W107°00'42";
Counter Clockwise along BIL VORTAC, 68 DME arc;
to the point of beginning.

Designated altitudes: 12,000 feet MSL to, but not including FL 180.

Times of use: 0730-1200 and 1800-2330 Mountain Time, Monday-Thursday; 0730-1200 Mountain Time, Friday; other times by

NOTAM. Estimate of expected area use is 3 hours per day, approximately 240 days per year.

Controlling agency: FAA, Salt Lake ARTCC.

Using agency: U.S. Air Force, 28th BW, Ellsworth AFB, SD.

Powder River 1C Low MOA, Montana

Boundaries: Beginning at Lat. N45°41'48", Long. W107°44'07";
to Lat. N45°40'30", Long. W107°13'42";
to Lat. N45°42'43", Long. W107°00'42";
Clockwise along BIL VORTAC, 68 DME arc;
to Lat. N45°14'11", Long. W107°14'21";
to Lat. N45°13'23", Long. W107°17'55";
to Lat. N45°31'00", Long. W107°34'19";
to Lat. N45°35'23", Long. W107°46'46";
Counter Clockwise along BIL VORTAC, 38 DME arc;
to the point of beginning.

Designated altitudes 500 feet AGL to, but not including 12,000 feet MSL. Except 1,500 feet AGL within a 3-NM radius of the following airport: Fairgrounds Airpark, MT.

Times of use 0730-1200 and 1800-2330 Mountain Time, Monday-Thursday; 0730-1200 Mountain Time, Friday; other times by NOTAM. Estimate of expected area use is 3 hours per day, approximately 240 days per year.

Controlling agency FAA, Salt Lake ARTCC.

Using agency U.S. Air Force, 28th BW, Ellsworth AFB, SD.

NPS Mitigation The Little Bighorn noise avoidance area boundaries:
N45-28.6561 W107-15.5057 to
N45-26.0787 W107-19.9172 to
N45-25.8566 W107-23.2907 to
N45-31.3973 W107-31.4971 to
N45-33.0734 W107-32.2886 to
N45-37.3357 W107-32.6526 to
N45-39.7426 W107-26.7047 to
N45-39.1091 W107-21.5969 to
N45-33.0471 W107-15.0289 to beginning.
Hours: From 1-hour prior, to 1-hour after, NPS Hours of Operation.
Altitude: The area bounded above will not be over-flown below 5,000 feet AGL during the hours listed above.

Special Events: The area bounded above will also be avoided when special events are coordinated.
Supersonic: No Supersonic within PR1C Low MOA.

Powder River 1C High MOA, Montana

Boundaries: Beginning at Lat. N45°41'48", Long. W107°44'07";
to Lat. N45°40'30", Long. W107°13'42";
to Lat. N45°42'43", Long. W107°00'42";
Clockwise along BIL VORTAC, 68 DME arc;
to Lat. N45°14'11", Long. W107°14'21";
to Lat. N45°13'23", Long. W107°17'55";
to Lat. N45°31'00", Long. W107°34'19";
to Lat. N45°35'23", Long. W107°46'46";
Counter Clockwise along BIL VORTAC, 38 DME arc;
to the point of beginning.

Designated altitudes: 12,000 feet MSL to, but not including FL 180.

Times of use: By NOTAM. (LFE Only *)

Controlling agency FAA, Salt Lake ARTCC.

Using agency U.S. Air Force, 28th BW, Ellsworth AFB, SD.

NPS Mitigation Supersonic: No Supersonic within PR1C High MOA.

Powder River 1D Low MOA, Montana

Boundaries: Beginning at Lat. N45°42'43", Long. W107°00'42";
to Lat. N45°47'00", Long. W106°35'30";
to Lat. N45°40'57", Long. W105°55'50";
to Lat. N44°48'11", Long. W105°45'03";
to Lat. N44°40'27", Long. W105°52'49";
to Lat. N44°47'38", Long. W106°28'48";
Counter Clockwise along SHR VORTAC, 25 DME arc;
to Lat. N45°14'11", Long. W107°14'21";
Counter Clockwise along BIL VORTAC, 68 DME arc;
to the point of beginning.

Designated altitudes: 500 feet AGL to but not including 12,000 feet MSL. Except 1,500 feet AGL within a 3-NM radius of the following airport: St Labre Mission Airport, MT. Except 12,000 feet MSL within the confines of the Northern Cheyenne Indian Reservation.

Times of use: 0730-1200 and 1800-2330 Mountain Time, Monday-Thursday; 0730-1200 Mountain Time, Friday; other times by

NOTAM. Estimate of expected area use is 3 hours per day, approximately 240 days per year.

Controlling agency FAA, Salt Lake ARTCC.

Using agency U.S. Air Force, 28th BW, Ellsworth AFB, SD.

Powder River 1D High MOA, Montana

Boundaries: Beginning at Lat. N45°42'43", Long. W107°00'42";
to Lat. N45°47'00", Long. W106°35'30";
to Lat. N45°40'57", Long. W105°55'50";
to Lat. N44°48'11", Long. W105°45'03";
to Lat. N44°40'27", Long. W105°52'49";
to Lat. N44°47'38", Long. W106°28'48";
Counter Clockwise along SHR VORTAC, 25 DME arc;
to Lat. N45°14'11", Long. W107°14'21";
Counter Clockwise along BIL VORTAC, 68 DME arc;
to the point of beginning.

Designated altitudes: 12,000 feet MSL to, but not including FL 180.

Times of use: 0730-1200 and 1800-2330 Mountain Time, Monday-Thursday; 0730-1200 Mountain Time, Friday; other times by NOTAM. Estimate of expected area use is 3 hours per day, approximately 240 days per year.

Controlling agency: FAA, Salt Lake ARTCC.

Using agency: U.S. Air Force, 28th BW, Ellsworth AFB, SD.

Powder River 2 Low MOA, Montana

Boundaries: Beginning at Lat. N45°59'27", Long. W105°45'07";
Counter Clockwise along the MLS VORTAC, 25 DME arc;
to Lat. N46°08'55", Long. W105°27'24";
to Lat. N45°53'08", Long. W104°33'46";
to Lat. N45°37'48", Long. W103°52'28";
to Lat. N45°29'05", Long. W103°17'10";
to Lat. N45°03'44", Long. W103°17'58";
to Lat. N44°45'30", Long. W104°24'39";
to Lat. N44°48'11", Long. W104°30'09";
to Lat. N44°46'11", Long. W104°41'00";
to Lat. N44°40'02", Long. W104°44'44";
to Lat. N44°33'01", Long. W105°10'34";
Counter Clockwise along the GCC VORTAC, 20 DME arc;
to Lat. N44°39'45", Long. W105°23'20";
to Lat. N44°47'12", Long. W105°30'41";

to the point of beginning.

Designated altitudes: 500 feet AGL to, but not including 12,000 feet MSL. Except 1,500 feet AGL within a 3-NM radius of the following airports: Broadus Airport, MT; Ekalaka Airport, MT; and Harding County Airport, SD.

Times of use: 0730-1200 and 1800-2330 Mountain Time, Monday-Thursday; 0730 - 1200 Mountain Time, Friday; other times by NOTAM. Estimate of expected area use is 6 hours per day, approximately 240 days per year.

Controlling agency: FAA, Denver ARTCC.

Using agency: U.S. Air Force, 28th BW, Ellsworth AFB, SD.

Powder River 2 High MOA, Montana

Boundaries: Beginning at Lat. N45°59'27", Long. W105°45'07";
Counter Clockwise along MLS VORTAC, 25 DME arc;
to Lat. N46°08'55", Long. W105°27'24";
to Lat. N45°53'08", Long. W104°33'46";
to Lat. N45°37'48", Long. W103°52'28";
to Lat. N45°29'05", Long. W103°17'10";
to Lat. N45°03'44", Long. W103°17'58";
to Lat. N44°45'30", Long. W104°24'39";
to Lat. N44°48'11", Long. W104°30'09";
to Lat. N44°46'11", Long. W104°41'00";
to Lat. N44°40'02", Long. W104°44'44";
to Lat. N44°33'01", Long. W105°10'34";
Counter Clockwise along GCC VORTAC, 20 DME arc;
to Lat. N44°39'45", Long. W105°23'20";
to Lat. N44°47'12", Long. W105°30'41";
to the point of beginning.

Designated altitude: 12,000 feet MSL to, but not including FL 180.

Times of use: 0730-1200 and 1800-2330 Mountain Time, Monday-Thursday; 0730-1200 Mountain Time, Friday; other times by NOTAM. Estimate of expected area use is 6 hours per day, approximately 240 days per year.

Controlling agency: FAA, Denver ARTCC.

Using agency: U.S. Air Force, 28th BW, Ellsworth AFB, SD.

Powder River 3 Low MOA, North Dakota

Boundaries: Beginning at Lat. N46°24'23", Long. W105°21'08";
to Lat. N46°30'59", Long. W104°39'10";
to Lat. N46°32'45", Long. W104°20'36";
to Lat. N46°36'34", Long. W104°02'08";
to Lat. N46°41'37", Long. W103°27'25";
Counter Clockwise along DIK VORTAC, 30 DME arc;
to Lat. N46°22'24", Long. W102°56'07";
to Lat. N45°47'47", Long. W102°59'01";
to Lat. N45°35'42", Long. W103°01'21";
to Lat. N45°52'07", Long. W103°44'36";
to Lat. N46°03'21", Long. W104°31'24";
to Lat. N46°18'08", Long. W105°21'51";
Counter Clockwise along MLS VORTAC, 25 DME arc;
to the point of beginning.

Designated altitudes: 500 feet AGL to, but not including 12,000 feet MSL.
Except 2,000 feet AGL within a 3-NM radius of: the following airports: Baker Municipal, MT and Bowman Field, ND. (Note 4)

Times of use: 0730-1200 and 1800-2330 Mountain Time, Monday-Thursday;
0730-1200 Mountain Time, Friday; other times by NOTAM.
Estimate of expected area use is 3 hours per day, approximately 240 days per year.

Controlling agency: FAA, Salt Lake ARTCC.

Using agency: U.S. Air Force, 28th BW, Ellsworth AFB, SD.

Powder River 3 High MOA, North Dakota

Boundaries: Beginning at Lat. N46°24'23", Long. W105°21'08";
to Lat. N46°30'59", Long. W104°39'10";
to Lat. N46°32'45", Long. W104°20'36";
to Lat. N46°36'34", Long. W104°02'08";
to Lat. N46°41'37", Long. W103°27'25";
Counter Clockwise along DIK VORTAC, 30 DME arc;
to Lat. N46°22'24", Long. W102°56'07";
to Lat. N45°47'47", Long. W102°59'01";
to Lat. N45°35'42", Long. W103°01'21";
to Lat. N45°52'07", Long. W103°44'36";
to Lat. N46°03'21", Long. W104°31'24";
to Lat. N46°18'08", Long. W105°21'51";
Counter Clockwise along MLS VORTAC, 25 DME arc;
to the point of beginning.

Designated altitudes: 12,000 feet MSL to, but not including FL 180.

Times of use: 0730-1200 and 1800-2330 Mountain Time, Monday-Thursday; 0730-1200 Mountain Time, Friday; other times by NOTAM. Estimate of expected area use is 3 hours per day, approximately 240 days per year.

Controlling agency: FAA, Salt Lake ARTCC.

Using agency: U.S. Air Force, 28th BW, Ellsworth AFB, SD.

Powder River 4 High MOA, North Dakota

Boundaries - Beginning at Lat. N46°21'48", Long. W102°41'42";
Counter Clockwise along the DIK VORTAC, 30 DME arc;
to Lat. N46°45'43", Long. W102°03'39";
to Lat. N46°44'43", Long. W101°43'10";
to Lat. N46°15'44", Long. W101°19'47";
to Lat. N46°13'38", Long. W101°06'17";
to Lat. N46°02'30", Long. W101°13'20";
to Lat. N45°56'25", Long. W101°17'59";
to Lat. N45°50'12", Long. W101°21'01";
to Lat. N45°24'13", Long. W101°37'02";
Counter Clockwise along the DPR VORTAC, 20 DME arc;
to Lat. N45°17'23", Long. W102°04'35";
to Lat. N45°30'13", Long. W102°44'07";
to Lat. N45°48'35", Long. W102°44'37";
to the point of beginning.

Designated altitudes: 12,000 feet MSL to, but not including FL 180.

Times of use: 0730 - 1200 and 1800 - 2330 Mountain Time, Monday - Thursday; 0730 - 1200 Mountain Time, Friday; other times by NOTAM. Estimate of expected area use is 3 hours per day, approximately 240 days per year.

Controlling agency: FAA, Minneapolis ARTCC

Using agency: U.S. Air Force, 28th BW, Ellsworth AFB, SD

Gap A Low MOA, Montana

Boundaries: Beginning at Lat. N45°57'58" Long. W105°59'23";
Counter Clockwise along the MLS VORTAC, 25 DME arc;
to Lat. N45°59'27" Long. W105°45'07";
to Lat. N44°47'12" Long. W105°30'41";
to Lat. N44°48'11" Long. W105°45'03";
to the point of beginning.

Designated altitudes: 500 feet AGL to, but not including 12,000 feet MSL.

Times of use: By NOTAM. (LFE Only *)

Controlling agency: FAA, Denver ARTCC

Using agency: U.S. Air Force, 28th BW, Ellsworth AFB, SD

Gap A High MOA, Montana

Boundaries: Beginning at Lat. N45°57'58", Long. W105°59'23";
Counter Clockwise along the MLS VORTAC, 25 DME arc;
to Lat. N45°59'27", Long. W105°45'07";
to Lat. N44°47'12", Long. W105°30'41";
to Lat. N44°48'11", Long. W105°45'03";
to the point of beginning.

Designated altitudes: 12,000 feet MSL to but not including FL 180.

Times of use: By NOTAM. (LFE Only*)

Controlling agency: FAA, Denver ARTCC

Using agency: U.S. Air Force, 28th BW, Ellsworth AFB, SD

Gap B Low MOA, Montana

Boundaries: Beginning at Lat. N46°08'55", Long. W105°27'24";
Counter Clockwise along the MLS VORTAC, 25 DME arc;
to Lat. N46°18'08", Long. W105°21'51";
to Lat. N46°03'21", Long. W104°31'24";
to Lat. N45°52'07", Long. W103°44'36";
to Lat. N45°35'42", Long. W103°01'21";
to Lat. N45°30'13", Long. W102°44'07";
to Lat. N45°29'05", Long. W103°17'10";
to Lat. N45°37'48", Long. W103°52'28";
to Lat. N45°53'08", Long. W104°33'46";
to the point of beginning.

Designated altitudes: 500 feet AGL to, but not including 12,000 feet MSL. Except 1,500 feet AGL within a 3-NM radius of the following airports: Ekalaka Airport, MT; and Harding County Airport, SD.

Times of use: By NOTAM. (LFE Only*)

Controlling agency: FAA, Salt Lake ARTCC

Using agency: U.S. Air Force, 28th BW, Ellsworth AFB, SD

Gap B High MOA, Montana

Boundaries: Beginning at Lat. N46°08'55", Long. W105°27'24";
Counter Clockwise along the MLS VORTAC, 25 DME arc;
to Lat. N46°18'08", Long. W105°21'51";
to Lat. N46°03'21", Long. W104°31'24";
to Lat. N45°52'07", Long. W103°44'36";
to Lat. N45°35'42", Long. W103°01'21";
to Lat. N45°30'13", Long. W102°44'07";
to Lat. N45°29'05", Long. W103°17'10";
to Lat. N45°37'48", Long. W103°52'28";
to Lat. N45°53'08", Long. W104°33'46";
to the point of beginning.

Designated altitude: 12,000 feet MSL to, but not including FL 180.

Times of use: By NOTAM. (LFE Only*)

Controlling agency: FAA, Salt Lake ARTCC

Using agency: U.S. Air Force, 28th BW, Ellsworth AFB, SD

Gap C Low MOA, North Dakota

Boundaries: Beginning at Lat. N46°22'24", Long. W102°56'07";
Counter Clockwise along the DIK VORTAC, 30 DME arc;
to Lat. N46°21'48", Long. W102°41'42";
to Lat. N45°48'35", Long. W102°44'37";
to Lat. N45°30'13", Long. W102°44'07";
to Lat. N45°35'42", Long. W103°01'21";
to Lat. N45°47'47", Long. W102°59'01";
to the point of beginning.

Designated altitudes: 500 feet AGL to but not including 12,000 feet MSL. Except 2,000 feet AGL within a 3-NM radius of the following airport: Hettinger Municipal Airport, ND.

Times of use: By NOTAM. (LFE Only*)

Controlling agency: FAA, Minneapolis ARTCC

Using agency: U.S. Air Force, 28th BW, Ellsworth AFB, SD

Gap C High MOA, North Dakota

Boundaries: Beginning at Lat. N46°22'24", Long. W102°56'07";
Counter Clockwise along the DIK VORTAC, 30 DME arc;
to Lat. N46°21'48", Long. W102°41'42";
to Lat. N45°48'35", Long. W102°44'37";
to Lat. N45°30'13", Long. W102°44'07";
to Lat. N45°35'42", Long. W103°01'21";
to Lat. N45°47'47", Long. W102°59'01";
to the point of beginning.

Designated altitudes: 12,000 feet MSL to, but not including FL 180.

Times of use: By NOTAM. (LFE Only*)

Controlling agency: FAA, Minneapolis ARTCC

Using agency: U.S. Air Force, 28th BW, Ellsworth AFB, SD

Powder River A MOA, Montana - Delete

Powder River B MOA, Wyoming - Delete

MISCELLANEOUS: No restrictions will be imposed on nonparticipating Visual Flight Rules (VFR) aircraft. VFR pilots are expected to exercise vigilance while transiting the MOA. They are strongly encouraged to contact the nearest flight service station and request the latest NOTAM information, or contact the controlling ARTCC to ascertain the status of the MOAs.

COMMENTS INVITED: The purpose of this notice is to invite interested persons to submit in writing any comments they may have regarding the overall aeronautical aspects of the proposal presented in this notice. Comments which provide the factual basis supporting the views and suggestions presented are the most helpful. Persons wishing to comment should submit correspondence to:

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Comments received on or before April 3, 2014, will be considered before final action is taken on the proposal. The proposal may change in light of comments received.

NOTICE DISTRIBUTION: Persons interested in being placed on a mailing list for future notices should submit such requests to the Federal Aviation Administration at the address listed above.

FOR FURTHER INFORMATION, CONTACT:

Department of Transportation
Federal Aviation Administration
ATO Central Service Center, Operations Support Group
ATTN: Dr. John Witucki, AJV-C23
2601 Meacham Blvd
Fort Worth, TX 76137
Telephone: (817) 321-7734

Issued in Fort Worth, Texas, on

FEB 13 2014

Kent M. Wheeler
Manager, Operations Support Group
ATO Central Service Center

Enclosure
Map

cc: AJV-W2; ASW-910; ASW-920; ASW-930; ANM-910; ANM-920; ANM-930; AJR-32; AJR-33; AJR-34; AGL-BIS-ADO; ANM-DEN-ADO; ANM-HLN-ADO; Salt Lake ARTCC-530; Denver ARTCC-530; Minneapolis ARTCC-530; AJW-3743; AJW-3744; North Dakota State Aviation Director, South Dakota State Aviation Director, Wyoming State Aviation Director, Montana State Aviation Director
SEE DISTRIBUTION LIST

A.2 AIRSPACE OPERATIONS

Figures A-1 through A-18 listed below, were found in the Draft EIS as Figures 3.1-7 through 3.1-24. They illustrate Federal Aviation Administration (FAA) Instrument Flight Rules (IFR) flight traffic and were specifically used to address potential impacts above FL260.

With the modified alternatives presented in the Final EIS (FEIS) Section 2.0 that exclude operations above FL260, most of the relevant information on the figures is no longer applicable. For continuity and a few references to representative IFR operations below FL260, the figures were retained in this appendix. Updated FAA data for operations are included in FEIS Table 3.1-2. FEIS Figure 3.2.1 shows the B-1 maneuvers for discussion in noise. The relevant information is included in the FEIS for the impact analysis.

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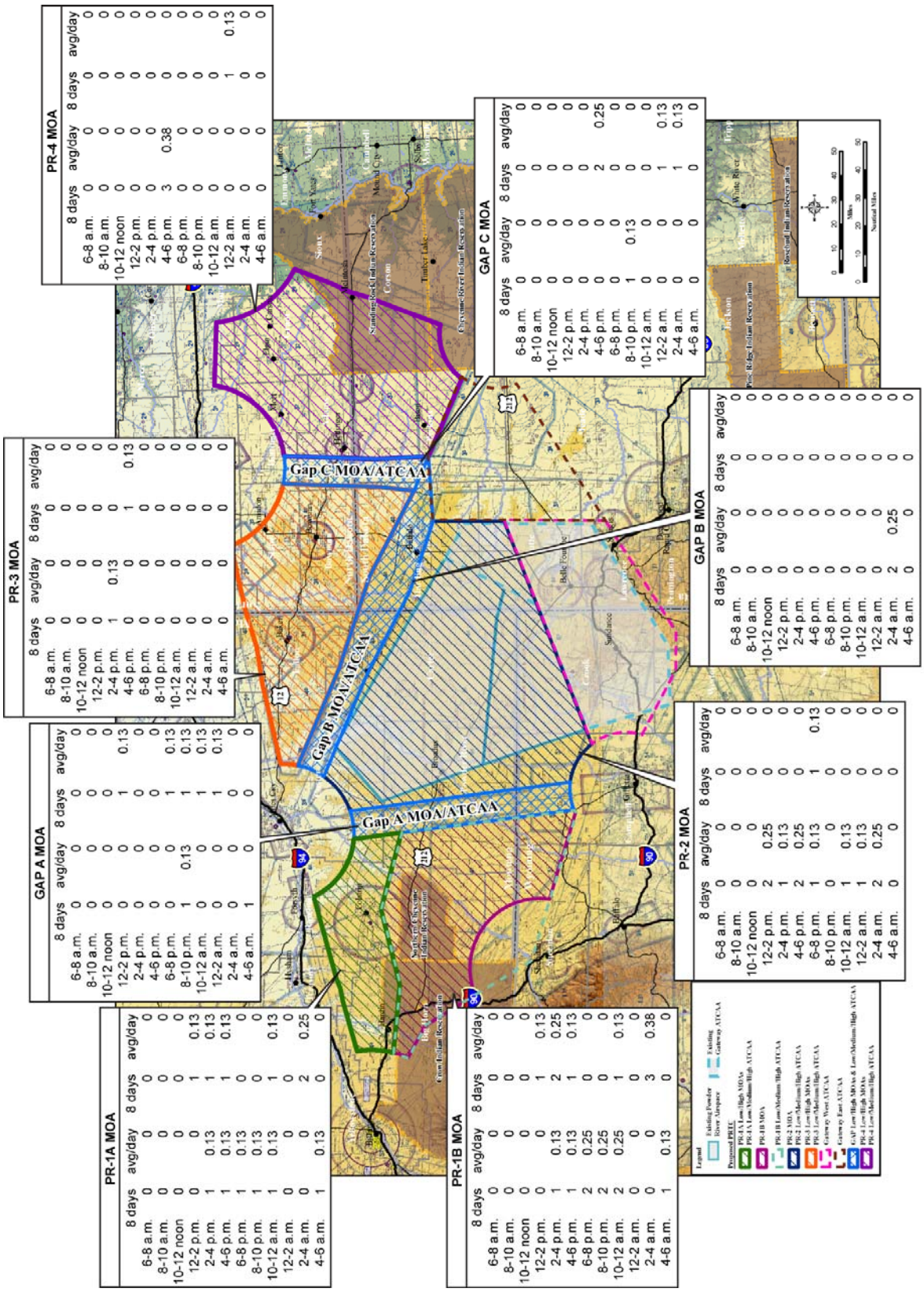


Figure A-1. MOA Average Daily FAA Documented Aircraft Operations Below 2,000 Feet AGL

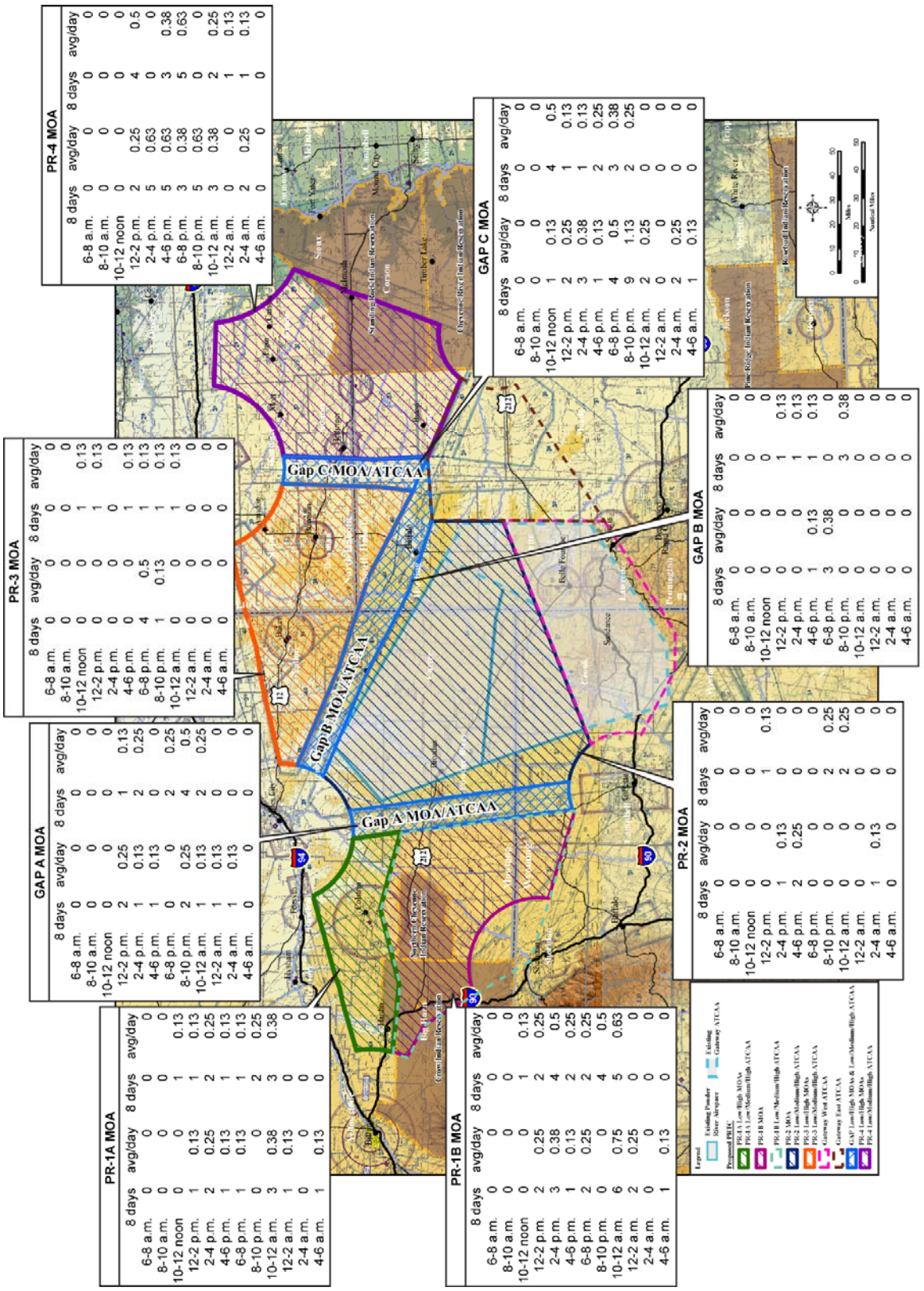
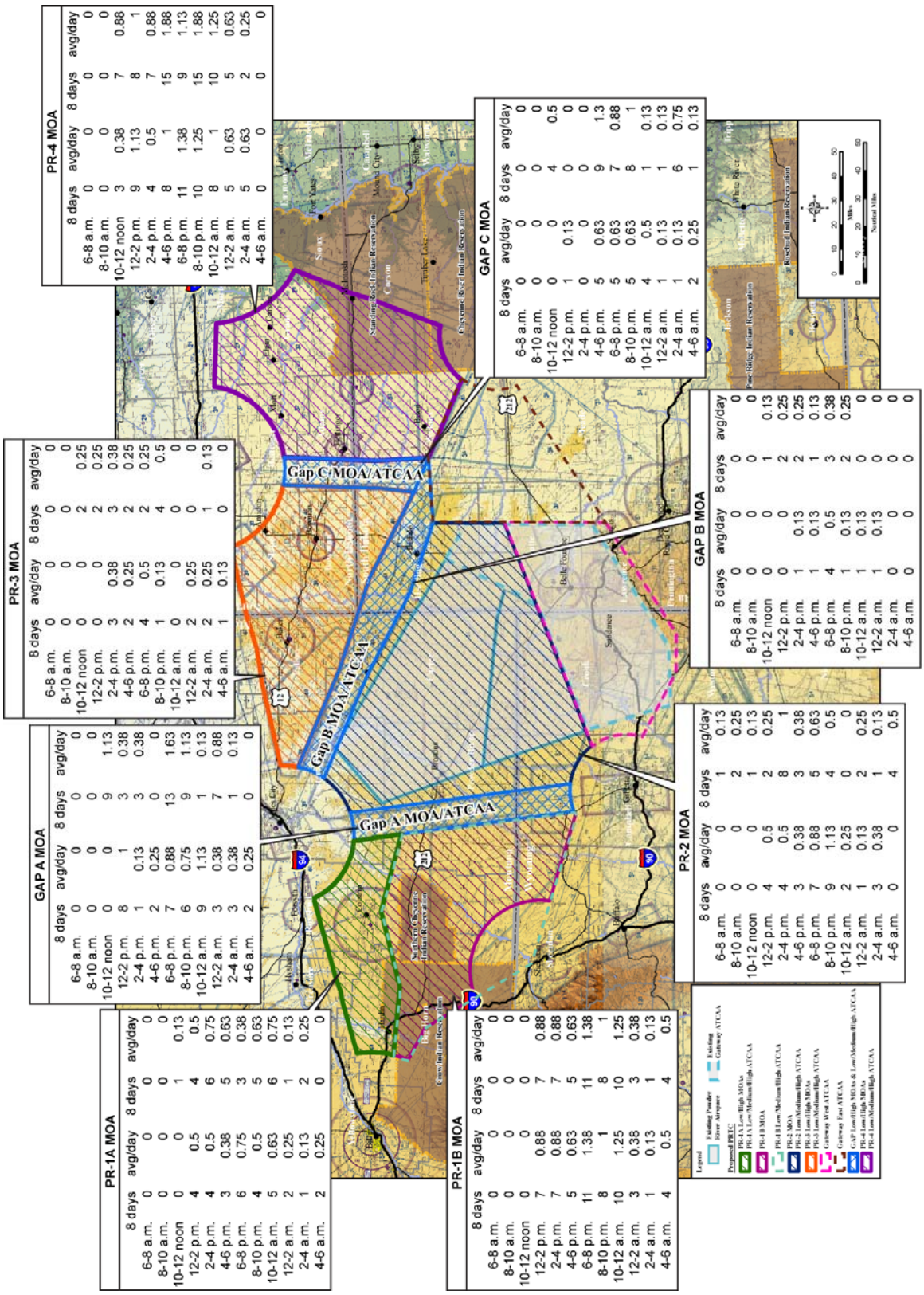


Figure A-2. MOA Average Daily FAA Documented Aircraft Operations from 2,000 Feet AGL to, but not including, 12,000 Feet MSL



PR-4 MOA

	8 days	avg/day
6-8 a.m.	0	0
8-10 a.m.	0	0
10-12 noon	0	0
12-2 p.m.	3	0.38
2-4 p.m.	9	1.13
4-6 p.m.	4	0.5
6-8 p.m.	8	1
8-10 p.m.	11	1.38
10-12 a.m.	10	1.25
12-2 a.m.	8	1
2-4 a.m.	5	0.63
4-6 a.m.	5	0.63

	8 days	avg/day
6-8 a.m.	0	0
8-10 a.m.	0	0
10-12 noon	3	0.38
12-2 p.m.	8	1
2-4 p.m.	7	0.88
4-6 p.m.	8	1
6-8 p.m.	15	1.88
8-10 p.m.	9	1.13
10-12 a.m.	15	1.88
12-2 a.m.	10	1.25
2-4 a.m.	5	0.63
4-6 a.m.	2	0.25
	0	0

PR-3 MOA

	8 days	avg/day
6-8 a.m.	0	0
8-10 a.m.	0	0
10-12 noon	0	0
12-2 p.m.	0	0
2-4 p.m.	3	0.38
4-6 p.m.	2	0.25
6-8 p.m.	4	0.5
8-10 p.m.	1	0.13
10-12 a.m.	0	0
12-2 a.m.	2	0.25
2-4 a.m.	2	0.25
4-6 a.m.	1	0.13

	8 days	avg/day
6-8 a.m.	0	0
8-10 a.m.	0	0
10-12 noon	0	0
12-2 p.m.	2	0.25
2-4 p.m.	2	0.25
4-6 p.m.	4	0.5
6-8 p.m.	0	0
8-10 p.m.	0	0
10-12 a.m.	1	0.13
12-2 a.m.	0	0
2-4 a.m.		
4-6 a.m.		

GAP C MOA

	8 days	avg/day
6-8 a.m.	0	0
8-10 a.m.	0	0
10-12 noon	0	0
12-2 p.m.	1	0.13
2-4 p.m.	0	0
4-6 p.m.	5	0.63
6-8 p.m.	5	0.63
8-10 p.m.	5	0.63
10-12 a.m.	4	0.5
12-2 a.m.	1	0.13
2-4 a.m.	1	0.13
4-6 a.m.	2	0.25

	8 days	avg/day
6-8 a.m.	0	0
8-10 a.m.	0	0
10-12 noon	0	0
12-2 p.m.	4	0.5
2-4 p.m.	0	0
4-6 p.m.	9	1.3
6-8 p.m.	7	0.88
8-10 p.m.	8	1
10-12 a.m.	1	0.13
12-2 a.m.	1	0.13
2-4 a.m.	6	0.75
4-6 a.m.	1	0.13

GAP A MOA

	8 days	avg/day
6-8 a.m.	0	0
8-10 a.m.	0	0
10-12 noon	0	0
12-2 p.m.	8	1
2-4 p.m.	1	0.13
4-6 p.m.	2	0.25
6-8 p.m.	7	0.88
8-10 p.m.	6	0.75
10-12 a.m.	9	1.13
12-2 a.m.	3	0.38
2-4 a.m.	3	0.38
4-6 a.m.	2	0.25

	8 days	avg/day
6-8 a.m.	0	0
8-10 a.m.	0	0
10-12 noon	0	0
12-2 p.m.	9	1.13
2-4 p.m.	3	0.38
4-6 p.m.	13	1.63
6-8 p.m.	9	1.13
8-10 p.m.	1	0.13
10-12 a.m.	7	0.88
12-2 a.m.	1	0.13
2-4 a.m.	0	0
4-6 a.m.	0	0

GAP B MOA

	8 days	avg/day
6-8 a.m.	0	0
8-10 a.m.	0	0
10-12 noon	0	0
12-2 p.m.	0	0
2-4 p.m.	1	0.13
4-6 p.m.	2	0.25
6-8 p.m.	2	0.25
8-10 p.m.	3	0.38
10-12 a.m.	2	0.25
12-2 a.m.	0	0
2-4 a.m.	0	0
4-6 a.m.	0	0

PR-1A MOA

	8 days	avg/day
6-8 a.m.	0	0
8-10 a.m.	0	0
10-12 noon	0	0
12-2 p.m.	4	0.5
2-4 p.m.	4	0.5
4-6 p.m.	3	0.38
6-8 p.m.	6	0.75
8-10 p.m.	4	0.5
10-12 a.m.	5	0.63
12-2 a.m.	2	0.25
2-4 a.m.	1	0.13
4-6 a.m.	2	0.25

	8 days	avg/day
6-8 a.m.	0	0
8-10 a.m.	0	0
10-12 noon	0	0
12-2 p.m.	1	0.13
2-4 p.m.	3	0.38
4-6 p.m.	5	0.63
6-8 p.m.	3	0.38
8-10 p.m.	5	0.63
10-12 a.m.	6	0.75
12-2 a.m.	1	0.13
2-4 a.m.	2	0.25
4-6 a.m.	0	0

PR-1B MOA

	8 days	avg/day
6-8 a.m.	0	0
8-10 a.m.	0	0
10-12 noon	0	0
12-2 p.m.	7	0.88
2-4 p.m.	7	0.88
4-6 p.m.	5	0.63
6-8 p.m.	11	1.38
8-10 p.m.	8	1
10-12 a.m.	10	1.25
12-2 a.m.	3	0.38
2-4 a.m.	1	0.13
4-6 a.m.	4	0.5

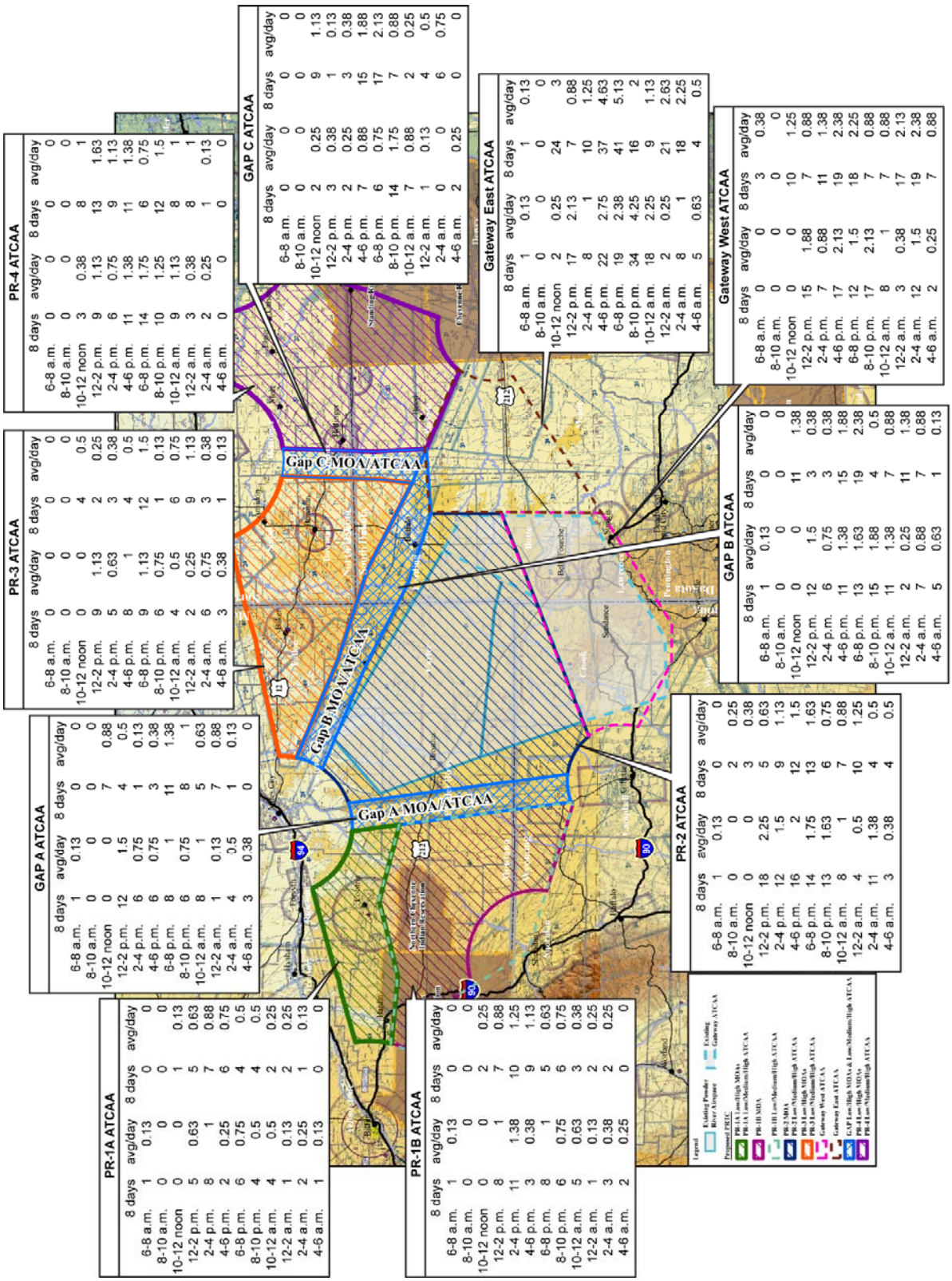
	8 days	avg/day
6-8 a.m.	0	0
8-10 a.m.	0	0
10-12 noon	0	0
12-2 p.m.	7	0.88
2-4 p.m.	7	0.88
4-6 p.m.	6	0.75
6-8 p.m.	5	0.63
8-10 p.m.	6	0.75
10-12 a.m.	7	0.88
12-2 a.m.	2	0.25
2-4 a.m.	2	0.25
4-6 a.m.	0	0

PR-2 MOA

	8 days	avg/day
6-8 a.m.	0	0
8-10 a.m.	0	0
10-12 noon	0	0
12-2 p.m.	4	0.5
2-4 p.m.	4	0.5
4-6 p.m.	3	0.38
6-8 p.m.	7	0.88
8-10 p.m.	9	1.13
10-12 a.m.	2	0.25
12-2 a.m.	1	0.13
2-4 a.m.	3	0.38
4-6 a.m.	0	0

	8 days	avg/day
6-8 a.m.	0	0
8-10 a.m.	0	0
10-12 noon	0	0
12-2 p.m.	0	0
2-4 p.m.	1	0.13
4-6 p.m.	2	0.25
6-8 p.m.	1	0.13
8-10 p.m.	3	0.38
10-12 a.m.	4	0.5
12-2 a.m.	0	0.25
2-4 a.m.	1	0.13
4-6 a.m.	4	0.5

Figure A-3. MOA Average Daily FAA Documented Aircraft Operations from 12,000 Feet MSL to, but not including, FL180.



PR-1A ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	1	0.13	0	0
8-10 a.m.	0	0	0	0
10-12 noon	0	0	0	0
12-2 p.m.	12	1.5	4	0.5
2-4 p.m.	6	0.75	1	0.13
4-6 p.m.	6	0.75	3	0.38
6-8 p.m.	8	1	11	1.38
8-10 p.m.	6	0.75	8	1
10-12 a.m.	8	1	5	0.63
12-2 a.m.	1	0.13	7	0.88
2-4 a.m.	4	0.5	1	0.13
4-6 a.m.	3	0.38	0	0

PR-1B ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	1	0.13	0	0
8-10 a.m.	0	0	0	0
10-12 noon	0	0	2	0.25
12-2 p.m.	8	1	7	0.88
2-4 p.m.	11	1.38	10	1.25
4-6 p.m.	3	0.38	9	1.13
6-8 p.m.	8	1	5	0.63
8-10 p.m.	6	0.75	6	0.75
10-12 a.m.	5	0.63	3	0.38
12-2 a.m.	1	0.13	2	0.25
2-4 a.m.	3	0.38	2	0.25
4-6 a.m.	2	0.25	0	0

PR-2 ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	1	0.13	0	0
8-10 a.m.	0	0	2	0.25
10-12 noon	0	0	3	0.38
12-2 p.m.	18	2.25	5	0.63
2-4 p.m.	12	1.5	9	1.13
4-6 p.m.	16	2	12	1.5
6-8 p.m.	14	1.75	13	1.63
8-10 p.m.	13	1.63	6	0.75
10-12 a.m.	8	1	7	0.88
12-2 a.m.	4	0.5	10	1.25
2-4 a.m.	11	1.38	4	0.5
4-6 a.m.	3	0.38	4	0.5

GAP A ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	1	0.13	0	0
8-10 a.m.	0	0	0	0
10-12 noon	0	0	7	0.88
12-2 p.m.	12	1.5	4	0.5
2-4 p.m.	6	0.75	1	0.13
4-6 p.m.	6	0.75	3	0.38
6-8 p.m.	8	1	11	1.38
8-10 p.m.	6	0.75	8	1
10-12 a.m.	8	1	5	0.63
12-2 a.m.	1	0.13	7	0.88
2-4 a.m.	4	0.5	1	0.13
4-6 a.m.	3	0.38	0	0

PR-3 ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	0	0	0	0
8-10 a.m.	0	0	0	0
10-12 noon	0	0	4	0.5
12-2 p.m.	9	1.13	2	0.25
2-4 p.m.	5	0.63	3	0.38
4-6 p.m.	8	1	4	0.5
6-8 p.m.	9	1.13	12	1.5
8-10 p.m.	6	0.75	1	0.13
10-12 a.m.	4	0.5	6	0.75
12-2 a.m.	2	0.25	9	1.13
2-4 a.m.	6	0.75	3	0.38
4-6 a.m.	3	0.38	1	0.13

PR-4 ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	0	0	0	0
8-10 a.m.	0	0	0	0
10-12 noon	3	0.38	8	1
12-2 p.m.	9	1.13	13	1.63
2-4 p.m.	6	0.75	9	1.13
4-6 p.m.	11	1.38	11	1.38
6-8 p.m.	14	1.75	6	0.75
8-10 p.m.	10	1.25	12	1.5
10-12 a.m.	9	1.13	8	1
12-2 a.m.	3	0.38	8	1
2-4 a.m.	2	0.25	1	0.13
4-6 a.m.	0		0	0

GAP C ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	0	0	0	0
8-10 a.m.	0	0	0	0
10-12 noon	2	0.25	9	1.13
12-2 p.m.	3	0.38	1	0.13
2-4 p.m.	2	0.25	3	0.38
4-6 p.m.	7	0.88	15	1.88
6-8 p.m.	6	0.75	17	2.13
8-10 p.m.	14	1.75	7	0.88
10-12 a.m.	7	0.88	2	0.25
12-2 a.m.	1	0.13	4	0.5
2-4 a.m.	0	0	6	0.75
4-6 a.m.	2	0.25	0	0

Gateway East ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	1	0.13	1	0.13
8-10 a.m.	0	0	0	0
10-12 noon	2	0.25	24	3
12-2 p.m.	17	2.13	7	0.88
2-4 p.m.	8	1	10	1.25
4-6 p.m.	22	2.75	37	4.63
6-8 p.m.	19	2.38	41	5.13
8-10 p.m.	34	4.25	16	2
10-12 a.m.	18	2.25	9	1.13
12-2 a.m.	2	0.25	21	2.63
2-4 a.m.	8	1	18	2.25
4-6 a.m.	5	0.63	4	0.5

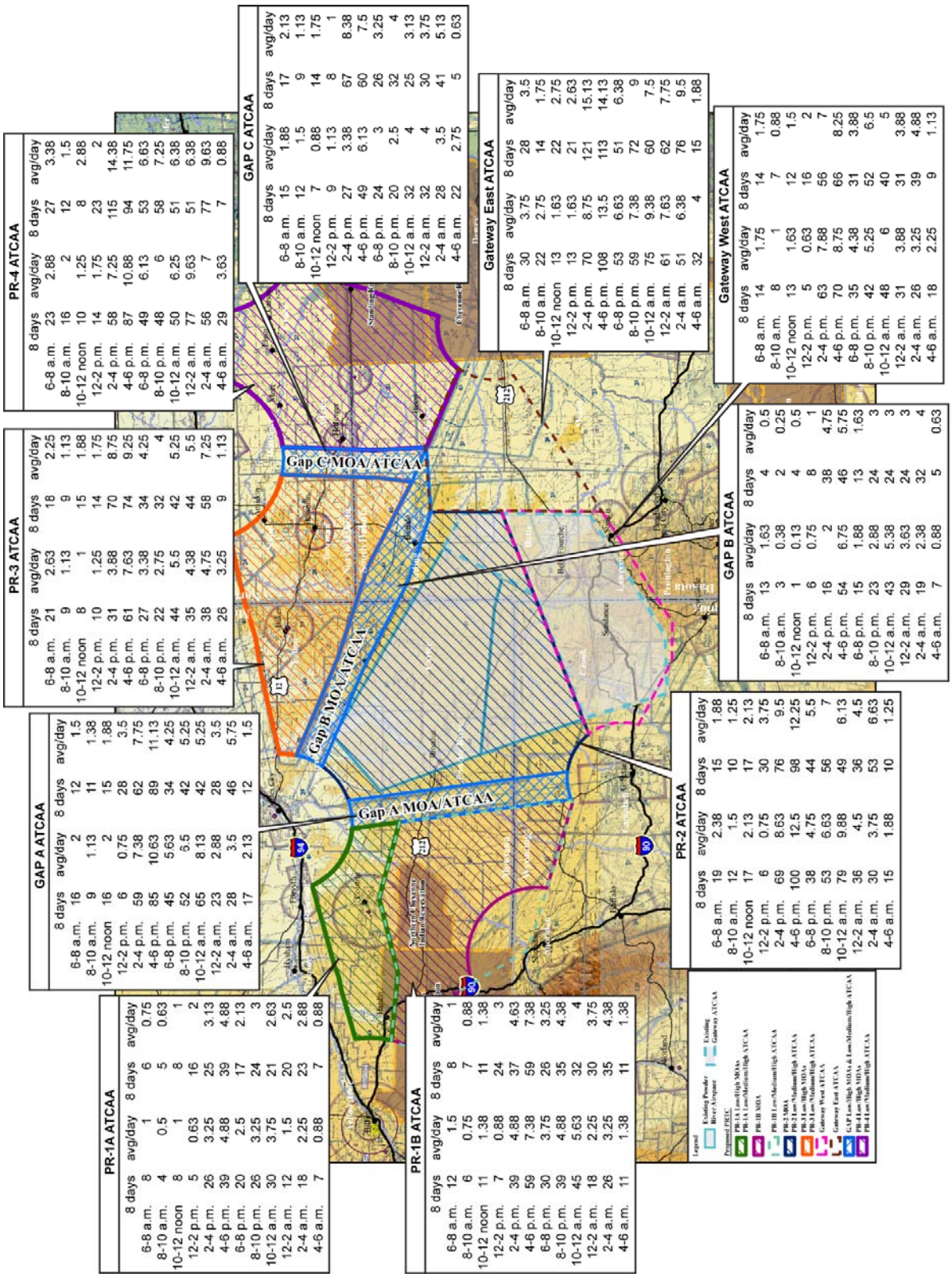
GAP B ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	1	0.13	0	0
8-10 a.m.	0	0	0	0
10-12 noon	0	0	11	1.38
12-2 p.m.	12	1.5	3	0.38
2-4 p.m.	6	0.75	3	0.38
4-6 p.m.	11	1.38	15	1.88
6-8 p.m.	13	1.63	19	2.38
8-10 p.m.	15	1.88	4	0.5
10-12 a.m.	11	1.38	7	0.88
12-2 a.m.	2	0.25	11	1.38
2-4 a.m.	7	0.88	7	0.88
4-6 a.m.	5	0.63	1	0.13

Gateway West ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	0	0	3	0.38
8-10 a.m.	0	0	0	0
10-12 noon	0	0	10	1.25
12-2 p.m.	15	1.88	7	0.88
2-4 p.m.	7	0.88	11	1.38
4-6 p.m.	17	2.13	19	2.38
6-8 p.m.	12	1.5	18	2.25
8-10 p.m.	17	2.13	7	0.88
10-12 a.m.	8	1	7	0.88
12-2 a.m.	3	0.38	17	2.13
2-4 a.m.	12	1.5	19	2.38
4-6 a.m.	2	0.25	7	0.88

Figure A-4. ATCAA Average Daily FAA Documented Aircraft Operations From FL180 To FL260



PR-1A ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	8	1	6	0.75
8-10 a.m.	4	0.5	5	0.63
10-12 noon	8	1	8	1
12-2 p.m.	5	0.63	16	2
2-4 p.m.	26	3.25	25	3.13
4-6 p.m.	39	4.88	39	4.88
6-8 p.m.	20	2.5	17	2.13
8-10 p.m.	26	3.25	24	3
10-12 a.m.	30	3.75	21	2.63
12-2 a.m.	12	1.5	20	2.5
2-4 a.m.	18	2.25	23	2.88
4-6 a.m.	7	0.88	7	0.88

PR-1B ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	12	1.5	8	1
8-10 a.m.	6	0.75	7	0.88
10-12 noon	11	1.38	11	1.38
12-2 p.m.	7	0.88	24	3
2-4 p.m.	39	4.88	37	4.63
4-6 p.m.	59	7.38	59	7.38
6-8 p.m.	30	3.75	26	3.25
8-10 p.m.	39	4.88	35	4.38
10-12 a.m.	45	5.63	32	4
12-2 a.m.	18	2.25	30	3.75
2-4 a.m.	26	3.25	35	4.38
4-6 a.m.	11	1.38	11	1.38

PR-2 ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	19	2.38	15	1.88
8-10 a.m.	12	1.5	10	1.25
10-12 noon	17	2.13	17	2.13
12-2 p.m.	6	0.75	30	3.75
2-4 p.m.	69	8.63	76	9.5
4-6 p.m.	100	12.5	98	12.25
6-8 p.m.	38	4.75	44	5.5
8-10 p.m.	53	6.63	56	7
10-12 a.m.	79	9.88	49	6.13
12-2 a.m.	36	4.5	36	4.5
2-4 a.m.	30	3.75	53	6.63
4-6 a.m.	15	1.88	10	1.25

GAP A ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	16	2	12	1.5
8-10 a.m.	9	1.13	11	1.38
10-12 noon	16	2	15	1.88
12-2 p.m.	6	0.75	28	3.5
2-4 p.m.	59	7.38	62	7.75
4-6 p.m.	85	10.63	89	11.13
6-8 p.m.	45	5.63	34	4.25
8-10 p.m.	52	6.5	42	5.25
10-12 a.m.	65	8.13	42	5.25
12-2 a.m.	23	2.88	28	3.5
2-4 a.m.	28	3.5	46	5.75
4-6 a.m.	17	2.13	12	1.5

PR-3 ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	21	2.63	18	2.25
8-10 a.m.	9	1.13	9	1.13
10-12 noon	8	1	15	1.88
12-2 p.m.	10	1.25	14	1.75
2-4 p.m.	31	3.88	70	8.75
4-6 p.m.	61	7.63	74	9.25
6-8 p.m.	27	3.38	34	4.25
8-10 p.m.	22	2.75	32	4
10-12 a.m.	44	5.5	42	5.25
12-2 a.m.	35	4.38	44	5.5
2-4 a.m.	38	4.75	58	7.25
4-6 a.m.	26	3.25	9	1.13

PR-4 ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	23	2.88	27	3.38
8-10 a.m.	16	2	12	1.5
10-12 noon	10	1.25	8	2.88
12-2 p.m.	14	1.75	23	2
2-4 p.m.	58	7.25	115	14.38
4-6 p.m.	87	10.88	94	11.75
6-8 p.m.	49	6.13	53	6.63
8-10 p.m.	48	6	58	7.25
10-12 a.m.	50	6.25	51	6.38
12-2 a.m.	77	9.63	51	6.38
2-4 a.m.	56	7	77	9.63
4-6 a.m.	29	3.63	7	0.88

GAP C ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	15	1.88	17	2.13
8-10 a.m.	12	1.5	9	1.13
10-12 noon	7	0.88	14	1.75
12-2 p.m.	9	1.13	8	1
2-4 p.m.	27	3.38	67	8.38
4-6 p.m.	49	6.13	60	7.5
6-8 p.m.	24	3	26	3.25
8-10 p.m.	20	2.5	32	4
10-12 a.m.	32	4	25	3.13
12-2 a.m.	32	4	30	3.75
2-4 a.m.	28	3.5	41	5.13
4-6 a.m.	22	2.75	5	0.63

Gateway East ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	30	3.75	28	3.5
8-10 a.m.	22	2.75	14	1.75
10-12 noon	13	1.63	22	2.75
12-2 p.m.	13	1.63	21	2.63
2-4 p.m.	70	8.75	121	15.13
4-6 p.m.	108	13.5	113	14.13
6-8 p.m.	53	6.63	51	6.38
8-10 p.m.	59	7.38	72	9
10-12 a.m.	75	9.38	60	7.5
12-2 a.m.	61	7.63	62	7.75
2-4 a.m.	51	6.38	76	9.5
4-6 a.m.	32	4	15	1.88

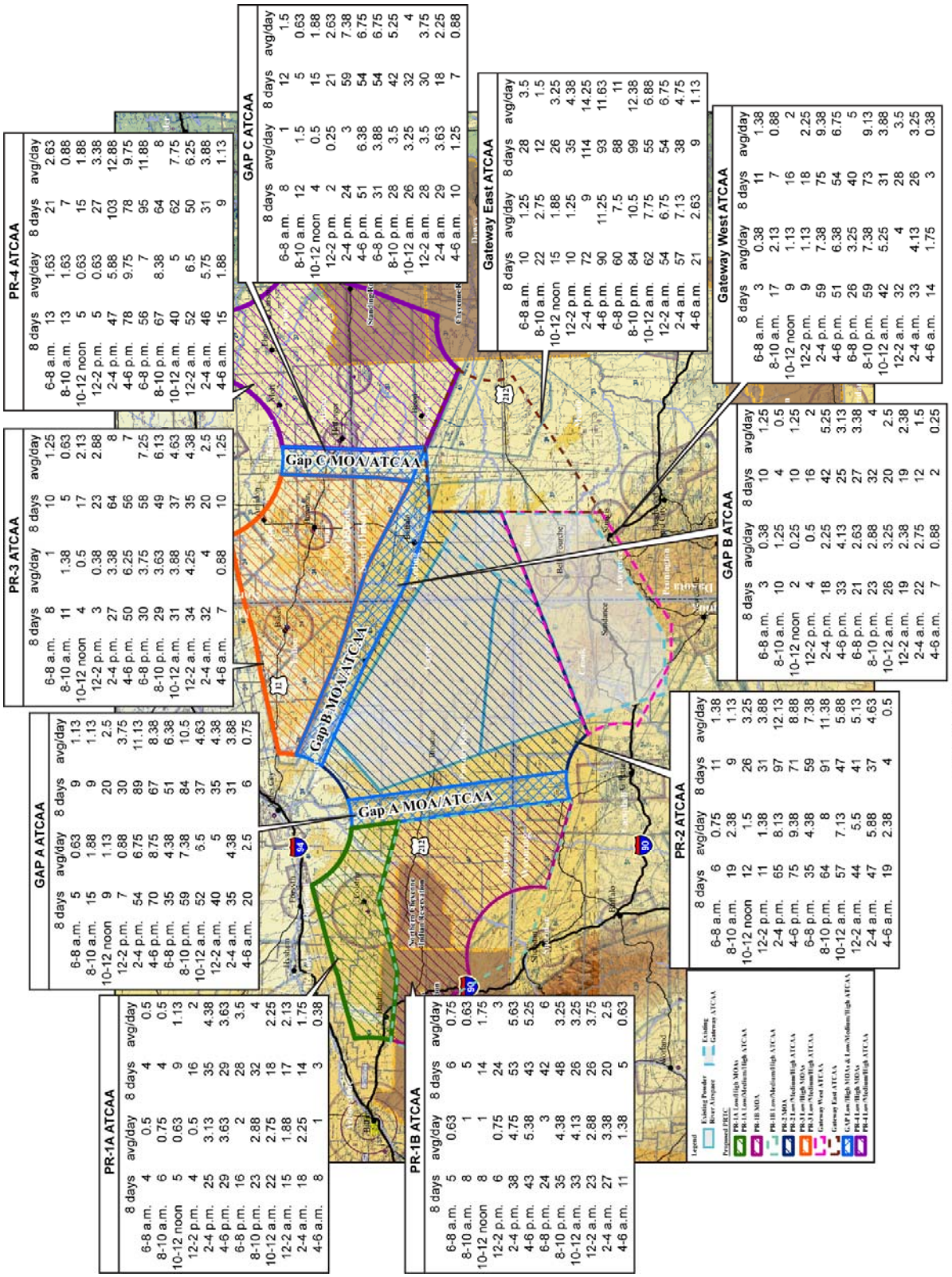
GAP B ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	13	1.63	4	0.5
8-10 a.m.	3	0.38	2	0.25
10-12 noon	1	0.13	4	0.5
12-2 p.m.	6	0.75	8	1
2-4 p.m.	16	2	38	4.75
4-6 p.m.	54	6.75	46	5.75
6-8 p.m.	15	1.88	13	1.63
8-10 p.m.	23	2.88	24	3
10-12 a.m.	43	5.38	24	3
12-2 a.m.	29	3.63	24	3
2-4 a.m.	19	2.38	32	4
4-6 a.m.	7	0.88	5	0.63

Gateway West ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	14	1.75	14	1.75
8-10 a.m.	8	1	7	0.88
10-12 noon	13	1.63	12	1.5
12-2 p.m.	5	0.63	16	2
2-4 p.m.	63	7.88	56	7
4-6 p.m.	70	8.75	66	8.25
6-8 p.m.	35	4.38	31	3.88
8-10 p.m.	42	5.25	52	6.5
10-12 a.m.	48	6	40	5
12-2 a.m.	31	3.88	31	3.88
2-4 a.m.	26	3.25	39	4.88
4-6 a.m.	18	2.25	9	1.13

Figure A-5. ATCAA Average Daily FAA Documented Aircraft Operations From FL260 To FL360



PR-1A ATCAA

	8 days	avg/day
6-8 a.m.	4	0.5
8-10 a.m.	6	0.75
10-12 noon	5	0.63
12-2 p.m.	4	0.5
2-4 p.m.	9	1.13
4-6 p.m.	16	2
6-8 p.m.	25	3.13
8-10 p.m.	29	3.63
10-12 a.m.	16	2
12-2 a.m.	23	2.88
2-4 a.m.	22	2.75
4-6 a.m.	15	1.88
6-8 a.m.	18	2.25
8-10 a.m.	14	1.75
10-12 noon	17	2.13
12-2 p.m.	14	1.75
2-4 p.m.	29	3.63
4-6 p.m.	28	3.5
6-8 p.m.	32	4
8-10 p.m.	18	2.25
10-12 a.m.	17	2.13
12-2 a.m.	14	1.75
2-4 a.m.	3	0.38
4-6 a.m.	8	1

PR-1B ATCAA

	8 days	avg/day
6-8 a.m.	5	0.63
8-10 a.m.	8	1
10-12 noon	8	1
12-2 p.m.	6	0.75
2-4 p.m.	38	4.75
4-6 p.m.	43	5.38
6-8 p.m.	24	3
8-10 p.m.	35	4.38
10-12 a.m.	33	4.13
12-2 a.m.	23	2.88
2-4 a.m.	27	3.38
4-6 a.m.	11	1.38
6-8 a.m.	6	0.75
8-10 a.m.	5	0.63
10-12 noon	14	1.75
12-2 p.m.	24	3
2-4 p.m.	53	5.63
4-6 p.m.	43	5.25
6-8 p.m.	42	6
8-10 p.m.	48	3.25
10-12 a.m.	26	3.25
12-2 a.m.	26	3.75
2-4 a.m.	20	2.5
4-6 a.m.	5	0.63

PR-2 ATCAA

	8 days	avg/day
6-8 a.m.	6	0.75
8-10 a.m.	19	2.38
10-12 noon	12	1.5
12-2 p.m.	11	1.38
2-4 p.m.	65	8.13
4-6 p.m.	75	9.38
6-8 p.m.	35	4.38
8-10 p.m.	64	8
10-12 a.m.	57	7.13
12-2 a.m.	44	5.5
2-4 a.m.	47	5.88
4-6 a.m.	19	2.38
6-8 a.m.	11	1.38
8-10 a.m.	9	1.13
10-12 noon	26	3.25
12-2 p.m.	31	3.88
2-4 p.m.	97	12.13
4-6 p.m.	71	8.88
6-8 p.m.	59	7.38
8-10 p.m.	91	11.38
10-12 a.m.	47	5.88
12-2 a.m.	41	5.13
2-4 a.m.	37	4.63
4-6 a.m.	4	0.5

GAP A ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	5	0.63	9	1.13
8-10 a.m.	15	1.88	9	1.13
10-12 noon	9	1.13	20	2.5
12-2 p.m.	7	0.88	30	3.75
2-4 p.m.	54	6.75	89	11.13
4-6 p.m.	70	8.75	67	8.38
6-8 p.m.	35	4.38	51	6.38
8-10 p.m.	59	7.38	84	10.5
10-12 a.m.	52	6.5	37	4.63
12-2 a.m.	40	5	35	4.38
2-4 a.m.	35	4.38	31	3.88
4-6 a.m.	20	2.5	6	0.75

PR-3 ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	8	1	10	1.25
8-10 a.m.	11	1.38	5	0.63
10-12 noon	4	0.5	17	2.13
12-2 p.m.	3	0.38	23	2.88
2-4 p.m.	27	3.38	64	8
4-6 p.m.	50	6.25	56	7
6-8 p.m.	30	3.75	58	7.25
8-10 p.m.	29	3.63	49	6.13
10-12 a.m.	31	3.88	37	4.63
12-2 a.m.	34	4.25	35	4.38
2-4 a.m.	32	4	20	2.5
4-6 a.m.	7	0.88	10	1.25

PR-4 ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	13	1.63	21	2.63
8-10 a.m.	13	1.63	7	0.88
10-12 noon	5	0.63	15	1.88
12-2 p.m.	5	0.63	27	3.38
2-4 p.m.	47	5.88	103	12.88
4-6 p.m.	78	9.75	78	9.75
6-8 p.m.	56	7	95	11.88
8-10 p.m.	67	8.38	64	8
10-12 a.m.	40	5	62	7.75
12-2 a.m.	52	6.5	50	6.25
2-4 a.m.	46	5.75	31	3.88
4-6 a.m.	15	1.88	9	1.13

GAP C ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	8	1	12	1.5
8-10 a.m.	12	1.5	5	0.63
10-12 noon	4	0.5	15	1.88
12-2 p.m.	2	0.25	21	2.63
2-4 p.m.	24	3	59	7.38
4-6 p.m.	51	6.38	54	6.75
6-8 p.m.	31	3.88	54	6.75
8-10 p.m.	28	3.5	42	5.25
10-12 a.m.	26	3.25	32	4
12-2 a.m.	28	3.5	30	3.75
2-4 a.m.	29	3.63	18	2.25
4-6 a.m.	10	1.25	7	0.88

Gateway East ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	10	1.25	28	3.5
8-10 a.m.	22	2.75	12	1.5
10-12 noon	15	1.88	26	3.25
12-2 p.m.	10	1.25	35	4.38
2-4 p.m.	72	9	114	14.25
4-6 p.m.	90	11.25	93	11.63
6-8 p.m.	60	7.5	88	11
8-10 p.m.	84	10.5	99	12.38
10-12 a.m.	62	7.75	55	6.88
12-2 a.m.	54	6.75	54	6.75
2-4 a.m.	57	7.13	38	4.75
4-6 a.m.	21	2.63	9	1.13

GAP B ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	3	0.38	10	1.25
8-10 a.m.	10	1.25	4	0.5
10-12 noon	2	0.25	10	1.25
12-2 p.m.	4	0.5	16	2
2-4 p.m.	18	2.25	42	5.25
4-6 p.m.	33	4.13	25	3.13
6-8 p.m.	21	2.63	27	3.38
8-10 p.m.	23	2.88	32	4
10-12 a.m.	26	3.25	20	2.5
12-2 a.m.	19	2.38	19	2.38
2-4 a.m.	22	2.75	12	1.5
4-6 a.m.	7	0.88	2	0.25

Gateway West ATCAA

	8 days	avg/day	8 days	avg/day
6-8 a.m.	3	0.38	11	1.38
8-10 a.m.	17	2.13	7	0.88
10-12 noon	9	1.13	16	2
12-2 p.m.	9	1.13	18	2.25
2-4 p.m.	59	7.38	75	9.38
4-6 p.m.	51	6.38	54	6.75
6-8 p.m.	26	3.25	40	5
8-10 p.m.	59	7.38	73	9.13
10-12 a.m.	42	5.25	31	3.88
12-2 a.m.	32	4	28	3.5
2-4 a.m.	33	4.13	26	3.25
4-6 a.m.	14	1.75	3	0.38

Figure A-6. ATCAA Average Daily FAA Documented Aircraft Operations Above FL360 To FL600

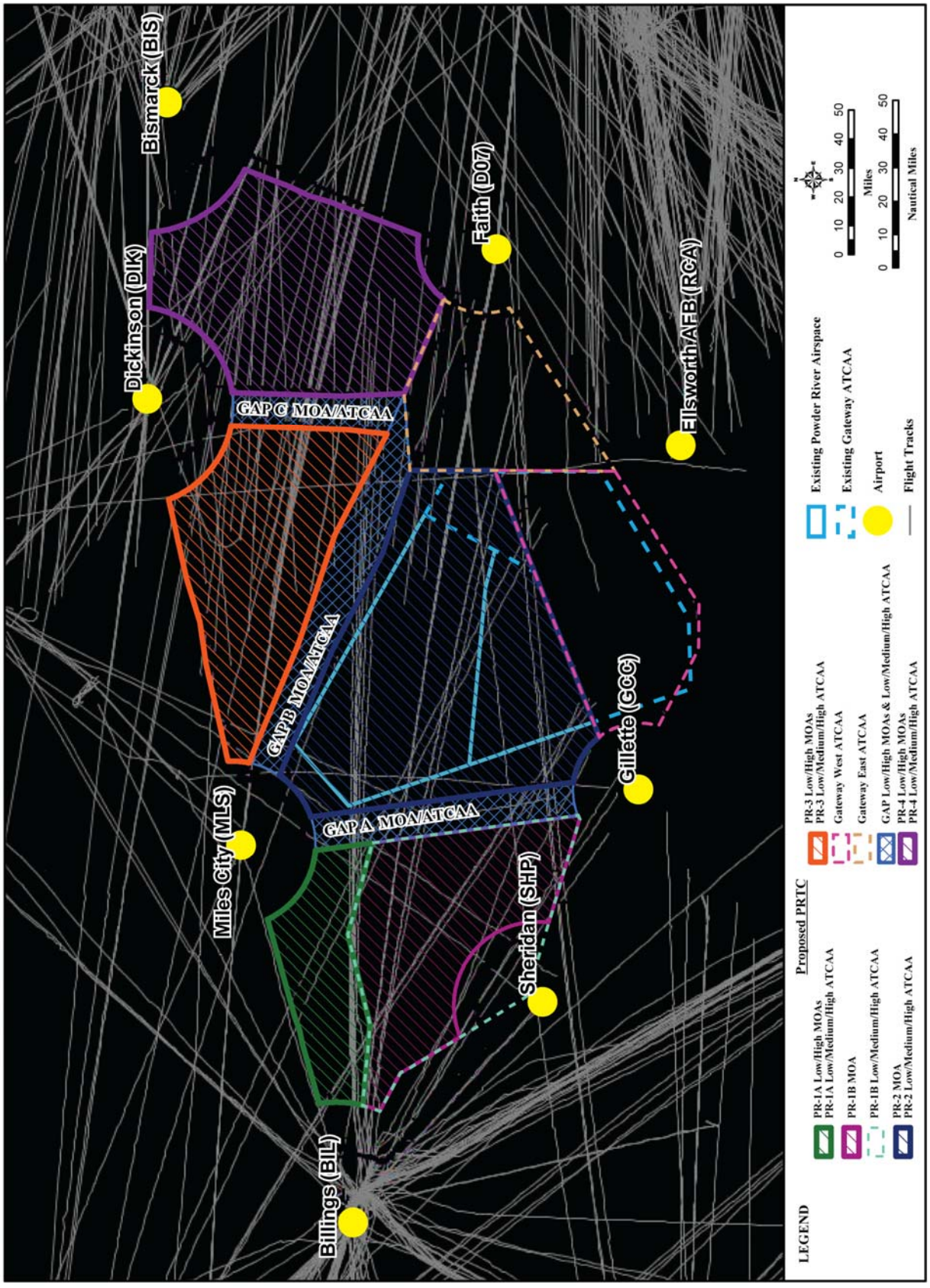


Figure A-7. Winter below 4,000 feet MSL

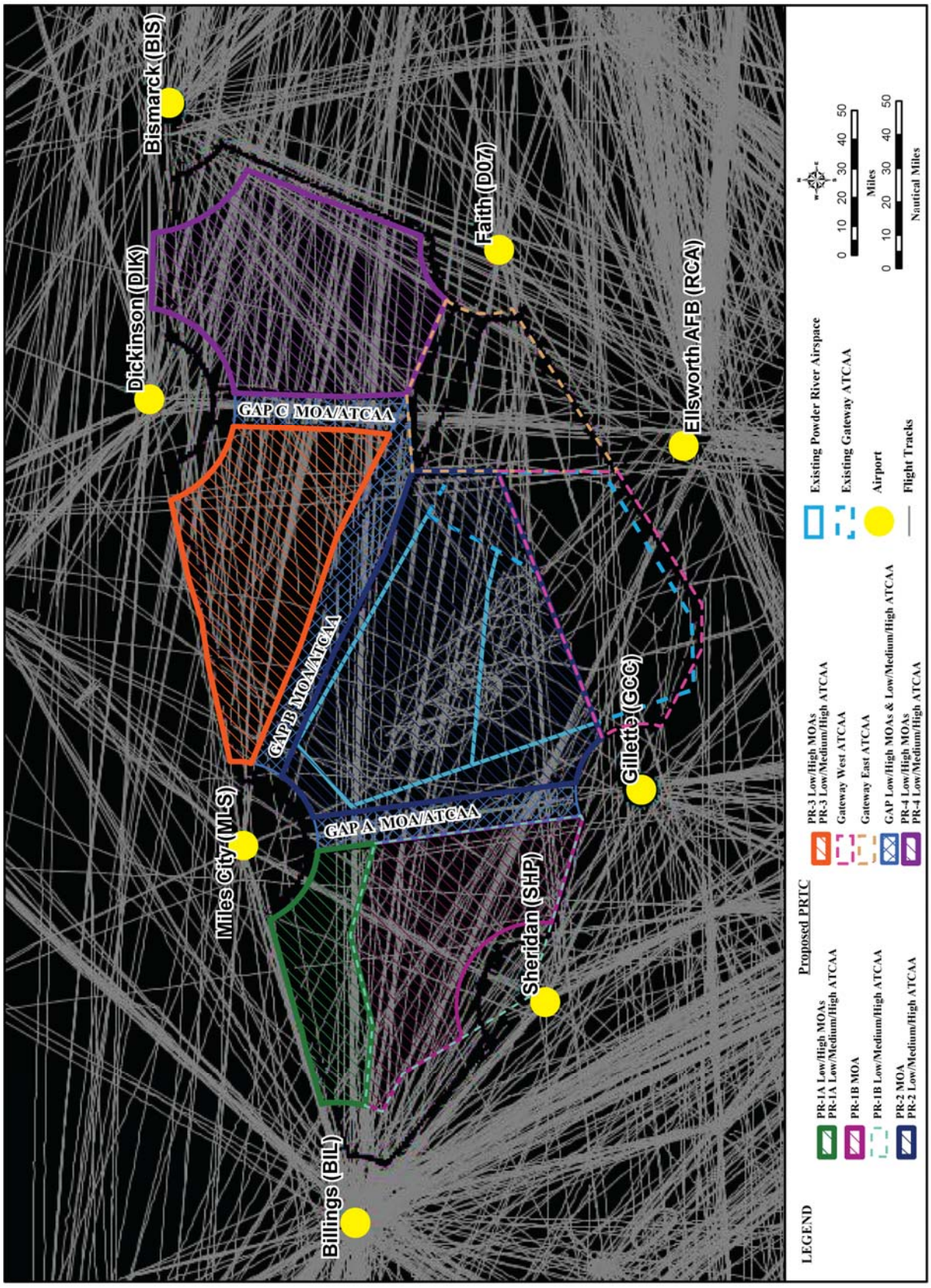


Figure A-8. Winter from 4,000 feet MSL to, but not including, 10,000 feet MSL

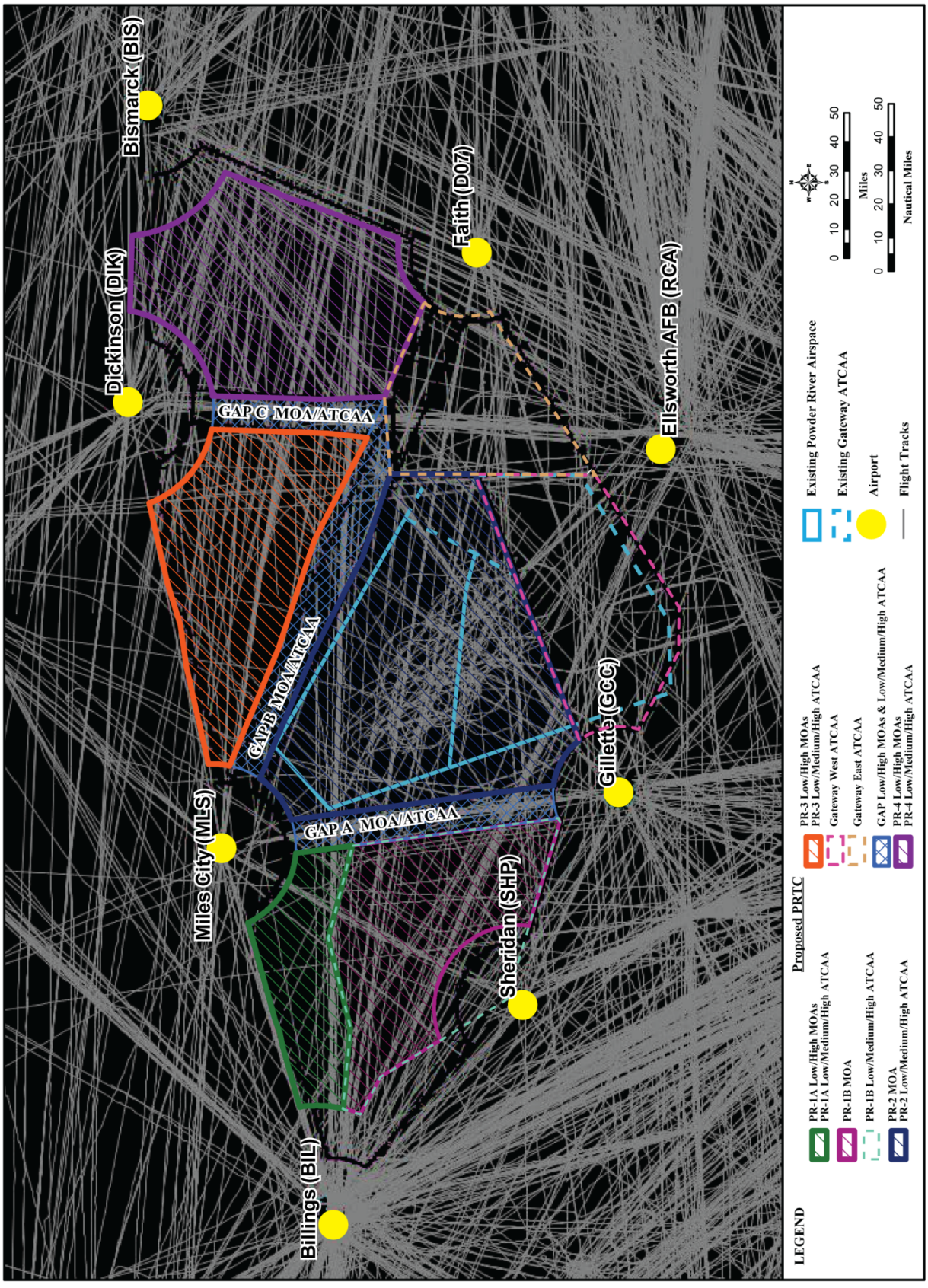


Figure A-9. Winter from 10,000 feet MSL to, but not including, FL180

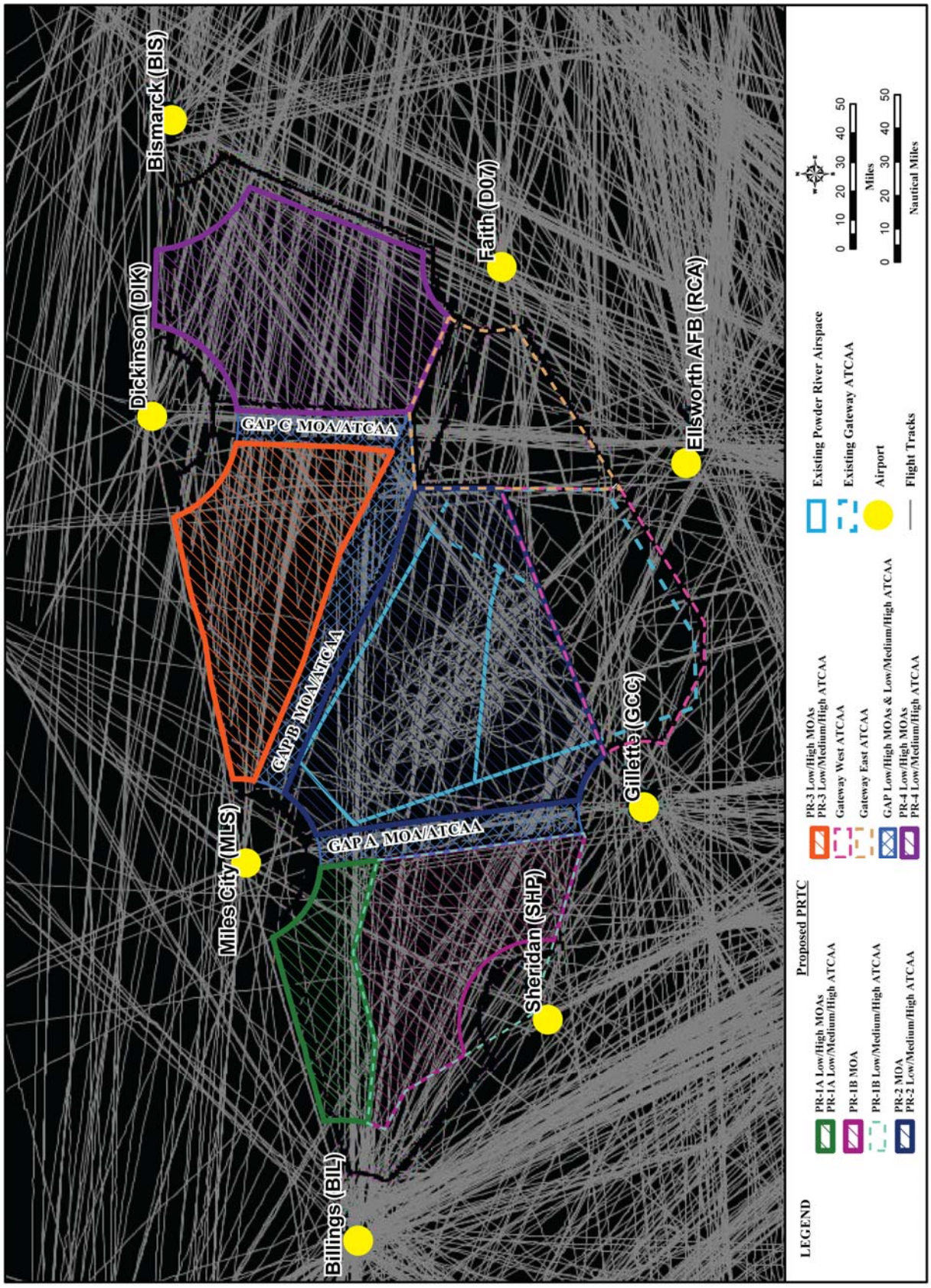


Figure A-10. Winter Low ATCAA from FL180 to FL260

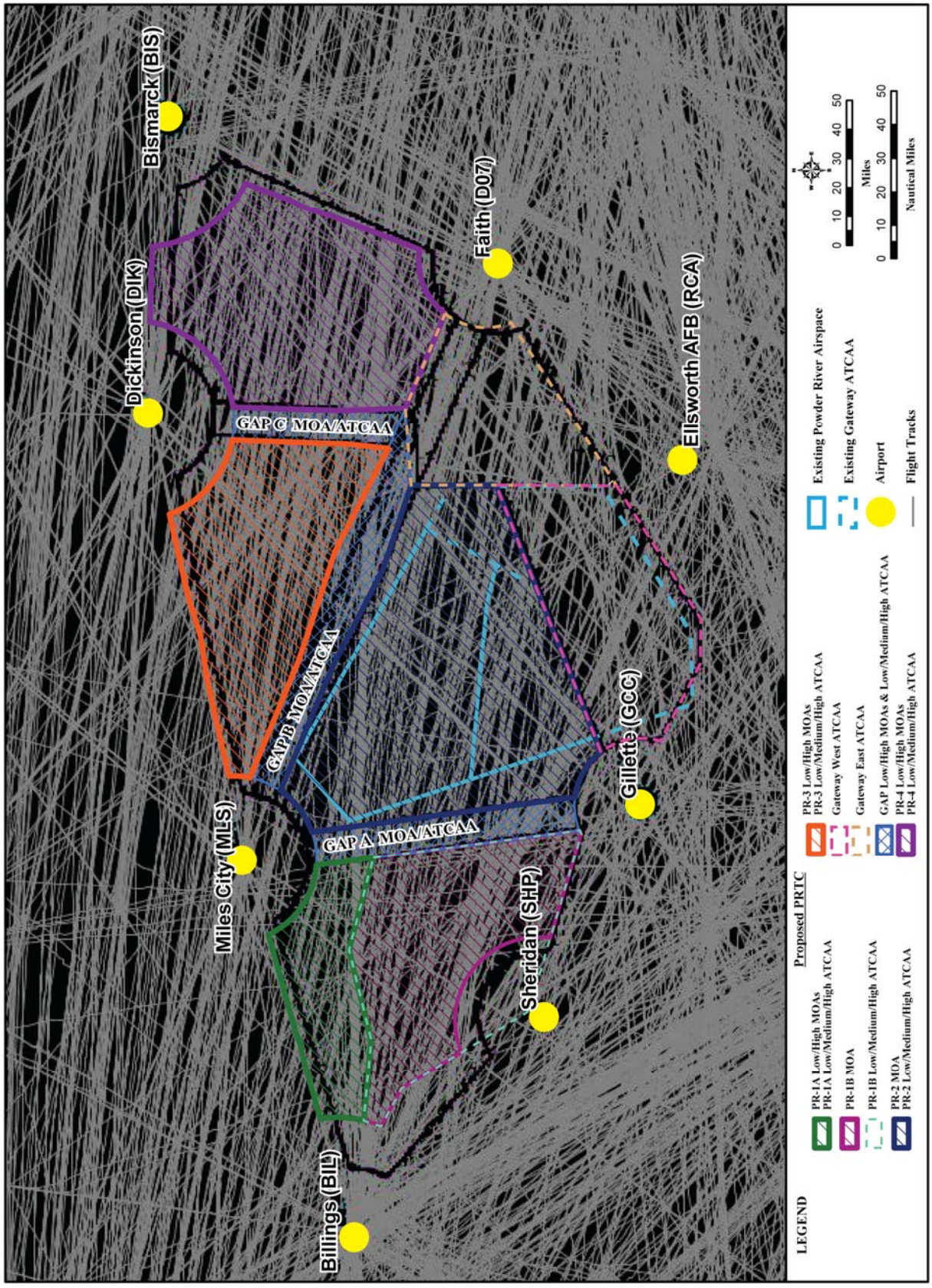


Figure A-11. Winter Medium ATCAA from FL260 to FL370

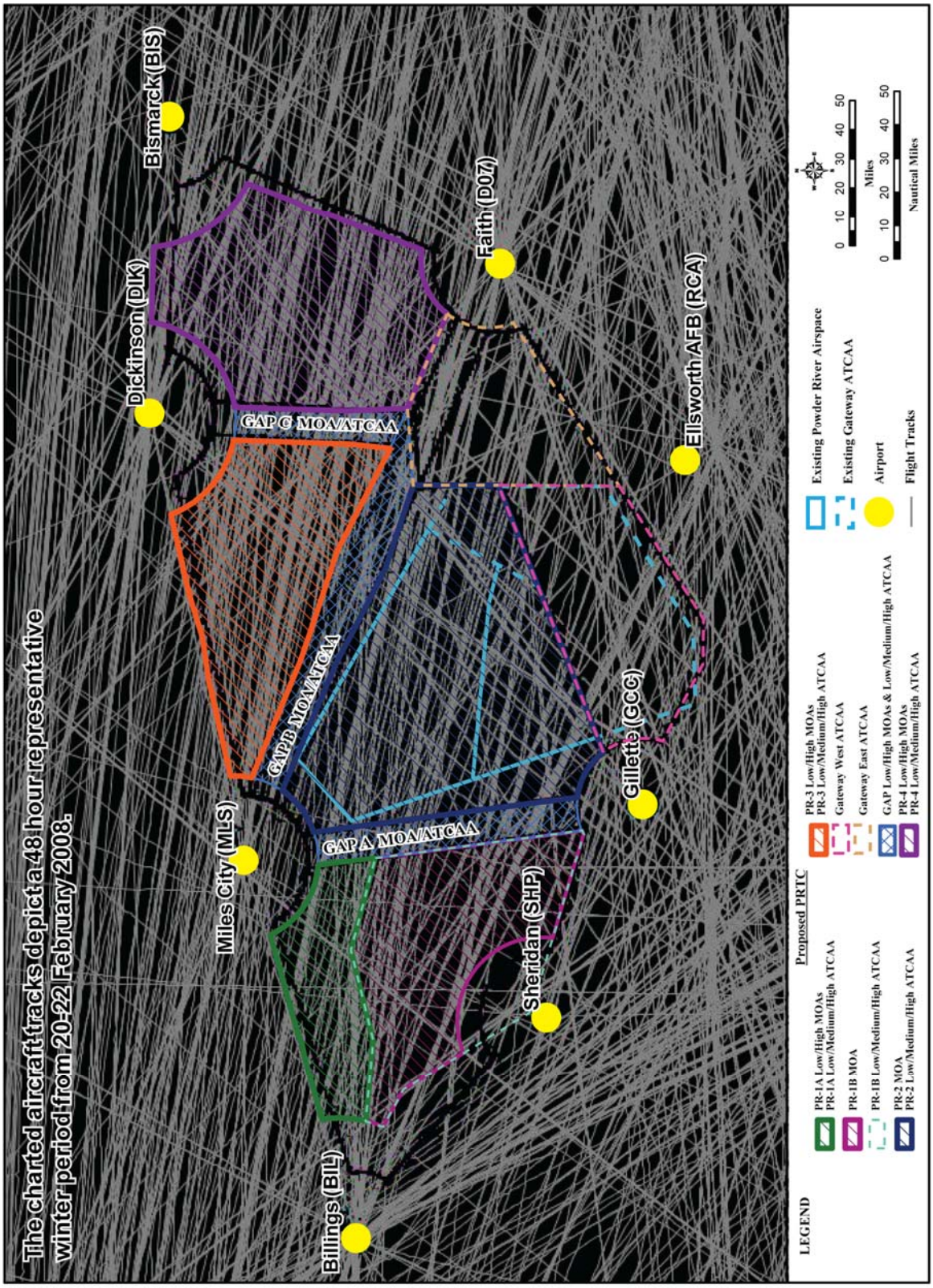


Figure A-12. Winter High ATCAA above FL370 to FL600

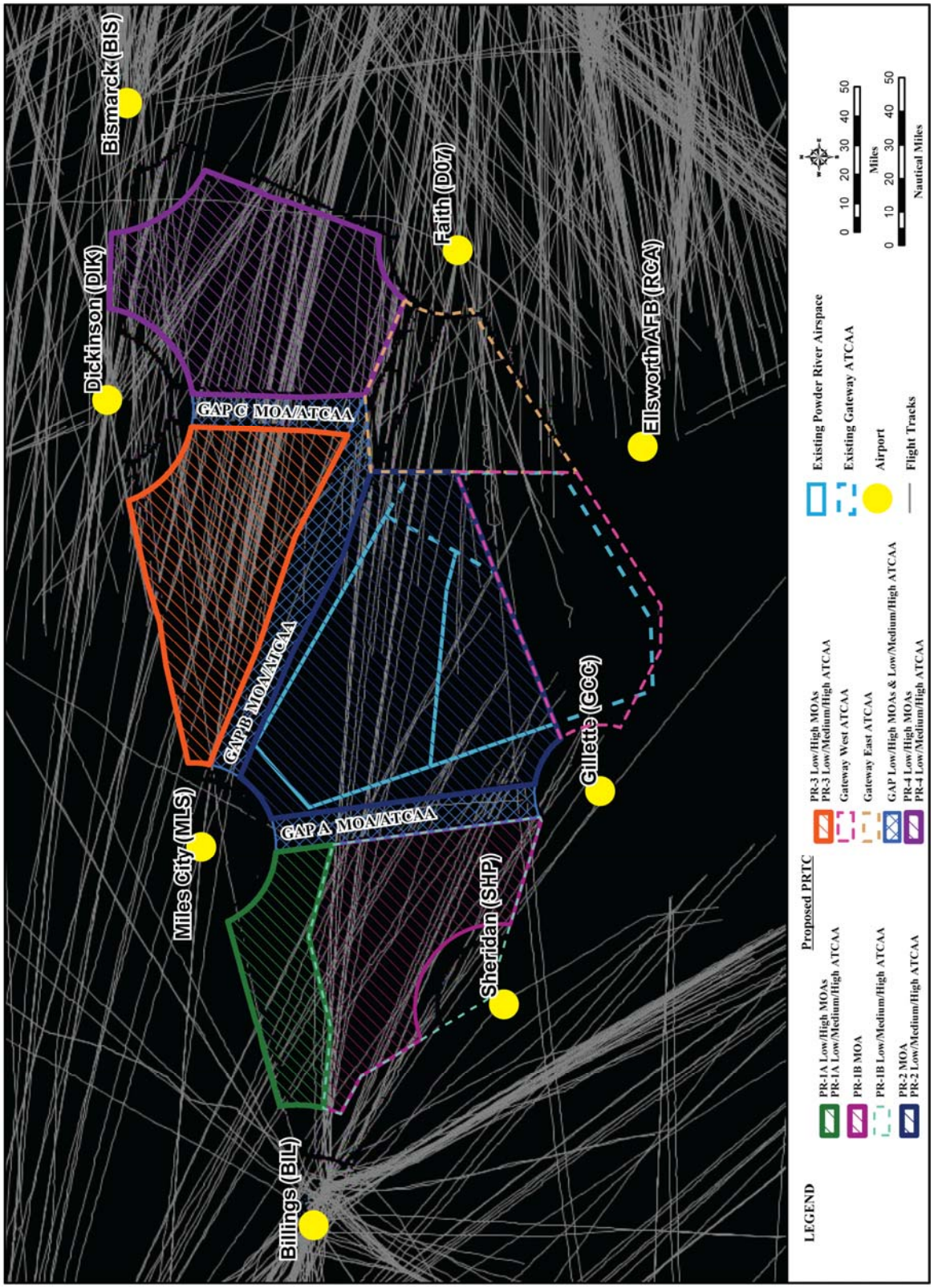


Figure A-13. Summer below 4,000 feet MSL

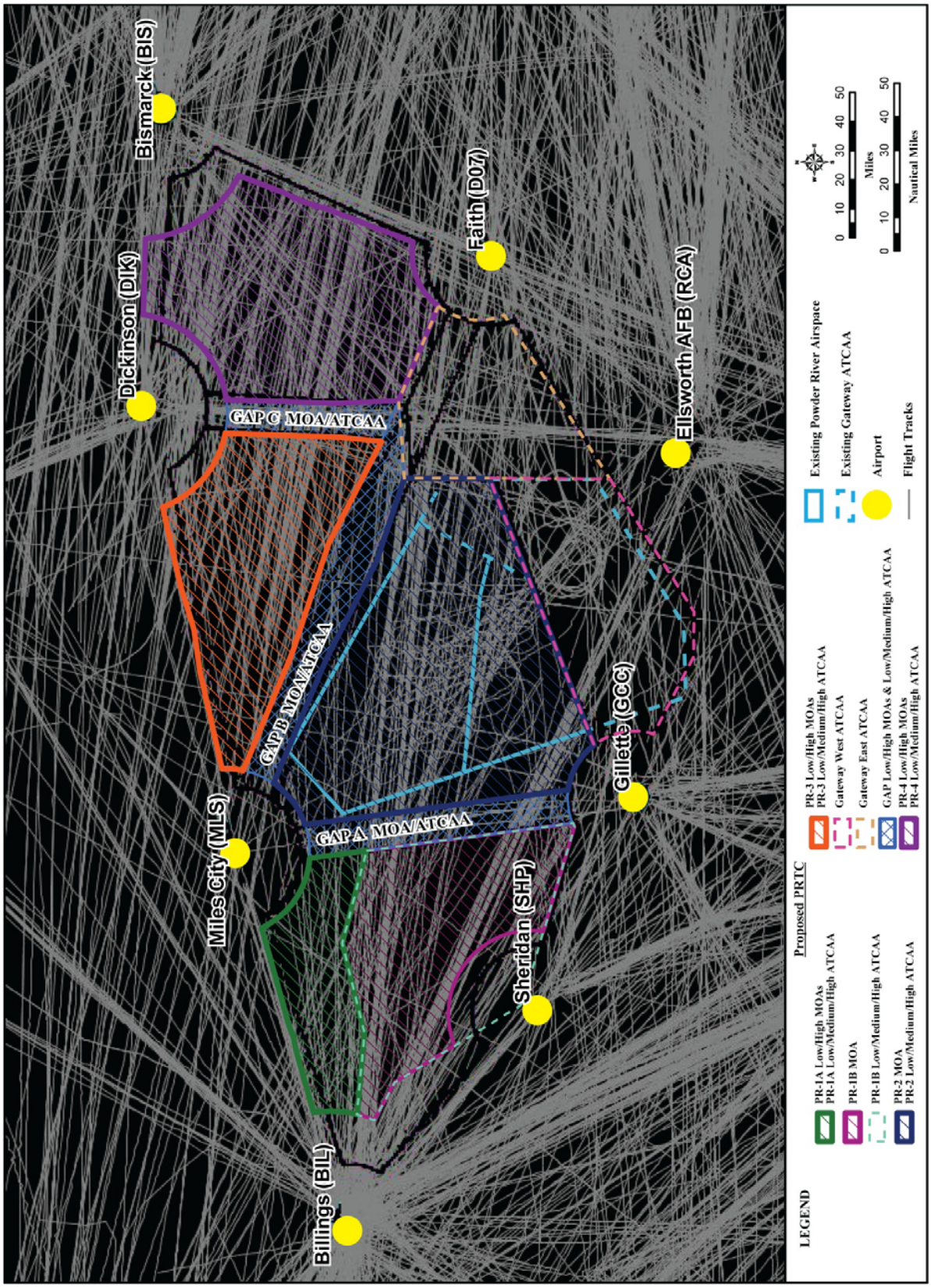


Figure A-14. Summer from 4,000 feet MSL to, but not including 10,000 feet MSL

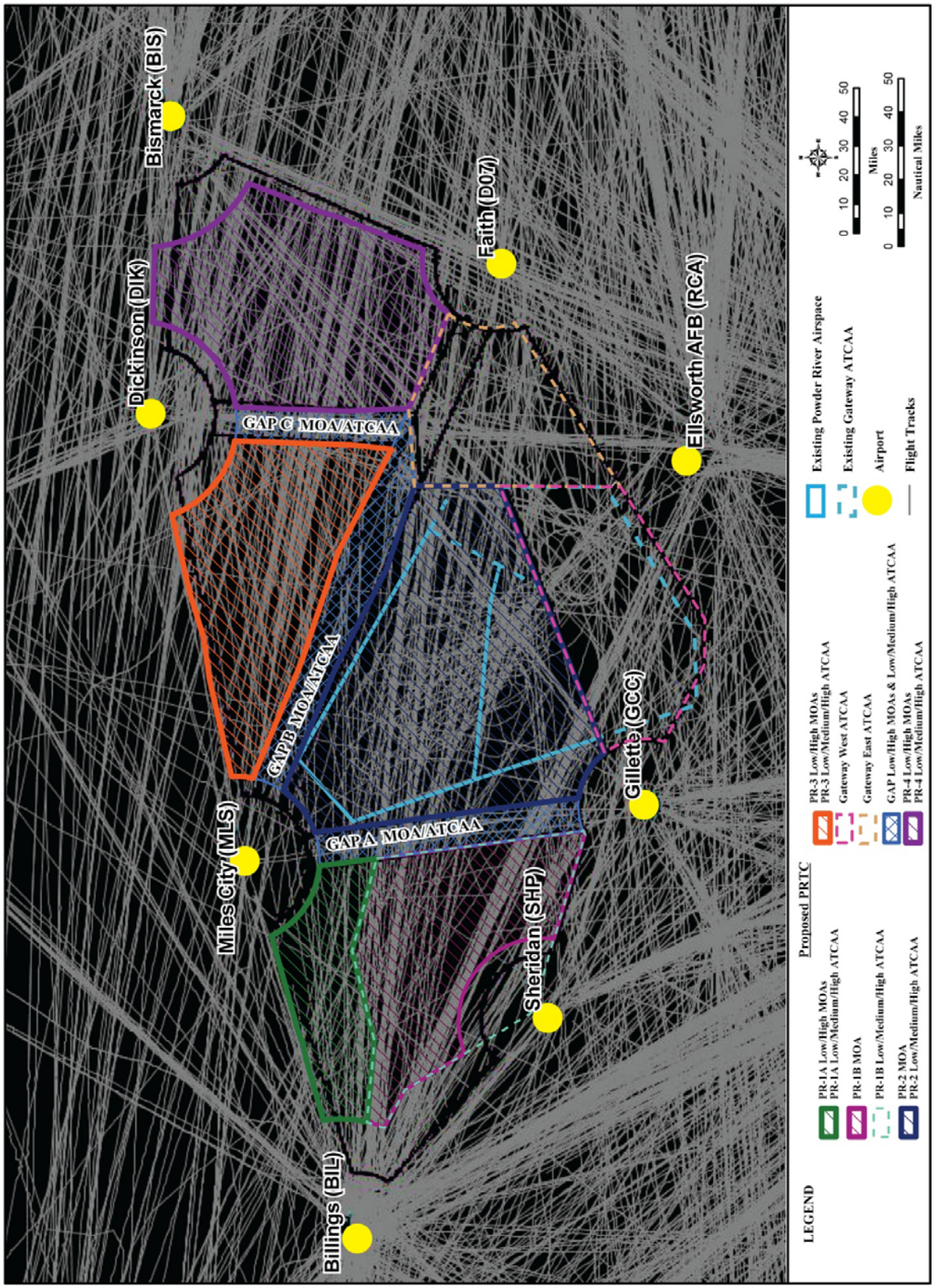


Figure A-15. Summer from 10,000 feet MSL to, but not including FL180

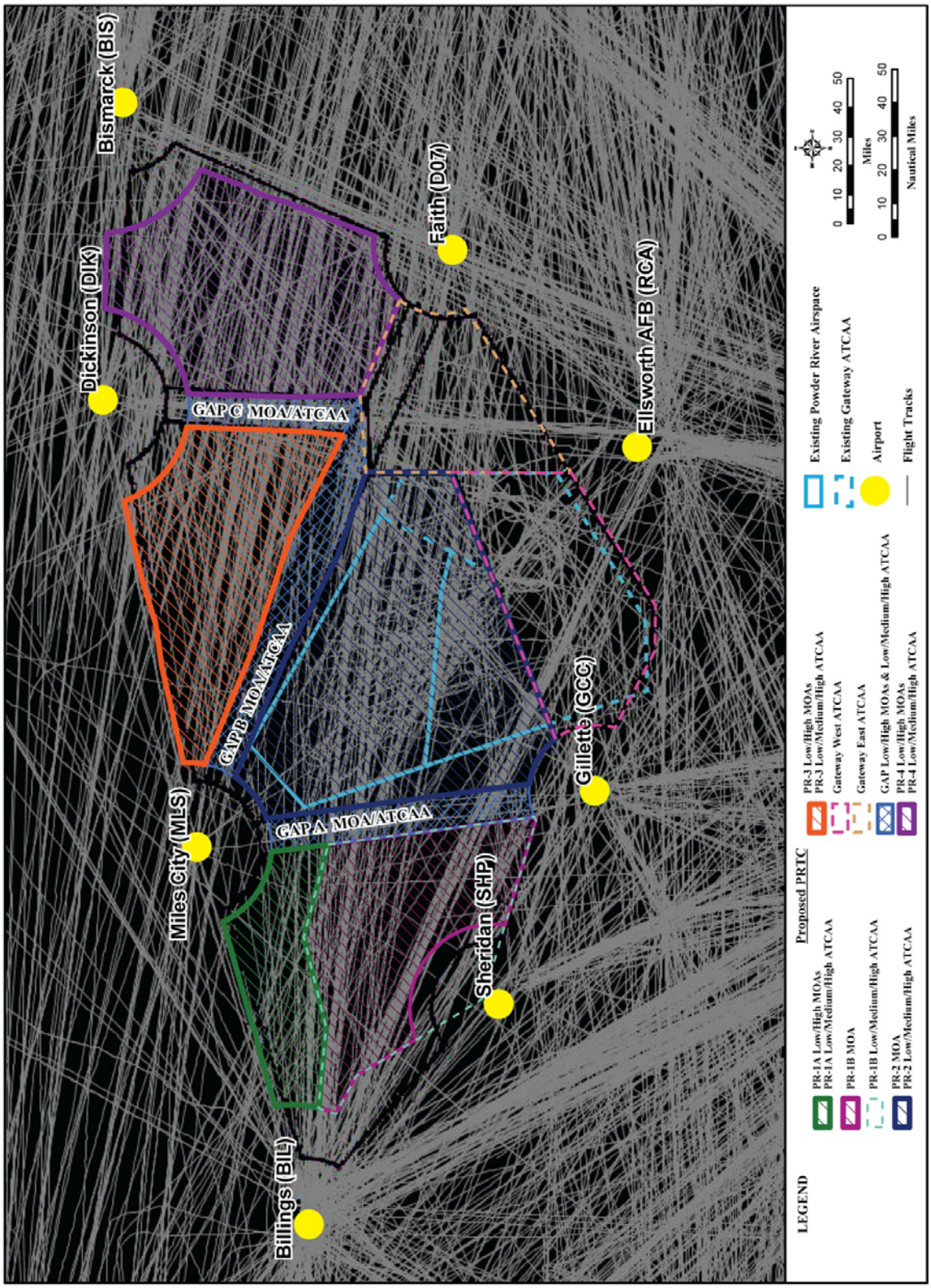


Figure A-16. Summer Low ATCAA from FL180 to FL260

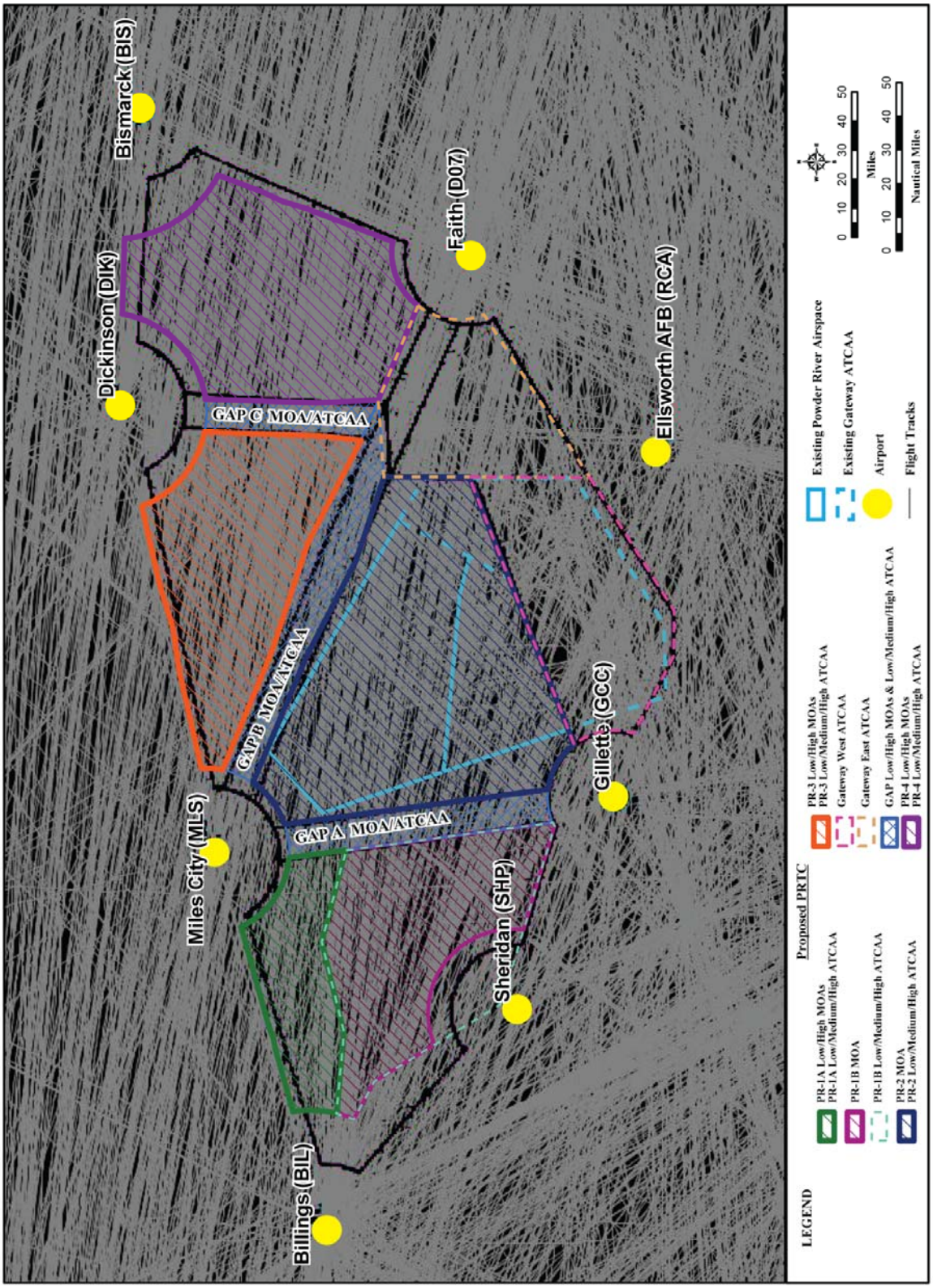


Figure A-17. Summer from FL260 to FL370

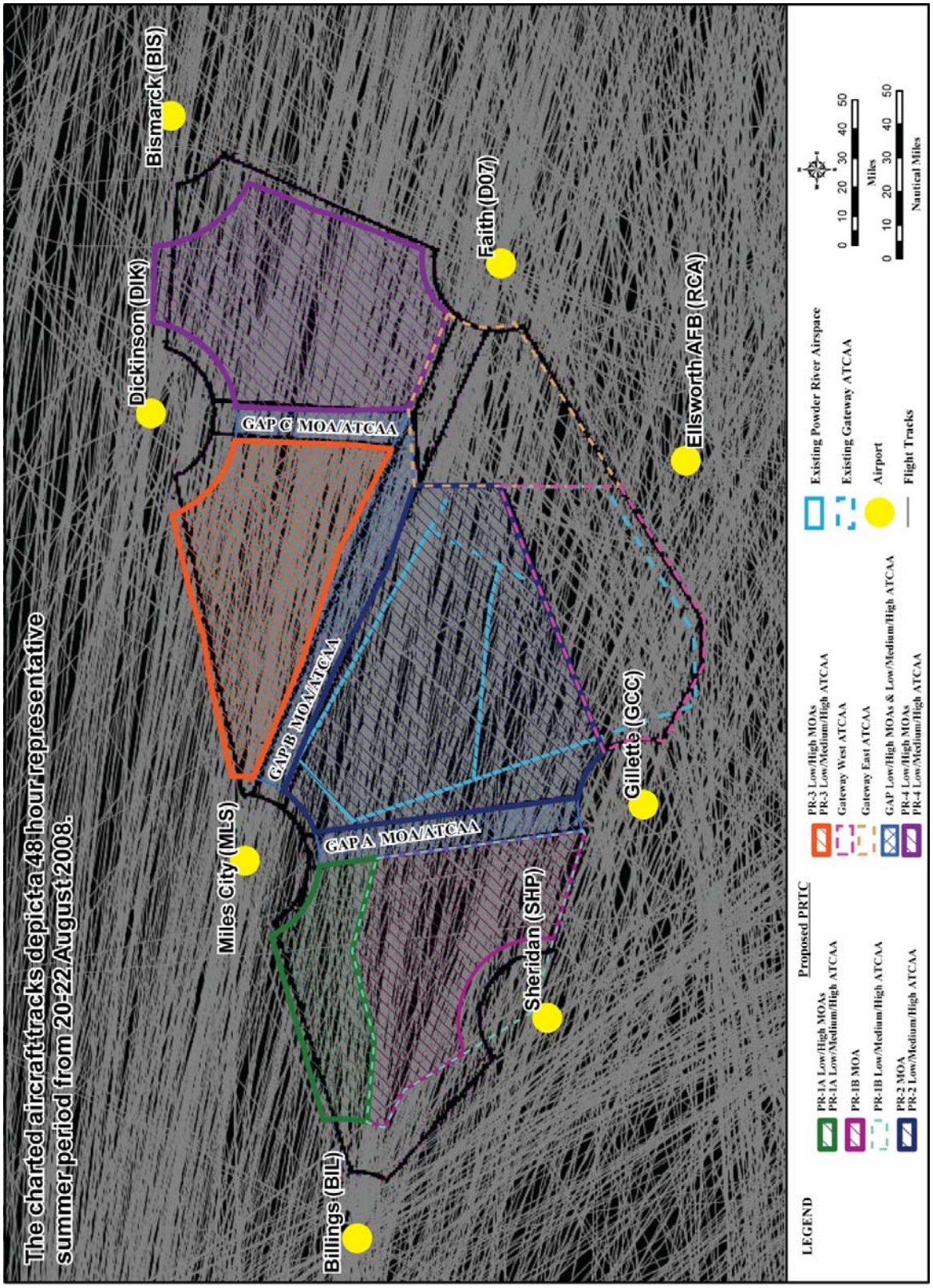


Figure A-18. Summer High ATCAA above FL370 to FL600

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APPENDIX B
POTENTIAL TRANSIENT AIRCRAFT

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FACT SHEET

U.S. Air Force Fact Sheet

A-10 THUNDERBOLT II

Mission

The A-10 Thunderbolt II has excellent maneuverability at low air speeds and altitude, and is an highly accurate weapons-delivery platform. The aircraft can loiter near battle areas for extended periods of time and operate under 1,000-foot ceilings (303.3 meters) with 1.5-mile (2.4 kilometers) visibility. The wide combat radius and short takeoff and landing capability permit operations in and out of locations near front lines. Using night vision goggles, A-10 pilots can conduct their missions during darkness.

The Thunderbolt IIs have Night Vision Imaging Systems, or NVIS, goggle compatible single-seat cockpits forward of their wings and a large bubble canopy which provides pilots all-around vision. The pilots are protected by titanium armor that also protects parts of the flight-control system. The redundant primary structural sections allow the aircraft to enjoy better survivability during close air support than did previous aircraft.

The aircraft can survive direct hits from armor-piercing and high explosive projectiles up to 23mm. Their self-sealing fuel cells are protected by internal and external foam. Manual systems back up their redundant hydraulic flight-control systems. This permits pilots to fly and land when hydraulic power is lost.

The Thunderbolt II can be serviced and operated from bases with limited facilities near battle areas. Many of the aircraft's parts are interchangeable left and right, including the engines, main landing gear and vertical stabilizers.

Avionics equipment includes multi-band communications; Global Positioning System and inertial navigations systems; infrared and electronic countermeasures against air-to-air and air-to-surface threats. And, it has a Pave Penny laser spot tracker system; a heads-up display to display flight and weapons delivery information; and a low altitude safety and targeting enhancement system, which provides constantly computed impact and release points for accurate ordnance delivery. There is also a low-altitude autopilot and a ground collision avoidance system.

The A-10 is currently undergoing the precision engagement modification, which adds upgraded cockpit displays, moving map, hands on throttle and stick, digital stores management, LITENING and Sniper advanced targeting pod integration, situational awareness data link or SADL, variable message format, or VMF, GPS-guided weapons, and upgraded DC power. Precision engagement modified aircraft are designated as the A-10C.

The Thunderbolt II can employ a wide variety of conventional munitions, including general purpose bombs, cluster bomb units, laser guided bombs, joint direct attack munitions or JDAM), wind corrected munitions dispenser or WCMD, AGM-65 Maverick and AIM-9 Sidewinder

missiles, rockets, illumination flares, and the GAU-8/A 30mm cannon, capable of firing 3,900 rounds per minute to defeat a wide variety of targets including tanks.

Background
The first production A-10A was delivered to Davis-Monthan Air Force Base, Ariz., in October 1975. It was designed specially for the close air support mission and had the ability to combine large military loads, long loiter and wide combat radius, which proved to be vital assets to the United States and its allies during Operation Desert Storm and Operation Noble Anvil.

The upgraded A-10C reached initial operation capability in September 2007. Specifically designed for close air support, its combination of large and varied ordnance load, long loiter time, accurate weapons delivery, austere field capability, and survivability has proven invaluable to the United States and its allies. The aircraft has participated in operations Desert Storm, Southern Watch, Provide Comfort, Desert Fox, Noble Anvil, Deny Flight, Deliberate Guard, Allied Force, Enduring Freedom and Iraqi Freedom.

General Characteristics
Primary Function: A-10 -- close air support, A-10C - airborne forward air control
Contractor: Fairchild Republic Co.
Power Plant: Two General Electric TF34-GE-100 turbofans
Thrust: 9,065 pounds each engine
Wingspan: 57 feet, 6 inches (17.42 meters)
Length: 53 feet, 4 inches (16.16 meters)
Height: 14 feet, 8 inches (4.42 meters)
Weight: 29,000 pounds (13,154 kilograms)
Maximum Takeoff Weight: 51,000 pounds (22,950 kilograms)
Fuel Capacity: 11,000 pounds (7,257 kilograms)
Payload: 16,000 pounds (7,257 kilograms)
Speed: 420 miles per hour (Mach 0.56)
Range: 800 miles (695 nautical miles)
Ceiling: 45,000 feet (13,636 meters)
Armament: One 30 mm GAU-8/A seven-barrel Gatling gun; up to 16,000 pounds (7,200 kilograms) of mixed ordnance on eight under-wing and three under-fuselage pylon stations, including 500 pound (225 kilograms) Mk-82 and 2,000 pounds (900 kilograms) Mk-84 series low/high drag bombs, incendiary cluster bombs, combined effects munitions, mine dispensing munitions, AGM-65 Maverick missiles and laser-guided/electro-optically guided bombs; infrared countermeasure flares; electronic countermeasure chaff; jammer pods; 2.75-inch (6.99 centimeters) rockets; illumination flares and AIM-9 Sidewinder missiles.
Crew: One
Unit Cost: Not available
Initial operating capability: A-10A, 1977; A-10C, 2007
Inventory: Active force, A-10, 143 and A-10C, 70; Reserve, A-10, 46 and OA-10, 6; ANG, A-10, 84 and OA-10, 18

Point of Contact
Air Combat Command, Public Affairs Office; 130 Andrews St., Suite 202; Langley AFB, VA 23665-1987; DSN 574-5007 or 757-764-5007; e-mail: accpa.operations@langley.af.mil

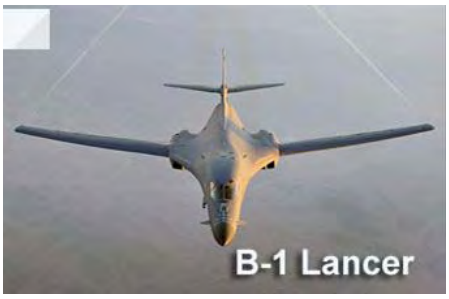
FACT SHEET

U.S. Air Force Fact Sheet

B-1B LANCER

Mission

Carrying the largest payload of both guided and unguided weapons in the Air Force inventory, the multi-mission B-1 is the backbone of America's long-range bomber force. It can rapidly deliver massive quantities of precision and non-precision weapons against any adversary, anywhere in the world, at any time.



Features

The B-1B's blended wing/body configuration, variable-geometry wings and turbofan afterburning engines, combine to provide long range, maneuverability and high speed while enhancing survivability. Forward wing settings are used for takeoff, landings, air refueling and in some high-altitude weapons employment scenarios. Aft wing sweep settings - the main combat configuration -- are typically used during high subsonic and supersonic flight, enhancing the B-1B's maneuverability in the low- and high-altitude regimes. The B-1B's speed and superior handling characteristics allow it to seamlessly integrate in mixed force packages. These capabilities, when combined with its substantial payload, excellent radar targeting system, long loiter time and survivability, make the B-1B a key element of any joint/composite strike force.

The B-1 is a highly versatile, multi-mission weapon system. The B-1B's synthetic aperture radar is capable of tracking, targeting and engaging moving vehicles as well as self-targeting and terrain-following modes. In addition, an extremely accurate Global Positioning System-aided Inertial Navigation System enables aircrews to navigate without the aid of ground-based navigation aids as well as engage targets with a high level of precision. The Combat Track II radios provide a secure beyond line of sight reach back connectivity until Link-16 is integrated on the aircraft. In a time sensitive targeting environment, the aircrew can use targeting data from the Combined Air Operations Center over Combat Track II, then to strike emerging targets rapidly and efficiently. This capability was effectively demonstrated during operations Enduring Freedom and Iraqi Freedom.

The B-1B's onboard self-protection electronic jamming equipment, radar warning receiver (ALQ-161) and expendable countermeasures (chaff and flare) system and a towed decoy system (ALE-50) complements its low-radar cross-section to form an integrated, robust defense system that supports penetration of hostile airspace. The ALQ-161 electronic countermeasures system detects and identifies the full spectrum of adversary threat emitters then applies the appropriate jamming technique either automatically or through operator inputs.

Current modifications build on this foundation. Radar sustainability and capability upgrades will provide a more reliable system and may be upgraded in the future to include an ultra high-resolution capability and automatic target recognition. The addition of a fully integrated data link, or FIDL, will add Link-16 communications capability. FIDL combined with associated cockpit upgrades will provide the crew with a much more flexible, integrated cockpit, and will

allow the B-1 to operate in the fast-paced integrated battlefield of the future. Several obsolete and hard to maintain electronic systems are also being replaced to improve aircraft reliability.

Background
The B-1A was initially developed in the 1970s as a replacement for the B-52. Four prototypes of this long-range, high speed (Mach 2.2) strategic bomber were developed and tested in the mid-1970s, but the program was canceled in 1977 before going into production. Flight testing continued through 1981.

The B-1B is an improved variant initiated by the Reagan administration in 1981. Major changes included the addition of additional structure to increase payload by 74,000 pounds, an improved radar and reduction of the radar cross section by an order of magnitude. The inlet was extensively modified as part of this RCS reduction, necessitating a reduction in maximum speed to Mach 1.2.

The first production B-1 flew in October 1984, and the first B-1B was delivered to Dyess Air Force Base, Texas, in June 1985. Initial operational capability was achieved on Oct. 1, 1986. The final B-1B was delivered May 2, 1988.

The B-1B holds almost 50 world records for speed, payload, range, and time of climb in its class. The National Aeronautic Association recognized the B-1B for completing one of the 10 most memorable record flights for 1994. The most recent records were made official in 2004.

The B-1B was first used in combat in support of operations against Iraq during Operation Desert Fox in December 1998. In 1999, six B-1s were used in Operation Allied Force, delivering more than 20 percent of the total ordnance while flying less than 2 percent of the combat sorties.

During the first six months of Operation Enduring Freedom, eight B-1s dropped nearly 40 percent of the total tonnage delivered by coalition air forces. This included nearly 3,900 JDAMs, or 67 percent of the total. In Operation Iraqi Freedom, the aircraft has flown less 1 percent of the combat missions while delivering 43 percent of the JDAMs used. The B-1 continues to be deployed today, flying missions daily in suppport of continuing oerations.

General Characteristics
Primary Function: Long-range, multi-role, heavy bomber
Contractor: Boeing, North America (formerly Rockwell International, North American Aircraft); Offensive avionics, Boeing Military Airplane; defensive avionics, EDO Corporation
Power plant: Four General Electric F101-GE-102 turbofan engine with afterburner
Thrust: 30,000-plus pounds with afterburner, per engine
Wingspan: 137 feet (41.8 meters) extended forward, 79 feet (24.1 meters) swept aft
Length: 146 feet (44.5 meters)
Height: 34 feet (10.4 meters)
Weight: approximately 190,000 pounds (86,183 kilograms)
Maximum Takeoff Weight: 477,000 pounds (216,634 kilograms)
Fuel Capacity: 265,274 pounds (120,326 kilograms)
Payload: 75,000 pounds (34,019 kilograms)
Speed: 900-plus mph (Mach 1.2 at sea level)
Range: Intercontinental
Ceiling: More than 30,000 feet (9,144 meters)
Armament: 84 500-pound Mk-82 or 24 2,000-pound Mk-84 general purpose bombs; up to 84 500-pound Mk-62 or 8 2,000-pound Mk-65 Quick Strike naval mines; 30 cluster munitions (CBU-87, -89, -97) or 30 Wind-Corrected Munitions Dispensers (CBU-103, -104, -105); up to 24 2,000-pound GBU-31 or 15 500-pound GBU-38 Joint Direct Attack Munitions; up to 24 AGM-158A Joint Air-to-Surface Standoff Missiles
Crew: Four (aircraft commander, copilot, and two weapon systems officers)
Unit Cost: $283.1 million (fiscal 98 constant dollars)
Initial operating capability: October 1986
Inventory: Active force, 66 (test, 2); ANG, 0; Reserve, 0

Point of Contact
Air Combat Command, Public Affairs Office; 130 Andrews St., Suite 202; Langley AFB, VA 23665-1987; DSN 574-5007 or 757-764-5007; e-mail: accpa.operations@langley.af.mil

FACT SHEET

U.S. Air Force Fact Sheet

B-2 SPIRIT

Mission

The B-2 Spirit is a multi-role bomber capable of delivering both conventional and nuclear munitions. A dramatic leap forward in technology, the bomber represents a major milestone in the U.S. bomber modernization program. The B-2 brings massive firepower to bear, in a short time, anywhere on the globe through previously impenetrable defenses.

Features

Along with the B-52, the B-2 provides the penetrating flexibility and effectiveness inherent in manned bombers. Its low-observable, or "stealth," characteristics give it the unique ability to penetrate an enemy's most sophisticated defenses and threaten its most valued, and heavily defended, targets. Its capability to penetrate air defenses and threaten effective retaliation provides a strong, effective deterrent and combat force well into the 21st century.

The revolutionary blending of low-observable technologies with high aerodynamic efficiency and large payload gives the B-2 important advantages over existing bombers. Its low-observability provides it greater freedom of action at high altitudes, thus increasing its range and a better field of view for the aircraft's sensors. Its unrefueled range is approximately 6,000 nautical miles (9,600 kilometers).

The B-2's low observability is derived from a combination of reduced infrared, acoustic, electromagnetic, visual and radar signatures. These signatures make it difficult for the sophisticated defensive systems to detect, track and engage the B-2. Many aspects of the low-observability process remain classified; however, the B-2's composite materials, special coatings and flying-wing design all contribute to its "stealthiness."

The B-2 has a crew of two pilots, a pilot in the left seat and mission commander in the right, compared to the B-1B's crew of four and the B-52's crew of five.

Background

The first B-2 was publicly displayed on Nov. 22, 1988, when it was rolled out of its hangar at Air Force Plant 42, Palmdale, Calif. Its first flight was July 17, 1989. The B-2 Combined Test Force, Air Force Flight Test Center, Edwards Air Force Base, Calif., is responsible for flight testing the engineering, manufacturing and development aircraft on the B-2.

Whiteman AFB, Mo., is the only operational base for the B-2. The first aircraft, Spirit of Missouri, was delivered Dec. 17, 1993. Depot maintenance responsibility for the B-2 is performed by Air Force contractor support and is managed at the Oklahoma City Air Logistics Center at Tinker AFB, Okla.

The combat effectiveness of the B-2 was proved in Operation Allied Force, where it was responsible for destroying 33 percent of all Serbian targets in the first eight weeks, by flying

nonstop to Kosovo from its home base in Missouri and back. In support of Operation Enduring Freedom, the B-2 flew one of its longest missions to date from Whiteman to Afghanistan and back. The B-2 completed its first-ever combat deployment in support of Operation Iraqi Freedom, flying 22 sorties from a forward operating location as well as 27 sorties from Whiteman AFB and releasing more than 1.5 million pounds of munitions. The aircraft received full operational capability status in December 2003. On Feb. 1, 2009, the Air Force's newest command, Air Force Global Strike Command, assumed responsibility for the B-2 from Air Combat Command.

The prime contractor, responsible for overall system design and integration, is Northrop Grumman Integrated Systems Sector. Boeing Military Airplanes Co., Hughes Radar Systems Group, General Electric Aircraft Engine Group and Vought Aircraft Industries, Inc., are key members of the aircraft contractor team.

General Characteristics
Primary function: Multi-role heavy bomber
Contractor: Northrop Grumman Corp. and **Contractor Team:** Boeing Military Airplanes Co., Hughes Radar Systems Group, General Electric Aircraft Engine Group and Vought Aircraft Industries, Inc.
Power Plant: Four General Electric F118-GE-100 engines
Thrust: 17,300 pounds each engine
Wingspan: 172 feet (52.12 meters)
Length: 69 feet (20.9 meters)
Height: 17 feet (5.1 meters
Weight: 160,000 pounds (72,575 kilograms)
Maximum Takeoff Weight: 336,500 pounds (152,634 kilograms)
Fuel Capacity: 167,000 pounds (75750 kilograms)
Payload: 40,000 pounds (18,144 kilograms)
Speed: High subsonic
Range: Intercontinental
Ceiling: 50,000 feet (15,240 meters)
Armament: Conventional or nuclear weapons
Crew: Two pilots
Unit cost: Approximately $1.157 billion (fiscal 98 constant dollars)
Initial operating capability: April 1997
Inventory: Active force: 20 (1 test); ANG: 0; Reserve: 0

Point of Contact
Air Force Global Strike Command , Public Affairs Office; 245 Davis Ave. E, Room 240; Barksdale AFB, LA 71110; DSN 781-0854/0819; commercial 318-456-0854/0819; afgsc.pa@barksdale.af.mil.

FACT SHEET

U.S. Air Force Fact Sheet

B-52 STRATOFORTRESS

Mission

The B-52 is a long-range, heavy bomber that can perform a variety of missions. The bomber is capable of flying at high subsonic speeds at altitudes up to 50,000 feet (15,166.6 meters). It can carry nuclear or precision guided conventional ordnance with worldwide precision navigation capability.

Features

In a conventional conflict, the B-52 can perform strategic attack, close-air support, air interdiction, offensive counter-air and maritime operations. During Desert Storm, B-52s delivered 40 percent of all the weapons dropped by coalition forces. It is highly effective when used for ocean surveillance, and can assist the U.S. Navy in anti-ship and mine-laying operations. Two B-52s, in two hours, can monitor 140,000 square miles (364,000 square kilometers) of ocean surface.

All B-52s are equipped with two electro-optical viewing sensors, a forward-looking infrared and advanced targeting pods to augment targeting, battle assessment, and flight safety, thus further improving its combat ability.

Pilots wear night vision goggles, or NVG, to enhance their vision during night operations. Night vision goggles provide greater safety during night operations by increasing the pilot's ability to visually clear terrain, avoid enemy radar and see other aircraft in a lights-out environment.

Starting in 1989, on-going modifications incorporate the global positioning system, heavy stores adapter beams for carrying 2,000 pound munitions, and a full array of advance weapons currently under development.

The use of aerial refueling gives the B-52 a range limited only by crew endurance. It has an unrefueled combat range in excess of 8,800 miles (14,080 kilometers).

Background

For more than 40 years B-52 Stratofortresses have been the backbone of the manned strategic bomber force for the United States. The B-52 is capable of dropping or launching the widest array of weapons in the U.S. inventory. This includes gravity bombs, cluster bombs, precision guided missiles and joint direct attack munitions. Updated with modern technology the B-52 will be capable of delivering the full complement of joint developed weapons and will continue into the 21st century as an important element of our nation's defenses. Current engineering analyses show the B-52's life span to extend beyond the year 2040.

The B-52A first flew in 1954, and the B model entered service in 1955. A total of 744 B-52s were built with the last, a B-52H, delivered in October 1962. The first of 102 B-52H's was delivered to Strategic Air Command in May 1961. The H model can carry up to 20 air launched cruise missiles. In addition, it can carry the conventional cruise missile that was launched in

several contingencies during the 1990s, starting with Operation Desert Storm and culminating with Operation Iraqi Freedom.

The aircraft's flexibility was evident in Operation Desert Storm and again during Operations Allied Force. B-52s struck wide-area troop concentrations, fixed installations and bunkers, and decimated the morale of Iraq's Republican Guard. On Sept. 2 to 3, 1996, two B-52H's struck Baghdad power stations and communications facilities with 13 AGM-86C conventional air launched cruise missiles, or CALCMs, as part of Operation Desert Strike. This mission was the longest distance flown for a combat mission involving a 34-hour, 16,000 statute mile round trip from Barksdale Air Force Base, La.

In 2001, the B-52 contributed to the success in Operation Enduring Freedom, providing the ability to loiter high above the battlefield and provide close air support through the use of precision guided munitions.

The B-52 also played a role in Operation Iraqi Freedom. On March 21, 2003, B-52Hs launched approximately 100 CALCMs during a night mission.

Only the H model is still in the Air Force inventory and is assigned to the 5th Bomb Wing at Minot AFB, N.D. and the 2nd Bomb Wing at Barksdale AFB, La., which fall under Air Force Global Strike Command. The aircraft is also assigned to the Air Force Reserve Command's 917th Wing at Barksdale.

General Characteristics
Primary Function: Heavy bomber
Contractor: Boeing Military Airplane Co.
Power plant: Eight Pratt & Whitney engines TF33-P-3/103 turbofan
Thrust: Each engine up to 17,000 pounds
Wingspan: 185 feet (56.4 meters)
Length: 159 feet, 4 inches (48.5 meters)
Height: 40 feet, 8 inches (12.4 meters)
Weight: Approximately 185,000 pounds (83,250 kilograms)
Maximum Takeoff Weight: 488,000 pounds (219,600 kilograms)
Fuel Capacity: 312,197 pounds (141,610 kilograms)
Payload: 70,000 pounds (31,500 kilograms)
Speed: 650 miles per hour (Mach 0.86)
Range: 8,800 miles (7,652 nautical miles)
Ceiling: 50,000 feet (15,151.5 meters)
Armament: Approximately 70,000 pounds (31,500 kilograms) mixed ordnance -- bombs, mines and missiles. (Modified to carry air-launched cruise missiles)
Crew: Five (aircraft commander, pilot, radar navigator, navigator and electronic warfare officer
Unit Cost: $53.4 million (fiscal 98 constant dollars)
Initial operating capability: April 1952
Inventory: Active force, 85; ANG, 0; Reserve, 9

Point of Contact
Air Force Global Strike Command, Public Affairs Office; 245 Davis Ave. E
Room 230; Barksdale AFB, LA 71110; 318- 456-0854/0819; or DSN 781-0854/0819; e-mail: afgsc.pa@barksdale.af.mil

FACT SHEET

U.S. Air Force Fact Sheet

C-130 HERCULES

Mission

The C-130 Hercules primarily performs the tactical portion of the airlift mission. The aircraft is capable of operating from rough, dirt strips and is the prime transport for air dropping troops and equipment into hostile areas. The C-130 operates throughout the U.S. Air Force, serving with Air Mobility Command, Air Force Special Operations Command, Air Combat Command, U.S. Air Forces in Europe, Pacific Air Forces, Air National Guard and the Air Force Reserve Command, fulfilling a wide range of operational missions in both peace and war situations. Basic and specialized versions of the aircraft airframe perform a diverse number of roles, including airlift support, Antarctic ice resupply, aeromedical missions, weather reconnaissance, aerial spray missions, firefighting duties for the U.S. Forest Service and natural disaster relief missions.

Features

Using its aft loading ramp and door the C-130 can accommodate a wide variety of oversized cargo, including everything from utility helicopters and six-wheeled armored vehicles to standard palletized cargo and military personnel. In an aerial delivery role, it can airdrop loads up to 42,000 pounds or use its high-flotation landing gear to land and deliver cargo on rough, dirt strips.

The flexible design of the Hercules enables it to be configured for many different missions, allowing for one aircraft to perform the role of many. Much of the special mission equipment added to the Hercules is removable, allowing the aircraft to revert back to its cargo delivery role if desired. Additionally, the C-130 can be rapidly reconfigured for the various types of cargo such as palletized equipment, floor-loaded material, airdrop platforms, container delivery system bundles, vehicles and personnel or aeromedical evacuation.

The C-130J is the latest addition to the C-130 fleet and will replace aging C-130E's. The C-130J incorporates state-of-the-art technology to reduce manpower requirements, lower operating and support costs, and provides life-cycle cost savings over earlier C-130 models. Compared to older C-130s, the J model climbs faster and higher, flies farther at a higher cruise speed, and takes off and lands in a shorter distance. The C-130J-30 is a stretch version, adding 15 feet to fuselage, increasing usable space in the cargo compartment.

C-130J/J-30 major system improvements include: advanced two-pilot flight station with fully integrated digital avionics; color multifunctional liquid crystal displays and head-up displays; state-of-the-art navigation systems with dual inertial navigation system and global positioning system; fully integrated defensive systems; low-power color radar; digital moving map display; new turboprop engines with six-bladed, all-composite propellers; digital auto pilot; improved fuel, environmental and ice-protection systems; and an enhanced cargo-handling system.

Background
Four decades have elapsed since the Air Force issued its original design specification, yet the remarkable C-130 remains in production. The initial production model was the C-130A, with four Allison T56-A-11 or -9 turboprops. A total of 219 were ordered and deliveries began in December 1956. The C-130B introduced Allison T56-A-7 turboprops and the first of 134 entered Air Force service in May 1959.

Introduced in August of 1962, the 389 C-130E's that were ordered used the same Allison T56-A-7 engine, but added two 1,290 gallon external fuel tanks and an increased maximum takeoff weight capability. June 1974 introduced the first of 308 C-130H's with the more powerful Allison T56-A-15 turboprop engine. Nearly identical to the C-130E externally, the new engine brought major performance improvements to the aircraft.

The latest C-130 to be produced, the C-130J entered the inventory in February 1999. With the noticeable difference of a six-bladed composite propeller coupled to a Rolls-Royce AE2100D3 turboprop engine, the C-130J brings substantial performance improvements over all previous models, and has allowed the introduction of the C-130J-30, a stretch version with a 15-foot fuselage extension. To date, the Air Force has taken delivery of 68 C-130J aircraft from Lockheed Martin Aeronautics Company.

Active-duty locations for the C-130 and its variations are Dyess Air Force Base, Texas; Little Rock AFB, Ark.; Ramstein Air Base, Germany; and Yokota AB, Japan.

Air Force Reserve locations for assigned C-130 models are Dobbins Air Reserve Base, Ga.; Keesler AFB, Miss.; Maxwell AFB, Ala.; Minnesota-St. Paul Joint Air Reserve Station, Minn.; Niagara Falls ARS, N.Y.; Peterson AFB, Colo.; Pittsburgh ARS, Pa.; Pope AFB, N.C. and Youngstown ARS, Ohio.

Air National Guard locations for C-130 and its variations are Baltimore (Martin State Airport), Md.; Boise Air Terminal, Idaho; Joint Reserve Base Carswell, Texas; Channel Island Air National Guard Station, Calif.; Charlotte/Douglas International Airport, N.C.; Cheyenne Municipal Airport, Wyo.; Kulis Air National Guard Base , Alaska; Little Rock AFB, Ark.; Louisville IAP, Ky.; Munoz ANGB, Puerto Rico; Mansfield Lahm Airport, Ohio; Minnesota-St. Paul ARS, Minn.; Nashville IAP, Tenn.; New Castle County ANGB, Del; Greater Peoria Regional Airport, Ill.; Quonset State Airport, R.I.; Reno-Tahoe IAP, Nev.; Savannah IAP, Ga.; Schenectady MAP, N.Y.; Rosecrans Memorial Airport, Mo.; and Yeager Airport, W.V.

General Characteristics
Primary Function: Global airlift
Contractor: Lockheed Martin Aeronautics Company
Power Plant:
C-130E: Four Allison T56-A-7 turboprops; 4,200 prop shaft horsepower
C-130H: Four Allison T56-A-15 turboprops; 4,591prop shaft horsepower
C-130J: Four Rolls-Royce AE 2100D3 turboprops; 4,700 horsepower
Length: C-130E/H/J: 97 feet, 9 inches (29.3 meters)
C-130J-30: 112 feet, 9 inches (34.69 meters)
Height: 38 feet, 10 inches (11. 9 meters)
Wingspan: 132 feet, 7 inches (39.7 meters)
Cargo Compartment:
C-130E/H/J: length, 40 feet (12.31 meters); width, 119 inches (3.12 meters); height, 9 feet (2.74 meters). Rear ramp: length, 123 inches (3.12 meters); width, 119 inches (3.02 meters)
C-130J-30: length, 55 feet (16.9 meters); width, 119 inches (3.12 meters); height, 9 feet (2.74 meters). Rear ramp: length, 123 inches (3.12 meters); width, 119 inches (3.02 meters)
Speed:
C-130E: 345 mph/300 ktas (Mach 0.49) at 20,000 feet (6,060 meters)
C-130H: 366 mph/318 ktas (Mach 0.52) at 20,000 feet (6,060 meters)
C-130J: 417 mph/362 ktas (Mach 0.59) at 22,000 feet (6,706 meters)
C-130J-30: 410 mph/356 ktas (Mach 0.58) at 22,000 feet (6,706 meters)

Ceiling:
C-130J: 28,000 feet (8,615 meters) with 42,000 pounds (19,090 kilograms) payload
C-130J-30: 26,000 feet (8,000 meters) with 44,500 pounds (20,227 kilograms) payload.
C-130H: 23,000 feet (7,077 meters) with 42,000 pounds (19,090 kilograms) payload.
C-130E: 19,000 feet (5,846 meters) with 42,000 pounds (19,090 kilograms) payload
Maximum Takeoff Weight:
C-130E/H/J: 155,000 pounds (69,750 kilograms)
C-130J-30: 164,000 pounds (74,393 kilograms)
Maximum Allowable Payload:
C-130E, 42,000 pounds (19,090 kilograms)
C-130H, 42,000 pounds (19,090 kilograms)
C-130J, 42,000 pounds (19,090 kilograms)
C-130J-30, 44,000 (19,958 kilograms)
Maximum Normal Payload:
C-130E, 36,500 pounds (16,590 kilograms)
C-130H, 36,500 pounds (16,590 kilograms)
C-130J, 34,000 pounds (15,422 kilograms)
C-130J-30, 36,000 pounds (16,329 kilograms)
Range at Maximum Normal Payload:
C-130E, 1,150 miles (1,000 nautical miles)
C-130H, 1,208 miles (1,050 nautical miles)
C-130J, 2,071 miles (1,800 nautical miles)
C-130J-30, 1,956 miles (1,700 nautical miles)
Range with 35,000 pounds of Payload:
C-130E, 1,438 miles (1,250 nautical miles)
C-130H, 1,496 miles (1,300 nautical miles)
C-130J, 1,841 miles (1,600 nautical miles)
C-130J-30, 2,417 miles (2,100 nautical miles)
Maximum Load:
C-130E/H/J: 6 pallets or 74 litters or 16 CDS bundles or 92 combat troops or 64 paratroopers, or a combination of any of these up to the cargo compartment capacity or maximum allowable weight.
C-130J-30: 8 pallets or 97 litters or 24 CDS bundles or 128 combat troops or 92 paratroopers, or a combination of any of these up to the cargo compartment capacity or maximum allowable weight.
Crew: C-130E/H: Five (two pilots, navigator, flight engineer and loadmaster)
C-130J/J-30: Three (two pilots and loadmaster)
Aeromedical Evacuation Role: A basic crew of five (two flight nurses and three medical technicians) is added for aeromedical evacuation missions. Medical crew may be decreased or increased as required by the needs of patients.
Unit Cost: C-130E, $11.9, C-130H, $30.1, C-130J, $48.5 (FY 1998 constant dollars in millions)
Date Deployed: C-130A, Dec 1956; C-130B, May 1959; C-130E, Aug 1962; C-130H, Jun 1974; C-130J, Feb 1999
Inventory: Active force, 145; Air National Guard, 181; Air Force Reserve, 102

Point of Contact
Air Mobility Command, Public Affairs Office; 503 Ward Drive Ste 214, Scott AFB, IL 62225-5335, DSN 779-7821 or 618-229-7821.

FACT SHEET

U.S. Air Force Fact Sheet

F-15 EAGLE

Mission

The F-15 Eagle is an all-weather, extremely maneuverable, tactical fighter designed to permit the Air Force to gain and maintain air supremacy over the battlefield.

Features

The Eagle's air superiority is achieved through a mixture of unprecedented maneuverability and acceleration, range, weapons and avionics. It can penetrate enemy defense and outperform and outfight any current enemy aircraft. The F-15 has electronic systems and weaponry to detect, acquire, track and attack enemy aircraft while operating in friendly or enemy-controlled airspace. The weapons and flight control systems are designed so one person can safely and effectively perform air-to-air combat.

The F-15's superior maneuverability and acceleration are achieved through high engine thrust-to-weight ratio and low wing loading. Low wing-loading (the ratio of aircraft weight to its wing area) is a vital factor in maneuverability and, combined with the high thrust-to-weight ratio, enables the aircraft to turn tightly without losing airspeed.

A multimission avionics system sets the F-15 apart from other fighter aircraft. It includes a head-up display, advanced radar, inertial navigation system, flight instruments, ultrahigh frequency communications, tactical navigation system and instrument landing system. It also has an internally mounted, tactical electronic-warfare system, "identification friend or foe" system, electronic countermeasures set and a central digital computer.

The pilot's head-up display projects on the windscreen all essential flight information gathered by the integrated avionics system. This display, visible in any light condition, provides information necessary to track and destroy an enemy aircraft without having to look down at cockpit instruments.

The F-15's versatile pulse-Doppler radar system can look up at high-flying targets and down at low-flying targets without being confused by ground clutter. It can detect and track aircraft and small high-speed targets at distances beyond visual range down to close range, and at altitudes down to treetop level. The radar feeds target information into the central computer for effective weapons delivery. For close-in dogfights, the radar automatically acquires enemy aircraft, and this information is projected on the head-up display. The F-15's electronic warfare system provides both threat warning and automatic countermeasures against selected threats.

A variety of air-to-air weaponry can be carried by the F-15. An automated weapon system enables the pilot to perform aerial combat safely and effectively, using the head-up display and the avionics and weapons controls located on the engine throttles or control stick. When the pilot changes from one weapon system to another, visual guidance for the required weapon

automatically appears on the head-up display.

The Eagle can be armed with combinations of different air-to-air weapons: AIM-120 advanced medium range air-to-air missiles on its lower fuselage corners, AIM-9L/M Sidewinder or AIM-120 missiles on two pylons under the wings, and an internal 20mm Gatling gun in the right wing root.

The F-15E is a two-seat, dual-role, totally integrated fighter for all-weather, air-to-air and deep interdiction missions. The rear cockpit is upgraded to include four multi-purpose CRT displays for aircraft systems and weapons management. The digital, triple-redundant Lear Siegler flight control system permits coupled automatic terrain following, enhanced by a ring-laser gyro inertial navigation system.

For low-altitude, high-speed penetration and precision attack on tactical targets at night or in adverse weather, the F-15E carries a high-resolution APG-70 radar and low-altitude navigation and targeting infrared for night pods

Background
The first F-15A flight was made in July 1972, and the first flight of the two-seat F-15B (formerly TF-15A) trainer was made in July 1973. The first Eagle (F-15B) was delivered in November 1974. In January 1976, the first Eagle destined for a combat squadron was delivered.

The single-seat F-15C and two-seat F-15D models entered the Air Force inventory beginning in 1979. These new models have Production Eagle Package (PEP 2000) improvements, including 2,000 pounds (900 kilograms) of additional internal fuel, provision for carrying exterior conformal fuel tanks and increased maximum takeoff weight of up to 68,000 pounds (30,600 kilograms).

The F-15 Multistage Improvement Program was initiated in February 1983, with the first production MSIP F-15C produced in 1985. Improvements included an upgraded central computer; a Programmable Armament Control Set, allowing for advanced versions of the AIM-7, AIM-9, and AIM-120A missiles; and an expanded Tactical Electronic Warfare System that provides improvements to the ALR-56C radar warning receiver and ALQ-135 countermeasure set. The final 43 included a Hughes APG-70 radar.

F-15C, D and E models were deployed to the Persian Gulf in 1991 in support of Operation Desert Storm where they proved their superior combat capability. F-15C fighters accounted for 34 of the 37 Air Force air-to-air victories. F-15E's were operated mainly at night, hunting SCUD missile launchers and artillery sites using the LANTIRN system.

They have since been deployed for air expeditionary force deployments and operations Southern Watch (no-fly zone in Southern Iraq), Provide Comfort in Turkey, Allied Force in Bosnia, Enduring Freedom in Afghanistan and Iraqi Freedom in Iraq.

General Characteristics
Primary function: Tactical fighter
Contractor: McDonnell Douglas Corp.
Power plant: Two Pratt & Whitney F100-PW-100, 220 or 229 turbofan engines with afterburners
Thrust: (C/D models) 23,450 pounds each engine
Wingspan: 42.8 feet (13 meters)
Length: 63.8 feet (19.44 meters)
Height: 18.5 feet (5.6 meters)
Weight: 31,700 pounds
Maximum takeoff weight: (C/D models) 68,000 pounds (30,844 kilograms)
Fuel Capacity: 36,200 pounds (three external plus conformal fuel tanks)
Payload: depends on mission
Speed: 1,875 mph (Mach 2 class)
Ceiling: 65,000 feet (19,812 meters)
Range: 3,450 miles (3,000 nautical miles) ferry range with conformal fuel tanks and three

external fuel tanks
Crew: F-15A/C: one. F-15B/D/E: two
Armament: One internally mounted M-61A1 20mm 20-mm, six-barrel cannon with 940 rounds of ammunition; four AIM-9 Sidewinder and four AIM-120 AMRAAMs or eight AIM-120 AMRAAMs, carried externally.
Unit Cost: A/B models - $27.9 million (fiscal 98 constant dollars);**C/D models** - $29.9 million (fiscal 98 constant dollars)
Initial operating capability: September 1975
Inventory: Total force, 522

Point of Contact
Air Combat Command, Public Affairs Office; 130 Andrews St., Suite 213; Langley AFB, VA 23665-1987; DSN 574-5007 or 757-764-5007; e-mail: accpa.operations@langley.af.mil

FACT SHEET

U.S. Air Force Fact Sheet

F-16 FIGHTING FALCON

Mission

The F-16 Fighting Falcon is a compact, multi-role fighter aircraft. It is highly maneuverable and has proven itself in air-to-air combat and air-to-surface attack. It provides a relatively low-cost, high-performance weapon system for the United States and allied nations.

Features

In an air combat role, the F-16's maneuverability and combat radius (distance it can fly to enter air combat, stay, fight and return) exceed that of all potential threat fighter aircraft. It can locate targets in all weather conditions and detect low flying aircraft in radar ground clutter. In an air-to-surface role, the F-16 can fly more than 500 miles (860 kilometers), deliver its weapons with superior accuracy, defend itself against enemy aircraft, and return to its starting point. An all-weather capability allows it to accurately deliver ordnance during non-visual bombing conditions.

In designing the F-16, advanced aerospace science and proven reliable systems from other aircraft such as the F-15 and F-111 were selected. These were combined to simplify the airplane and reduce its size, purchase price, maintenance costs and weight. The light weight of the fuselage is achieved without reducing its strength. With a full load of internal fuel, the F-16 can withstand up to nine G's -- nine times the force of gravity -- which exceeds the capability of other current fighter aircraft.

The cockpit and its bubble canopy give the pilot unobstructed forward and upward vision, and greatly improved vision over the side and to the rear. The seat-back angle was expanded from the usual 13 degrees to 30 degrees, increasing pilot comfort and gravity force tolerance. The pilot has excellent flight control of the F-16 through its "fly-by-wire" system. Electrical wires relay commands, replacing the usual cables and linkage controls. For easy and accurate control of the aircraft during high G-force combat maneuvers, a side stick controller is used instead of the conventional center-mounted stick. Hand pressure on the side stick controller sends electrical signals to actuators of flight control surfaces such as ailerons and rudder.

Avionics systems include a highly accurate enhanced global positioning and inertial navigation systems, or EGI, in which computers provide steering information to the pilot. The plane has UHF and VHF radios plus an instrument landing system. It also has a warning system and modular countermeasure pods to be used against airborne or surface electronic threats. The fuselage has space for additional avionics systems.

Background

The F-16A, a single-seat model, first flew in December 1976. The first operational F-16A was delivered in January 1979 to the 388th Tactical Fighter Wing at Hill Air Force Base, Utah.

The F-16B, a two-seat model, has tandem cockpits that are about the same size as the one in the A model. Its bubble canopy extends to cover the second cockpit. To make room for the second cockpit, the forward fuselage fuel tank and avionics growth space were reduced. During training, the forward cockpit is used by a student pilot with an instructor pilot in the rear cockpit.

All F-16s delivered since November 1981 have built-in structural and wiring provisions and systems architecture that permit expansion of the multirole flexibility to perform precision strike, night attack and beyond-visual-range interception missions. This improvement program led to the F-16C and F-16D aircraft, which are the single- and two-place counterparts to the F-16A/B, and incorporate the latest cockpit control and display technology. All active units and many Air National Guard and Air Force Reserve units have converted to the F-16C/D.

The F-16 was built under an unusual agreement creating a consortium between the United States and four NATO countries: Belgium, Denmark, the Netherlands and Norway. These countries jointly produced with the United States an initial 348 F-16s for their air forces. Final airframe assembly lines were located in Belgium and the Netherlands. The consortium's F-16s are assembled from components manufactured in all five countries. Belgium also provides final assembly of the F100 engine used in the European F-16s. Recently, Portugal joined the consortium. The long-term benefits of this program will be technology transfer among the nations producing the F-16, and a common-use aircraft for NATO nations. This program increases the supply and availability of repair parts in Europe and improves the F-16's combat readiness.

USAF F-16 multirole fighters were deployed to the Persian Gulf in 1991 in support of Operation Desert Storm, where more sorties were flown than with any other aircraft. These fighters were used to attack airfields, military production facilities, Scud missiles sites and a variety of other targets.

During Operation Allied Force, USAF F-16 multirole fighters flew a variety of missions to include suppression of enemy air defense, offensive counter air, defensive counter air, close air support and forward air controller missions. Mission results were outstanding as these fighters destroyed radar sites, vehicles, tanks, MiGs and buildings.

Since Sept. 11, 2001, the F-16 has been a major component of the combat forces committed to the Global War on Terrorism flying thousands of sorties in support of operations Noble Eagle (Homeland Defense), Enduring Freedom in Afghanistan and Iraqi Freedom

General Characteristics
Primary Function: Multirole fighter
Contractor: Lockheed Martin Corp.
Power Plant: F-16C/D: one Pratt and Whitney F100-PW-200/220/229 or General Electric F110-GE-100/129
Thrust: F-16C/D, 27,000 pounds
Wingspan: 32 feet, 8 inches (9.8 meters)
Length: 49 feet, 5 inches (14.8 meters)
Height: 16 feet (4.8 meters)
Weight: 19,700 pounds without fuel (8,936 kilograms)
Maximum Takeoff Weight: 37,500 pounds (16,875 kilograms)
Fuel Capacity: 7,000 pounds internal (3,175 kilograms); typical capacity, 12,000 pounds with two external tanks (5443 kilograms)
Payload: Two 2,000-pound bombs, two AIM-9 and 1,040-gallon external tanks
Speed: 1,500 mph (Mach 2 at altitude)
Range: More than 2,002 miles ferry range (1,740 nautical miles)
Ceiling: Above 50,000 feet (15 kilometers)
Armament: One M-61A1 20mm multibarrel cannon with 500 rounds; external stations can carry up to six air-to-air missiles, conventional air-to-air and air-to-surface munitions and electronic countermeasure pods
Crew: F-16C, one; F-16D, one or two
Unit cost: F-16A/B , $14.6 million (fiscal 98 constant dollars); **F-16C/D,**$18.8 million (fiscal 98

constant dollars)
Initial operating capability: F-16A, January 1979; F-16C/D Block 25-32, 1981; F-16C/D Block 40-42, 1989; and F-16C/D Block 50-52, 1994
Inventory: Total force, F-16C/D, 1,280

Point of Contact
Air Combat Command, Public Affairs Office; 130 Andrews St., Suite 202; Langley AFB, VA 23665-1987; DSN 574-5007 or 757-764-5007; e-mail: accpa.operations@langley.af.mil

FACT SHEET

U.S. Air Force Fact Sheet

F-22 RAPTOR

Mission

The F-22 Raptor is the Air Force's newest fighter aircraft. Its combination of stealth, supercruise, maneuverability, and integrated avionics, coupled with improved supportability, represents an exponential leap in warfighting capabilities. The Raptor performs both air-to-air and air-to-ground missions allowing full realization of operational concepts vital to the 21st century Air Force.

The F-22, a critical component of the Global Strike Task Force, is designed to project air dominance, rapidly and at great distances and defeat threats attempting to deny access to our nation's Air Force, Army, Navy and Marine Corps. The F-22 cannot be matched by any known or projected fighter aircraft.

Features

A combination of sensor capability, integrated avionics, situational awareness, and weapons provides first-kill opportunity against threats. The F-22 possesses a sophisticated sensor suite allowing the pilot to track, identify, shoot and kill air-to-air threats before being detected. Significant advances in cockpit design and sensor fusion improve the pilot's situational awareness. In the air-to-air configuration the Raptor carries six AIM-120 AMRAAMs and two AIM-9 Sidewinders.

The F-22 has a significant capability to attack surface targets. In the air-to-ground configuration the aircraft can carry two 1,000-pound GBU-32 Joint Direct Attack Munitions internally and will use on-board avionics for navigation and weapons delivery support. In the future air-to-ground capability will be enhanced with the addition of an upgraded radar and up to eight small diameter bombs. The Raptor will also carry two AIM-120s and two AIM-9s in the air-to-ground configuration.

Advances in low-observable technologies provide significantly improved survivability and lethality against air-to-air and surface-to-air threats. The F-22 brings stealth into the day, enabling it not only to protect itself but other assets.

The F-22 engines produce more thrust than any current fighter engine. The combination of sleek aerodynamic design and increased thrust allows the F-22 to cruise at supersonic airspeeds (greater than 1.5 Mach) without using afterburner -- a characteristic known as supercruise. Supercruise greatly expands the F-22 's operating envelope in both speed and range over current fighters, which must use fuel-consuming afterburner to operate at supersonic speeds.

The sophisticated F-22 aerodesign, advanced flight controls, thrust vectoring, and high thrust-to-weight ratio provide the capability to outmaneuver all current and projected aircraft. The F-22 design has been extensively tested and refined aerodynamically during the development

process.

The F-22's characteristics provide a synergistic effect ensuring F-22A lethality against all advanced air threats. The combination of stealth, integrated avionics and supercruise drastically shrinks surface-to-air missile engagement envelopes and minimizes enemy capabilities to track and engage the F-22 . The combination of reduced observability and supercruise accentuates the advantage of surprise in a tactical environment.

The F-22 will have better reliability and maintainability than any fighter aircraft in history. Increased F-22 reliability and maintainability pays off in less manpower required to fix the aircraft and the ability to operate more efficiently.

Background
The Advanced Tactical Fighter entered the Demonstration and Validation phase in 1986. The prototype aircraft (YF-22 and YF-23) both completed their first flights in late 1990. Ultimately the YF-22 was selected as best of the two and the engineering and manufacturing development effort began in 1991 with development contracts to Lockheed/Boeing (airframe) and Pratt & Whitney (engines). EMD included extensive subsystem and system testing as well as flight testing with nine aircraft at Edwards Air Force Base, Calif. The first EMD flight was in 1997 and at the completion of its flight test life this aircraft was used for live-fire testing.

The program received approval to enter low rate initial production in 2001. Initial operational and test evaluation by the Air Force Operational Test and Evaluation Center was successfully completed in 2004. Based on maturity of design and other factors the program received approval for full rate production in 2005. Air Education and Training Command, Air Combat Command and Pacific Air Forces are the primary Air Force organizations flying the F-22. The aircraft designation was the F/A-22 for a short time before being renamed F-22A in December 2005.

General Characteristics
Primary Function: Air dominance, multi-role fighter
Contractor: Lockheed-Martin, Boeing
Power Plant: Two Pratt & Whitney F119-PW-100 turbofan engines with afterburners and two-dimensional thrust vectoring nozzles.
Thrust: 35,000-pound class (each engine)
Wingspan: 44 feet, 6 inches (13.6 meters)
Length: 62 feet, 1 inch (18.9 meters)
Height: 16 feet, 8 inches (5.1 meters)
Weight: 43,340 pounds (19,700 kilograms)
Maximum Takeoff Weight: 83,500 pounds (38,000 kilograms)
Fuel Capacity: Internal: 18,000 pounds (8,200 kilograms); with 2 external wing fuel tanks: 26,000 pounds (11,900 kilograms)
Payload: Same as armament air-to-air or air-to-ground loadouts; with or without 2 external wing fuel tanks.
Speed: Mach 2 class with supercruise capability
Range: More than 1,850 miles ferry range with 2 external wing fuel tanks (1,600 nautical miles)
Ceiling: Above 50,000 feet (15 kilometers)
Armament: One M61A2 20-millimeter cannon with 480 rounds, internal side weapon bays carriage of two AIM-9 infrared (heat seeking) air-to-air missiles and internal main weapon bays carriage of six AIM-120 radar-guided air-to-air missiles (air-to-air loadout) or two 1,000-pound GBU-32 JDAMs and two AIM-120 radar-guided air-to-air missiles (air-to-ground loadout)
Crew: One
Unit Cost: $143 million
Initial operating capability: December 2005
Inventory: Total force, 137

Point of Contact
Air Combat Command, Public Affairs Office; 130 Andrews St., Suite 202; Langley AFB, VA 23665-1987; DSN 574-5007 or 757-764-5007; e-mail: accpa.operations@langley.af.mil

APPENDIX C
CHARACTERISTICS OF CHAFF

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APPENDIX C CHARACTERISTICS OF CHAFF

Defensive countermeasures are used by military aircraft during training in response to simulated threats. Chaff is a self-protection device that permits an aircraft threatened by enemy radar-directed munitions to distract and/or avoid the threat.

Chaff consists of extremely small strands (or dipoles) of an aluminum-coated crystalline silica core. When released from an aircraft, chaff initially forms a sphere, then disperses in the air and eventually drifts to the ground. The chaff effectively reflects radar signals in various bands (depending on the length of the chaff fibers) and forms a very large image or electronic "cloud" of reflected signals on a radar screen. When the aircraft is obscured from radar detection by the cloud, the aircraft can safely maneuver or leave an area.

Chaff is made as small and light as possible so that it will remain in the air long enough to confuse enemy radar. The chaff fibers are thinner than a human hair (i.e., generally 25.4 microns in diameter), and range in length from 0.3 to over 1 inch. The weight of chaff material in the RR-170 or RR-188 cartridge is approximately 95 grams or 3.35 ounces (United States Air Force [Air Force] 1997). Since chaff can obstruct radar, its use is coordinated with the Federal Aviation Administration (FAA). RR-170 and RR-188 chaff are the same size. RR-188 chaff has D and E band dipoles removed to avoid interference with FAA radar. RR-170 chaff dipoles are cut to disguise the aircraft and produce a more realistic training experience in threat avoidance.

1.0 CHAFF CHARACTERISTICS

Chaff is comprised of silica, aluminum, and stearic acid, which are generally prevalent in the environment. Silica (silicon dioxide) belongs to the most common mineral group, silicate minerals. Silica is inert in the environment and does not present an environmental concern with respect to soil chemistry. Aluminum is the third most abundant element in the earth's crust, forming some of the most common minerals, such as feldspars, micas, and clays. Natural soil concentrations of aluminum ranging from 10,000 to 300,000 parts per million have been documented (Lindsay 1979). These levels vary depending on numerous environmental factors, including climate, parent rock materials from which the soils were formed, vegetation, and soil moisture alkalinity/acidity. The solubility of aluminum is greater in acidic and highly alkaline soils than in neutral pH conditions. Aluminum eventually oxidizes to Al_2O_3 (aluminum oxide) over time, depending on its size and form and the environmental conditions.

The chaff fibers have an anti-clumping agent (Neofat – 90 percent stearic acid and 10 percent palmitic acid) to assist with rapid dispersal of the fibers during deployment (Air Force 1997). Stearic acid is an animal fat that degrades when exposed to light and air.

A single bundle of chaff consists of the chaff fibers in an 8-inch long rectangular tube or cartridge, a plastic piston, a cushioned spacer, and two plastic end caps (1/8-inch thick, 1-inch x 1-inch or 1-inch x 2-inch). The chaff dispenser remains in the aircraft. The plastic end caps and spacer fall to the ground when chaff is dispensed. The spacer is a spongy material (felt) designed to absorb the force of release. Figure C-1 illustrates the components of a chaff cartridge. Table C-1 lists the components of the silica core and the aluminum coating. Table C-2 presents the characteristics of RR-188 or RR-170 chaff.

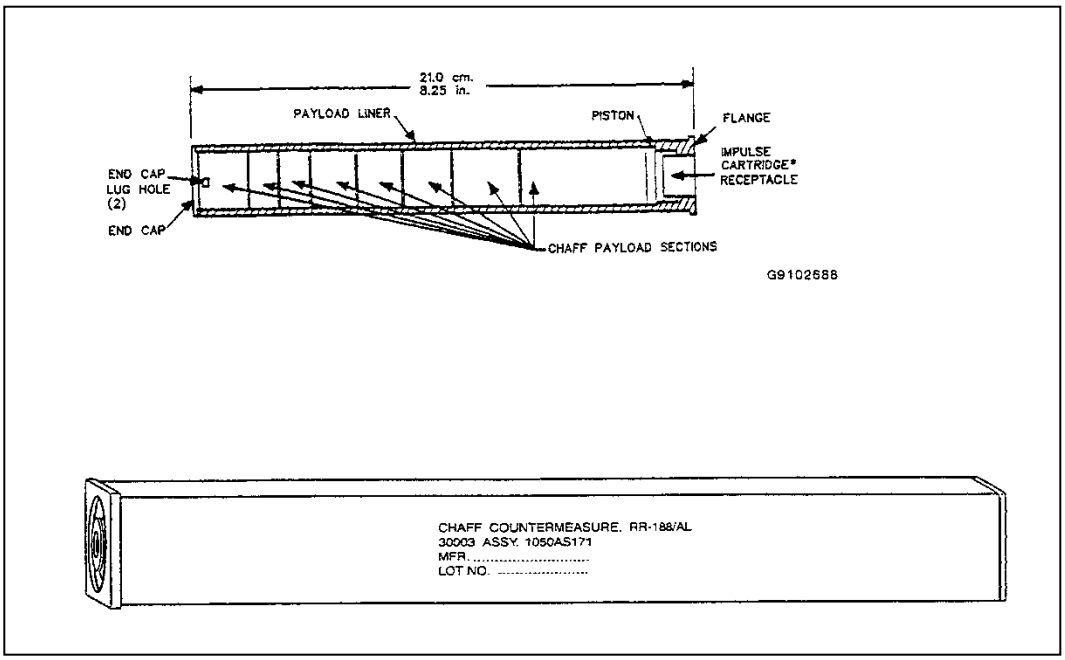

Figure C-1. RR-188 or RR-170 Chaff Cartridge

Table C-1. Components of RR-188 or RR-170 Chaff

Element	*Chemical Symbol*	*Percent (by weight)*
Silica Core		
Silicon dioxide	SiO_2	52-56
Aluminum Oxide	Al_2O_3	12-16
Calcium Oxide and Magnesium Oxide	CaO and MgO	16-25
Boron Oxide	B_2O_3	8-13
Sodium Oxide and Potassium Oxide	Na_2O and K_2O	1-4
Iron Oxide	Fe_2O_3	1 or less
Aluminum Coating (Typically Alloy 1145)		
Aluminum	Al	99.45 minimum
Silicon and Iron	Si and Fe	0.55 maximum
Copper	Cu	0.05 maximum
Manganese	Mn	0.05 maximum
Magnesium	Mg	0.05 maximum
Zinc	Zn	0.05 maximum
Vanadium	V	0.05 maximum
Titanium	Ti	0.03 maximum
Others		0.03 maximum

Source: Air Force 1997

Table C-2. Characteristics of RR-188 or RR-170 Chaff

Attribute	*RR-188 or RR-170*
Composition	Aluminum coated silica
Ejection Mode	Pyrotechnic
Configuration	Rectangular tube cartridge
Size	8 x 1 x 1 inches (8 cubic inches)
Number of Dipoles	5.46 million
Dipole Size (cross-section)	1 mil (diameter)
Impulse Cartridge	BBU-35/B
Other Comments	Cartridge stays in aircraft; less interference with FAA radar (no D and E bands)

Source: Air Force 1997

The B-1 uses RR-170 A/AL chaff. Figure C-2 is a photograph of an open RR-170 chaff cartridge with all the pieces. RR-170 A/AL has the same material as the RR-188 chaff cartridge. The RR-170 A/AL has chaff dipoles cut differently from the RR-188 chaff. RR-188 chaff was originally used for tracking because the dipole did not interfere with FAA radars, but newer radars can now also detect RR-188 chaff.

The B-52 uses RR-112/AC chaff which is not deployed from a cartridge. RR-112/AC chaff comes in rolls which are like the chaff in Figure C-2. The rolls are in a box which is installed in the B-52. A mechanical system then measures out the chaff to form a brief electronic cloud to mask the B-52 from radar threats.

The F-22 uses the same chaff material in a slightly different chaff cartridge to expedite clean ejection of the chaff. The chaff cartridge design is less likely to leave debris of any kind in the dispenser bay yet still provides robust chaff dispensing. F-22 delayed-opening chaff is packaged in two sets of soft packs that retain approximately the same number of dipoles per cut as RR-170 chaff. The differences are two end caps and six parchment paper wraps that facilitate deployment. Two end caps, two pistons, six approximately 2-inch by 4-inch paper pieces, and chaff fibers fall to the ground with each chaff cartridge deployed. Other aircraft participating in LFE training discharge comparable chaff fibers and similar residual pieces to those described for RR-170 chaff.

2.0 CHAFF EJECTION

Chaff is ejected from aircraft pyrotechnically using a BBU-35/B impulse cartridge. Pyrotechnic ejection uses hot gases generated by an explosive impulse charge. The gases push the small piston down the chaff-filled tube. A small plastic end cap is ejected, followed by the chaff fibers, and, in the case of F-22 chaff, three mylar pieces. The plastic tube remains within the aircraft. Debris from the ejection consists of two small, square pieces of plastic 1/8-inch thick (i.e., the piston and the end cap), three mylar strips, and the felt spacer. Table C-3 lists the characteristics of BBU-35/B impulse cartridges used to pyrotechnically eject chaff.

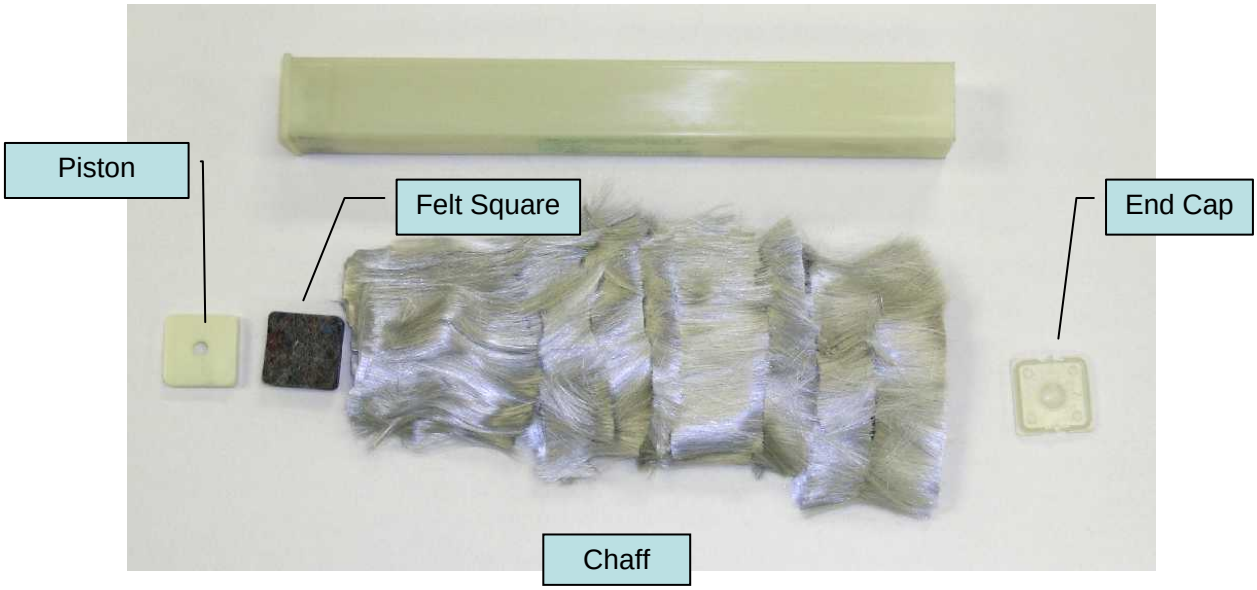

Figure C-2. RR-170 A/AL Chaff

Table C-3. BBU-35/B Impulse Charges Used to Eject Chaff

Component	*BBU-35/B*
Overall Size Overall Volume Total Explosive Volume	0.625 inches x 0.530 inches 0.163 inches^3 0.034 inches^3
Bridgewire	Trophet A 0.0025 inches x 0.15 inches
Initiation Charge	0.008 cubic inches 130 mg 7,650 psi boron 20% potassium perchlorate 80% *
Booster Charge	0.008 cubic inches 105 mg 7030 psi boron 18% potassium nitrate 82%
Main Charge	0.017 cubic inches 250 mg loose fill RDX ** pellets 38.2% potassium perchlorate 30.5% boron 3.9% potassium nitrate 15.3% super floss 4.6% Viton A 7.6%

Source: Air Force 1997

Upon release from an aircraft, chaff forms a cloud approximately 30 meters in diameter in less than one second under normal conditions. Quality standards for chaff cartridges require that they demonstrate ejection of 98 percent of the chaff in undamaged condition, with a reliability of 95 percent at a 95 percent confidence level. They must also be able to withstand a variety of environmental conditions that might be encountered during storage, shipment, and operation. The net result is that chaff is normally manufactured to tolerance levels in excess of 99 percent reliability.

Table C-4 lists performance requirements for chaff.

Table C-4. Performance Requirements for Chaff

Condition	*Performance Requirement*	
High Temperature	Up to +165 degrees Fahrenheit	
Low Temperature	Down to –65 °F	
Temperature Shock	Shock from –70 °F to +165 °F	
Temperature Altitude	Combined temperature altitude conditions up to 70,000 feet	
Humidity	Up to 95 percent relative humidity	
Sand and Dust	Sand and dust encountered in desert regions subject to high sand dust conditions and blowing sand and dust particles	
Accelerations/Axis	G-Level	Time (minute)
Transverse-Left (X)	9.0	1
Transverse-Right (-X)	3.0	1
Transverse (Z)	4.5	1
Transverse (-Z)	13.5	1
Lateral-Aft (-Y)	6.0	1
Lateral-Forward (Y)	6.0	1
Shock (Transmit)	Shock encountered during aircraft flight	
Vibration	Vibration encountered during aircraft flight	
Free Fall Drop	Shock encountered during unpackaged item drop	
Vibration (Repetitive)	Vibration encountered during rough handling of packaged item	
Three Foot Drop	Shock encountered during rough handling of packaged item	

Note: Cartridge must be capable of total ejection of chaff from the cartridge liner under these conditions.
Source: Air Force 1997

3.0 POLICIES AND REGULATIONS ON CHAFF USE

Current Air Force policy on use of chaff and flares was established by the Airspace Subgroup of Headquarters Air Force Flight Standards Agency in 1993. It requires units to obtain frequency clearance

from the Air Force Frequency Management Center and the FAA prior to using chaff to ensure that training with chaff is conducted on a non-interference basis. This ensures electromagnetic compatibility between the FAA, the Federal Communications Commission, and Department of Defense (DoD) agencies. The Air Force does not place any restrictions on the use of chaff provided those conditions are met (Air Force 1997).

Air Force Instruction (AFI) 13-201, U.S. Air Force Airspace Management, September 2001. This guidance establishes practices to decrease disturbance from flight operations that might cause adverse public reaction. It emphasizes the Air Force's responsibility to ensure that the public is protected to the maximum extent practicable from hazards and effects associated with flight operations.

AFI 11-214 Air Operations Rules and Procedures, December 2005. This instruction delineates procedures for chaff and flare use. It prohibits use unless in an approved area.

4.0 ENVIRONMENTAL EFFECTS OF CHAFF

The potential for effects of chaff deposition and fragmentation in the environment has been of interest to agencies and the public. There has also been interest by land management agencies in the military use of chaff. This interest is largely driven by concern that the fragmentation of chaff fibers was not documented. Does chaff begin breaking down almost immediately following ejection? Does it become small enough to be inhaled by man or by wildlife? Conversely, if the chaff does not fragment, could chaff particles be ingested by livestock or wildlife? What would be the environmental effects of chaff particles?

A variety of studies on the effects of chaff have been conducted over the past 40 years for the Army, Navy, Air Force, National Guard Bureau, and Canadian Forces Headquarters (Government Accountability Office [GAO] 1998). The focus of these studies ranged from effects on livestock from ingestion of chaff (Canada Department of Agriculture 1972) to environmental impacts from the deposition of chaff fibers on marine and terrestrial ecosystems (Air Force 1997). In the early 1990s, ACC prepared a study on the known environmental consequences of chaff and other defensive measures (Air Force 1997). None of the studies demonstrated significant environmental effects of chaff.

In response to continuing concern on the part of private citizens with the military's use of chaff, Senator Harry Reid (Nevada) requested that the GAO conduct an independent evaluation of chaff use. The subsequent GAO report (1998) acknowledged that citizens and various public interest groups continued to express concerns of potentially harmful or undesirable effects of chaff on the environment. The report recommended that the Secretaries of the Air Force, Army, and Navy determine the merits of open questions made in previous chaff reports and whether additional actions are needed to address them.

4.1 ATMOSPHERIC EFFECTS

The DoD engaged a "Select Blue Ribbon Panel" of independent, non-government scientists to 1) review the environmental effects of radio frequency (RF) chaff used by the United States (U.S.) military; and 2) to make recommendations to decrease scientific uncertainty where significant environmental effects of RF chaff are possible. The report of the Blue Ribbon Panel (Spargo 1999) identified a variety of issues of interest, and included specific recommendations for the further evaluation of chaff use.

The fate of chaff fibers after release was of particular interest to the Blue Ribbon Panel. The panel requested additional data on the degree of chaff fragmentation and the potential for re-suspension of

chaff or chaff fragments in the natural environment. Two issues related to chaff fragmentation and re-suspension were identified (Spargo 1999).

> **Atmospheric effects:** What fraction of emitted chaff breaks up from mid-air turbulence into respirable particles?
>
> **Ground effects:** What fraction of chaff reaching the ground is subsequently abraded, re-suspended, and reduced to respirable sized particles?

An independent study on chaff fragmentation and re-suspension rates was initiated to evaluate these issues. *The Fate and Distribution of Radio-Frequency Chaff*, Desert Research Institute (DRI) was released on 1 April 2002. A parallel independent study also addressed chaff fragmentation and re-suspension (Cook 2002).

Both studies used atmospheric chaff fragmentation tests and a fluidized bed to simulate chaff fragmentation in the atmosphere. The ground chaff fragmentation tests used wind generation in a portable environmental chamber to simulate chaff fragmentation after it falls to the ground.

4.2 MID-AIR TURBULENCE EFFECTS

Chaff in the military training environment released at altitudes below 30,000 feet above ground level (AGL) are typically deposited on the ground within ten hours of formation (DRI 2002). Atmospheric fragmentation, which appears to occur, takes place within the first 2 hours of release, likely immediately after release, when the density of fibers within the cloud is at its greatest. The DRI findings suggest that in the simulated mid-air column, relatively little fragmentation occurs between 2 and 8 hours (DRI 2002).

The experimental data obtained from tests were not sufficiently robust to definitively conclude when most chaff fragmentation occurs. Most fragmentation could occur immediately upon ejection or within the first 2 hours after ejection. While chaff fragmentation in the DRI tests appeared to be minor, some fragmentation did occur, and there was some degree of formation of particles sufficiently small as to be considered respirable. Abrasion tests suggested that on the order of one part mass in 10^7 may be abraded to particulate matter less than 10 micrograms in diameter (PM_{10}) or smaller (DRI 2002). The data sampling and testing did result in a small fraction of chaff being converted to respirable particles. The data suggest that this is not a significant factor in the fate of training chaff in the mid-air column. DRI concluded that virtually none of the airborne chaff was degraded to respirable size particles of PM_{10} or less. Based on these tests, there is little environmental risk from airborne chaff abrading to respirable particles prior to the chaff being deposited on the surface.

4.3 SURFACE EFFECTS AND FRAGMENTATION

The 1998 GAO report recommended that the Secretaries of the Air Force, Army, and Navy determine the merits of open questions made in previous chaff reports and whether additional actions were needed to address them. The Select Blue-Ribbon Panel of independent, non-government scientists (Spargo 1999) identified a need for further investigation of the re-suspension of chaff and chaff fragments once deposited on the surface.

4.3.1 *GROUND SURFACE EFFECTS*

Following deposition on the ground, chaff is subjected to various physical processes that may break the individual fibers into fragments. Processes that may induce fragmentation on the ground include wind-driven re-suspension and deposition, wind-driven interaction with soils, wind-driven interaction with

plants, disturbance by animals, and vehicular traffic. Processes that may induce fragmentation on water include wind and wave action. Field studies on ground fragmentation were conducted to gain information on the relative importance of these processes and to address different test approaches to evaluate post-deposition fragmentation (DRI 2002; Cook 2002).

Results of these studies indicate that, once deposited on the ground, chaff undergoes rapid fragmentation. Typically between 5 and 10 percent of the chaff in these tests was reduced to particles less than 10 microns in length over a 2-hour period. In nature, assuming similar wind, soil interaction, and other processes are at work, it seems likely that most chaff would be reduced to fragments less than 10 microns within a matter of days of deposition. Chaff fragmentation on the ground surface is primarily wind driven. Increasing airflow in these studies resulted in increasing fragmentation. This suggests that higher wind levels in the ambient environment would lead to increased fragmentation (DRI 2002).

Baseline sampling results from this study indicated minimal chaff concentrations (1 microgram/square foot) in the soil of an area heavily utilized for military aircraft training using chaff. This may indicate extensive fragmentation and dispersal of chaff used for training purposes on the range. The naturally occurring materials that comprise chaff, wind driven turbulence, fragmentation, and dispersal of PM_{10} size particles provide a sufficient basis to explain this finding. In essence, chaff particles, once on the ground, appear to rapidly degrade and become indiscernible from ambient silica and aluminum soil materials (DRI 2002, Cook 2002).

4.3.2 *AQUATIC SURFACE AND SUBSTRATE EFFECTS*

Potential aquatic and marine effects of chaff have been of interest to both the Air Force and the Navy. Aquatic environments are sensitive to any chemicals released from any sources. The questions asked regarding chaff in an aquatic environment deal with the dissolution of the chaff in the water or marine environment, the potential resulting release of chemicals which could be mobile within the aquatic ecosystems, and the potential sensitivity of aquatic organisms to released chemicals (Farrell and Siciliano 2005). Although not specifically tested, chaff fragments in a marine environment would be subject to both wind and wave action. This suggests that chaff fragmentation in an aquatic marine environment would be similar to chaff fragmentation observed in ground fragmentation tests.

Chaff deposition on the water surface would be subject to physical factors and would be expected to become part of the underlying sediment. The Navy sponsored a series of studies to address the potential for chaff materials to concentrate in the sediment. An area in the Chesapeake Bay was identified as a location for Navy-sponsored studies. A series of studies were performed in the Chesapeake Bay to address whether chaff release was contributing to aluminum levels in the Chesapeake Bay (Wilson *et al.* 2001). An estimated 500 tons of chaff had been deposited over the bay during aircraft and Navy maneuvers for both research and training purposes from the mid-1970s to 1995. As part of the Wilson study, a series of sediment sampling locations were tested at various sampling depths to determine whether increased aluminum could be detected. A background sampling location at approximately the same depths was sampled in an area not subject to chaff deposition.

The studies found no significant difference in mean aluminum concentrations between the sediments that were from the control site and those taken from areas of heavy chaff use. The results did demonstrate some variation in the types of aluminum at the test and control locations. Inorganic monometric aluminum concentrations were significantly lower under the chaff use areas than in the background conditions. Mean concentrations of organic monometric aluminum were significantly higher in the sediment under the high chaff use area than in the control area. Exchangeable aluminum (AL_{EX}) represents aluminum bound to the soil by an electrostatic charge. AL_{EX} is a good indicator of soil

acidity and of the concentration of potential toxic aluminum present. AL_{EX} concentrations under the heavy chaff use area were numerically lower but not significantly different from those of the control area (Wilson *et al.* 2001).

Sediment sampling in the Chesapeake Bay area did not indicate that aluminum concentrations below the flight path were significantly increased as a result of chaff use. Aluminum concentrations in fish, plants, or other biota were not assessed in the sediment survey.

Aluminum is not known to accumulate to any great extent in most invertebrates under non-acid conditions. It is unlikely that much, if any, of the aluminum present as a result of chaff use would be available for uptake by aquatic plants, fish, or other biota. The conclusions reached by Wilson *et al.* suggested that deployment of chaff resulted in minimal but statistically significant increases in nontoxic aluminum in sediment under the flight path. Concentrations of aluminum of toxicological interest were significantly lower under the heavy chaff use area than in background sediment samples (Wilson *et al.* 2001).

Additional studies were conducted to evaluate the potential for chaff concentrations to be harmful to aquatic organisms. A Chesapeake Bay study by Systems Consultants for the U.S. Navy found no evidence that chaff was acutely toxic to six species of aquatic organisms (Arfsten *et al.* 2002). Concentrations of chaff between 10 to 100 times the exposure levels expected to be found in the Chesapeake Bay were placed in tanks containing a variety of aquatic organisms. American oysters, blue mussels, blue crab, and killifish were among the species tested. There was no significance in mortality as a result of exposure to concentrations of chaff of one to two orders of magnitude greater than expected chaff concentrations (Arfsten *et al.* 2002).

Chaff was not found to result in concentrations of aluminum which would produce environmental impacts in the Chesapeake Bay environment. Part of the reason for this may be that chaff is comprised of nearly entirely aluminum and silicate with some trace elements. Aluminum and silicate are the most common minerals in the earth's crust. Ocean waters are in constant exposure to crust materials, and there would be little reason to believe that the addition of small amounts of aluminum and silicate from chaff would have any effect on either the marine environment or sediment.

Before becoming part of the sediment, could chaff particles have environmental consequences? Chaff particles in the aquatic environment are similar to natural particles produced by sponges. The most abundant ocean shallow water sponges have siliceous spicules (small spikes) which are very similar to chaff. All fresh water sponges also contain spicules. Sponge spicules are simple, straight, needle-like silicon dioxide spikes, often with sharp pointed ends. Sponge spicules range from 1 to 30 micrometers (µm) in diameter and from 40 to 850 µm in length. Chaff fibers are approximately 25 µm in diameter and can break down to different lengths. Thus, naturally occurring sponge spicules are approximately the same diameter and can be the same length as chaff fibers. Both marine and fresh water sponges are abundant in the environment and aquatic animals regularly come in contact with spicules. A variety of species feed on sponges, including ring-necked ducks, crayfish, sea urchins, clams, shrimp, larval king crabs, and hawks-bill turtles. These species do not purposefully consume spicules but they do come in contact with spicules as a result of consuming sponges. Aquatic organisms are regularly exposed to and consume materials of the same size and similar composition to chaff fibers (Spargo 1999). This contact and consumption would reduce the likelihood that free floating chaff particles would result in environmental consequences.

Chaff in an aquatic environment has not been found to significantly increase the concentration of any toxic aluminum constituents in sediments under airspace that has undergone 25 years of chaff operations. Concentrations of chaff in test environments were not found to result in a significant

change in mortality to a variety of marine organisms in the Chesapeake Bay area. No effect was seen in marine organisms exposed to concentrations of 10 times and 100 times the expected environmental exposure. Marine and fresh water sponges normally create chaff-like spicules and foraging species are exposed to and consume these spicules on a regular basis with no detrimental effect. Chaff release in airspace above an aquatic environment is not expected to affect the environment and likely is not discernible within the environment.

4.4 CHAFF EFFECTS ON RADAR SYSTEMS

Chaff is designed to interfere with radar so that a maneuvering aircraft can escape a radar lock from an opposing radar. This use of chaff in training could affect weather monitoring radar. Weather radar has become increasingly important to predicting both flight and ground weather effects.

4.4.1 *WEATHER TRACKING RADAR*

The primary weather surveillance radar operated by the National Weather Service (NWS), FAA, and the DoD is the Weather Surveillance Radar-1988 Doppler (WSR-88D system) (National Research Council 2002). DoD training uses chaff as a defensive countermeasure. Within the CONUS, the Air Force uses RR-188 chaff to reduce, but not eliminate, chaff caused echoes to weather and other radars. In certain regions of the CONUS, including near DoD training areas in the west and southwest, RR-188 chaff can be seen as a major radar echo contaminant (Elmore *et al.* 2004). Chaff deployed in the training areas can include RR-188 chaff, as well as combat coded chaff which creates a chaff echo.

The Next Generation Weather Radar (NEXRAD) system provides Doppler radar coverage to most of the U.S. Designed in the mid-1980s, NEXRAD is continuing to be upgraded to meet air traffic and weather prediction requirements (National Research Council 2002). As part of the ongoing NEXRAD modernization, the NWS is adding polarimetric capability to existing operational radars. These capabilities improve the radar's ability to identify and classify hydrameteor types, such as rain, hail, ice crystals, and to distinguish non-meteorological types, such as chaff (Ryzhkov *et al.* 2003). Several radar images have distinctive properties which can be differentiated using radar classification algorithms.

4.4.2 *AIRSPACE AND RANGE ISSUES*

The improvements in NEXRAD have enhanced the ability of radar systems to detect RR-188 chaff. Investigations have been conducted to see whether RR-188 training chaff could be deployed and remain within the boundaries of a training airspace. By its very nature, chaff is light and designed to remain airborne to permit the evading aircraft to maneuver while the chaff cloud breaks radar contact. Could chaff be deployed at a low enough altitude that, under specific meteorological conditions, chaff particles would stay within the surface area under the training airspace? In most cases, this is not possible because the meteorological conditions and chaff fall rate are unpredictable. It has not been possible to determine where chaff particles would fall. The chaff plume migrates with the prevailing wind at altitude. In a series of case studies designed to track chaff plumes, the chaff plume from a release at altitudes between 15,000 to 22,000 feet above mean sea level (MSL), under moderate wind and stable atmosphere conditions, produced chaff plumes that traveled over 100 miles in two hours and could be expected to stay aloft for approximately another three hours. The total expected distance traveled by the deployed chaff prior to being deposited on the surface could be in the 120 to 300 mile range (DRI 2002).

The nature of chaff and the diversity of meteorological conditions mean that deployed chaff will continue to be an echo contaminant. This echo effect can be partially addressed through the radar

operators understanding when and where chaff is deployed and, possibly, through additional software or hardware refinement to distinguish and differentiate the chaff echo contamination.

4.5 CHAFF CONCLUSIONS

Although large numbers of chaff bundles are deployed in training, modern chaff is typically not easy to identify in the environment unless the chaff bundle fails to properly deploy and a clump of chaff is deposited on the surface. Chaff particles are difficult to identify in an environment subject to training chaff use for decades. The reasons for the difficulty in identifying chaff or chaff particles is because chaff is found to rapidly fragment on the surface and chaff is primarily composed of silica and aluminum, two of the most common elements in the earth's crust. Multiple studies to identify chaff particles or to locate elevated concentrations on the ground or in substrate have had limited success, primarily because chaff rapidly fragments in the environment and becomes indiscernible from ambient soil particles. No biological effects to marine organisms have been observed even when such organisms are subject to substantially higher concentrations than could be expected to occur as a result of training. The use of parchment paper in place of Mylar for delayed opening chaff reduces the deposition of plastic pieces to the environment to the level experienced with similar non delayed opening chaff.

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APPENDIX D
CHARACTERISTICS AND ANALYSIS OF FLARES

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APPENDIX D CHARACTERISTICS AND ANALYSIS OF FLARES

1.0 INTRODUCTION

Aircraft participating in Large Force Exercises (LFEs) often use a variety of self-protection flares in approved airspace. Self-protection flares are magnesium pellets that, when ignited, burn for 3.5 to 5 seconds at 2,000 degrees Fahrenheit. The burn temperature is hotter than the exhaust of an aircraft, and therefore attracts and decoys heat-seeking weapons targeted on the aircraft. Flares are used in pilot training to develop the near instinctive reactions to a threat that are critical to combat survival. This appendix describes flare characteristics, ejection, risks, and associated regulations.

2.0 FLARE CHARACTERISTICS

Self-protection flares are primarily mixtures of magnesium and Teflon (polytetrafluoroethylene) molded into rectangular shapes (United States Air Force [Air Force] 1997). Longitudinal grooves provide space for materials that aid in ignition. Typically, flares are wrapped with an aluminum-coated mylar or filament-reinforced tape (wrapping) and inserted into an aluminum (0.03 inches thick) case that is closed with a felt spacer and a small plastic end cap (Air Force 1997). The top of the case has a pyrotechnic impulse cartridge that is activated electrically to produce hot gases that push a piston, the flare material, and the end cap out of the aircraft into the airstream.

The B-1 uses MJU 23 A/B flares and the B-52 uses ALA-17 A, B, or C flares. The F-16 uses M-206 and MJU-7 A/B flares. F-22 uses MJU-10/B flares. The F-15 uses either the MJU-10/B or MJU-7 A/B flare. Table D-1 presents the types of aircraft and flares which could be normally expected during in the Powder River Training Complex (PRTC). There are three types of ignition mechanisms for self-protection flares: non-parasitic, parasitic, and semi-parasitic. The non-parasitic flare is discharged from the aircraft before ignition. The parasitic flare ignites inside the tube within the aircraft and is discharged already burning. The semi-parasitic flare is thrust out of the case by a firing mechanism that also begins the flare ignition process. Both the MJU-10/B and MJU-7 A/B are semi-parasitic flares.

Figure D-1 is a drawing of a simple M-206 flare. It is 1 inch wide, 1 inch high, and 8 inches long. When the firing device is electronically triggered, gas pressure pushes the small nylon or plastic piston. A hole extends through the piston and concurrently starts the flare burning. The piston pushes the flare out of the casing, pops off the plastic end cap, splits the wrapping material, and deploys the flare. Figure D-2 presents an M-206 countermeasure flare and the aluminum case, which stays in the aircraft.

Table D-1. Typical Self-Protection Flares Used for Training in ACC-scheduled Airspace

Attribute	*ALA-17*	*M-206*	*MJU-7 A/B*	*MJU-10/B*	*MJU-23/B and A/B*
Aircraft	B-52, AC-130	A-10, F-16, C-130, C-17	F-16, F-15, C-130	F-15, F-22	B-1B
Mode	Parasitic	Parasitic	Semi-parasitic	Semi-parasitic	Non-parasitic
Configuration	2 cylindrical cartridges in series	Rectangular	Rectangular	Rectangular	Cylindrical
Size	Each cylinder 4.75x2.25 inches (diameter)	1x1x8 inches (8 cubic inches)	1x2x8 inches (16 cubic inches)	2.66x2x8 inches (42.6 cubic inches)	10.5x2.75 inches (diameter) (90.7 cubic inches)
Impulse cartridge	None; electrically activated M-2 squib	M-796	BBU-36/B	BBU-36/B	BBU-46/B
Safety and Initiation (S&I) Device	None	None	Slider assembly	Slider assembly	Slider assembly with ignition charge
Weight (nominal)	Pellet: 18 oz Canister: 10 oz	6.9 ounces	13 ounces	40 ounces	43 ounces
Other Comments	Canister ejected with first unit	None	None	None	None

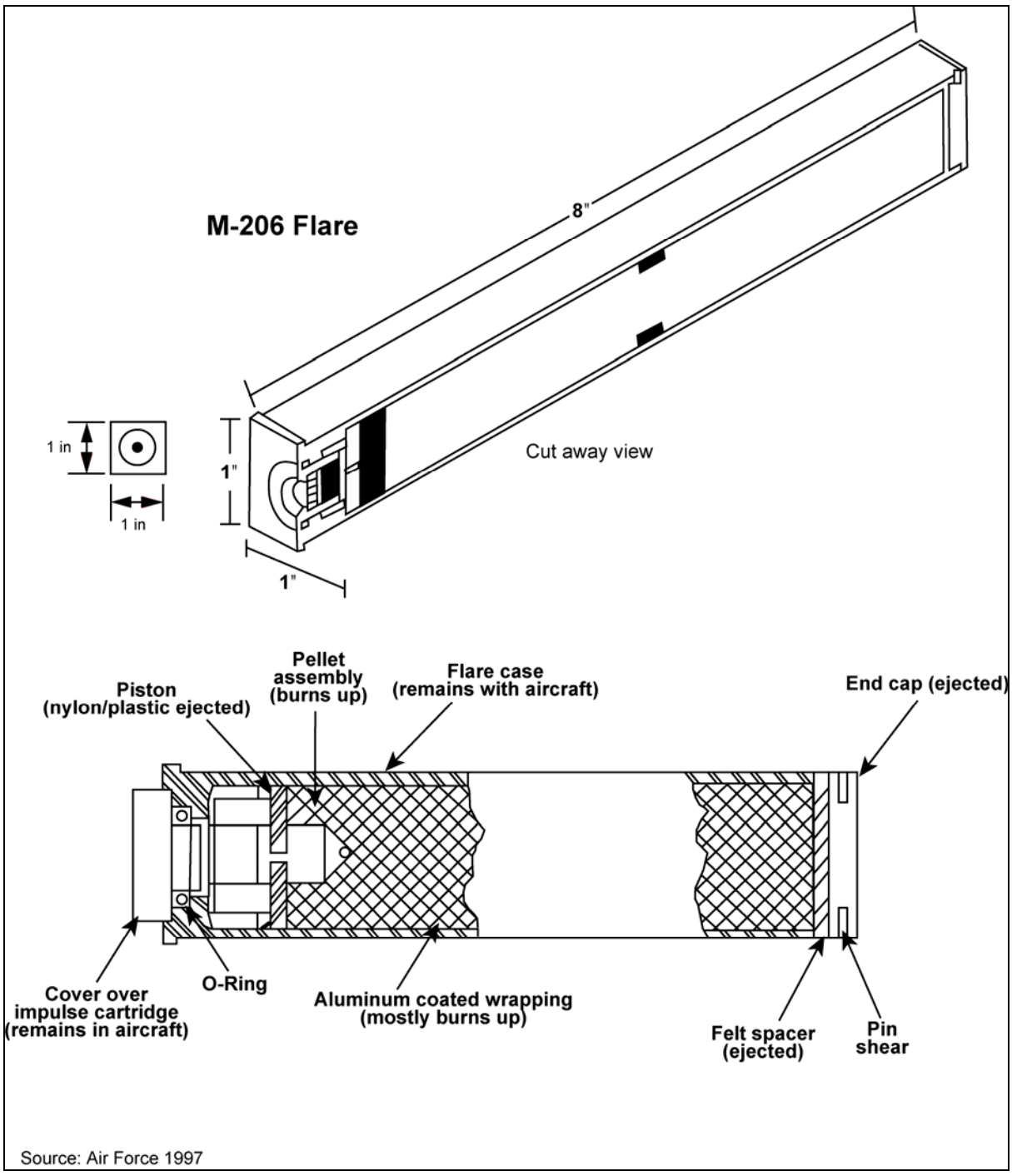

Figure D-1. M-206 Flare

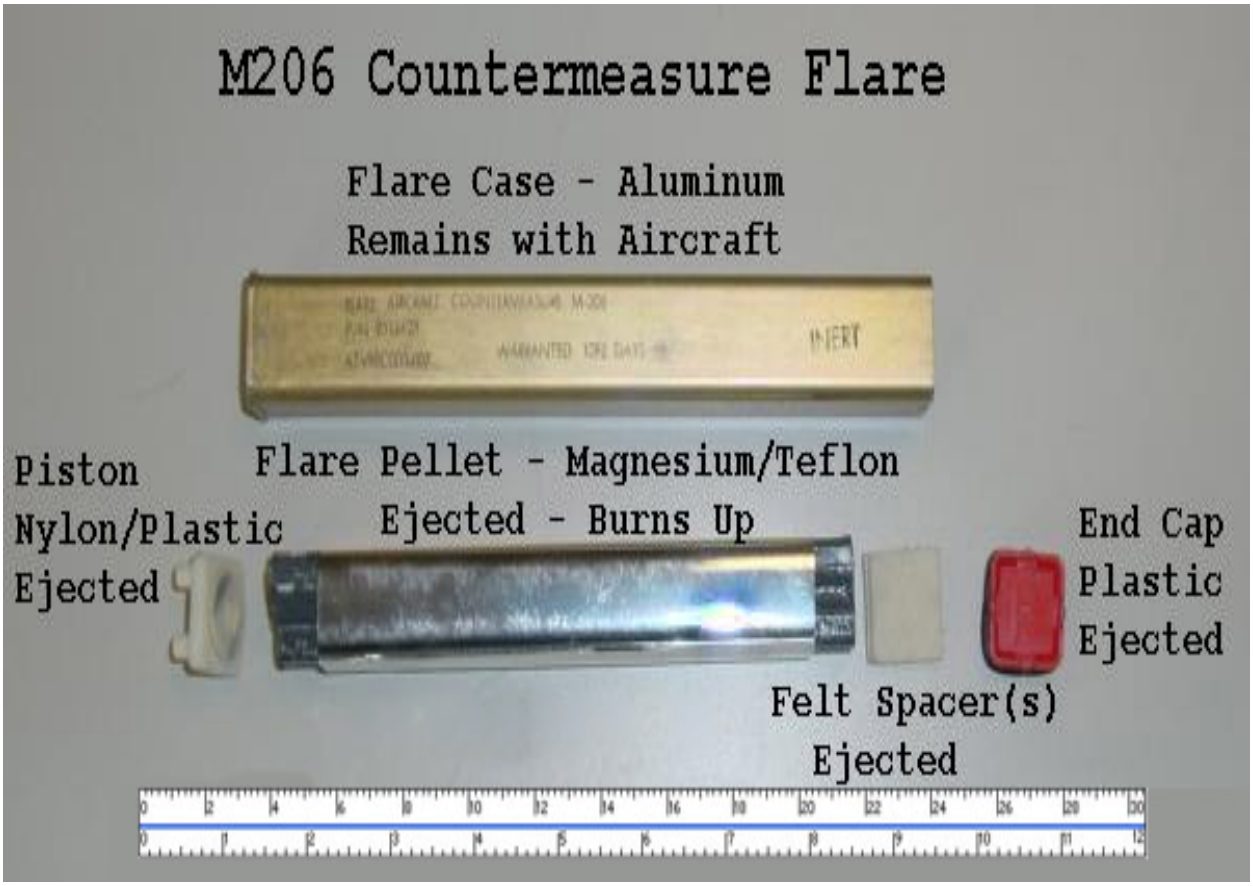

Figure D-2. M-206 Countermeasure Flare

A flare may be compared to a muzzle-loading rifle. There is a firing cap, a powder charge, wadding between the charge and the bullet, and a wad at the end that keeps everything in place. The electrical firing "cap" creates a gas that ejects the plastic or nylon slider, 2 felt spacers that hold everything in place, and the end cap. The "bullet" is a magnesium/Teflon flare pellet that is ejected and burns up in 4 to 5 seconds.

B-1 and B-52 flares would be used during training exercises in PRTC training airspace. The B-1B uses the MJU-23/B flare as noted in Table D-1. The MJU-23/B, shown in Figure D-3 is a non-parasitic cylindrical flare used only on the B-1B aircraft. It is 10.5 inches long and 2.75 inches in diameter. Figure D-4 is a photograph of the parts of the MJU 23/B flare. The MJU-23/B flare includes the same S&I device as the semi-parasitic MJU-7 A/B flare. The MJU-23/B has a plastic end cap with 0.5 inches of black rubber potting compound designed to absorb the shock of hitting spring-loaded doors on the aircraft. The earlier MJU-23/A used an aluminum piston and included strips of felt spacers on the side and circular felt spacers in the cylinder. The newer MJU-23/B replaces the aluminum with a plastic piston, retains circular felt spacers, and reduces the side felt spacer strips. The MJU-23/B uses the BBU-46/B impulse cartridge. The MJU-23A/B B1 bomber flare expels, along with the magnesium/Teflon flare pellet, other non-flare residual materials. Residual materials for the MJU-23A/B include two felt pads, a tin closure cap, a plastic/nylon end cap, and a piston with a Safe and Initiation (S&I) system attached. In most flare deployments, the aluminum wrap around the magnesium pellet will be burned and blown off when the flare ignites upon exiting the flare's case.

The B-52 uses the ALA-17 A/B flare as noted in Table D-1. A drawing of the ALA-17A/B flare is presented in Figure D-5. The flare consist of two independently fired aluminum cylinders, each 4.75 inches long and 2.25 inches in diameter, crimped together end-to end. The ALA-17 A/B flare with the two cylinders is 9.5 inches long, 2.25 inches in diameter, and from the outside, looks similar to the MJU-23/B flare (Figure D-4). When the top cylinder is fired, the flare pellet is ejected from the aircraft, along with the entire bottom cylinder. Impulse cartridges are not used; the flares are fired directly with an electrically activated squib set in potting compound. The M-2 squib weights about 0.0022 ounces and is composed of 40 percent potassium chlorate, 32 percent lead thiocyanate, 18 percent charcoal, and 10 percent Egyptian lacquer (Global Security 2008). Both the upper and lower flare case will expel an aluminum end cap and plastic piston. Both the upper and lower flare are deployed and ignited by the impulse cartridge. Therefore, there is no S&I device in either the upper or lower flare cartridge case. The newer ALA-17 C flare has upper and lower flare cylinders both contained in one aluminum housing, depicted in the cutaway Figure D-6. Both the upper and lower flares are wrapped in aluminum tape and possess individual deployment and ignition systems. A plastic end cap and S&I system are deployed with the individual flare pellets. The lower flare's expended impulse cartridge and aluminum housing/mid-spacer are expelled by deployment of the upper flare. The ALA-17C model full aluminum housing remains in the B-52 dispenser rack.

Figure D-7 is a drawing of an MJU-7 A/B flare. The MJU-7 A/B is a semi-parasitic flare which contains a charge that is ignited as the flare is ejected from the aircraft. The MJU-7 A/B is 2 inches wide, 1 inch high, and 8 inches long. The MJU-7 A/B is similar to the M-206, with a flare pellet, a nylon or plastic slider (or piston), felt spacers, and an end cap. In addition, the MJU-7 A/B contains a safe and initiation (S&I) device which is ejected with flare deployment. The S&I device provides for the ignition and also splits open the wrapping as the flare exits the aircraft. Figure D-8 presents a cutaway view of all parts of the MJU-7 A/B flare.

The flare used by the F-22 is the MJU-10/B flare. Figure D-9 is a drawing of the MJU-10/B flare. The primary difference between the MJU-7 A/B and the MJU-10/B flare types is that the MJU-10/B flare is twice as large as the MJU-7 A/B. Table D-2 provides a summary description of the M-206, MJU-7 A/B, and MJU-10/B flares. The M-206 contains a flare pellet of approximately 7 cubic inches. The MJU-7 A/B flare pellet is approximately 14 cubic inches and the MJU-10/B flare pellet is approximately 36 cubic inches. Table D-3 presents the typical composition of F-22 and F-15 defensive flares. The flares are expelled from the flare cartridges with a BBU-36/B impulse charge. Table D-4 presents the components of this impulse charge.

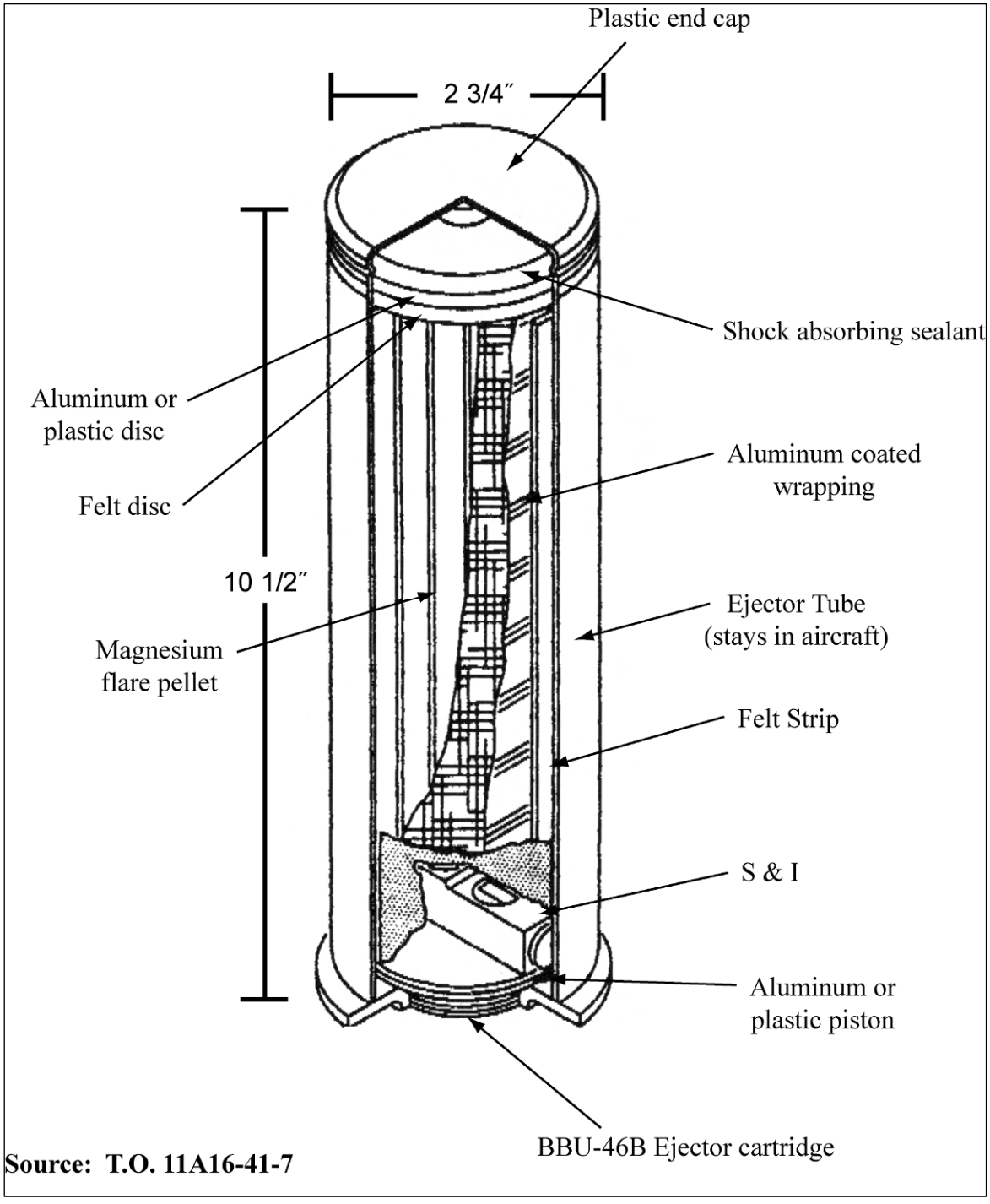

Figure D-3. MJU-23/B Flare Used by B-1B Aircraft

Figure D-4. MJU-23 Flare

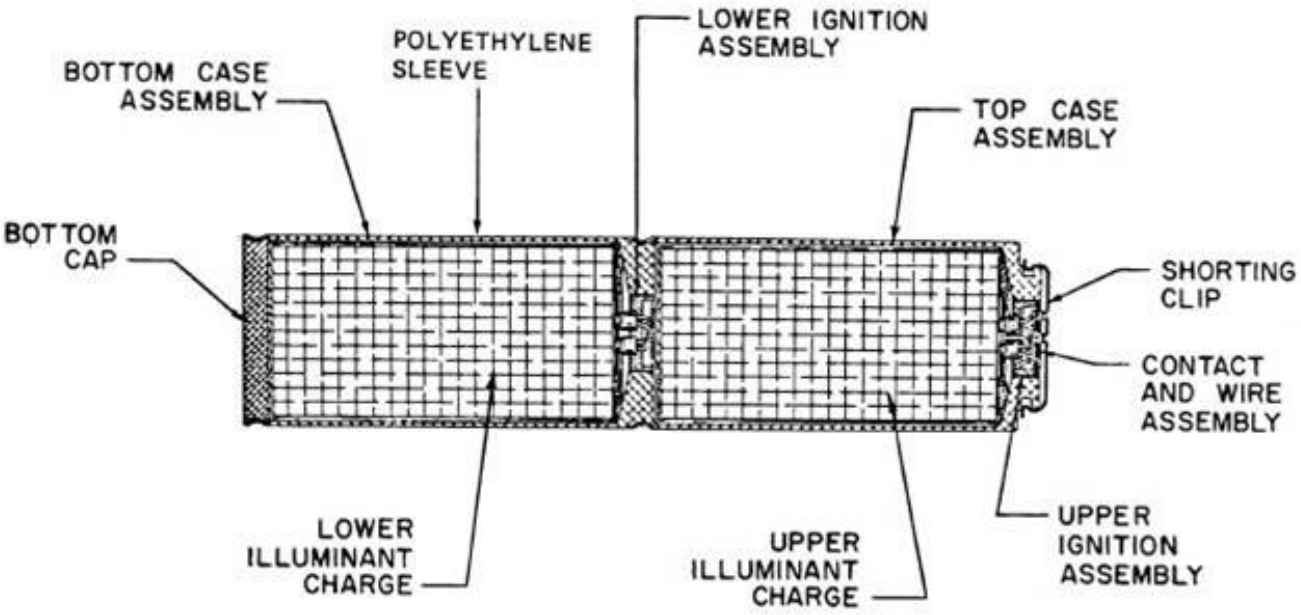

Figure D-5. ALA-17 Flare Cartridge

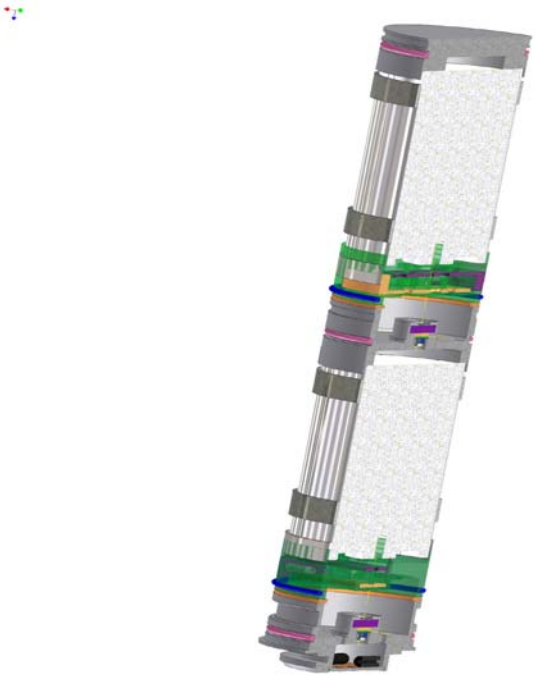

Figure D-6. ALA-17 Cutaway

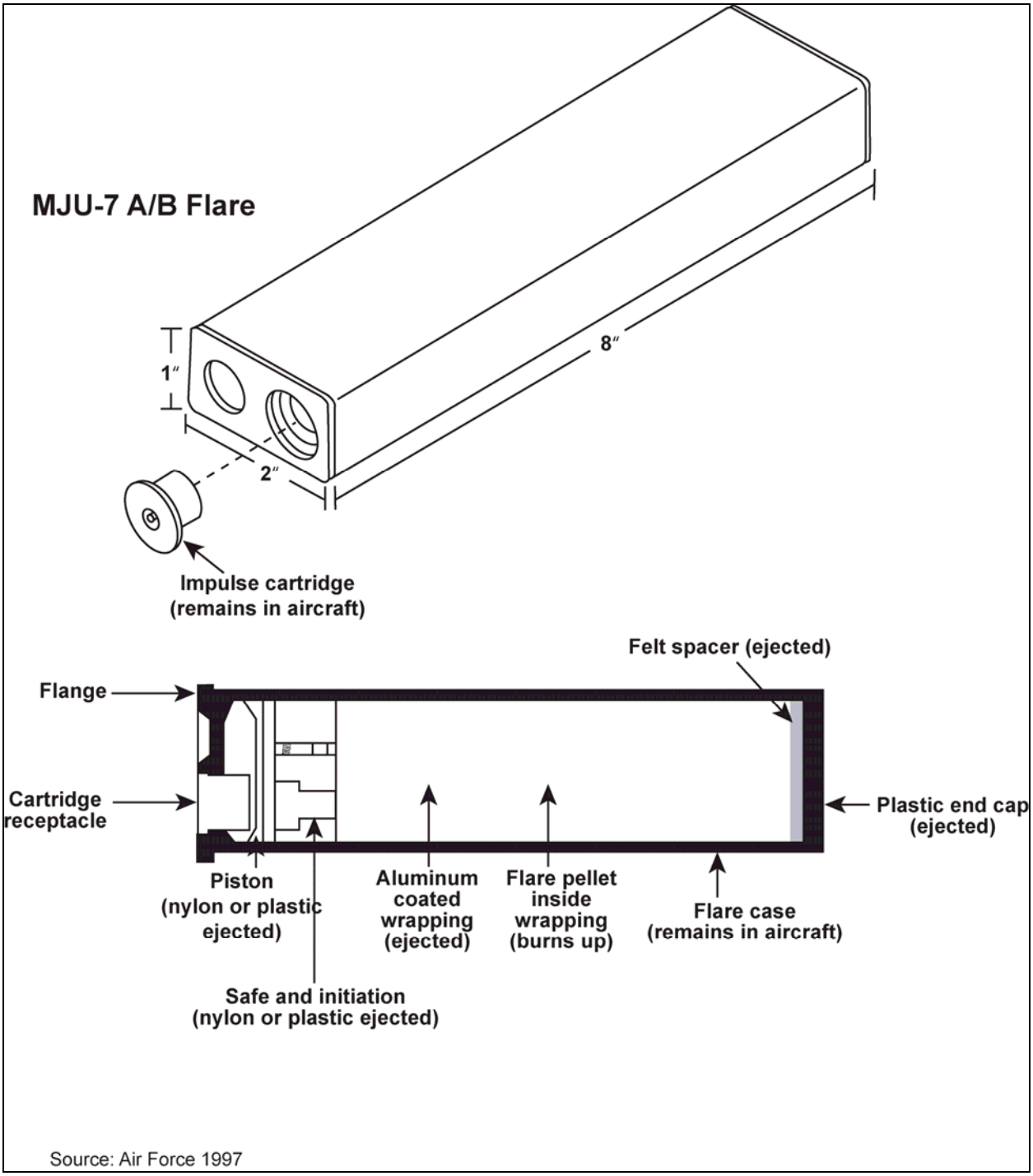

Figure D-7. MJU-7 A/B Flare

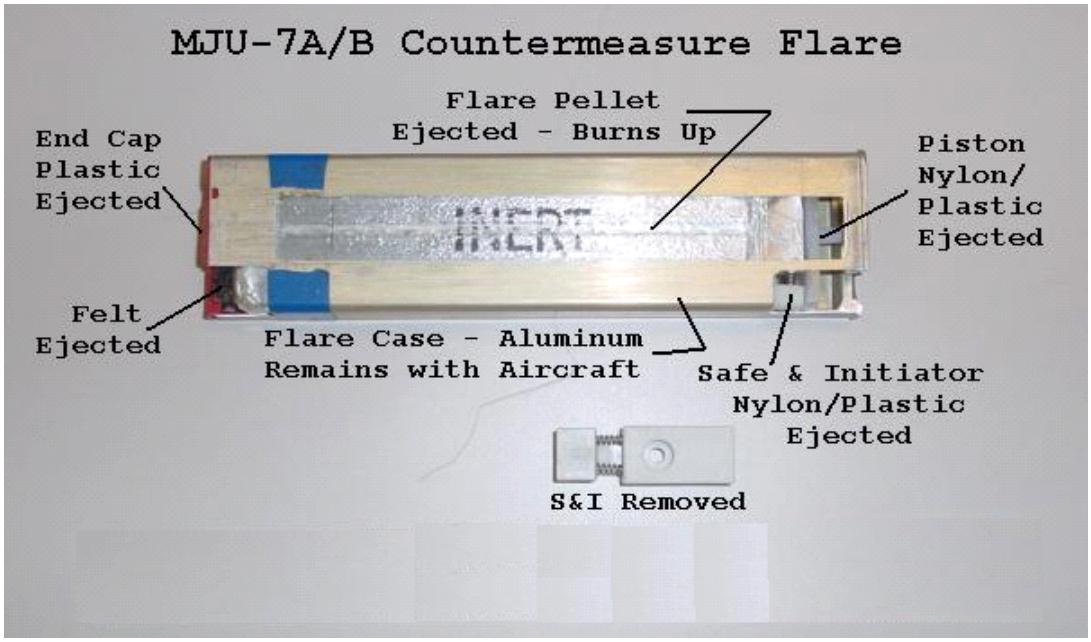

Figure D-8. MJU-7 A/B Countermeasure Flare (cut away view)

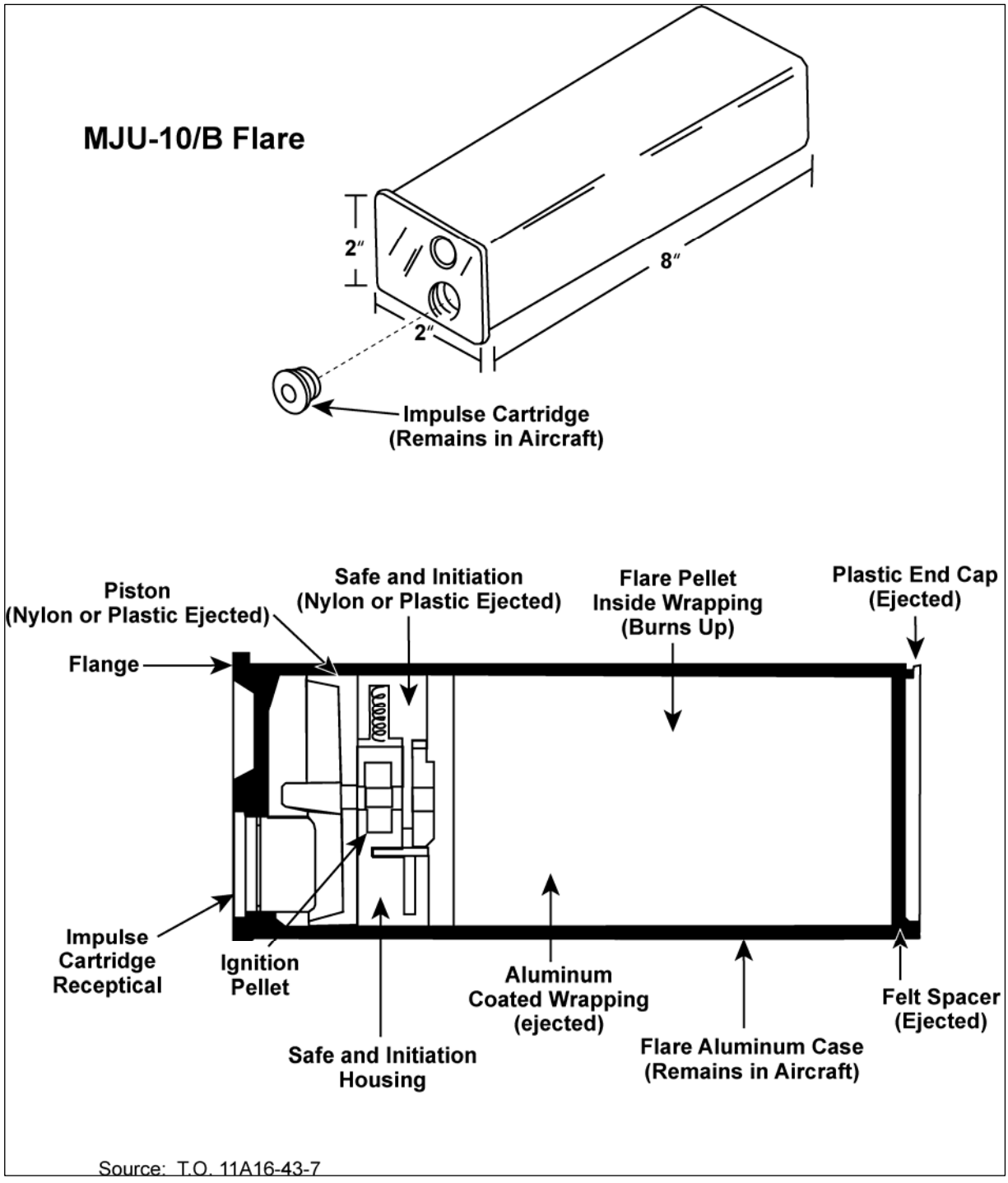

Figure D-9. MJU-10/B Flare

Table D-2. Description of M-206, MJU-7 A/B, and MJU-10/B Flares

Attribute	*M-206*	*MJU-7 A/B*	*MJU-10/B*
Aircraft	F-16, A-10, AC-130, C-17	F-15, F-16, AC-130	F-15, F-22
Mode	Parasitic	Semi-parasitic	Semi-parasitic
Configuration	Rectangle	Rectangle	Rectangle
Size	1x1x8 inches (8 cubic inches)	1x2x8 inches (16 cubic inches)	2x2x8 inches (32 cubic inches)
Impulse Cartridge	M-796	BBU-36/B: MJU-7	BBU-36/B
S&I Device	None	Slider Assembly	Slider Assembly
Weight (nominal)	6.8 ounces	13 ounces	40 ounces
Felt Spacers	1 to 2, 1x1 inch	1 to 2, 1x2 inches	1 to 2, 2x2 inches

Table D-3. Typical Composition of MJU-10/B and MJU-7 A/B Self-Protection Flares

Part	*Components*
Combustible	
Flare Pellet	Polytetrafluoroethylene (Teflon) ($-[C_2F_4]_n$ – n=20,000 units) Magnesium (Mg) Fluoroelastomer (Viton, Fluorel, Hytemp)
First Fire Mixture	Boron (B) Magnesium (Mg) Potassium perchlorate ($KClO_4$) Barium chromate ($BaCrO_4$) Fluoroelastomer
Immediate Fire/ Dip Coat	Polytetrafluoroethylene (Teflon) ($-[C_2F_4]_n$ – n=20,000 units) Magnesium (Mg) Fluoroelastomer
Assemblage (Residual Components)	
Aluminum Wrap	Mylar or filament tape bonded to aluminum tape
End Cap	Plastic (nylon)
Felt Spacers	Felt pads (0.25 inches by cross section of flare)
Safe & Initiation (S&I) Device	Plastic (nylon, tefzel, zytel)
Piston	Plastic (nylon, tefzel, zytel)

Source: Air Force 1997

Table D-4. Components of BBU-36/B Impulse Charges

Component	*BBU-36/B*
Overall Size Overall Volume Total Explosive Volume	0.740 x 0.550 inches 0.236 cubic inches 0.081 cubic inches
Bridgewire	Trophet A
Closure Disk	Scribed disc, washer
Initiation Charge	
Volume	0.01 cubic inches
Weight	100 mg
Compaction	6,200 psi
Composition	42.5 percent boron 52.5 percent potassium perchlorate 5.0 percent Viton A
Booster Charge	
Volume	0.01 cubic inches
Weight	150 mg
Compaction	5,100 psi
Composition	20 percent boron 80 percent potassium nitrate
Main Charge	
Volume	0.061 cubic inches
Weight	655 mg
Compaction	Loose fill
Composition	Hercules #2400 smokeless powder (50-77% nitrocellulose, 15-43 percent nitroglycerine)

Source: Air Force 1997

3.0 ENVIRONMENTAL EFFECTS OF FLARES

3.1 FLARE RELIABILITY

Initial concerns regarding defensive training flare use focused on questions of flare reliability, fire risk, and flare emissions. Flare reliability is important because a flare failure could have a variety of environmental consequences. Reliability is determined by testing the flares after manufacture. Flare testing consists of selecting 80 flares randomly from a lot of several thousand flares. Lot acceptance testing for the MJU-7 A/B, the most heavily used flare, examines the success of ignition and burn, pellet breakup, and indication of dispenser damage. The specification requires that a flare lot pass an ignition and ejection test. In this test, with a sample size of 80, two failures would be acceptable, but three failures would result in the entire flare lot being rejected (Air Force 1997). To ensure that good lots are not erroneously rejected in these tests, the flares would have to be designed to a reliability of 99 percent (assuming a confidence level of 95 percent). Therefore, the reliability of the MJU-7 A/B flare is expected to be approximately 99 percent. Other factors are required to achieve comparable levels of reliability. Flares are manufactured to avoid rejection of the entire lot. These levels of reliability are reasonable when the purpose of the flare is taken into consideration. A flare is designed to protect life and a multi-million dollar investment.

3.2 FLARE FAILURES

There are four different types of flare failure. One failure would be if the flare was electrically triggered but did not release and did not burn. Such a flare would be treated as unexploded ordnance (UXO) when the aircraft returned to the base, and the flare would be removed for disposal.

A second type of flare failure would be if the flare burned but did not release from the aircraft. This would be an extremely dangerous situation for the pilot. There is one known case of this occurring; in 1980, an F-102 aircraft was destroyed and the pilot ejected. Reliability of flare ignition and deployment has been substantially improved since then.

A third type of flare failure would be a released flare at an improper altitude or that did not burn correctly. If a burning flare struck the ground, it could result in a fire, with potential environmental consequences. If a broken part of a flare struck the ground, it would not burn unless subject to temperatures or friction generating temperatures in the one to two thousand degree range.

A fourth type of flare failure is if a flare was released from the aircraft but did not burn, either in whole or part, and becomes a dud flare on the ground. There are two potential locations for a dud flare: on or off military-controlled land. Military-controlled land includes the base airfield where, at times, an unburned flare (the first type of failure) is jolted out of its container during a landing and becomes a dud flare (the fourth type of failure) on or adjacent to the runway. Military-controlled land also includes training ranges over which flares are deployed. Non-military controlled land includes lands managed by other governmental agencies and private lands.

The first type of flare failure results in an unburned flare returning to the base. This would be handled as UXO and would not normally be treated as a potential environmental impact. The second type of flare failure is an extremely rare case of a flare causing a Class A accident with loss of an aircraft and possibly a life. Such a situation would be quantified in terms of flight safety and would be part of the documented Class A accident rates for the specific aircraft. As noted above, there is only one documented case of this type of flare failure.

The third type of flare failure is a flare which is still burning when it strikes the ground. Documented cases of this have occurred. Upon investigation, such cases are nearly always the case of a flare being deployed at too low an altitude.

If a flare struck the ground while still burning, it could ignite surface material and cause a fire. This has occurred at active military training ranges where flare- or munitions-caused fires are documented. In all known cases, the flares burning when they struck the ground were released at a very low altitude. Table D-5 presents the time-to-distance for a falling object, such as a flare. Release at an altitude below 300 feet has the potential for a flare that burns in 4 to 5 seconds to still be burning when it strikes the ground. On active military ranges, firebreaks are established to reduce the potential for fires to spread off the range.

The best way to reduce the risk of flare-caused fires is to establish adequate minimum altitudes for flare release. In 8 seconds, a flare would fall approximately 1,000 feet. An M-206 or an MJU-7 A/B flare is designed to burn out within 150 to 400 feet. Where flares are deployed at a minimum altitude of 1,500 feet above the ground, the likelihood of a flare-caused fire is substantially reduced. In areas where flares are used within training airspace over public or private lands, the minimum altitude for flare deployment is typically between 1,500 to 2,000 feet above ground level (AGL).

Table D-5. Flare Burn-out Rate and Distance

Time (in Sec)	*Acceleration*	*Distance(in feet)*
0.5	32.2	4.025
1.0	32.2	16.100
1.5	32.2	36.225
2.0	32.2	64.400
2.5	32.2	100.625
3.0	32.2	144.900
3.5	32.2	197.225
4.0	32.2	257.600
4.5	32.2	326.025
5.0	32.2	402.500
5.5	32.2	487.025
6.0	32.2	579.600
6.5	32.2	680.225
7.0	32.2	788.900
7.5	32.2	905.625
8.0	32.2	1030.400
8.5	32.2	1163.225
9.0	32.2	1304.100
9.5	32.2	1453.025
10.0	32.2	1610.000

Note: Initial velocity is assumed to be zero.

3.3 DUD FLARES

The fourth type of flare failure is a dud flare on the ground. A dud flare on nonmilitary land, either public or private land, has the potential to produce environmental consequences. United States (U.S.) military training ranges where flares are used were contacted to estimate the potential for locating a dud flare on the ground. The military has personnel experienced with UXO who survey military ranges to identify and remove live ordnance or dud flares. Experience from the Goldwater Range in Arizona

and the Utah Test and Training Range identified very few dud flares on the ground. The surveys were not scientific studies that evaluated the entire military training ranges, but did survey areas within which 95 to 99 percent of the UXO would be expected. In areas where approximately 200,000 flares had been deployed, an estimated 18 duds were found on the ground. This calculates to a ratio of approximately 1 in 10,000.

There is no instance of a dud flare or any flare debris striking an individual. A dud M-206 flare would be an approximately 3/4 pound piece of material falling at a speed of over 100 miles per hour. It is extremely unlikely that an individual could be struck by such a falling object, but if someone were, it could cause severe injury or death. Dud flares are extremely rare, but they are dangerous.

Although very few dud flares would be expected on the ground, and fewer would be expected to be found, any located dud flare should be treated as UXO. Figure D-10 is approximately 40 percent of an M-206 flare and wrapping that did not burn. Apparently, during deployment, the M-206 flare pellet broke before it was completely ignited and the unburned portion was deposited on the military training range. A dud flare would probably not ignite even in a campfire unless it was on a very hot bed of coals. If a dud flare were shot with a bullet or cut with a power saw, the friction could cause it to ignite. If a dud flare were struck by an ax, it is unlikely, but possible, that an ignition could occur. Should a flare be ignited, it would burn at a temperature of 2,000°F and could result in severe injury or death.

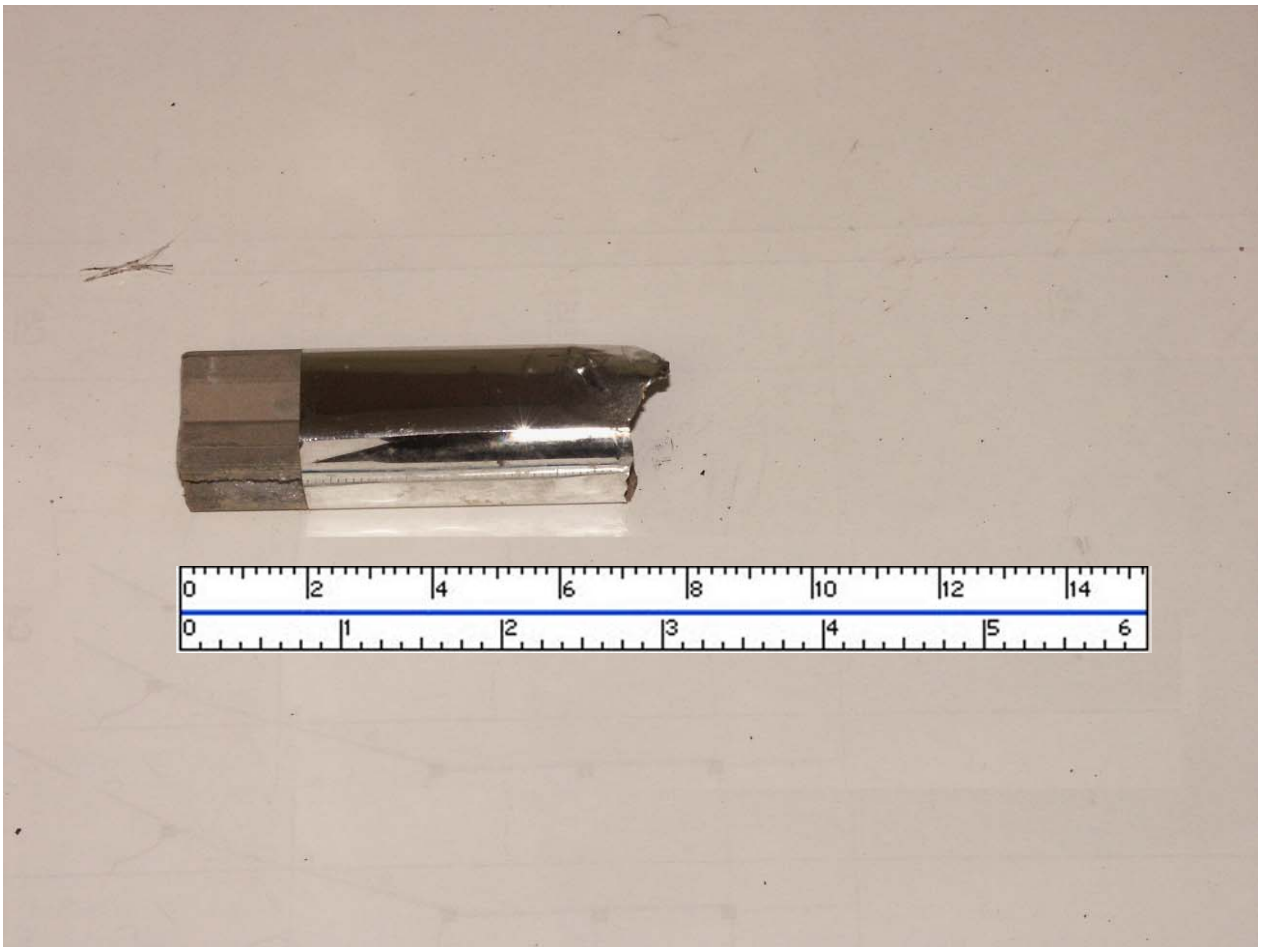

Figure D-10. Approximately 40 Percent of an M-206 Flare

The primary environmental message for anyone in the public finding a dud flare (an extremely unlikely event) is: mark its location but do not touch it. The likelihood of finding a dud flare is extremely remote, and the likelihood of a dud flare igniting is even more remote, but because there would be dud flares on the ground under the airspace, someone has the potential to come upon one. The message is: do not touch it; tell an authority about its location.

The number of dud flares on the ground is few. If a dud flare fell in a water body, it would deteriorate over time. The chemicals released during deterioration would not be expected to be of sufficient quantity to cause a noticeable reduction in the water quality or impact upon marine resources.

3.4 FLARE EMISSIONS

Environmental questions have also been raised regarding flare emissions, including flare ash. Studies on ash components were performed by measuring residual materials after flares were ignited in a furnace (Air Force 1997). Constituents from combustion were identified, and a worst case scenario was estimated to calculate whether flare emissions or flare ash could result in an environmental impact.

The M-206 and MJU-7 A/B do not contain lead although some earlier flares had lead in the firing mechanism, and some flares still contain chromium in the firing mechanism. A statistical model was used to calculate emission concentrations of lead and chromium with the goal of learning what level of flare emissions or ash would be required to achieve toxic levels of lead or chromium. The model calculated that 1.5 million MJU-7 A/B flares would have to be released below an altitude of 400 feet AGL over a 10,000 acre training range before the level of chromium emissions would become a health risk. Approximately 400,000 flares are deployed by Air Combat Command (ACC) aircraft in all ACC training airspace approved for defensive flare training (Air Force 1997). No location has the combination of flare numbers, altitude, and range area. The number of flares is smaller, the minimum release altitude is higher, and the training area is substantially larger. Flare emissions are not now, nor is it feasible that they could become, a health hazard (Air Force 1997).

There are also trace elements of boron in the flare pellet. To achieve a toxic level of boron, flare ash from approximately 4,000 flares would annually need to fall on an acre of land. It would be almost impossible to deposit 4,000 flares on one acre of land. In fact, it would not be possible for a high performance military aircraft to purposefully deposit even one flare on a specific acre of land. Flare emissions and flare ash are not likely to result in measurable air quality or physical effects to the environment.

3.5 FLARE RESIDUAL MATERIALS

Environmental questions have been raised regarding flare materials which are not consumed during the flare burn and which are deposited on the surface following flare deployment. Table D-6 presents the residual materials from representative flares used in PRTC training airspace.

Residual materials identified as MJU-7 wrapping materials are included in Figure D-11 with a pen for scale. This is believed to be the wrapping from an MJU-7 A/B flare and was attributed to training aircraft over private property. Range workers were shown residual flare materials and asked to see if they could find such materials on the range. The workers located a variety of residual materials including the materials pictured in Figures 10, 12, and 13. Figure D-12 is the piston or nylon slider assembly from an M-206 flare. The M-206 is a parasitic flare where ignition occurs as the flare is discharged. The burn occurs very quickly and parts, such as portion of the wrapping material, may not be consumed. Wrapping material is not a risk, but it can be viewed as a piece of unanticipated debris by anyone finding it on public or private land under airspace assessed for flare use.

Table D-6. Residual Material Deposited on the Surface Following Deployment of One Flare

	Flare Type			
Material	***M-206***	***MJU-7/B***	***MJU-10/B***	***MJU-23/B***
End Cap	One 1 inch x 1 inch x 1/4 inch plastic or nylon	One 2 inch x 1 inch x 1/4 inch plastic or nylon	One 2 inch x 2 inch x 1/4 inch plastic or nylon	One 2 3/4 inch diameter x 1/4 inch thick round plastic disc
Piston	One 1 inch x 1 inch x 1/2 inch plastic or nylon	One 2 inch x 1 inch x 1/2 inch plastic or nylon	One 2 inch x 2 inch x 1/2 inch plastic or nylon	One approximately 2 3/4 inch diameter x 1/2 inch aluminum (or plastic) piston
Spacer	One or two 1 inch x 1 inch felt	One or two 2 inch x 1 inch felt	One or two 2 inch x 2 inch felt	One 1/2 inch thick x 2 3/4 inch diameter rubber shock absorber sealant, two (1/8 inch x 2 3/4 inch diameter) felt discs, up to four 1 inch x 10 inch felt strips
Wrapping	One up to 2 inch x 17 inch piece of aluminum-coated stiff duct-tape type material	One up to 3 inch x 17 inch piece of aluminum-coated stiff duct-tape type material	One up to 4 inch x 17 inch piece of aluminum-coated stiff duct-tape type material	One up to 4 1/2 inch x 20 inch piece of aluminum-coated stiff duct-tape type material
S&I Device	N/A	One 2 inch x 1 inch x 1/2 inch nylon and plastic spring device	One 2 inch x 1 inch x 1/2 inch nylon and plastic spring device	One 2 inch x 1 inch x 1/2 inch nylon and plastic spring device

Figure D-11. MJU-7 Residual Flare Wrapping Materials

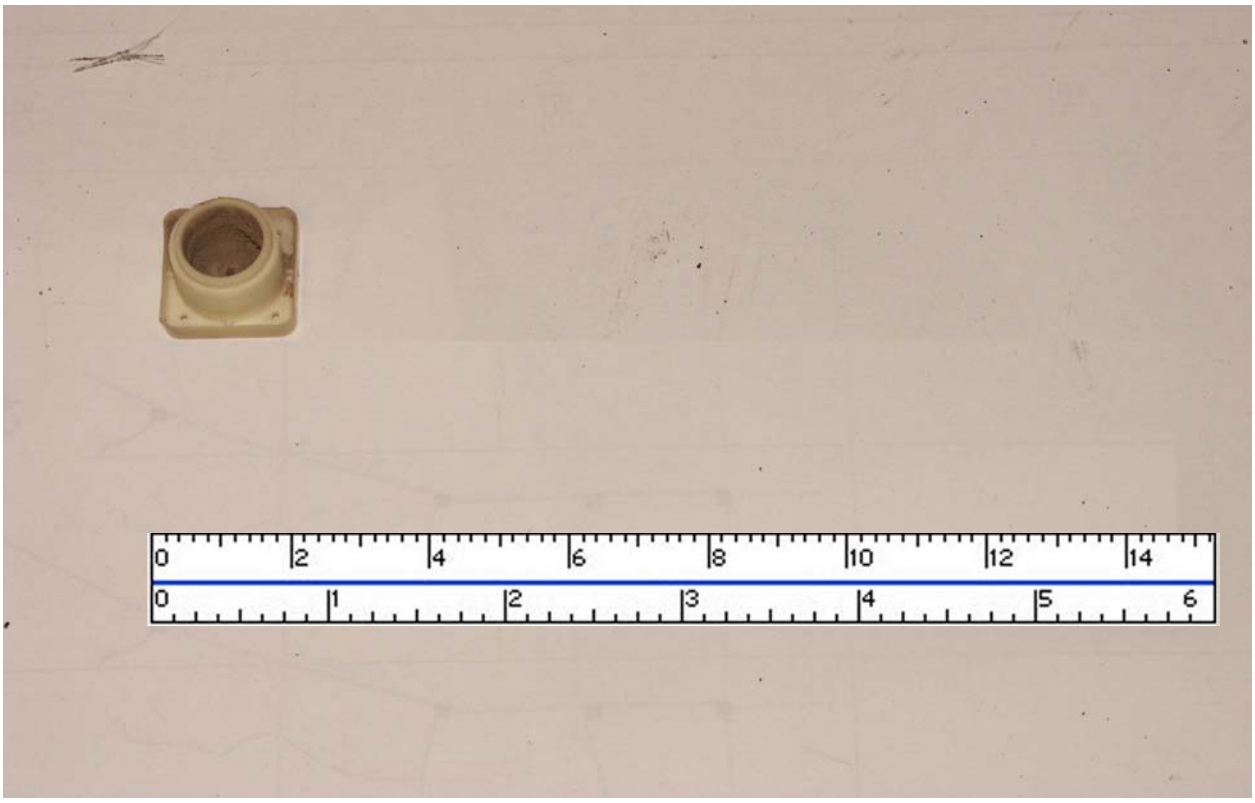

Figure D-12. M-206 Piston

The weight of flare residual materials is of interest to assess whether the materials represent a safety risk. Weights of residual components for representative flares are presented in Table D-7. The M-206 piston and felt cushion together weigh approximately 0.06 ounces. The M-206 and MJU-7 A/B wrapping materials have a high surface-to-weight ratio and do not fall with much force. The heaviest residual component is the S&I device used in several flares (Table D-6). Each S&I device weighs about .07 to .08 ounces depending upon material which may be melted to the S&I device. Two S&I devices are pictured in Figure D-13 with some melted fibers from the wrapping material attached.

Table D-7. M-206 and MJU-7 A/B Component Weights

Component	*Weight*
M-206	
Plastic end cap	0.08896 ounces
Piston and cushion assembly	0.06271 ounces
Felt spacer	0.01896 ounces
Wrapper (2 inches x 13 inches)	0.3135 ounces
MJU-7 A/B	
End cap	0.10500 ounces
S&I Device (clean)	0.6606 ounces
Piston	0.10500 ounces
Felt spacer	0.01604 ounces
Wrapper (3 inches x 13 inches)	0.4696 ounces

Figure D-13. Two S&I Devices Used in MJU-10/B, and Other Flare Types

Calculations were made that take into consideration the weight and surface area of the S&I device. At gravitational rates of acceleration, an S&I device could strike the ground at a momentum of from 0.08 to 0.16 pounds per second (see Table D-8). By comparison, if an element with a momentum of 0.1 pounds per second were to strike an individual's unprotected head, there is a one percent possibility of a concussion (Air Force 1997). This means that if an S&I device struck an unprotected individual with no hat, it could cause injury comparable to that of a marble-sized hailstone.

Table D-8. MJU-7 A/B Component Hazard

	Maximum Surface Area		
Component	***Area (in^2)***	***Terminal Velocity (ft/sec)***	***Momentum (lb-sec)***
S&I Device	1.65	58	0.08
Piston	1.65	23	0.005
End Caps	2.0	21	0.005
	Minimum Surface Area		
S&I Device	0.413	115	0.16
Piston	0.413	46	0.01
End Caps	0.125	84	0.02

Table D-9 quantifies how often an S&I device could be expected to strike a structure, a vehicle, or a person. The assumptions behind this table are that approximately 2,000 MJU-7 A/B-type flares would be annually deployed over an area of 2,000 square miles with a population of one person per square mile. Based on studies performed in the U.S., individuals were, in aggregate, out of doors and

unprotected, with no hat, approximately 10 percent of the time (Tennessee Valley Authority 2003, Klepeis *et al.* 2001). Other assumptions are 2.7 persons per family and 2 structures plus 2 vehicles per family. In an area with one person per square mile and these assumptions, there would be an expected structure hit once in 13 years by a hailstone-sized S&I device under the airspace where MJU-7 A/B flares were used for training. No damage would be expected to the structures.

Table D-9. S&I Device Potential Annual Strikes

Persons Per Square Mile	*Structure*	*Vehicle*	*Person*
0.1	.0075	0.00005	0.0000025
1.0	.075	0.0005	0.000025
10.0	.75	0.005	0.00025

Table D-9 can be used to calculate other population densities and other exposures of a population. For example, if there were a population of one person per square mile with all individuals unprotected one hundred percent of the time (living out of doors with no hat or 10 times the table), there would be an expected 0.00025 person struck by an S&I device annually or one person in 4,000 years. These results demonstrate that it is very unlikely that an individual could be struck by one of these objects with the force of a large hailstone, and if a person were struck on an unprotected head, there would be an approximately one percent chance of a concussion.

Some of the flare materials which fall to the surface after deployment are larger than an S&I device. Table D-6 lists larger pieces from the MJU-10/B and MJU-23/B flares, including the end caps and wrapping. The surface to mass ratio of most of these pieces would not be expected to permit the pieces to achieve a terminal velocity as great as the S&I device. Some parts, such as the ALA-17A/B flare debris include the entire bottom cylinder assembly, as well as the end cap and felt spacers from the top flare. The debris from an ALA-17A/B flare could fall in an orientation that the terminal velocity could produce a momentum in the 0.10 to 0.20 range. The relative low use of these flares reduces potential risk from the bottom cylinder assembly. ACC units are estimated to annually use fewer than 4,000 of these flares worldwide.

End caps, felt spacers, sliders, and wrapping material fall to the earth with each flare deployed. Most flare types have a plastic S&I device which falls to the ground. These dropped objects are extremely unlikely to pose a risk of injury or environmental damage, but the materials would fall to the ground under airspace where such flares are used in training. Figure D-14 is an example of an M-206 flare wrapper on the ground. To the untrained eye, as the wrapping material weathers, the wrapper may have the appearance of a natural object, such as the stick in the foreground. However, individuals finding and identifying these pieces could express annoyance with the residual flare materials.

Figure D-14. A Flare Wrapper Partially Covered by Pine Needles

4.0 FLARE CONCLUSIONS

Section 2.0 describes typical flares used regularly or intermittently in PRTC-scheduled training airspace. The environmental consequences of realistic military training with flares can be summarized as:

- The risk of a fire can be greatly reduced through adjusting the minimum altitude for deployment of self-protection flares. There is still the possibility of a mistake where a flare could be deployed at too low an altitude, but establishing minimum altitudes substantially reduces the potential for that mistake or for a flare-caused fire in the environment.
- Dud flares are infrequent with today's technology. The important environmental piece of information for dud flares is that, if one is found, it should be left where it is, its location should be marked, and authorities should be notified. Environmental analyses could explain that the risk from a falling dud flare striking anything is so low as to be inconsequential. If a dud flare were found, it should not be moved and an authority should be notified.
- There is almost no discernible trace from flare ash. A burning flare can be seen, but there is almost no detectable air or soils pollution that could come from the number of flares burned within a training airspace.
- Residual materials from the M-206, the MJU-7 A/B, MJU-10/B, ALA-17/C, or MJU-23 A/B flares have very little safety risk. Flare debris would have little environmental effect except that it could be an annoyance if found.

5.0 REFERENCES

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APPENDIX E
PUBLIC INVOLVEMENT AND AGENCY CORRESPONDENCE

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Distribution List for Draft EIS

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First Name	Last Name	Title	Organization Name	Address Line 1	Address Line 2	City	State	Postal Code
		Deputy Regional Director - Indian Services	Bureau of Indian Affairs	Great Plains Regional Office	115 4th Ave. SE	Aberdeen	SD	57401
		District Ranger	Black Hills National Forest	Northern Hills Ranger District	2014 N Main St	Spearfish	SD	57783
Pine	Abrahamson		Bowman County Commissioners	14310 98th St SW		Bowman	ND	58623
Fred	Adams		Basin Electric Power Coop	1717 E Interstate Ave		Bismarck	ND	58503
Margaret	Ahlness					Bowman	ND	58623
Hans	Ahlness		Weather Modification, Inc.	3802 20th St N		Fargo	ND	58102
Qusi	Al-Haj		Senator Thune	1313 W Main St		Rapid City	SD	57701
Rayford	Anderson					Buffalo	SD	57720
Dave	Anderson		SDDOT Aeronautics	700 E Broadway Ave		Pierre	SD	57501
Craig	Appleman					Broadus	MT	59317
Max	Arnett	Manager	Bowman Municipal Airport	Box 198		Bowman	ND	58623
Jim	Atchison					Colstrip	MT	59323
John & Therese	Baldwin		Baldwin Ranch Co.	HC 78 Box 110		Ismay	MT	59336
Dallis	Basel					Union Center	SD	57787
Michael	Beason		CAP	5172 Ridgeview Rd		Rapid City	SD	57701
Jon	Becker		South Dakota Department of Transportation	Local Transportation Programs	700 E Broadway	Pierre	SD	57501
Ken	Beltz					Boyes	MT	59316
Duane	Berke		TDO Aviation	7709 Blue Bird Ln		Black Hawk	SD	57718
Kate	Bertin		Independent Press	PO Box 106		Forsyth	MT	59327
Leslie	Best		Davidson Cattle Co	HC 74 Box 120		Big Horn	MT	59010
Bill	Bickel					Miles City	MT	59301
Leland	Black		Bureau of Indian Affairs	PO Box 40		Lame Deer	MT	59043
Cedric	Black Eagle					Crow Agency	MT	59022
Larry	Blacksmith					Crow Agency	MT	59022
Hubert	Blackwolf					Lame Deer	MT	59043
Clark	Blake					Belle Fourche	SD	57717
Kathy	Bockness		Bureau of Land Management	111 Garryowen Rd		Miles City	MT	59301
Jay	Bodner	Director of Natural Resources	Montana Stockgrowers Assoc	420 N California		Helena	MT	59601
Gregg	Bourland		Bureau of Indian Affairs	Box 325		Eagle Butte	SD	57625
James	Bragg					Bowman	ND	58623
Steve	Brandt		Sarpy Ranch			Hysham	MT	59038
	Brence Family					Ekalaka	MT	59324
Eugene	Brooks					Bowman	ND	58623-

First Name	Last Name	Title	Organization Name	Address Line 1	Address Line 2	City	State	Postal Code
								4045
Paul	Brooks		Slope County Comm	14504 74th St SW		Bowman	ND	58623
Daniel	Brothers		North Dakota Atmospheric Research Board	900 E Boulevard Ave		Bismarck	ND	58505
Lee	Brown		Mitre	7515 Colshire Dr	MSN 560	McLean	VA	22102
Rory	Brown Wolf		CRST Cultural Preservation	PO Box 590		Eagle Butte	SD	57625
Ralph	Brownfield					Hammond	MT	59332
David	Brumsvold		Wind Capital Group	108 5th St N		Northwood	IA	50459
Kevin	Bucholz		North Winds Lodge	Box 500		Bowman	MT	58623
Bill	Bullard	CEO	R-CALF United Stockgrowers of America	PO Box 30715		Billings	MT	59107
Mark	Burke		Basin Electric	925 Crescent Ln		Bismarck	ND	58501
Kathleen	Burrage					Crow Agency	MT	59022
E. Lindsey	Butler	Acting Manager, Planning/Programming Branch	FAA-Great Lakes Region	Airports Division - AGL-610	2300 E Devon	Des Plaines	IL	60018
Christine	Carter					Sheridan	WY	82801
Lorne	Cass		RTCA/NWA	7200 34th Ave S	Dept F7001	Minneapolis	MN	55450
Fulton & Betty	Castleberry	Manager	Castleberry Airport	Box 25		Ekalaka	MT	59324
Ron	Clapsaddle					Elgin	ND	58533
Ernest	Clark					Spearfish	SD	57783
Nici Meyer	Clarkson					Bowman	ND	58623
Perry	Clausen		Southwest Airlines	PO Box 36611	HDQ 8FO	Dallas	TX	75235
Thomas "T.C."	Coble		St. Vincent Help Flight	1233 N 30th St		Billings	MT	59101
Ardys	Cook		CRST Council	PO Box 590		Eagle Butte	SD	57625
Andrew	Cook		Rapid City Journal	507 Main St		Rapid City	SD	57701
Barry	Cooper	Great Lakes Regional Administrator	AGL-1 FAA Great Lakes Region Headquarters	O'Hare Lake Office Center	2300 E Devon Ave	Des Plaines	IL	60018
Greg	Cornett					Hulett	WY	82720
Rachel	Court		Senator Jon Tester	222 N 32nd St		Billings	MT	59101
Steve	Craddock					Miles City	MT	59301
Sonja	Crocker					Rosebud	MT	59347
Bonnie	Crow		Bison School	PO Box 9		Bison	SD	57620
Russ	Dahl	President	Montana Pilots' Association	498 BIA RT 1		Nashua	MT	59248
Milo	Dailey		Belle Fourche Post/Bee	614 State St		Belle Fourche	SD	57717
Luann	Dart	Director	Grant County Job Development Authority	PO Box 309		Elgin	ND	58533

First Name	Last Name	Title	Organization Name	Address Line 1	Address Line 2	City	State	Postal Code
Tom	Davis					Belle Fourche	SD	57717
Tommy	Dawes					Crow Agency	MT	59022
Pat	Dennis	Manager	St. Labre Airport	PO Box 77		Ashland	MT	59003
Al	Dial	Mayor	Box Elder City Hall	520 N Ellsworth Road, #9C		Box Elder	SD	57719
Rod	Diede		Bowman County	107 9th Ave NW		Bowman	ND	58623
Ted	Dilse	Manager/Owner	Dilse Pvt Airstrip Airport	7603 135th Ave SW		Scranton	ND	58653
Delbert	Dinstel		MT Pilots Assoc	PO Box 2484		Colstrip	MT	59323
Patricia L.	Dressler	Environmental Protection Specialist	Bismarck Airports District Office	2301 University Drive Building 23B		Bismarck	ND	58504
Fred	Drga					Ismay	MT	59336
Greg	Dyer		FAA, Denver ARTCC	2211 17th Ave		Longmont	CO	80501
Russell	Eagle Bear	Tribal Historic Preservation Officer	Rosebud Sioux Tribe	PO Box 809		Rosebud	SD	57570
Chuck	Eagleman					Lame Deer	MT	59043
Marge	Eagleman		Bureau of Indian Affairs-NCA	PO Box 40		Lame Deer	MT	59043
Monte	Eayrs					Fallon	MT	59326
Norm	Edwards					Spearfish	SD	57783
Bailey	Egan		MT Pilots Assoc	7 Egan Ln		Forsyth	MT	59327
Gerald	Ellis		Ellis Ranch			Miles City	MT	59301
Jim	Englehart					Bison	SD	57620
Karen	Englehart					Bison	SD	57620
Rich	Erickson	Fire Chief	Rhame Volunteer Fire Department	PO Box 95		Rhame	ND	58651
John & Corinne	Erickson					Bison	SD	57620
Nancy	Espy	Chairman	Powder River County Commissioners	PO Box 200		Broadus	MT	59317-0200
Jeff	Faught		North Dakota Game and Fish Department	100 N Bismarck Expressway		Bismarck	ND	58504
Mike	Ferguson		AOPA	4 Airport Dr		Townsend	MT	59644
Dorothy	Fire Cloud		Devil's Tower National Park	Hwy 110 Bldg 170		Devils Tower	WY	82714
Conrad	Fisher					Lame Deer	MT	59043
Tracy	Fruit					Broadus	MT	59317
Dean	Fulmer		FAA Minneapolis	512 Division St.		Farmington	MN	55024
D. Keith	Gaaskjolen					Meadow	SD	57644
Zachary	Gaaskjolen					Black Hawk	SD	57718
Kevin	Gappert		MT Bureau of Land Management	PO Box 1765		Miles City	MT	59301

First Name	Last Name	Title	Organization Name	Address Line 1	Address Line 2	City	State	Postal Code
Kevin	Gappert		Bureau of Land Management	111 Garryowen Rd		Miles City	MT	59301
Glenn	Gay		Gay Ranch, Inc.			Broadus	MT	59317
Ray & Linda	Gilbert		South Dakota Stockgrowers	PO Box 166		Buffalo	SD	57720
Kathy	Glines		Harding County	PO Box 26		Buffalo	SD	57720
Pete	Gober	Field Supervisor	U.S. Fish and Wildlife Service	South Dakota Ecological Services Field Office	420 S. Garfield Avenue, Suite 400	Pierre	SD	57501-5408
Marvin	Gookin					Baker	MT	59313
Paul	Gremse		Butte County Veterans Service Office	830 6th Ave		Belle Fourche	SD	57717
Richard	Grosskopf		Landmark of Billings, Inc.	1925 Grand Ave, Ste 144		Billings	MT	59102
Jim	Hamilton					Decker	MT	59025
Michael	Hamilton					Sheridan	WY	82801
Greg	Hampshire		Wyoming Dept of Transportation, Aeronautics Division	5300 Bishop Blvd		Cheyenne	WY	82009-3340
Michael	Hannigan		FAA AJR HAAM	2300 E Devon		Des Plaines	IL	60018
Bernard & Catherine	Hansen					Forsyth	MT	59327
Terry & Deborah	Hanson					Miles City	MT	59801
Deborah	Hanson					Miles City	MT	59301
Marian	Hanson					Ashland	MT	59003
Rick	Hanson		Congresswoman Herseth Sandlin	1823 W Main St		Rapid City	SD	57702
Denise	Hartse		Miles City Star	PO Box 743		Miles City	MT	59301
Misty	Hays		U.S. Forest Service	2250 E Richards St		Douglas	WY	82633
Raymond	Hech					Lame Deer	MT	59043
George & Sydney	Hegge				4309 West River Rd	Medora	ND	58645
Robert	Helmer					Rapid City	SD	57702
John	Helms					Buffalo	SD	57720
Scott	Hemmer					Broadus	MT	59317
Makenzi	Henderson		KOTA-TV	518 St Joseph St		Rapid City	SD	57701-2717
Lynetta	Henderson					Buffalo	SD	57720
Ralph	Hennig		MDU Resources Group Inc	PO Box 5650		Bismarck	ND	58506
Brooke	Hershey					Bison	SD	57620
Stephanie	Hester		National Parks Conservation Association	Northern Rockies Regional Office	PO Box 824	Helena	MT	59624
Kenny	Hill		Big Horn, Inc.	4831 US Hwy 82 West		Ty Ty	GA	31795

First Name	Last Name	Title	Organization Name	Address Line 1	Address Line 2	City	State	Postal Code
Jill	Hill					Tifton	GA	31793
Milas & E.A.	Hills					Colstrip	MT	59323
Virginia	Hoenke					Ismay	MT	59336
Alice	Holcomb					Buffalo	SD	57720
Bob	Hollister		MT Pilots Assoc	Box 1211		Forsyth	MT	59327
Clayton	Hornung	Mayor	City of Baker	PO Box 1512		Baker	MT	59313
Paige	Hoskinson Olson	Review and Compliance Coordinator	Department of Tourism and State Development	711 E Wells Avenue		Pierre	SD	57501-3369
Marc	Hotchkiss					Reva	SD	57651
Gary	Huckins					Miles City	MT	59301
Ron	Jablonski		U.S. Forest Service	99 23rd Ave W, Ste B		Dickinson	ND	58601
Jim	Jandreau		Bear Butte State Park	PO Box 688		Sturgis	SD	57785
Jerry	Janurin		Aerial Hunting	HC 67 Box 23		Buffalo	SD	57720
Jerry	Jeffers		Bowman-Slope Soil Conservation District	PO Box 920		Bowman	ND	58623
Ray	Jilek	Manager	Black Hills-Clyde Ice Field Airport	300 Aviation Pl.		Spearfish	SD	57783
Gary	Johnson		Buffalo Town Board	Box 66		Buffalo	SD	57720
Sheldon	Johnson					Sheridan	WY	82801
Phil & Peggy	Johnson					Fort Shaw	MT	59443
Russell & Cara	Jorgensen					Forsyth	MT	59327
Marvin	Kammeren					Rapid City	SD	57701
Marvin	Kammerer					Rapid City	SD	57701
Charles	Kane		SR Cattle Co.			Sheridan	WY	82801
David	Kane	President	Sheridan County Stockgrowers			Decker	MT	59025
Rod	Kelly		Kelly Ranch			Ismay	MT	59336
Rex	Kelsch		Mott Airport Authority	PO Box 236		Mott	ND	58646
Jackie	King		U.S. Rep. Barbara Cubin	Box 44003		Casper	WY	82620
William	Koepplin					Elgin	ND	58553
Shane & Kathy	Kolb					Meadow	SD	57644
Steve	Kozel		U.S. Forest Service	Box 680		Sundance	WY	82729
L.A. & Norma	Kraemer					Deadwood	SD	57732
Anna	LaBree					Ekalaka	MT	59324
Bruce	Lambert		Ekalaka Eagle Newspaper	PO Box 66		Ekalaka	MT	59324
Sylvia	Lamberth					Interior	SD	57750-0078

First Name	Last Name	Title	Organization Name	Address Line 1	Address Line 2	City	State	Postal Code
Bob	Lamond		NBAA	5300 Lindsay St		Fairfax	VA	22032
Bill & Katie	Lane		Crescent Cross Ranch			Ismay	MT	59336
Thomas	Lane		Rancher's for the Environment	Box 1238		Livingston	MT	59047
Darin	Langerud	Director	North Dakota Atmospheric Resource Board	900 E Boulevard Ave, Dept 410		Bismarck	ND	58505-0850
Danny	Lanning	Owner	Lanning Ranch Airport	200 Lanning Trail		Alzada	MT	59311
Gene	Larson					Miles City	MT	59301
Robin	LeBeau					Eagle Butte	SD	57625
Kenneth	Lee					Sturgis	SD	57785
Pete	Lehmann	Government Analyst Air Traffic Services	Aircraft Owners and Pilots Association	421 Aviation Way		Frederick	MD	21701-4798
Fred	LeLacheur	Senior Airport Engineer	Morrison-Maierle Inc.	1 Engineering Place		Helena	MT	59602
Marcia	Leslie					Sheridan	WY	82801
Aaron	Levorsen					Elgin	ND	58533
Carlton	Levorsen					Elgin	ND	58533
Kelly	Lorge					Bowman	ND	58623
Thomas	Lubnau II	Representative	State Representative	4 Cherokee Circle		Gillette	WY	82718
Tom	Luoma					Baker	MT	59313
Tom	Lutey		Billings Gazette	PO Box 36300		Billings	MT	59107-6300
Joe & Kandi	Luther					Big Horn	MT	59010
Dave	Madel					Biddle	MT	59314
Jim	Magagna	Executive Vice President	Wyoming Stock Growers Assoc	PO Box 206		Cheyenne	WY	82003
Mel & Eleanor	Marousek					Belle Fourche	SD	57717
Gary J.	Martin					Glasgow	MT	59230
Phillip	Mason					Sundance	WY	82729
Mark	Masters		Bureau of Indian Affairs-Fire	PO Box 40		Lame Deer	MT	59043
Tim	Matuszewski		United Airlines	1200 E Algonquin Rd.		Elk Grove Village	IL	60007
William	Mayo		Mayo Aviation	Box 544		Colstrip	MT	59323
John	McAulay		McAulay Ranch			Terry	MT	59349
Jimmy & Erna	McClure					Sheridan	WY	82801-0744
Pat	McElgunn		Rapid City Chamber of Commerce	PO Box 747		Rapid City	SD	57709
Elizabeth	McFarland		U.S. Forest Service	PO Box 168		Ashland	MT	59003
Lloyd	McKeown					Rhame	ND	58651
Roger	Meggers	Manager	Baker Municipal Airport	315 4th St SW		Baker	MT	59313

First Name	Last Name	Title	Organization Name	Address Line 1	Address Line 2	City	State	Postal Code
Darin	Meggers		Baker Air Service	PO Box 979		Baker	MT	59313
Frank & Charlene	Mehling		Medicine Rocks Ranch			Baker	MT	59313
Stan	Michals		GFP	3305 W South		Rapid City	SD	57702
Kyle	Michels					Elgin	ND	58533
Robert	Miller		North Dakota Aeronautics Commission	Box 64		Casselton	ND	58012
John	Miller	Surface Water Quality Program	SD DENR PMB 2020	Joe Foss Building	523 E Capitol	Pierre	SD	57501
Sheri	Miner		Tribal Land Office	PO Box 590		Eagle Butte	SD	57625
Bob	Morland		Bowman County Airport	15 S Main		Bowman	ND	58603
Charles	Murphy	Chairman	Standing Rock Sioux Tribal Council	PO Box D		Fort Yates	ND	58538
Dan	Nelson					Meadows	SD	57644
Jack	Nesbit		Custer County	1010 Main St		Miles City	MT	59301
Gary	Ness		ND Aero Commission	Box 5020		Bismarck	ND	58502
Myra	Niederman		Grant County News	PO Box 100		Elgin	ND	58533
David	Niemi					Buffalo	SD	57720
Kevin	Nolan		FAA, WSA OPS Support (ATA3)	1601 Lind Ave SW		Renton	WA	98057
Steven J.	Obenauer	Manager	Bismarck Airports District Office	Federal Aviation Administration	2301 University Drive, Building 23B	Bismarck	ND	58504
Mary	Ogdahl					Miles City	MT	59301
Lee	Old Bear		Bureau of Indian Affairs - Fire	PO Box 40		Lame Deer	MT	59043
Darrin	Old Coyote					Crow Agency	MT	59022
Allen	Old Horn					Crow Agency	MT	59022
Allen	Olson					Box Elder	SD	57719
Frank & Dianne	O'Neill					Miles City	MT	59301
Tom & Lillian	Ostendorf					Powderville	MT	59345
Merlan	Paaverud, Jr.	State Historic Preservation Officer	State Historical Society of North Dakota	612 East Boulevard Avenue		Bismarck	ND	58505-0830
Dean & Gloria	Parks					Ekalaka	MT	59324
Dean	Pearson		Bowman County	104 1st St NW		Bowman	ND	58623
Kent	Pennington					Big Horn	MT	59010
Donna Rae	Petersen		CRST Cultural Preservation	PO Box 590		Eagle Butte	SD	57625
Ole	Peterson					Colstrip	MT	59323
Ellen	Pfister					Shepherd	MT	59079
Dwight	Pladsen					Rapid City	SD	57702

First Name	Last Name	Title	Organization Name	Address Line 1	Address Line 2	City	State	Postal Code
Stan	Pope					Bowman	ND	58623
Stephen	Potts		U.S. Environmental Protection Agency, Region 8 - Montana Office	10 W 15th St, Ste. 3200		Helena	MT	59626
Ted & Bonnie	Quade					Broadus	MT	59317
Jeff	Rader					Bozeman	MT	59771
Cindy	Radue					Miles City	MT	59301-9603
Chris	Rankin		U.S. Forest Service	2250 E Richards St		Douglas	WY	82633
Deb	Ranum		Fallon County Commissioners	10 W Fallon		Baker	MT	59313
Michael	Rath					Spearfish	SD	57783
Grove	Rathbun	President	South Dakota Pilots Association	1265 Duffer Drive		Rapid City	SD	57702
Grace	Rea					Bowman	ND	58623
Monte	Reder					Miles City	MT	59301
Steve	Reid		U.S. Forest Service	5765 W Broadway		Missoula	MT	59808
Fred	Reinhardt					Billings	MT	59102
James	Renner					Ismay	MT	59336
Donald	Rieger		Fallon County Commissioners	10 West Fallon	PO Box 846	Baker	MT	59313-0846
Paul	Ringling		Ringling Ranch Ltd Part	PO Box 1029		Miles City	MT	59301
Greg & Mary Jo	Roberts	Manager	Diamond Ring Ranch			Terry	MT	59349
Jerome	Roehrich					New Leipzig	ND	58562
Joell	Romick		Meade County Admin.	1425 Sherman St		Sturgis	SD	57785
Steve	Rosencranz		Carter County Commissioner	470 Larson Loop Rd		Hammond	MT	59332
Dennis	Roth					Elgin	ND	58533
Michael	Ruff					Broadus	MT	59317
Robert & Wilma	Rusley		S-X Ranch			Baker	MT	59313
Dona	Rutherford		Devils Tower National Monument	Box 10		Devils Tower	WY	82714
J.D. & Christi	Ryen					Prairie City	SD	57649
Donald	Sales					Decker	MT	59025
Brad	Sauer					Miles City	MT	59301
Rod	Schaaf					Bowman	ND	58623
James	Schaeffer		Consolidated Power Producers, Inc	PO Box 256		Webster	SD	57274
Teresa	Schanzenbach		Chamber of Commerce	415 5th Ave		Belle Fourche	SD	57717
Duane & Gail	Schatz					Elgin	ND	58533
Evonna	Schelling		Sundance Times	PO Box 102		Moorcroft	WY	82721

First Name	Last Name	Title	Organization Name	Address Line 1	Address Line 2	City	State	Postal Code
Milo	Schindler					Rapid City	SD	57703
Norman	Schock	Mayor	City of Elgin	309 3rd Ave NW		Elgin	ND	58533
Gary	Schroeder		EAA/CAR	310 St. Francis		Rapid City	SD	57701
Kenny	Schultz					Ekalaka	MT	59324
Brian	Schwend	Manager	Schwend Flying Service	PO Box 45		Forsyth	MT	59327
Jack	Schwend					Rosebud	MT	59347
Sherri	Schwenke		U.S. Forest Service	240 W Century		Bismarck	ND	58501
Jon	Scraper					Fargo	ND	58103
Richard	Seidel					Bison	SD	57620
Craig	Shaver	Chair, Property Rights Committee	South Dakota Stockgrowers Assoc	426 St Joseph St		Rapid City	SD	57701
Rico	Short		FAA, Air Traffic Control Command Center	13600 Eds Dr, #100		Herndon	VA	20175
Wade	Sikorski					Baker	MT	59313
Geri	Small	President	Northern Cheyenne Tribal Council	PO Box 128		Lame Deer	MT	59043
Richard	Smith					Redig	SD	57776
Val	Snyder					Sheridan	WY	82801
Raydelle	Sperle					Reva	SD	57651
Roger	Sprague					Forsyth	MT	59327
Virginia	Sprague					Colstrip	MT	59327
Ashley	Stanhope		Farmers Union Oil Co	Box 1199		Baker	MT	59313
Mark	Stelter		NLEDC	PO Box 52		New Leipzig	ND	58562
Wally	Stephens		Nation's Center News	Box 107		Buffalo	SD	57720
Daryl & Geraldine	Storm					Meadow	SD	57644
Eric	Strohacker		Weather Modification, Inc.	3802 20th St N		Fargo	ND	58102
Ryan	Sundberg		Bureau of Land Management	Box 37 BLM Fire		Camp Crook	SD	57724
Larry	Svoboda	NEPA Program Chief	US Environmental Protection Agency, Region 8	1595 Wynkoop Street		Denver	CO	80202-1129
Adrienne	Swallow	Environmental Protection Specialist	Standing Rock Sioux Tribe	PO Box D		Ft Yates	ND	58538
Larry	Taborsky		North Dakota Aeronautics Commission (NDAC)	2301 University Dr., Building 1652-22	PO Box 5020	Bismarck	ND	58502
Jacob	Tall Bull					Lame Deer	MT	59043
Gary & Jean	Tennant	Owner	Tennant Ranch Airport	HC 59, Box 15		Camp Crook	SD	57724
Dustin	Tenold					Reva	SD	57651
David	Thiele		North Dakota National Guard	Fraine Barracks		Bismarck	ND	58504

First Name	Last Name	Title	Organization Name	Address Line 1	Address Line 2	City	State	Postal Code
Jeff	Tichenor		FAA Denver TRACON	26705 E. 68th Ave		Denver	CO	80249
Greg	Tober		Help Flight	12736 Canyon Creek Rd		Molt	MT	59057
Clarence	Ulmer					Belle Fourche	SD	57717
William & Juanita	Unhoch					Sheridan	WY	82801
Wayne	VanDeGraaff		FAA, SLC ARTCC	700 N 2150 W		Salt Lake City	UT	84116
Trent	VanderBoom		Clear Wind	510 Jackson St		Belle Fourche	MT	57717
J. Liessman	Vantine		Crownbutte Wind Power, Inc	111 5th Ave NE		Mandan	ND	58554
Carl	Venne	Chairman	Crow Tribal Council	PO Box 159		Crow Agency	MT	59022
Charles	Verhulst					Reva	SD	57651
Ben	VerWolf					Broadus	MT	59317
Chuck & Colleen	Vetter					Elgin	ND	58533
Bill	Vroman					Buffalo	SD	57720
Larry	Vroman					Buffalo	SD	57720
Ken	Wabaunsee		U.S. Forest Service	5765 W Broadway St.		Missoula	MT	59808
Dean	Wagner					Ralph	SD	57650
Bob	Walters		CRST Council	PO Box 590		Eagle Butte	SD	57625
Dean	Wang		Bank of Baker	PO Box 739		Baker	MT	59313
Warren	Wash	Manager	Broadus Airport	Box 394		Broadus	MT	59317
Pauline	Webb		West River Eagle	Box 210		Eagle Butte	SD	57625
Jeanne	Whalen		Crook Co. WY Land Use Planning	3961 Hwy 24		Aladdin	WY	82710
Glen	White		Hysham Airport	521 Summit		Hysham	MT	59038
Dennis	White					Forsyth	MT	59327
Marcus	White Bull		U.S. Forest Service	PO Box 37		Camp Crook	SD	57724
Virginia	Whitefeather					Dupree	SD	57623
Dean	Wink		Meade County Commissioner Dist 1	PO Box 137		Howes	SD	57748
Mike	Wobbema		North Dakota National Guard	Fraine Barracks		Bismarck	ND	58504
David	Wolfskill		Eagle Aviation	300 Aviation Pl		Spearfish	SD	57783
Bert & Helen	Woods					Ashland	MT	59003
Jason	Woolston					Baker	MT	59313
Noel	Young					Sheridan	WY	82801
Phyllis	Young					Ft Yates	ND	58538
Clayton	Zacher					Elgin	ND	58533
Penny	Zimmerman		Senator Jon Tester	122 W Towne St		Glendive	MT	59330

Sample IICEP Letters and Distribution Lists

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SAMPLE IICEP LETTER 1

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

MEMORANDUM FOR U.S. Fish and Wildlife Service
134 Union Blvd
Lakewood, CO 80228

FROM: HQ ACC/A7P
129 Andrews Street, Suite 122
Langley AFB VA 23665-2769

SUBJECT: Powder River Training Complex, Environmental Impact Statement (EIS)

1. The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

2. The proposed action would restructure and reconfigure the existing Powder River Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspaces (ATCAAs). The PRTC proposal would establish two air refueling routes, create additional low altitude MOA (500 feet Above Ground Level [AGL] up to but not including 18,000 feet above Mean Sea Level [MSL]) and high-altitude ATCAA (18,000-60,000 MSL) combinations in portions of South Dakota, North Dakota, Wyoming and Montana. The proposal would support additional ground-based assets to simulate threats and an increase in aircraft training flights, permit the use of training chaff and flares, and authorize supersonic flight above 10,000 AGL. Three action alternatives and a no-action alternative have currently been identified for analyses and are discussed in the attached meeting brochure (Atch 1).

3. The purpose of this correspondence is to initiate informal Section 7 consultation in compliance with the Endangered Species Act (ESA) and to request information regarding federally listed threatened, endangered, candidate, and species proposed for listing under the ESA that occur or may occur in the proposed airspace. All or portions of the following locations have the potential of being affected by the proposal's overhead training airspace due to one or more of the alternatives: ***Montana***—Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***—Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***—Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

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4. The Air Force is committed to community outreach and recognizing that open communication of issues is a critical element of the EIS process, the Air Force will host public meetings in communities underlying and/or adjacent to the proposed airspace as identified in the meeting flyer at attachment 2. Community meetings are also being coordinated on each Native American Reservation. Meetings with public, agency, and Native American stakeholders during this scoping process will help identify the full range of reasonable alternatives, potential impacts, and key issues to be considered in the environmental impact analysis process.

5. To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EIS, please provide information and/or comments to Ms. Linda DeVine, HQ ACC/A7PP at the above address with a copy to SAIC, Dr. Thomas W. Mulroy, 5464 Carpintoria Avenue, Carpinteria CA 93013, not later than August 4, 2008. If you any specific questions about this proposal, please feel free to contact Ms. Linda DeVine at (757) 764-9434, by electronic-mail at acc.prtc@langley.af.mil. You may also obtain information including the two attachments to this letter, from our website at www.accplanning.org. Thank you in advance for your assistance in this matter.

Sincerely,

BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

Attachment:
1. Scoping Meeting Brochure
2. Flyer

Global Power For America

Powder River

Powder River Training Complex • Environmental Impact Statement

Scoping Meetings for the Powder River Training Complex (PRTC) Environmental Impact Statement (EIS)

Welcome!

The United States Air Force is conducting scoping meetings for the PRTC EIS. The Air Force is preparing an EIS to determine the potential environmental consequences of a proposal to expand the Powder River Complex to create the PRTC. The PRTC would allow for more effective use of limited resources and finite flying hours by providing, locally, the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth and Minot AFBs. The options being analyzed could:

1. Restructure and reconfigure the existing PRC Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspace (ATCAA) and add new MOA/ATCAA airspace with a floor of 500 feet above ground level (AGL).
2. Increase sortie-operations (aircraft training) in the new and modified training airspace.
3. Support additional ground-based simulated threat emitters under the MOAs.
4. Authorize use of training chaff and flares throughout the new and modified airspace.
5. Permit supersonic flight above 10,000 feet AGL.

Meeting Agenda

Open House.....4:00 p.m. - 7:00 p.m.

- View video presentation
- Visit information booths
- Discuss proposal with Air Force personnel
- Submit written comments

The Air Force is committed to community outreach and will consider your input to determine the scope of the issues to be addressed and to help identify the significant environmental issues to be analyzed in depth. Your involvement and input are vital to help us focus the environmental analysis.

Why is the PRTC Needed?

- Aircrews need adequately sized, configured, and available airspace to train as they fight during worldwide deployment.
- Increasing training in local airspace optimizes the limited amount of training hours allocated.
- Reducing commute time to remote training ranges like Nevada Test and Training Range (NTTR) reduces fuel consumption.
- Use of chaff and flares allows aircrews to deploy defensive countermeasures as they would in combat.
- Supersonic training assists aircrews to train for show of force and for quick reaction to enemy threats in combat.
- More effectively use limited resources and finite flying hours.

Scoping meetings provide the public an opportunity to learn about the proposed PRTC and provide input into this environmental impact analysis process.

The scoping process helps us identify and address community-specific issues and concerns regarding the proposed airspace use.

The National Environmental Policy Act guides the PRTC EIS.

NEPA requires federal decision makers to consider potential environmental consequences of proposed actions and reasonable alternatives, including a No-Action Alternative in an EIS. The EIS complies with environmental regulations and documents potential impacts to the natural and human environment.

Resources initially identified for analysis in the EIS include (but are not limited to) the following:

- **Airspace Operations** Airspace, Noise, Air Quality, and Safety (ground and air)
- **Natural Resources** Physical and Biological Resources
- **Cultural Resources** Cultural, Native American, Traditional, and Historic Resources
- **Human Resources** Land Use, Quality of Life, Socioeconomics, and Environmental Justice

The EIS Process Timeline

Opportunities for Public Involvement

- Notice of Intent (NOI) Published in Federal Register
- **Scoping**
- Preparation of Draft EIS
- Notice of Availability of Draft EIS
- **60-Day Public Comment Period**
- Preparation of Final EIS
- Notice of Availability of Final EIS
- 30-Day Waiting Period
- Record of Decision

Your input is essential to the environmental analysis process!

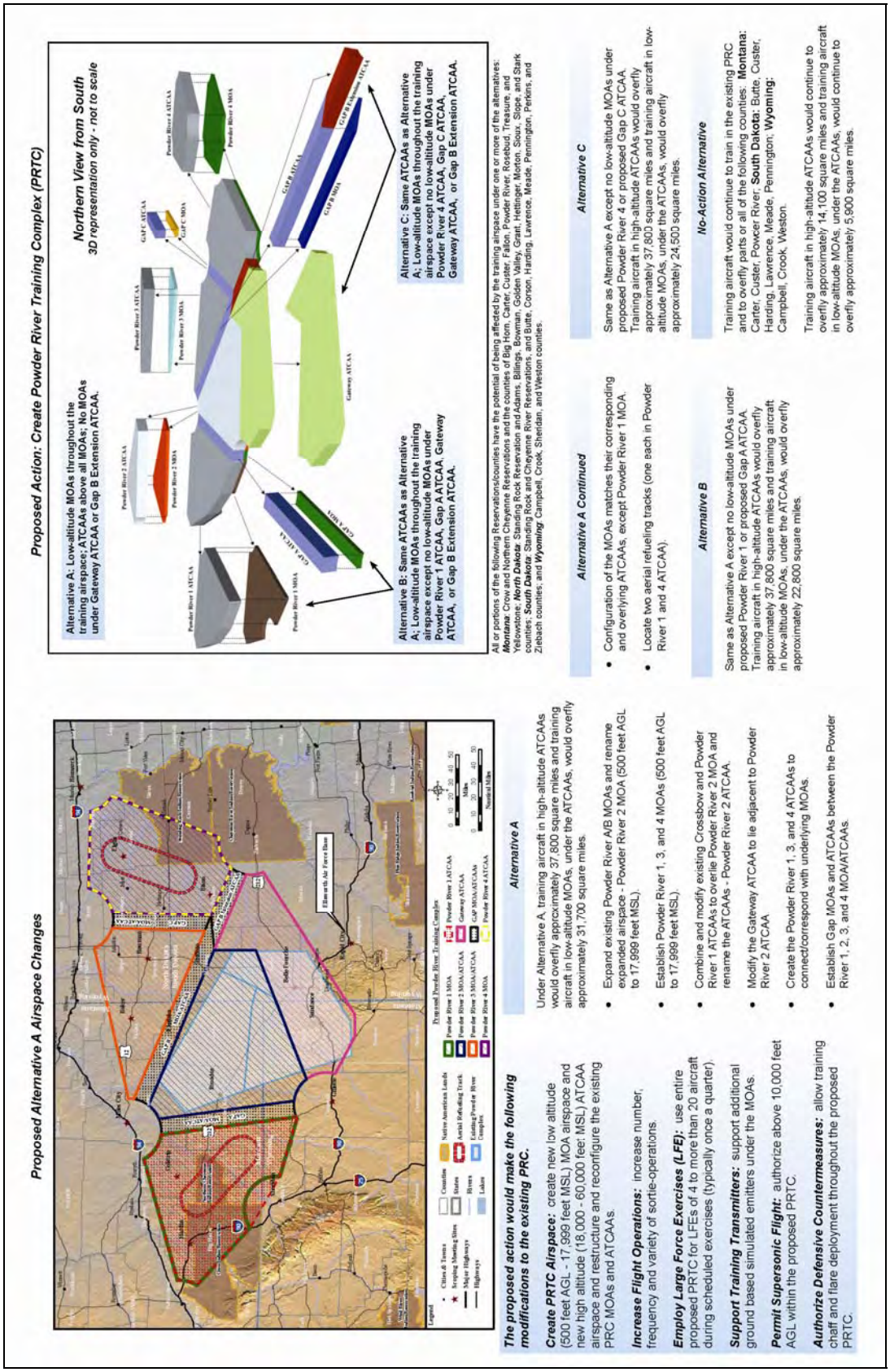
Providing Comments

To provide comments, please fill out a comment sheet. Please give your comments to an Air Force representative or place it in the comment box. Comment forms, or your own letter, may also be mailed to:

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

To ensure your comments are considered in the Draft EIS, please submit your comments before ***August 4, 2008.***

Public comments on this Draft EIS are requested pursuant to the NEPA, 42 USC 4321, et seq. All written comments received during the comment period will be made available to the public and considered during EIS preparation. Your provision of private address information with your comment is voluntary. Your private address information will not be released in the EIS or for any other purpose, unless required by law. However, your private address information will be used to compile the mailing list for EIS distribution. Failure to provide such information will result in your name not being included on the distribution list.


Proposed Action: Create Powder River Training Complex (PRTC)
Northern View from South
3D representation only - not to scale
Alternative A: Low-altitude MOAs throughout the training airspace; ATCAAs above all MOAs; No MOAs under Gateway ATCA or Gap B Extension ATCAA.
Alternative B: Same ATCAAs as Alternative A; Low-altitude MOAs throughout the training airspace except no low-altitude MOAs under Powder River 1 ATCAA, Gap A ATCAA, Gateway ATCAA, or Gap B Extension ATCAA.
Alternative C: Same ATCAAs as Alternative A; Low-altitude MOAs throughout the training airspace except no low-altitude MOAs under Powder River 4 ATCAA, Gap C ATCAA, Gateway ATCAA, or Gap B Extension ATCAA.
All or portions of the following Reservations/counties have the potential of being affected by the training airspace under one or more of the alternatives: **Montana**: Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; **North Dakota**: Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; **South Dakota**: Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, and Ziebach counties; and **Wyoming**: Campbell, Crook, Sheridan, and Weston counties.
Alternative A Continued
Configuration of the MOAs matches their corresponding and overlying ATCAAs, except Powder River 1 MOA.
Locate two aerial refueling tracks (one each in Powder River 1 and 4 ATCAA).
Alternative B
Same as Alternative A except no low-altitude MOAs under proposed Powder River 1 or proposed Gap A ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 22,800 square miles.
Alternative C
Same as Alternative A except no low-altitude MOAs under proposed Powder River 4 or proposed Gap C ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 24,500 square miles.
No-Action Alternative
Training aircraft would continue to train in the existing PRC and to overfly parts or all of the following counties: **Montana**: Carter, Custer, Powder River; **South Dakota**: Butte, Custer, Harding, Lawrence, Meade, Pennington; **Wyoming**: Campbell, Crook, Weston.
Training aircraft in high-altitude ATCAAs would continue to overfly approximately 14,100 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would continue to overfly approximately 5,900 square miles.
Proposed Alternative A Airspace Changes
Alternative A
Under Alternative A, training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 31,700 square miles.
The proposed action would make the following modifications to the existing PRC.
Create PRTC Airspace: create new low altitude (500 feet AGL - 17,999 feet MSL) MOA airspace and new high altitude (18,000 - 60,000 feet MSL) ATCAA airspace and restructure and reconfigure the existing PRC MOAs and ATCAAs.
Increase Flight Operations: increase number, frequency and variety of sortie-operations.
Employ Large Force Exercises (LFE): use entire proposed PRTC for LFEs of 4 to more than 20 aircraft during scheduled exercises (typically once a quarter).
Support Training Transmitters: support additional ground based simulated emitters under the MOAs.
Permit Supersonic Flight: authorize above 10,000 feet AGL within the proposed PRTC.
Authorize Defensive Countermeasures: allow training chaff and flare deployment throughout the proposed PRTC.
Expand existing Powder River A/B MOAs and rename expanded airspace - Powder River 2 MOA (500 feet AGL to 17,999 feet MSL).
Establish Powder River 1, 3, and 4 MOAs (500 feet AGL to 17,999 feet MSL).
Combine and modify existing Crossbow and Powder River 1 ATCAAs to overlie Powder River 2 MOA and rename the ATCAAs - Powder River 2 ATCAA.
Modify the Gateway ATCAA to lie adjacent to Powder River 2 ATCAA.
Create the Powder River 1, 3, and 4 ATCAAs to connect/correspond with underlying MOAs.
Establish Gap MOAs and ATCAAs between the Powder River 1, 2, 3, and 4 MOA/ATCAAs.

Please Attend!

Scoping Meetings for the Powder River Training Complex (PRTC) Environmental Impact Statement (EIS)

Ellsworth Air Force Base (AFB), South Dakota proposes to modify their training airspace.

Please attend a public scoping meeting to:

- ☑ Learn more about the proposal
- ☑ Provide community-specific input
- ☑ Be included on our mailing list

Public Scoping Meetings

Open House 4:00 p.m. to 7:00 p.m.
Public invited to attend at any time. Information will be available throughout.

South Dakota

Rapid City
Monday, June 16, 2008
Rapid City Public Library
610 Quincy Street

Belle Fourche
Tuesday, June 17, 2008
Community Center
(Dakota Room)
1111 National Street

Buffalo
Monday, July 14, 2008
Harding County Memorial
Recreation Center
West Allison Street

Bison
Tuesday, July 15, 2008
Bison School Cafeteria
200 East Carr Street

Wyoming

Sundance
Wednesday, June 18, 2008
Crook County Public Library
414 East Main Street

Gillette
Thursday, June 19, 2008
Campbell County
Fire Department
106 Rohan Avenue

Sheridan
Friday, June 20, 2008
Sheridan Senior Center
North Entrance
211 Smith Street

Montana

Hardin
Monday, June 23
Hardin Chamber of Commerce
10 E. Railroad Street

Colstrip
Tuesday, June 24, 2008
Isabel Bills Community
Learning Center,
520 Poplar Drive

Miles City
Wednesday, June 25, 2008
Miles Community College
2715 Dickinson

Ekalaka
Thursday, June 26, 2008
St. Joan of Arc Parish Hall
Church Street

Broadus
Friday, June 27, 2008
Powder River County District
High School
500 North Trautman

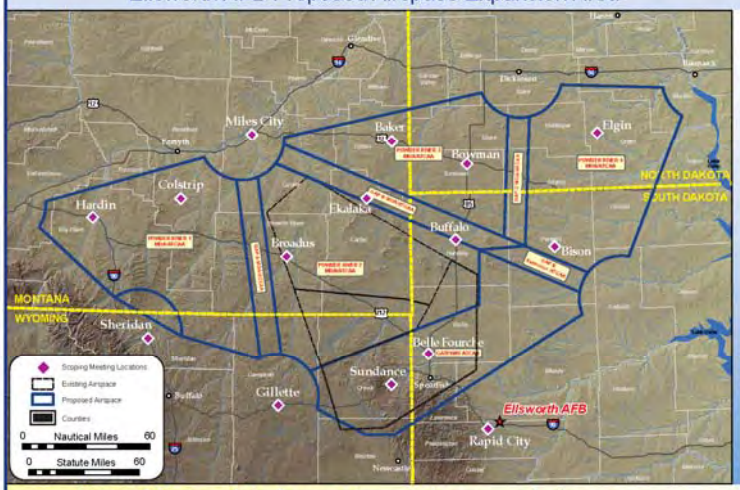
Baker
Tuesday, July 8, 2008
Baker High School
1015 South Third Street West

North Dakota

Bowman
Wednesday, July 9, 2008
City Hall Meeting Room
101 1st Street Southwest

Elgin
Thursday, July 10, 2008
Elgin Community Center
305 North Main Street

Ellsworth AFB Proposed Airspace Expansion Area



For more information about the meeting contact:

28th Bomb Wing
Ellsworth AFB, Public Affairs
(605) 385-5056

Send comments to:

Ms. Linda DeVine
EIS Project Manager
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

For additional information visit our website at www.accplanning.org

DISTRIBUTION LIST

U.S. Fish and Wildlife Service
South Dakota Ecological Services Field Office
420 S. Garfield Avenue, Suite 400
Pierre, SD 57501-5408

U.S. Fish and Wildlife Service
Wyoming Ecological Services Field Office
5353 Yellowstone Road, Ste. 308A
Cheyenne, WY 82009-4178

U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926

U.S. Fish and Wildlife Service
Montana Field Office
585 Shepard Way
Helena, MT 59601

U.S. Fish and Wildlife Service
134 Union Blvd
Lakewood, CO 80228

SAMPLE IICEP LETTER 2

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

MEMORANDUM FOR State Historical Society of North Dakota
612 East Boulevard Avenue
Bismarck, ND 58505-0830

FROM: HQ ACC/A7P
129 Andrews Street
Langley AFB VA 23665-2769

SUBJECT: Powder River Training Complex, Environmental Impact Statement (EIS)

1. The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

2. The proposed action would restructure and reconfigure the existing Powder River Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspaces (ATCAAs). The PRTC proposal would establish two air refueling routes, create additional low altitude MOA (500 feet Above Ground Level [AGL] up to, but not including, 18,000 feet above Mean Sea Level [MSL]) and high-altitude ATCAA (18,000-60,000 MSL) combinations in portions of South Dakota, North Dakota, Wyoming and Montana. The proposal would support additional ground-based assets to simulate threats and an increase in aircraft training flights, permit the use of training chaff and flares, and authorize supersonic flight above 10,000 AGL. Three action alternatives and a no-action alternative have currently been identified for analyses and are discussed in the attached meeting brochure (Atch 1).

3. The purpose of this correspondence is to initiate the Section 106 process of the National Historic Preservation Act (NHPA) of 1966 (as amended) in the potentially affected areas. We are in the early stages of gathering information concerning previous archaeological and historic studies for the areas under the affected region. We would appreciate any assistance you could provide in identifying and retrieving this important information, as well as concerns you may have about the potential effects of the proposal on significant cultural resources. All or portions of the following locations have the potential of being affected by the proposal's overhead training airspace due to one or more of the alternatives: ***Montana***—Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***—Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***—Standing Rock and Cheyenne River Reservations, and Butte, Corson,

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Harding, Lawrence, Meade, Pennington, Perkins, Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

4. The Air Force is committed to community outreach. Recognizing that open communication of issues is a critical element of the EIS process, the Air Force will host public meetings in communities underlying and/or adjacent to the proposed airspace as identified in the meeting flyer at attachment 2. The Air Force intends to coordinate public involvement for the purpose of Section 106 review under the NHPA with public involvement in the EIS prepared under the Environmental Impact Analysis Process. The 28 Bomb Wing Commander at Ellsworth AFB has initiated consultation with the tribal leaders of the Crow, Northern Cheyenne, Standing Rock and Cheyenne River Nations and community meetings are being coordinated on each Native American Reservation. Meetings with public, agency, and Native American stakeholders during this scoping process will help identify the full range of reasonable alternatives, potential impacts, and key issues to be considered in the environmental impact analysis process.

5. To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EIS, please provide information and/or comments to Ms. Linda DeVine, HQ ACC/A7PP at the above address not later than August 4, 2008. If you have any specific questions about this proposal, please feel free to contact Ms. Linda DeVine at (757) 764-9434, or by electronic-mail at acc.prtc@langley.af.mil. You may also obtain information including the two attachments to this letter, from our website at www.accplanning.org. Thank you in advance for your assistance in this matter.

BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

Attachment:
1. Scoping Meeting Brochure
2. Flyer

Global Power For America

Powder River
Powder River Training Complex • Environmental Impact Statement

Scoping Meetings
for the Powder River Training Complex (PRTC)
Environmental Impact Statement (EIS)

Welcome!

The United States Air Force is conducting scoping meetings for the PRTC EIS. The Air Force is preparing an EIS to determine the potential environmental consequences of a proposal to expand the Powder River Complex to create the PRTC. The PRTC would allow for more effective use of limited resources and finite flying hours by providing, locally, the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth and Minot AFBs. The options being analyzed could:

1. Restructure and reconfigure the existing PRC Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspace (ATCAA) and add new MOA/ATCAA airspace with a floor of 500 feet above ground level (AGL).
2. Increase sortie-operations (aircraft training) in the new and modified training airspace.
3. Support additional ground-based simulated threat emitters under the MOAs.
4. Authorize use of training chaff and flares throughout the new and modified airspace.
5. Permit supersonic flight above 10,000 feet AGL.

Meeting Agenda

Open House.....4:00 p.m. - 7:00 p.m.

- View video presentation
- Visit information booths
- Discuss proposal with Air Force personnel
- Submit written comments

The Air Force is committed to community outreach and will consider your input to determine the scope of the issues to be addressed and to help identify the significant environmental issues to be analyzed in depth. Your involvement and input are vital to help us focus the environmental analysis.

Why is the PRTC Needed?

- Aircrews need adequately sized, configured, and available airspace to train as they fight during worldwide deployment.
- Increasing training in local airspace optimizes the limited amount of training hours allocated.
- Reducing commute time to remote training ranges like Nevada Test and Training Range (NTTR) reduces fuel consumption.
- Use of chaff and flares allows aircrews to deploy defensive countermeasures as they would in combat.
- Supersonic training assists aircrews to train for show of force and for quick reaction to enemy threats in combat.
- More effectively use limited resources and finite flying hours.

Scoping meetings provide the public an opportunity to learn about the proposed PRTC and provide input into this environmental impact analysis process.

The scoping process helps us identify and address community-specific issues and concerns regarding the proposed airspace use.

The National Environmental Policy Act guides the PRTC EIS.

NEPA requires federal decision makers to consider potential environmental consequences of proposed actions and reasonable alternatives, including a No-Action Alternative in an EIS. The EIS complies with environmental regulations and documents potential impacts to the natural and human environment.

Resources initially identified for analysis in the EIS include (but are not limited to) the following:

- **Airspace Operations** Airspace, Noise, Air Quality, and Safety (ground and air)
- **Natural Resources** Physical and Biological Resources
- **Cultural Resources** Cultural, Native American, Traditional, and Historic Resources
- **Human Resources** Land Use, Quality of Life, Socioeconomics, and Environmental Justice

The EIS Process Timeline

Opportunities for Public Involvement

Notice of Intent (NOI) Published in Federal Register → **Scoping** → Preparation of Draft EIS → Notice of Availability of Draft EIS → **60-Day Public Comment Period** → Preparation of Final EIS → Notice of Availability of Final EIS → 30-Day Waiting Period → Record of Decision

Your input is essential to the environmental analysis process!

Providing Comments

To provide comments, please fill out a comment sheet. Please give your comments to an Air Force representative or place it in the comment box. Comment forms, or your own letter, may also be mailed to:

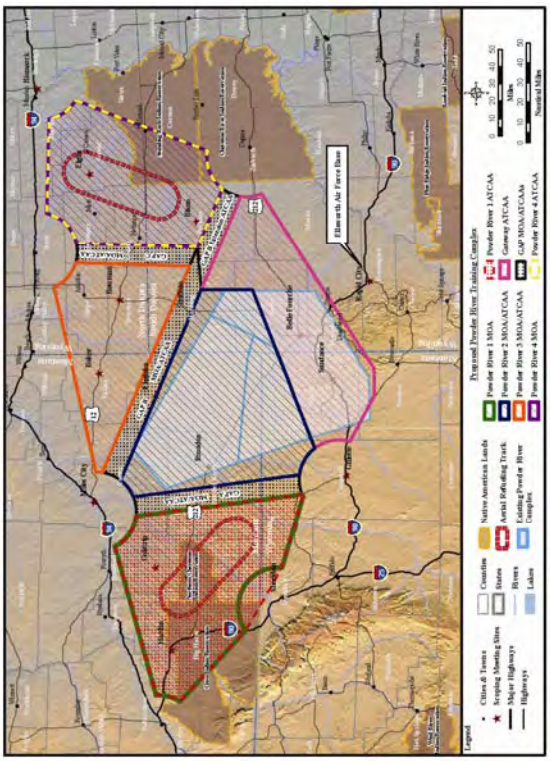
Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

To ensure your comments are considered in the Draft EIS, please submit your comments before ***August 4, 2008.***

Public comments on this Draft EIS are requested pursuant to the NEPA, 42 USC 4321, et seq. All written comments received during the comment period will be made available to the public and considered during EIS preparation. Your provision of private address information with your comment is voluntary. Your private address information will not be released in the EIS or for any other purpose, unless required by law. However, your private address information will be used to compile the mailing list for EIS distribution. Failure to provide such information will result in your name not being included on the distribution list.

Proposed Action: Create Powder River Training Complex (PRTC)

Proposed Alternative A Airspace Changes



The proposed action would make the following modifications to the existing PRC.

Create PRTC Airspace: create new low altitude (500 feet AGL - 17,999 feet MSL) MOA airspace and new high altitude (18,000 - 60,000 feet MSL) ATCAA airspace and restructure and reconfigure the existing PRC MOAs and ATCAAs.

Increase Flight Operations: increase number, frequency and variety of sortie-operations.

Employ Large Force Exercises (LFE): use entire proposed PRTC for LFEs of 4 to more than 20 aircraft during scheduled exercises (typically once a quarter).

Support Training Transmitters: support additional ground based simulated emitters under the MOAs.

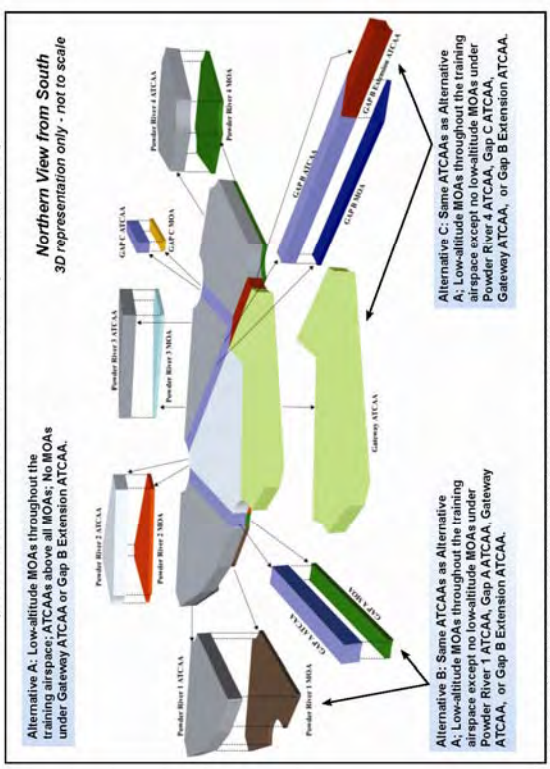
Permit Supersonic Flight: authorize above 10,000 feet AGL within the proposed PRTC.

Authorize Defensive Countermeasures: allow training chaff and flare deployment throughout the proposed PRTC.

Alternative A

Under Alternative A, training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 31,700 square miles.

- Expand existing Powder River A/B MOAs and rename expanded airspace - Powder River 2 MOA (500 feet AGL to 17,999 feet MSL).
- Establish Powder River 1, 3, and 4 MOAs (500 feet AGL to 17,999 feet MSL).
- Combine and modify existing Crossbow and Powder River 1 ATCAAs to overlie Powder River 2 MOA and rename the ATCAAs - Powder River 2 ATCAA.
- Modify the Gateway ATCAA to lie adjacent to Powder River 2 ATCAA.
- Create the Powder River 1, 3, and 4 ATCAAs to connect/correspond with underlying MOAs.
- Establish Gap MOAs and ATCAAs between the Powder River 1, 2, 3, and 4 MOA/ATCAAs.



All or portions of the following Reservations/counties have the potential of being affected by the training airspace under one or more of the alternatives: ***Montana***: Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***: Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***: Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, and Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

Alternative A Continued

- Configuration of the MOAs matches their corresponding and overlying ATCAAs, except Powder River 1 MOA.
- Locate two aerial refueling tracks (one each in Powder River 1 and 4 ATCAA).

Alternative B

Same as Alternative A except no low-altitude MOAs under proposed Powder River 1 or proposed Gap A ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 22,800 square miles.

Alternative C

Same as Alternative A except no low-altitude MOAs under proposed Powder River 4 or proposed Gap C ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 24,500 square miles.

No-Action Alternative

Training aircraft would continue to train in the existing PRC and to overfly parts or all of the following counties: **Montana:** Carter, Custer, Powder River; **South Dakota:** Butte, Custer, Harding, Lawrence, Meade, Pennington; **Wyoming:** Campbell, Crook, Weston.

Training aircraft in high-altitude ATCAAs would continue to overfly approximately 14,100 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would continue to overfly approximately 5,900 square miles.

Powder River

Powder River Training Complex • Environmental Impact Statement

Please Attend!

Scoping Meetings for the Powder River Training Complex (PRTC) Environmental Impact Statement (EIS)

Ellsworth Air Force Base (AFB), South Dakota proposes to modify their training airspace.

Please attend a public scoping meeting to:

- ☑ Learn more about the proposal
- ☑ Provide community-specific input
- ☑ Be included on our mailing list

Public Scoping Meetings

Open House 4:00 p.m. to 7:00 p.m.
Public invited to attend at any time. Information will be available throughout.

South Dakota

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Rapid City Public Library
610 Quincy Street

Belle Fourche
Tuesday, June 17, 2008
Community Center
(Dakota Room)
1111 National Street

Buffalo
Monday, July 14, 2008
Harding County Memorial
Recreation Center
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Fire Department
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Sheridan
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Sheridan Senior Center
North Entrance
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Montana

Hardin
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Hardin Chamber of Commerce
10 E. Railroad Street

Colstrip
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Church Street

Broadus
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Baker
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1015 South Third Street West

North Dakota

Bowman
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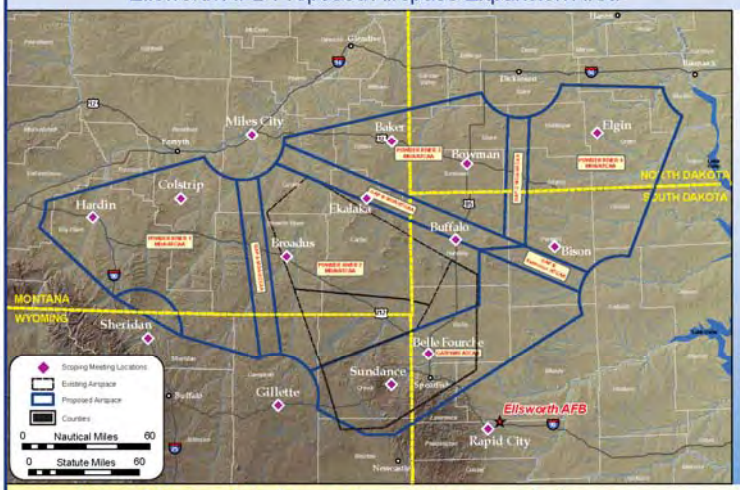
City Hall Meeting Room
101 1st Street Southwest

Elgin
Thursday, July 10, 2008
Elgin Community Center
305 North Main Street

Ellsworth AFB Proposed Airspace Expansion Area



For more information about the meeting contact:

28th Bomb Wing
Ellsworth AFB, Public Affairs
(605) 385-5056

Send comments to:

Ms. Linda DeVine
EIS Project Manager
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

For additional information visit our website at www.accplanning.org

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State Historical Society of North Dakota
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Bismarck, ND 58505-0830

State Parks & Cultural Resources Historic Preservation Office
2301 Central Avenue
Cheyenne, WY 82002

Montana Historical Society
225 N. Roberts
PO Box 20121
Helena, MT 59620

Wyoming State Parks/Historic Sites HQ
2301 Central Avenue
Cheyenne, WY 82002

SAMPLE IICEP LETTER 3

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

The Honorable Jerry Jimison
City of Glendive
300 S Merrill
Glendive, MT 59330

Dear Mayor Jimison:

The United States Air Force (Air Force) is in the process of preparing an Environmental Impact Statement (EIS) to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

The proposed action would restructure and reconfigure the existing Powder River Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspaces (ATCAAs). The PRTC proposal would establish two air refueling routes, create additional low altitude MOA (500 feet Above Ground Level [AGL] up to, but not including, 18,000 feet above Mean Sea Level [MSL]) and high-altitude ATCAA (18,000-60,000 MSL) combinations in portions of South Dakota, North Dakota, Wyoming and Montana. The proposal would support additional ground-based assets to simulate threats and an increase in aircraft training flights, permit the use of training chaff and flares, and authorize supersonic flight above 10,000 AGL. Three action alternatives and a no-action alternative have currently been identified for analyses and are discussed in the attached meeting brochure (Atch 1). All or portions of the following locations have the potential of being affected by the proposal's overhead training airspace due to one or more of the alternatives: ***Montana***—Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***—Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***—Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

Recognizing that open communication of issues is a critical element of the EIS process, the Air Force will host public meetings in communities underlying and/or adjacent to the proposed airspace as identified in the meeting flyer at attachment 2. Community meetings are also being coordinated on each Native American Reservation. The Air Force intends to coordinate public involvement for the purpose of Section 106 review under the National Historic Preservation Act with public involvement in the EIS prepared under the Environmental Impact Analysis Process. Meetings with public, agency, and Native American stakeholders during this

Global Power For America

scoping process will help identify the full range of reasonable alternatives, potential impacts, and key issues to be considered in the environmental impact analysis process.

The Air Force is committed to community outreach and as an additional effort to inform the public of these meetings, we request your assistance in posting the enclosed flyer in a conspicuous place within your community. The scoping meetings will be in an open-house format, where Air Force representatives will describe the proposed action and alternatives, explain the National Environmental Policy Act, outline opportunities for public involvement, and answer questions about the proposal. The public meetings will be held from 4:00 to 7:00 p.m., and interested parties or citizens are welcome to come at any time since information will be provided throughout the duration of the open house. The Air Force will publish notices of EIS preparation and upcoming public scoping meetings in local newspapers.

Public and agency comments received during the meetings, as well as written comments received by the Air Force during the scoping period and throughout the environmental process, will be considered in the preparation of the EIS. The Air Force will accept comments at any time during the environmental process; however, to ensure the Air Force has sufficient time to consider public input in the preparation of the Draft EIS, comments should be submitted to Ms. Linda DeVine, HQ ACC/A7PP, 129 Andrews Street, Rm 317, Langley AFB VA 23665-2769, by August 4, 2008.

If you any specific questions about this proposal or desire additional information, please contact the public affairs office at Ellsworth AFB SD, 605-385-5056. You may also obtain information including the two attachments to this letter, from our website at www.accplanning.org. Thank you in advance for your assistance in this matter.

Sincerely

BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

Attachments:
1. Scoping Meeting Brochure
2. Flyer

Global Power For America

Powder River
Powder River Training Complex • Environmental Impact Statement

Scoping Meetings
for the Powder River Training Complex (PRTC)
Environmental Impact Statement (EIS)

Welcome!

The United States Air Force is conducting scoping meetings for the PRTC EIS. The Air Force is preparing an EIS to determine the potential environmental consequences of a proposal to expand the Powder River Complex to create the PRTC. The PRTC would allow for more effective use of limited resources and finite flying hours by providing, locally, the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth and Minot AFBs. The options being analyzed could:

1. Restructure and reconfigure the existing PRC Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspace (ATCAA) and add new MOA/ATCAA airspace with a floor of 500 feet above ground level (AGL).
2. Increase sortie-operations (aircraft training) in the new and modified training airspace.
3. Support additional ground-based simulated threat emitters under the MOAs.
4. Authorize use of training chaff and flares throughout the new and modified airspace.
5. Permit supersonic flight above 10,000 feet AGL.

Meeting Agenda

Open House.....4:00 p.m. - 7:00 p.m.

- View video presentation
- Visit information booths
- Discuss proposal with Air Force personnel
- Submit written comments

The Air Force is committed to community outreach and will consider your input to determine the scope of the issues to be addressed and to help identify the significant environmental issues to be analyzed in depth. Your involvement and input are vital to help us focus the environmental analysis.

Why is the PRTC Needed?

- Aircrews need adequately sized, configured, and available airspace to train as they fight during worldwide deployment.
- Increasing training in local airspace optimizes the limited amount of training hours allocated.
- Reducing commute time to remote training ranges like Nevada Test and Training Range (NTTR) reduces fuel consumption.
- Use of chaff and flares allows aircrews to deploy defensive countermeasures as they would in combat.
- Supersonic training assists aircrews to train for show of force and for quick reaction to enemy threats in combat.
- More effectively use limited resources and finite flying hours.

Scoping meetings provide the public an opportunity to learn about the proposed PRTC and provide input into this environmental impact analysis process.

The scoping process helps us identify and address community-specific issues and concerns regarding the proposed airspace use.

The National Environmental Policy Act guides the PRTC EIS.

NEPA requires federal decision makers to consider potential environmental consequences of proposed actions and reasonable alternatives, including a No-Action Alternative in an EIS. The EIS complies with environmental regulations and documents potential impacts to the natural and human environment.

Resources initially identified for analysis in the EIS include (but are not limited to) the following:

- **Airspace Operations** Airspace, Noise, Air Quality, and Safety (ground and air)
- **Natural Resources** Physical and Biological Resources
- **Cultural Resources** Cultural, Native American, Traditional, and Historic Resources
- **Human Resources** Land Use, Quality of Life, Socioeconomics, and Environmental Justice

The EIS Process Timeline

Opportunities for Public Involvement

Notice of Intent (NOI) Published in Federal Register → **Scoping** → Preparation of Draft EIS → Notice of Availability of Draft EIS → **60-Day Public Comment Period** → Preparation of Final EIS → Notice of Availability of Final EIS → 30-Day Waiting Period → Record of Decision

Your input is essential to the environmental analysis process!

Providing Comments

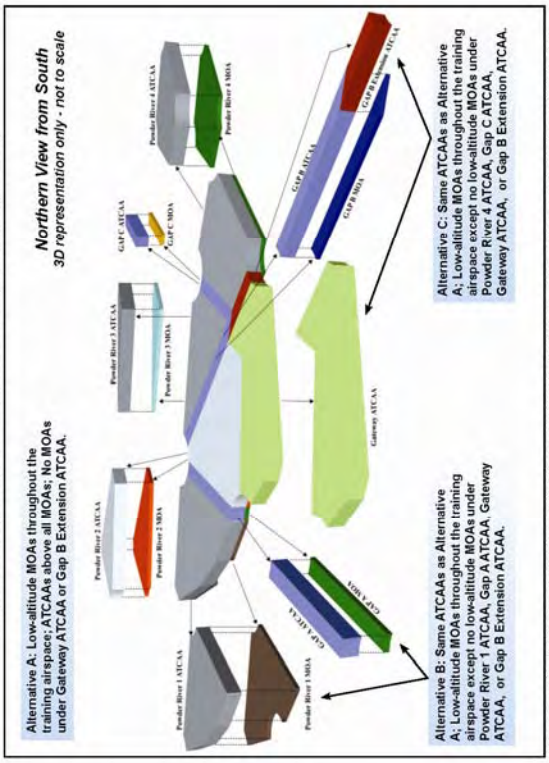
To provide comments, please fill out a comment sheet. Please give your comments to an Air Force representative or place it in the comment box. Comment forms, or your own letter, may also be mailed to:

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

To ensure your comments are considered in the Draft EIS, please submit your comments before ***August 4, 2008.***

Public comments on this Draft EIS are requested pursuant to the NEPA, 42 USC 4321, et seq. All written comments received during the comment period will be made available to the public and considered during EIS preparation. Your provision of private address information with your comment is voluntary. Your private address information will not be released in the EIS or for any other purpose, unless required by law. However, your private address information will be used to compile the mailing list for EIS distribution. Failure to provide such information will result in your name not being included on the distribution list.

Proposed Action: Create Powder River Training Complex (PRTC)



All or portions of the following Reservations/counties have the potential of being affected by the training airspace under one or more of the alternatives: ***Montana***: Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***: Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***: Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, and Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

Alternative A Continued

- Configuration of the MOAs matches their corresponding and overlying ATCAAs, except Powder River 1 MOA.
- Locate two aerial refueling tracks (one each in Powder River 1 and 4 ATCAA).

Alternative B

Same as Alternative A except no low-altitude MOAs under proposed Powder River 1 or proposed Gap A ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 22,800 square miles.

Alternative C

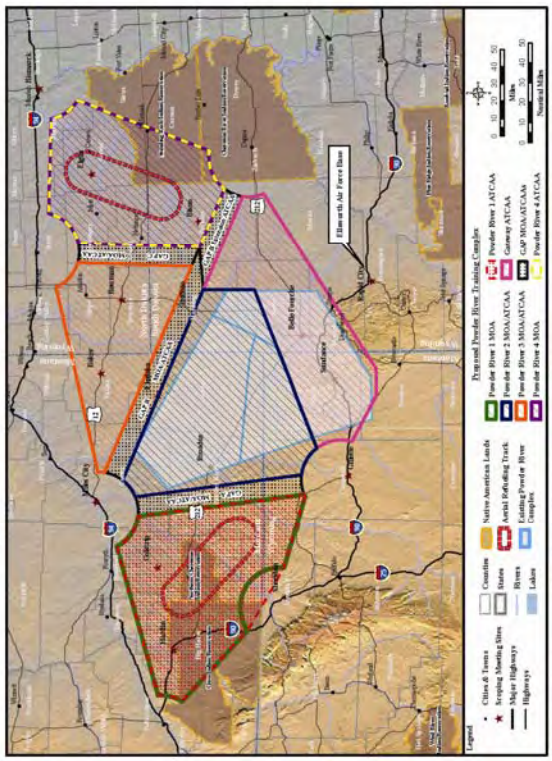
Same as Alternative A except no low-altitude MOAs under proposed Powder River 4 or proposed Gap C ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 24,500 square miles.

No-Action Alternative

Training aircraft would continue to train in the existing PRC and to overfly parts or all of the following counties: **Montana:** Carter, Custer, Powder River; **South Dakota:** Butte, Custer, Harding, Lawrence, Meade, Pennington; **Wyoming:** Campbell, Crook, Weston.

Training aircraft in high-altitude ATCAAs would continue to overfly approximately 14,100 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would continue to overfly approximately 5,900 square miles.

Proposed Alternative A Airspace Changes



The proposed action would make the following modifications to the existing PRC.

Create PRTC Airspace: create new low altitude (500 feet AGL - 17,999 feet MSL) MOA airspace and new high altitude (18,000 - 60,000 feet MSL) ATCAA airspace and restructure and reconfigure the existing PRC MOAs and ATCAAs.

Increase Flight Operations: increase number, frequency and variety of sortie-operations.

Employ Large Force Exercises (LFE): use entire proposed PRTC for LFEs of 4 to more than 20 aircraft during scheduled exercises (typically once a quarter).

Support Training Transmitters: support additional ground based simulated emitters under the MOAs.

Permit Supersonic Flight: authorize above 10,000 feet AGL within the proposed PRTC.

Authorize Defensive Countermeasures: allow training chaff and flare deployment throughout the proposed PRTC.

Alternative A

Under Alternative A, training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 31,700 square miles.

- Expand existing Powder River A/B MOAs and rename expanded airspace - Powder River 2 MOA (500 feet AGL to 17,999 feet MSL).
- Establish Powder River 1, 3, and 4 MOAs (500 feet AGL to 17,999 feet MSL).
- Combine and modify existing Crossbow and Powder River 1 ATCAAs to overlie Powder River 2 MOA and rename the ATCAAs - Powder River 2 ATCAA.
- Modify the Gateway ATCAA to lie adjacent to Powder River 2 ATCAA.
- Create the Powder River 1, 3, and 4 ATCAAs to connect/correspond with underlying MOAs.
- Establish Gap MOAs and ATCAAs between the Powder River 1, 2, 3, and 4 MOA/ATCAAs.

Please Attend!

Scoping Meetings for the Powder River Training Complex (PRTC) Environmental Impact Statement (EIS)

Ellsworth Air Force Base (AFB), South Dakota proposes to modify their training airspace.

Please attend a public scoping meeting to:

- ☑ Learn more about the proposal
- ☑ Provide community-specific input
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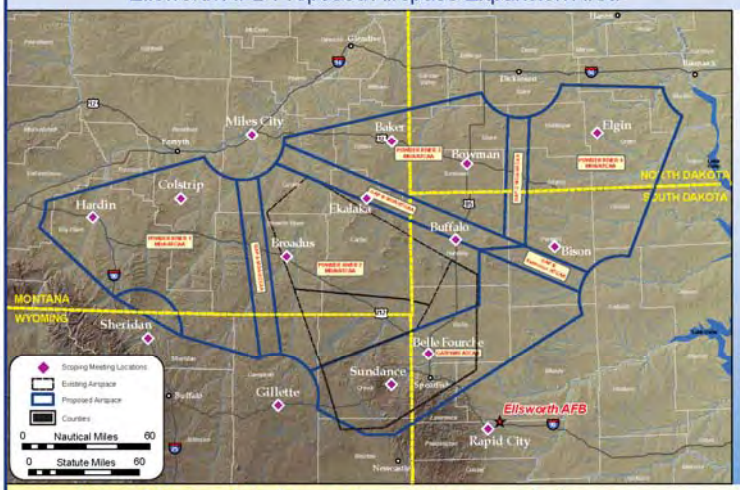

For more information about the meeting contact:

28th Bomb Wing
Ellsworth AFB, Public Affairs
(605) 385-5056

Send comments to:

Ms. Linda DeVine
EIS Project Manager
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

For additional information visit our website at www.accplanning.org

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Mike Weyrich
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Whitewood, SD 57793

Ann Culp
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Lead, SD 57754

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Hill City, SD 57745

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Melstone, MT 59054

Clyde Pfeifle
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Timber Lake, SD 57656

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Bob Wood
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Dayton, WY 82836

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Cowley, WY 82420

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Hardin, MT 59034

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Clayton Hornung
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Baker, MT 59313

Joe Whalen
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Miles City, MT 59301

Daniel Murion
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Forsyth, MT 59327

Rosalee Brimmer
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Duane Evenson
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Gillette, WY 82716

SAMPLE IICEP LETTER 4

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

MEMORANDUM FOR Bureau of Indian Affairs
Standing Rock Agency
PO Box E
Fort Yates, ND 58538

FROM: HQ ACC/A7P
129 Andrews Street
Langley AFB VA 23665-2769

SUBJECT: Powder River Training Complex, Environmental Impact Statement (EIS)

1. The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

2. The proposed action would restructure and reconfigure the existing Powder River Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspaces (ATCAAs). The PRTC proposal would establish two air refueling routes, create additional low altitude MOA (500 feet Above Ground Level [AGL] up to, but not including, 18,000 feet above Mean Sea Level [MSL]) and high-altitude ATCAA (18,000-60,000 MSL) combinations in portions of South Dakota, North Dakota, Wyoming and Montana. The proposal would support additional ground-based assets to simulate threats and an increase in aircraft training flights, permit the use of training chaff and flares, and authorize supersonic flight above 10,000 AGL. Three action alternatives and a no-action alternative have currently been identified for analyses and are discussed in the attached meeting brochure (Atch 1).

3. All or portions of the following locations have the potential of being affected by the proposal's overhead training airspace due to one or more of the alternatives: ***Montana***—Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***—Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***—Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

4. The Air Force is committed to community outreach. Recognizing that open communication of issues is a critical element of the EIS process, the Air Force will host public meetings in

Global Power For America

communities underlying and/or adjacent to the proposed airspace as identified in the meeting flyer at attachment 2. The Air Force intends to coordinate public involvement for the purpose of Section 106 review under the NHPA with public involvement in the EIS prepared under the Environmental Impact Analysis Process. The 28 Bomb Wing Commander at Ellsworth AFB has initiated consultation with the tribal leaders of the Crow, Northern Cheyenne, Standing Rock and Cheyenne River Nations and community meetings are being coordinated on each Native American Reservation. Meetings with public, agency, and Native American stakeholders during this scoping process will help identify the full range of reasonable alternatives, potential impacts, and key issues to be considered in the environmental impact analysis process.

5. To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EIS, please provide information and/or comments to Ms. Linda DeVine, HQ ACC/A7PP at the above address not later than August 4, 2008. If you have any specific questions about this proposal, please feel free to contact Ms. Linda DeVine at (757) 764-9434, or by electronic-mail at acc.prtc@langley.af.mil. You may also obtain information including the two attachments to this letter, from our website at www.accplanning.org. Thank you in advance for your assistance in this matter.

BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

Attachment:
1. Scoping Meeting Brochure
2. Flyer

Global Power For America

Powder River
Powder River Training Complex • Environmental Impact Statement

Scoping Meetings
for the Powder River Training Complex (PRTC)
Environmental Impact Statement (EIS)

Welcome!

The United States Air Force is conducting scoping meetings for the PRTC EIS. The Air Force is preparing an EIS to determine the potential environmental consequences of a proposal to expand the Powder River Complex to create the PRTC. The PRTC would allow for more effective use of limited resources and finite flying hours by providing, locally, the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth and Minot AFBs. The options being analyzed could:

1. Restructure and reconfigure the existing PRC Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspace (ATCAA) and add new MOA/ATCAA airspace with a floor of 500 feet above ground level (AGL).
2. Increase sortie-operations (aircraft training) in the new and modified training airspace.
3. Support additional ground-based simulated threat emitters under the MOAs.
4. Authorize use of training chaff and flares throughout the new and modified airspace.
5. Permit supersonic flight above 10,000 feet AGL.

Meeting Agenda

Open House.....4:00 p.m. - 7:00 p.m.

- View video presentation
- Visit information booths
- Discuss proposal with Air Force personnel
- Submit written comments

The Air Force is committed to community outreach and will consider your input to determine the scope of the issues to be addressed and to help identify the significant environmental issues to be analyzed in depth. Your involvement and input are vital to help us focus the environmental analysis.

Why is the PRTC Needed?

- Aircrews need adequately sized, configured, and available airspace to train as they fight during worldwide deployment.
- Increasing training in local airspace optimizes the limited amount of training hours allocated.
- Reducing commute time to remote training ranges like Nevada Test and Training Range (NTTR) reduces fuel consumption.
- Use of chaff and flares allows aircrews to deploy defensive countermeasures as they would in combat.
- Supersonic training assists aircrews to train for show of force and for quick reaction to enemy threats in combat.
- More effectively use limited resources and finite flying hours.

Scoping meetings provide the public an opportunity to learn about the proposed PRTC and provide input into this environmental impact analysis process. The scoping process helps us identify and address community-specific issues and concerns regarding the proposed airspace use.

The National Environmental Policy Act guides the PRTC EIS.

NEPA requires federal decision makers to consider potential environmental consequences of proposed actions and reasonable alternatives, including a No-Action Alternative in an EIS. The EIS complies with environmental regulations and documents potential impacts to the natural and human environment.

Resources initially identified for analysis in the EIS include (but are not limited to) the following:

- **Airspace Operations** Airspace, Noise, Air Quality, and Safety (ground and air)
- **Natural Resources** Physical and Biological Resources
- **Cultural Resources** Cultural, Native American, Traditional, and Historic Resources
- **Human Resources** Land Use, Quality of Life, Socioeconomics, and Environmental Justice

The EIS Process Timeline

Opportunities for Public Involvement

Notice of Intent (NOI) Published in Federal Register → **Scoping** → Preparation of Draft EIS → Notice of Availability of Draft EIS → **60-Day Public Comment Period** → Preparation of Final EIS → Notice of Availability of Final EIS → 30-Day Waiting Period → Record of Decision

Your input is essential to the environmental analysis process!

Providing Comments

To provide comments, please fill out a comment sheet. Please give your comments to an Air Force representative or place it in the comment box. Comment forms, or your own letter, may also be mailed to:

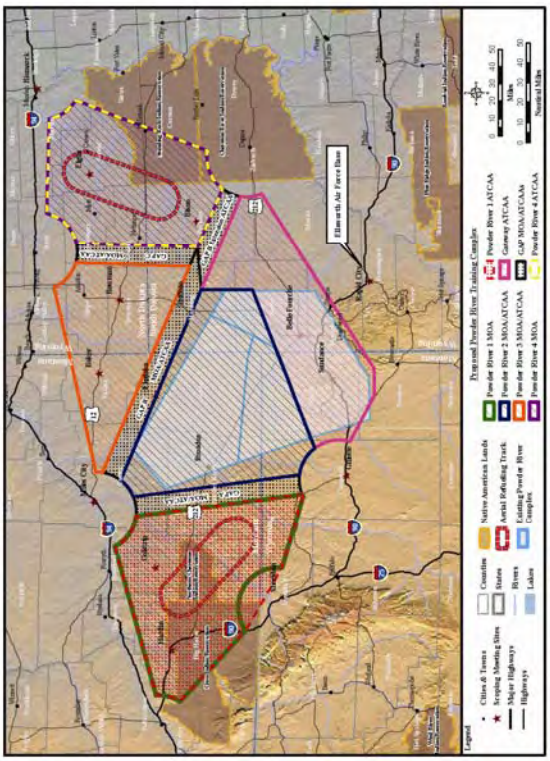
Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

To ensure your comments are considered in the Draft EIS, please submit your comments before ***August 4, 2008.***

Public comments on this Draft EIS are requested pursuant to the NEPA, 42 USC 4321, et seq. All written comments received during the comment period will be made available to the public and considered during EIS preparation. Your provision of private address information with your comment is voluntary. Your private address information will not be released in the EIS or for any other purpose, unless required by law. However, your private address information will be used to compile the mailing list for EIS distribution. Failure to provide such information will result in your name not being included on the distribution list.

Proposed Action: Create Powder River Training Complex (PRTC)

Proposed Alternative A Airspace Changes



The proposed action would make the following modifications to the existing PRC.

Create PRTC Airspace: create new low altitude (500 feet AGL - 17,999 feet MSL) MOA airspace and new high altitude (18,000 - 60,000 feet MSL) ATCAA airspace and restructure and reconfigure the existing PRC MOAs and ATCAAs.

Increase Flight Operations: increase number, frequency and variety of sortie-operations.

Employ Large Force Exercises (LFE): use entire proposed PRTC for LFEs of 4 to more than 20 aircraft during scheduled exercises (typically once a quarter).

Support Training Transmitters: support additional ground based simulated emitters under the MOAs.

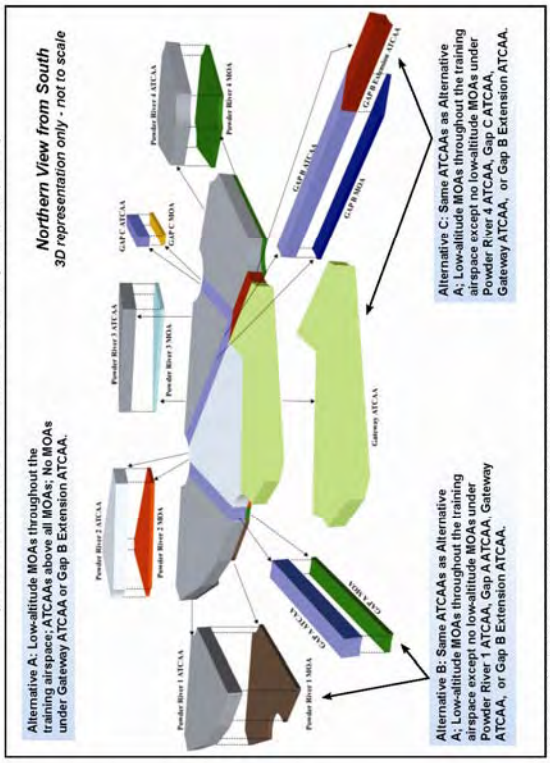
Permit Supersonic Flight: authorize above 10,000 feet AGL within the proposed PRTC.

Authorize Defensive Countermeasures: allow training chaff and flare deployment throughout the proposed PRTC.

Alternative A

Under Alternative A, training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 31,700 square miles.

- Expand existing Powder River A/B MOAs and rename expanded airspace - Powder River 2 MOA (500 feet AGL to 17,999 feet MSL).
- Establish Powder River 1, 3, and 4 MOAs (500 feet AGL to 17,999 feet MSL).
- Combine and modify existing Crossbow and Powder River 1 ATCAAs to overlie Powder River 2 MOA and rename the ATCAAs - Powder River 2 ATCAA.
- Modify the Gateway ATCAA to lie adjacent to Powder River 2 ATCAA.
- Create the Powder River 1, 3, and 4 ATCAAs to connect/correspond with underlying MOAs.
- Establish Gap MOAs and ATCAAs between the Powder River 1, 2, 3, and 4 MOA/ATCAAs.



All or portions of the following Reservations/counties have the potential of being affected by the training airspace under one or more of the alternatives: ***Montana***: Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***: Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***: Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, and Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

Alternative A Continued

- Configuration of the MOAs matches their corresponding and overlying ATCAAs, except Powder River 1 MOA.
- Locate two aerial refueling tracks (one each in Powder River 1 and 4 ATCAA).

Alternative B

Same as Alternative A except no low-altitude MOAs under proposed Powder River 1 or proposed Gap A ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 22,800 square miles.

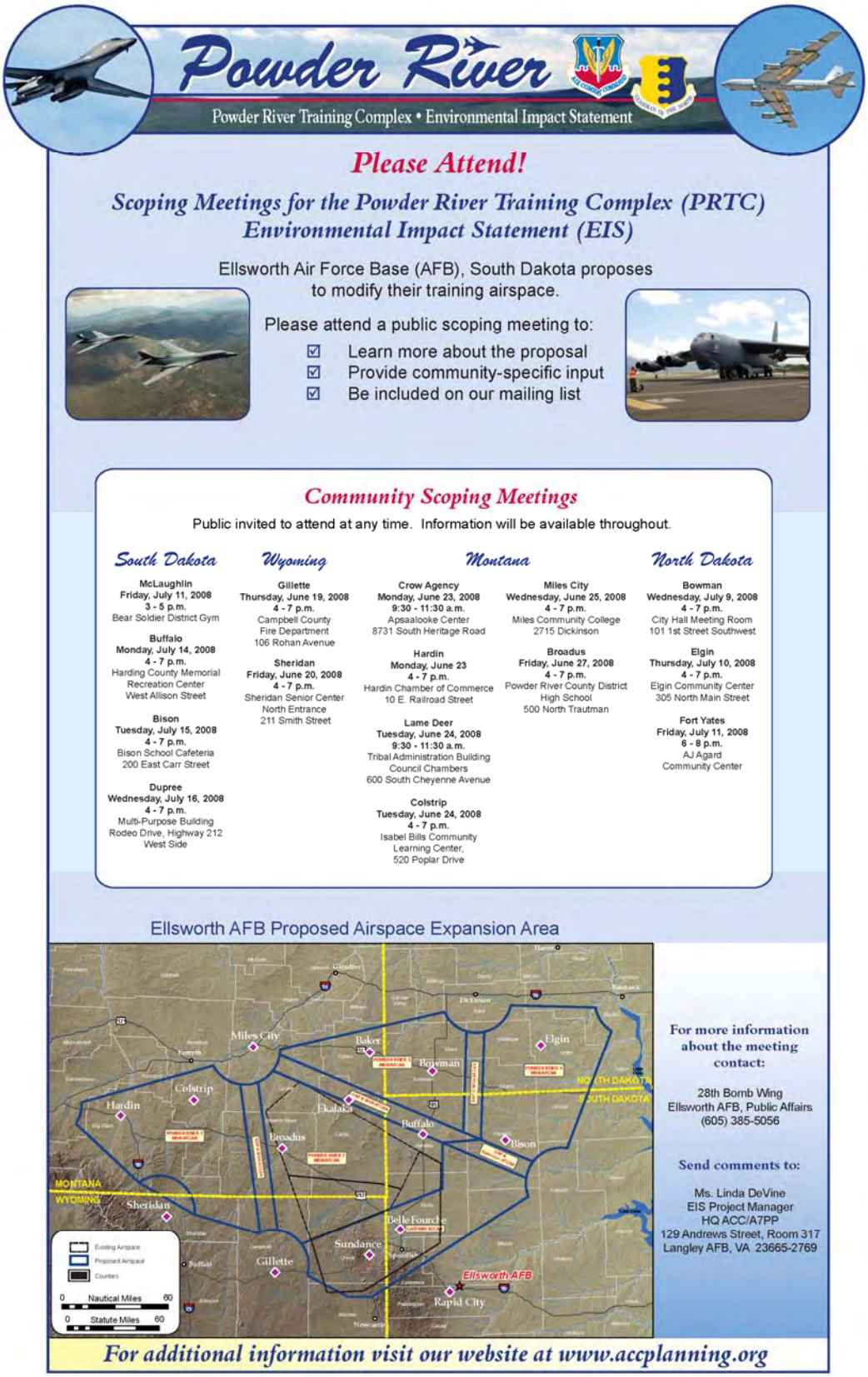
Alternative C

Same as Alternative A except no low-altitude MOAs under proposed Powder River 4 or proposed Gap C ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 24,500 square miles.

No-Action Alternative

Training aircraft would continue to train in the existing PRC and to overfly parts or all of the following counties: **Montana:** Carter, Custer, Powder River; **South Dakota:** Butte, Custer, Harding, Lawrence, Meade, Pennington; **Wyoming:** Campbell, Crook, Weston.

Training aircraft in high-altitude ATCAAs would continue to overfly approximately 14,100 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would continue to overfly approximately 5,900 square miles.


Powder River
Powder River Training Complex • Environmental Impact Statement
Please Attend!
Scoping Meetings for the Powder River Training Complex (PRTC)
Environmental Impact Statement (EIS)
Ellsworth Air Force Base (AFB), South Dakota proposes
to modify their training airspace.
Please attend a public scoping meeting to:
☑ Learn more about the proposal
☑ Provide community-specific input
☑ Be included on our mailing list
Community Scoping Meetings
Public invited to attend at any time. Information will be available throughout.
South Dakota
McLaughlin
Friday, July 11, 2008
3 - 5 p.m.
Bear Soldier District Gym
Buffalo
Monday, July 14, 2008
4 - 7 p.m.
Harding County Memorial
Recreation Center
West Allison Street
Bison
Tuesday, July 15, 2008
4 - 7 p.m.
Bison School Cafeteria
200 East Carr Street
Dupree
Wednesday, July 16, 2008
4 - 7 p.m.
Multi-Purpose Building
Rodeo Drive, Highway 212
West Side
Wyoming
Gillette
Thursday, June 19, 2008
4 - 7 p.m.
Campbell County
Fire Department
106 Rohan Avenue
Sheridan
Friday, June 20, 2008
4 - 7 p.m.
Sheridan Senior Center
North Entrance
211 Smith Street
Montana
Crow Agency
Monday, June 23, 2008
9:30 - 11:30 a.m.
Apsaalooke Center
8731 South Heritage Road
Hardin
Monday, June 23
4 - 7 p.m.
Hardin Chamber of Commerce
10 E. Railroad Street
Lame Deer
Tuesday, June 24, 2008
9:30 - 11:30 a.m.
Tribal Administration Building
Council Chambers
600 South Cheyenne Avenue
Colstrip
Tuesday, June 24, 2008
4 - 7 p.m.
Isabel Bills Community
Learning Center,
520 Poplar Drive
Miles City
Wednesday, June 25, 2008
4 - 7 p.m.
Miles Community College
2715 Dickinson
Broadus
Friday, June 27, 2008
4 - 7 p.m.
Powder River County District
High School
500 North Trautman
North Dakota
Bowman
Wednesday, July 9, 2008
4 - 7 p.m.
City Hall Meeting Room
101 1st Street Southwest
Elgin
Thursday, July 10, 2008
4 - 7 p.m.
Elgin Community Center
305 North Main Street
Fort Yates
Friday, July 11, 2008
6 - 8 p.m.
AJ Agard
Community Center
Ellsworth AFB Proposed Airspace Expansion Area
Miles City
Baker
Bowman
Elgin
Colstrip
Hardin
Ekalaka
Buffalo
Bison
Broadus
MONTANA
WYOMING
NORTH DAKOTA
SOUTH DAKOTA
Sheridan
Belle Fourche
Sundance
Gillette
Ellsworth AFB
Rapid City
Existing Airspace
Proposed Airspace
Counties
0 Nautical Miles 60
0 Statute Miles 60
For more information about the meeting contact:
28th Bomb Wing
Ellsworth AFB, Public Affairs
(605) 385-5056
Send comments to:
Ms. Linda DeVine
EIS Project Manager
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769
For additional information visit our website at www.accplanning.org

DISTRIBUTION LIST

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Billings, MT 59101

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Pine Ridge, SD 57770

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Great Plains Regional Office
115 4th Ave. SE
Aberdeen, SD 57401

Bureau of Indian Affairs
Cheyenne River Agency
PO Box 325
Eagle Butte, SD 57625

SAMPLE IICEP LETTER 5

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

Chippewa-Cree Business Committee
Rocky Boy Route, Box 544
Box Elder, MT 59521

Dear Sir/Madam,

The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

The proposed action would restructure and reconfigure the existing Powder River Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspaces (ATCAAs). The PRTC proposal would establish two air refueling routes, create additional low altitude MOA (500 feet Above Ground Level [AGL] up to, but not including, 18,000 feet above Mean Sea Level [MSL]) and high-altitude ATCAA (18,000-60,000 MSL) combinations in portions of South Dakota, North Dakota, Wyoming and Montana. The proposal would support additional ground-based assets to simulate threats and an increase in aircraft training flights, permit the use of training chaff and flares, and authorize supersonic flight above 10,000 AGL. Three action alternatives and a no-action alternative have currently been identified for analyses and are discussed in the attached meeting brochure (Atch 1).

As part of this Environmental Impact Analysis Process, the Air Force would like to consider your concerns and initiate Government-to-Government consultation regarding the proposed action. We are in the early stages of gathering information concerning previous archaeological and historic studies for the areas under the affected region. We would appreciate any assistance you could provide in identifying and retrieving this important information, as well as concerns you may have about the potential effects of the proposal on significant cultural resources. All or portions of the following locations have the potential of being affected by the proposal's overhead training airspace due to one or more of the alternatives: ***Montana***—Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***—Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***—Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

The Air Force is committed to community outreach. Recognizing that open communication of issues is a critical element of the EIS process, the Air Force will host public

Global Power For America

meetings in communities underlying and/or adjacent to the proposed airspace as identified in the meeting flyer at attachment 2. The Air Force intends to coordinate public involvement for the purpose of Section 106 review under the NHPA with public involvement in the EIS prepared under the Environmental Impact Analysis Process. Meetings with public, agency, and Native American stakeholders during this scoping process will help identify the full range of reasonable alternatives, potential impacts, and key issues to be considered in the environmental impact analysis process.

To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EIS, please provide information and/or comments to Ms. Linda DeVine, HQ ACC/A7PP at the above address not later than August 4, 2008. If you have any specific questions about this proposal, please feel free to contact Ms. Linda DeVine at (757) 764-9434, or by electronic-mail at acc.prtc@langley.af.mil. You may also obtain information including the two attachments to this letter, from our website at www.accplanning.org. Thank you in advance for your assistance in this matter.

Sincerely,

BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

Attachment:
1. Scoping Meeting Brochure
2. Flyer

Global Power For America

Powder River

Powder River Training Complex • Environmental Impact Statement

Scoping Meetings for the Powder River Training Complex (PRTC) Environmental Impact Statement (EIS)

Welcome!

The United States Air Force is conducting scoping meetings for the PRTC EIS. The Air Force is preparing an EIS to determine the potential environmental consequences of a proposal to expand the Powder River Complex to create the PRTC. The PRTC would allow for more effective use of limited resources and finite flying hours by providing, locally, the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth and Minot AFBs. The options being analyzed could:

1. Restructure and reconfigure the existing PRC Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspace (ATCAA) and add new MOA/ATCAA airspace with a floor of 500 feet above ground level (AGL).
2. Increase sortie-operations (aircraft training) in the new and modified training airspace.
3. Support additional ground-based simulated threat emitters under the MOAs.
4. Authorize use of training chaff and flares throughout the new and modified airspace.
5. Permit supersonic flight above 10,000 feet AGL.

Meeting Agenda

Open House.....4:00 p.m. - 7:00 p.m.

- View video presentation
- Visit information booths
- Discuss proposal with Air Force personnel
- Submit written comments

The Air Force is committed to community outreach and will consider your input to determine the scope of the issues to be addressed and to help identify the significant environmental issues to be analyzed in depth. Your involvement and input are vital to help us focus the environmental analysis.

Why is the PRTC Needed?

- Aircrews need adequately sized, configured, and available airspace to train as they fight during worldwide deployment.
- Increasing training in local airspace optimizes the limited amount of training hours allocated.
- Reducing commute time to remote training ranges like Nevada Test and Training Range (NTTR) reduces fuel consumption.
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Scoping meetings provide the public an opportunity to learn about the proposed PRTC and provide input into this environmental impact analysis process.

The scoping process helps us identify and address community-specific issues and concerns regarding the proposed airspace use.

The National Environmental Policy Act guides the PRTC EIS.

NEPA requires federal decision makers to consider potential environmental consequences of proposed actions and reasonable alternatives, including a No-Action Alternative in an EIS. The EIS complies with environmental regulations and documents potential impacts to the natural and human environment.

Resources initially identified for analysis in the EIS include (but are not limited to) the following:

- **Airspace Operations** Airspace, Noise, Air Quality, and Safety (ground and air)
- **Natural Resources** Physical and Biological Resources
- **Cultural Resources** Cultural, Native American, Traditional, and Historic Resources
- **Human Resources** Land Use, Quality of Life, Socioeconomics, and Environmental Justice

The EIS Process Timeline

Opportunities for Public Involvement

- Notice of Intent (NOI) Published in Federal Register
- **Scoping**
- Preparation of Draft EIS
- Notice of Availability of Draft EIS
- **60-Day Public Comment Period**
- Preparation of Final EIS
- Notice of Availability of Final EIS
- 30-Day Waiting Period
- Record of Decision

Your input is essential to the environmental analysis process!

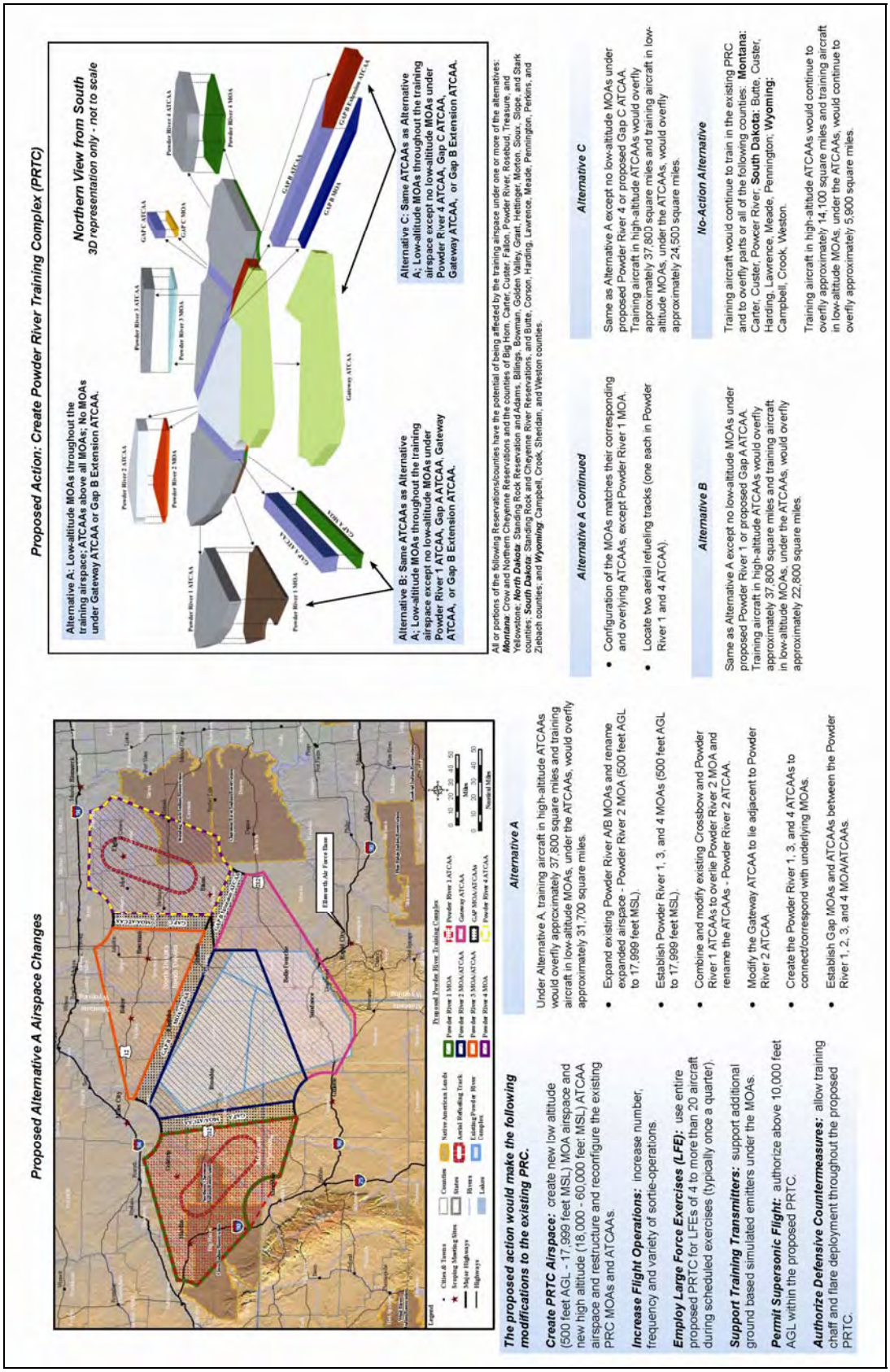
Providing Comments

To provide comments, please fill out a comment sheet. Please give your comments to an Air Force representative or place it in the comment box. Comment forms, or your own letter, may also be mailed to:

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

To ensure your comments are considered in the Draft EIS, please submit your comments before ***August 4, 2008.***

Public comments on this Draft EIS are requested pursuant to the NEPA, 42 USC 4321, et seq. All written comments received during the comment period will be made available to the public and considered during EIS preparation. Your provision of private address information with your comment is voluntary. Your private address information will not be released in the EIS or for any other purpose, unless required by law. However, your private address information will be used to compile the mailing list for EIS distribution. Failure to provide such information will result in your name not being included on the distribution list.


Proposed Action: Create Powder River Training Complex (PRTC)
Northern View from South
3D representation only - not to scale
Alternative A: Low-altitude MOAs throughout the training airspace; ATCAAs above all MOAs; No MOAs under Gateway ATCA or Gap B Extension ATCAA.
Alternative B: Same ATCAAs as Alternative A; Low-altitude MOAs throughout the training airspace except no low-altitude MOAs under Powder River 1 ATCAA, Gap A ATCAA, Gateway ATCAA, or Gap B Extension ATCAA.
Alternative C: Same ATCAAs as Alternative A; Low-altitude MOAs throughout the training airspace except no low-altitude MOAs under Powder River 4 ATCAA, Gap C ATCAA, Gateway ATCAA, or Gap B Extension ATCAA.
All or portions of the following Reservations/counties have the potential of being affected by the training airspace under one or more of the alternatives: **Montana**: Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; **North Dakota**: Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; **South Dakota**: Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, and Ziebach counties; and **Wyoming**: Campbell, Crook, Sheridan, and Weston counties.
Alternative A Continued
Configuration of the MOAs matches their corresponding and overlying ATCAAs, except Powder River 1 MOA.
Locate two aerial refueling tracks (one each in Powder River 1 and 4 ATCAA).
Alternative B
Same as Alternative A except no low-altitude MOAs under proposed Powder River 1 or proposed Gap A ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 22,800 square miles.
Alternative C
Same as Alternative A except no low-altitude MOAs under proposed Powder River 4 or proposed Gap C ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 24,500 square miles.
No-Action Alternative
Training aircraft would continue to train in the existing PRC and to overfly parts or all of the following counties: **Montana**: Carter, Custer, Powder River; **South Dakota**: Butte, Custer, Harding, Lawrence, Meade, Pennington; **Wyoming**: Campbell, Crook, Weston.
Training aircraft in high-altitude ATCAAs would continue to overfly approximately 14,100 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would continue to overfly approximately 5,900 square miles.
Proposed Alternative A Airspace Changes
Alternative A
Under Alternative A, training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 31,700 square miles.
The proposed action would make the following modifications to the existing PRC.
Create PRTC Airspace: create new low altitude (500 feet AGL - 17,999 feet MSL) MOA airspace and new high altitude (18,000 - 60,000 feet MSL) ATCAA airspace and restructure and reconfigure the existing PRC MOAs and ATCAAs.
Increase Flight Operations: increase number, frequency and variety of sortie-operations.
Employ Large Force Exercises (LFE): use entire proposed PRTC for LFEs of 4 to more than 20 aircraft during scheduled exercises (typically once a quarter).
Support Training Transmitters: support additional ground based simulated emitters under the MOAs.
Permit Supersonic Flight: authorize above 10,000 feet AGL within the proposed PRTC.
Authorize Defensive Countermeasures: allow training chaff and flare deployment throughout the proposed PRTC.
Expand existing Powder River A/B MOAs and rename expanded airspace - Powder River 2 MOA (500 feet AGL to 17,999 feet MSL).
Establish Powder River 1, 3, and 4 MOAs (500 feet AGL to 17,999 feet MSL).
Combine and modify existing Crossbow and Powder River 1 ATCAAs to overlie Powder River 2 MOA and rename the ATCAAs - Powder River 2 ATCAA.
Modify the Gateway ATCAA to lie adjacent to Powder River 2 ATCAA.
Create the Powder River 1, 3, and 4 ATCAAs to connect/correspond with underlying MOAs.
Establish Gap MOAs and ATCAAs between the Powder River 1, 2, 3, and 4 MOA/ATCAAs.

Powder River

Powder River Training Complex • Environmental Impact Statement

Please Attend!

Scoping Meetings for the Powder River Training Complex (PRTC) Environmental Impact Statement (EIS)

Ellsworth Air Force Base (AFB), South Dakota proposes to modify their training airspace.

Please attend a public scoping meeting to:

- ☑ Learn more about the proposal
- ☑ Provide community-specific input
- ☑ Be included on our mailing list

Community Scoping Meetings

Public invited to attend at any time. Information will be available throughout.

South Dakota

McLaughlin
Friday, July 11, 2008
3 - 5 p.m.
Bear Soldier District Gym

Buffalo
Monday, July 14, 2008
4 - 7 p.m.
Harding County Memorial Recreation Center
West Allison Street

Bison
Tuesday, July 15, 2008
4 - 7 p.m.
Bison School Cafeteria
200 East Carr Street

Dupree
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4 - 7 p.m.
Multi-Purpose Building
Rodeo Drive, Highway 212
West Side

Wyoming

Gillette
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4 - 7 p.m.
Campbell County Fire Department
106 Rohan Avenue

Sheridan
Friday, June 20, 2008
4 - 7 p.m.
Sheridan Senior Center
North Entrance
211 Smith Street

Montana

Crow Agency
Monday, June 23, 2008
9:30 - 11:30 a.m.
Apsaalooke Center
8731 South Heritage Road

Hardin
Monday, June 23
4 - 7 p.m.
Hardin Chamber of Commerce
10 E. Railroad Street

Lame Deer
Tuesday, June 24, 2008
9:30 - 11:30 a.m.
Tribal Administration Building
Council Chambers
600 South Cheyenne Avenue

Colstrip
Tuesday, June 24, 2008
4 - 7 p.m.
Isabel Bills Community Learning Center,
520 Poplar Drive

Miles City
Wednesday, June 25, 2008
4 - 7 p.m.
Miles Community College
2715 Dickinson

Broadus
Friday, June 27, 2008
4 - 7 p.m.
Powder River County District High School
500 North Trautman

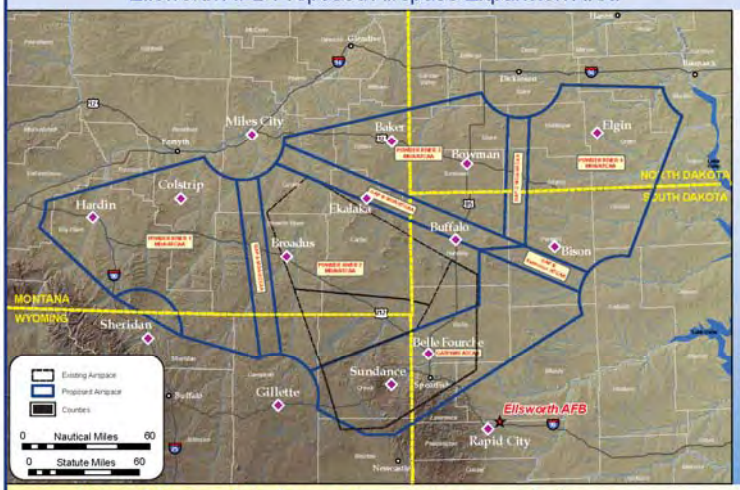
North Dakota

Bowman
Wednesday, July 9, 2008
4 - 7 p.m.
City Hall Meeting Room
101 1st Street Southwest

Elgin
Thursday, July 10, 2008
4 - 7 p.m.
Elgin Community Center
305 North Main Street

Fort Yates
Friday, July 11, 2008
6 - 8 p.m.
AJ Agard Community Center

Ellsworth AFB Proposed Airspace Expansion Area



For more information about the meeting contact:

28th Bomb Wing
Ellsworth AFB, Public Affairs
(605) 385-5056

Send comments to:

Ms. Linda DeVine
EIS Project Manager
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

For additional information visit our website at www.accplanning.org

DISTRIBUTION LIST

Chippewa-Cree Business Committee
Rocky Boy Route, Box 544
Box Elder, MT 59521

Turtle Mountain Tribal Council
PO Box 900
Highway 5 West
Belcourt, ND 58316

Three Affiliated Tribes Business Council
404 Frontage Road
New Town, ND 58763

Eastern Shoshone Tribal Council
15 North Fork Road
PO Box 538
Fort Washakie, WY 82514

Rosebud Sioux Tribe
PO Box 430
Rosebud, SD 57570

Arapaho Business Council
PO Box 396
Fort Washakie, WY 82514

Oglala Sioux Tribal Council
PO Box 2070
Pine Ridge, SD 57770

Confederated Salish and Kootenai Tribe
PO Box 278
51383 Highway 93 North
Pablo, MT 59855

Fort Belknap Community Council
RR1, Box 66
Harlem, MT 59526

Fort Peck Tribal Executive Board
PO Box 1027
501 Medicine Bear Road
Poplar, MT 59255

Spirit Lake Sioux Tribal Council
PO Box 359
Fort Totten, ND 58335

SAMPLE IICEP LETTER 6

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 12 2008

Ms. Clara Caufield
Northern Cheyenne Tribal Administration Offices
600 S. Cheyenne Ave.
Lame Deer, MT 59043

Dear Ms. Caufield,

The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

The proposed action would restructure and reconfigure the existing Powder River Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspaces (ATCAAs). The PRTC proposal would establish two air refueling routes, create additional low altitude MOA (500 feet Above Ground Level [AGL] up to, but not including, 18,000 feet above Mean Sea Level [MSL]) and high-altitude ATCAA (18,000-60,000 MSL) combinations in portions of South Dakota, North Dakota, Wyoming and Montana. The proposal would support additional ground-based assets to simulate threats and an increase in aircraft training flights, permit the use of training chaff and flares, and authorize supersonic flight above 10,000 AGL. Three action alternatives and a no-action alternative have currently been identified for analyses and are discussed in the attached meeting brochure (Atch 1).

As part of this Environmental Impact Analysis Process, and in continuance of Government-to-Government consultation initiated by Colonel Scott Vander Hamm, 28 BW/CC, Ellsworth AFB SD, we request your assistance in gathering information concerning previous archaeological and historic studies for the areas under the affected region. We would appreciate any assistance you could provide in identifying and retrieving this important information, as well as concerns you may have about the potential effects of the proposal on significant cultural resources. All or portions of the following locations have the potential of being affected by the proposal's overhead training airspace due to one or more of the alternatives: ***Montana***—Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***—Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***—Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

Global Power For America

The Air Force is committed to community outreach and we appreciate the opportunity to hold a community meeting at the Northern Cheyenne Tribal Administration Building Council Chambers on Tuesday, June 24, 2008 from 9:30 – 11:30 a.m. Open communication of issues is a critical element of the EIS process, and we would appreciate your assistance in posting the attached meeting flyers (Atch 2) around the community and encouraging public participation. The Air Force intends to coordinate public involvement for the purpose of Section 106 review under the NHPA with public involvement in the EIS prepared under the Environmental Impact Analysis Process. Meetings with public, agency, and Native American stakeholders during this scoping process will help identify the full range of reasonable alternatives, potential impacts, and key issues to be considered in the environmental impact analysis process.

To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EIS, please provide information and/or comments to Ms. Linda DeVine, HQ ACC/A7PP, 129 Andrews Street, Rm 317, Langley AFB VA 23665-2769 not later than August 4, 2008. If you have any specific questions about this request, please feel free to contact Ms. Linda DeVine at (757) 764-9434, or by electronic-mail at acc.prtc@langley.af.mil. You may also obtain information including the two attachments to this letter, from our website at www.accplanning.org. Thank you in advance for your assistance in this matter.

Sincerely,

BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

Attachment:
1. Scoping Meeting Brochure
2. Flyer

Global Power For America

Powder River
Powder River Training Complex • Environmental Impact Statement

Scoping Meetings
for the Powder River Training Complex (PRTC)
Environmental Impact Statement (EIS)

Welcome!

The United States Air Force is conducting scoping meetings for the PRTC EIS. The Air Force is preparing an EIS to determine the potential environmental consequences of a proposal to expand the Powder River Complex to create the PRTC. The PRTC would allow for more effective use of limited resources and finite flying hours by providing, locally, the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth and Minot AFBs. The options being analyzed could:

1. Restructure and reconfigure the existing PRC Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspace (ATCAA) and add new MOA/ATCAA airspace with a floor of 500 feet above ground level (AGL).
2. Increase sortie-operations (aircraft training) in the new and modified training airspace.
3. Support additional ground-based simulated threat emitters under the MOAs.
4. Authorize use of training chaff and flares throughout the new and modified airspace.
5. Permit supersonic flight above 10,000 feet AGL.

Meeting Agenda

Open House.....4:00 p.m. - 7:00 p.m.

- View video presentation
- Visit information booths
- Discuss proposal with Air Force personnel
- Submit written comments

The Air Force is committed to community outreach and will consider your input to determine the scope of the issues to be addressed and to help identify the significant environmental issues to be analyzed in depth. Your involvement and input are vital to help us focus the environmental analysis.

Why is the PRTC Needed?

- Aircrews need adequately sized, configured, and available airspace to train as they fight during worldwide deployment.
- Increasing training in local airspace optimizes the limited amount of training hours allocated.
- Reducing commute time to remote training ranges like Nevada Test and Training Range (NTTR) reduces fuel consumption.
- Use of chaff and flares allows aircrews to deploy defensive countermeasures as they would in combat.
- Supersonic training assists aircrews to train for show of force and for quick reaction to enemy threats in combat.
- More effectively use limited resources and finite flying hours.

Scoping meetings provide the public an opportunity to learn about the proposed PRTC and provide input into this environmental impact analysis process.

The scoping process helps us identify and address community-specific issues and concerns regarding the proposed airspace use.

The National Environmental Policy Act guides the PRTC EIS.

NEPA requires federal decision makers to consider potential environmental consequences of proposed actions and reasonable alternatives, including a No-Action Alternative in an EIS. The EIS complies with environmental regulations and documents potential impacts to the natural and human environment.

Resources initially identified for analysis in the EIS include (but are not limited to) the following:

- **Airspace Operations**
  Airspace, Noise, Air Quality, and Safety (ground and air)
- **Natural Resources**
  Physical and Biological Resources
- **Cultural Resources**
  Cultural, Native American, Traditional, and Historic Resources
- **Human Resources**
  Land Use, Quality of Life, Socioeconomics, and Environmental Justice

The EIS Process Timeline

Opportunities for Public Involvement

- Notice of Intent (NOI) Published in Federal Register
- **Scoping**
- Preparation of Draft EIS
- Notice of Availability of Draft EIS
- **60-Day Public Comment Period**
- Preparation of Final EIS
- Notice of Availability of Final EIS
- 30-Day Waiting Period
- Record of Decision

Your input is essential to the environmental analysis process!

Providing Comments

To provide comments, please fill out a comment sheet. Please give your comments to an Air Force representative or place it in the comment box. Comment forms, or your own letter, may also be mailed to:

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

To ensure your comments are considered in the Draft EIS, please submit your comments before ***August 4, 2008.***

Public comments on this Draft EIS are requested pursuant to the NEPA, 42 USC 4321, et seq. All written comments received during the comment period will be made available to the public and considered during EIS preparation. Your provision of private address information with your comment is voluntary. Your private address information will not be released in the EIS or for any other purpose, unless required by law. However, your private address information will be used to compile the mailing list for EIS distribution. Failure to provide such information will result in your name not being included on the distribution list.

Proposed Action: Create Powder River Training Complex (PRTC)
Northern View from South
3D representation only - not to scale
Alternative A: Low-altitude MOAs throughout the training airspace; ATCAAs above all MOAs; No MOAs under Gateway ATCAA or Gap B Extension ATCAA.
Alternative B: Same ATCAAs as Alternative A; Low-altitude MOAs throughout the training airspace except no low-altitude MOAs under Powder River 1 ATCAA, Gap A ATCAA, Gateway ATCAA, or Gap B Extension ATCAA.
Alternative C: Same ATCAAs as Alternative A; Low-altitude MOAs throughout the training airspace except no low-altitude MOAs under Powder River 4 ATCAA, Gap C ATCAA, Gateway ATCAA, or Gap B Extension ATCAA.
All or portions of the following Reservations/counties have the potential of being affected by the training airspace under one or more of the alternatives: Montana: Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; North Dakota: Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; South Dakota: Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, and Ziebach counties; and Wyoming: Campbell, Crook, Sheridan, and Weston counties.
Alternative A Continued
Configuration of the MOAs matches their corresponding and overlying ATCAAs, except Powder River 1 MOA.
Locate two aerial refueling tracks (one each in Powder River 1 and 4 ATCAA).
Alternative B
Same as Alternative A except no low-altitude MOAs under proposed Powder River 1 or proposed Gap A ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 22,800 square miles.
Alternative C
Same as Alternative A except no low-altitude MOAs under proposed Powder River 4 or proposed Gap C ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 24,500 square miles.
No-Action Alternative
Training aircraft would continue to train in the existing PRC and to overfly parts or all of the following counties: Montana: Carter, Custer, Powder River; South Dakota: Butte, Custer, Harding, Lawrence, Meade, Pennington; Wyoming: Campbell, Crook, Weston.
Training aircraft in high-altitude ATCAAs would continue to overfly approximately 14,100 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would continue to overfly approximately 5,900 square miles.
Proposed Alternative A Airspace Changes
Alternative A
Under Alternative A, training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 31,700 square miles.
The proposed action would make the following modifications to the existing PRC.
Create PRTC Airspace: create new low altitude (500 feet AGL - 17,999 feet MSL) MOA airspace and new high altitude (18,000 - 60,000 feet MSL) ATCAA airspace and restructure and reconfigure the existing PRC MOAs and ATCAAs.
Increase Flight Operations: increase number, frequency and variety of sortie-operations.
Employ Large Force Exercises (LFE): use entire proposed PRTC for LFEs of 4 to more than 20 aircraft during scheduled exercises (typically once a quarter).
Support Training Transmitters: support additional ground based simulated emitters under the MOAs.
Permit Supersonic Flight: authorize above 10,000 feet AGL within the proposed PRTC.
Authorize Defensive Countermeasures: allow training chaff and flare deployment throughout the proposed PRTC.
Expand existing Powder River A/B MOAs and rename expanded airspace - Powder River 2 MOA (500 feet AGL to 17,999 feet MSL).
Establish Powder River 1, 3, and 4 MOAs (500 feet AGL to 17,999 feet MSL).
Combine and modify existing Crossbow and Powder River 1 ATCAAs to overlie Powder River 2 MOA and rename the ATCAAs - Powder River 2 ATCAA.
Modify the Gateway ATCAA to lie adjacent to Powder River 2 ATCAA.
Create the Powder River 1, 3, and 4 ATCAAs to connect/correspond with underlying MOAs.
Establish Gap MOAs and ATCAAs between the Powder River 1, 2, 3, and 4 MOA/ATCAAs.

Powder River

Powder River Training Complex • Environmental Impact Statement

Please Attend!

Scoping Meetings for the Powder River Training Complex (PRTC) Environmental Impact Statement (EIS)

Ellsworth Air Force Base (AFB), South Dakota proposes to modify their training airspace.

Please attend a public scoping meeting to:

- ☑ Learn more about the proposal
- ☑ Provide community-specific input
- ☑ Be included on our mailing list

Community Scoping Meetings

Public invited to attend at any time. Information will be available throughout.

South Dakota

McLaughlin
Friday, July 11, 2008
3 - 5 p.m.
Bear Soldier District Gym

Buffalo
Monday, July 14, 2008
4 - 7 p.m.
Harding County Memorial Recreation Center
West Allison Street

Bison
Tuesday, July 15, 2008
4 - 7 p.m.
Bison School Cafeteria
200 East Carr Street

Dupree
Wednesday, July 16, 2008
4 - 7 p.m.
Multi-Purpose Building
Rodeo Drive, Highway 212
West Side

Wyoming

Gillette
Thursday, June 19, 2008
4 - 7 p.m.
Campbell County Fire Department
106 Rohan Avenue

Sheridan
Friday, June 20, 2008
4 - 7 p.m.
Sheridan Senior Center
North Entrance
211 Smith Street

Montana

Crow Agency
Monday, June 23, 2008
9:30 - 11:30 a.m.
Apsaalooke Center
8731 South Heritage Road

Hardin
Monday, June 23
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10 E. Railroad Street

Lame Deer
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Tribal Administration Building
Council Chambers
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Broadus
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City Hall Meeting Room
101 1st Street Southwest

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Fort Yates
Friday, July 11, 2008
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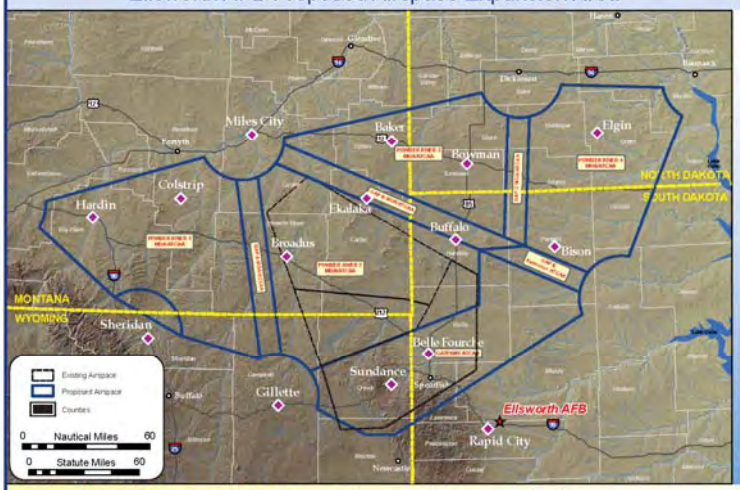
AJ Agard Community Center

Ellsworth AFB Proposed Airspace Expansion Area



For more information about the meeting contact:

28th Bomb Wing
Ellsworth AFB, Public Affairs
(605) 385-5056

Send comments to:

Ms. Linda DeVine
EIS Project Manager
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

For additional information visit our website at www.accplanning.org

DISTRIBUTION LIST

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Crow Nation Office of Legal Counsel
Batcheeitche Avenue
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Crow Agency, MT 59022

Clara Caufield
Northern Cheyenne Tribal Administration Offices
600 S. Cheyenne Ave.
Lame Deer, MT 59043

Donald Red Thunder
Land Operations Office
Building 2001
Main Street
Eagle Butte, SD 57625

Richard Bird
Chairman, Economic Committee
PO Box D
Fort Yates, ND 58538

Chairman Joseph Brings Plenty
Cheyenne River Sioux Tribal Council
PO Box 590
Eagle Butte, SD 57625

SAMPLE IICEP LETTER 7

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

MEMORANDUM FOR DISTRIBUTION

FROM: HQ ACC/A7P
129 Andrews Street, Room 317
Langley AFB VA 23665-2769

SUBJECT: Powder River Training Complex, Environmental Impact Statement (EIS)

1. The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

2. The proposed action would restructure and reconfigure the existing Powder River Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspaces (ATCAAs). The PRTC proposal would establish two air refueling routes, create additional low altitude MOA (500 feet Above Ground Level [AGL] up to, but not including, 18,000 feet above Mean Sea Level [MSL]) and high-altitude ATCAA (18,000-60,000 MSL) combinations in portions of South Dakota, North Dakota, Wyoming and Montana. The proposal would support additional ground-based assets to simulate threats and an increase in aircraft training flights, permit the use of training chaff and flares, and authorize supersonic flight above 10,000 AGL. Three action alternatives and a no-action alternative have currently been identified for analyses and are discussed in the attached meeting brochure (Atch 1). All or portions of the following locations have the potential of being affected by the proposal's overhead training airspace due to one or more of the alternatives: ***Montana***—Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***—Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***—Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

3. Recognizing that open communication of issues is a critical element of the EIS process, the Air Force will host numerous public meetings in communities underlying and/or adjacent to the proposed action (Atch 2). The scoping meetings will be in held in an open-house format, where Air Force representatives will describe the proposed action and alternatives, the National Environmental Policy Act process which we are undertaking, outline opportunities for public involvement, and answer questions on the proposal. The meetings will last from 4:00 to 7:00 pm

Global Power For America

at all locations, and interested parties or citizens are welcome to come at any time since information will be provided throughout the duration of the open house.

4. Meetings with public and agency stakeholders during this scoping process will help identify the full range of reasonable alternatives, potential impacts, and key issues throughout the environmental impact analysis process. The Air Force intends to coordinate public involvement for the purpose of Section 106 review under the National Historic Preservation with public involvement in the EIS prepared under this Environmental Impact Analysis Process. The Federal Aviation Administration has accepted the Air Force's request to be a cooperating agency for this action and has appointed the Central Service Area as their office of primary responsibility for this EIS.

5. The Air Force will accept comments at any time during the environmental process and any information you feel would assist us in this process would be appreciated. To ensure the Air Force has sufficient time to consider public input in the preparation of the draft EIS, information and comments should be submitted to Ms. Linda DeVine, HQ ACC/A7PP, 129 Andrews Street, Room 317, Langley AFB VA 23665-2769 by August 4, 2008.

6. If you have any specific questions about this proposal, please feel free to contact Ms. DeVine at (757) 764-9434, by electronic-mail at acc.prtc@langley.af.mil or contact the public affairs office at Ellsworth AFB SD, 605-385-5056. You may also obtain information including the two attachments to this letter, from our website at www.accplanning.org. Thank you in advance for your assistance in this matter.

BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

Attachments:
1. Scoping Meeting Brochure
2. Flyer

Global Power For America

Powder River
Powder River Training Complex • Environmental Impact Statement

Scoping Meetings
for the Powder River Training Complex (PRTC)
Environmental Impact Statement (EIS)

Welcome!

The United States Air Force is conducting scoping meetings for the PRTC EIS. The Air Force is preparing an EIS to determine the potential environmental consequences of a proposal to expand the Powder River Complex to create the PRTC. The PRTC would allow for more effective use of limited resources and finite flying hours by providing, locally, the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth and Minot AFBs. The options being analyzed could:

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Open House.....4:00 p.m. - 7:00 p.m.

- View video presentation
- Visit information booths
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- Submit written comments

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- Aircrews need adequately sized, configured, and available airspace to train as they fight during worldwide deployment.
- Increasing training in local airspace optimizes the limited amount of training hours allocated.
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- **Airspace Operations**
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- **Natural Resources**
  Physical and Biological Resources
- **Cultural Resources**
  Cultural, Native American, Traditional, and Historic Resources
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  Land Use, Quality of Life, Socioeconomics, and Environmental Justice

The EIS Process Timeline

Opportunities for Public Involvement

- Notice of Intent (NOI) Published in Federal Register
- **Scoping**
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- **60-Day Public Comment Period**
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- Record of Decision

Your input is essential to the environmental analysis process!

Providing Comments

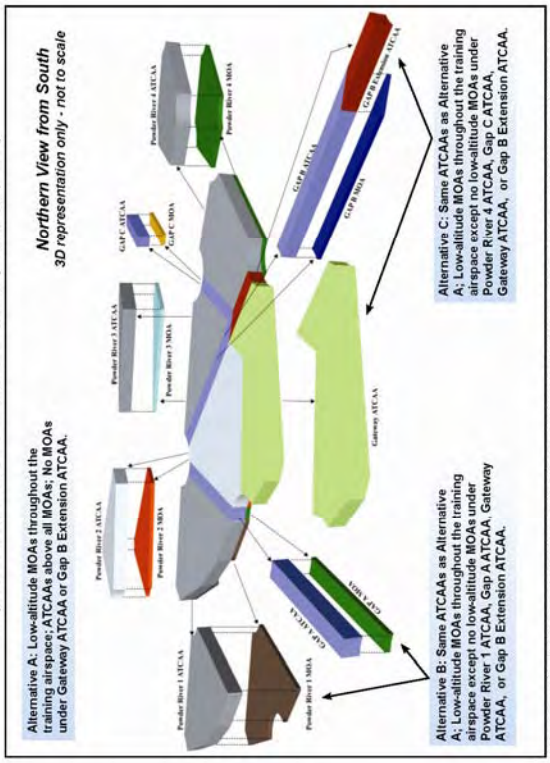
To provide comments, please fill out a comment sheet. Please give your comments to an Air Force representative or place it in the comment box. Comment forms, or your own letter, may also be mailed to:

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

To ensure your comments are considered in the Draft EIS, please submit your comments before ***August 4, 2008.***

Public comments on this Draft EIS are requested pursuant to the NEPA, 42 USC 4321, et seq. All written comments received during the comment period will be made available to the public and considered during EIS preparation. Your provision of private address information with your comment is voluntary. Your private address information will not be released in the EIS or for any other purpose, unless required by law. However, your private address information will be used to compile the mailing list for EIS distribution. Failure to provide such information will result in your name not being included on the distribution list.

Proposed Action: Create Powder River Training Complex (PRTC)



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Alternative A Continued

- Configuration of the MOAs matches their corresponding and overlying ATCAAs, except Powder River 1 MOA.
- Locate two aerial refueling tracks (one each in Powder River 1 and 4 ATCAA).

Alternative B

Same as Alternative A except no low-altitude MOAs under proposed Powder River 1 or proposed Gap A ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 22,800 square miles.

Alternative C

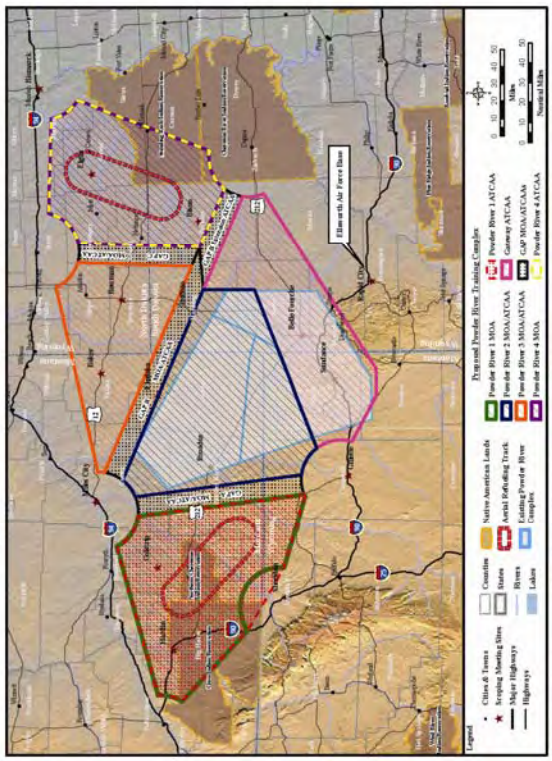
Same as Alternative A except no low-altitude MOAs under proposed Powder River 4 or proposed Gap C ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 24,500 square miles.

No-Action Alternative

Training aircraft would continue to train in the existing PRC and to overfly parts or all of the following counties: **Montana:** Carter, Custer, Powder River; **South Dakota:** Butte, Custer, Harding, Lawrence, Meade, Pennington; **Wyoming:** Campbell, Crook, Weston.

Training aircraft in high-altitude ATCAAs would continue to overfly approximately 14,100 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would continue to overfly approximately 5,900 square miles.

Proposed Alternative A Airspace Changes



Alternative A

Under Alternative A, training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 31,700 square miles.

- Expand existing Powder River A/B MOAs and rename expanded airspace - Powder River 2 MOA (500 feet AGL to 17,999 feet MSL).
- Establish Powder River 1, 3, and 4 MOAs (500 feet AGL to 17,999 feet MSL).
- Combine and modify existing Crossbow and Powder River 1 ATCAAs to overlie Powder River 2 MOA and rename the ATCAAs - Powder River 2 ATCAA.
- Modify the Gateway ATCAA to lie adjacent to Powder River 2 ATCAA.
- Create the Powder River 1, 3, and 4 ATCAAs to connect/correspond with underlying MOAs.
- Establish Gap MOAs and ATCAAs between the Powder River 1, 2, 3, and 4 MOA/ATCAAs.

The proposed action would make the following modifications to the existing PRC.

Create PRTC Airspace: create new low altitude (500 feet AGL - 17,999 feet MSL) MOA airspace and new high altitude (18,000 - 60,000 feet MSL) ATCAA airspace and restructure and reconfigure the existing PRC MOAs and ATCAAs.

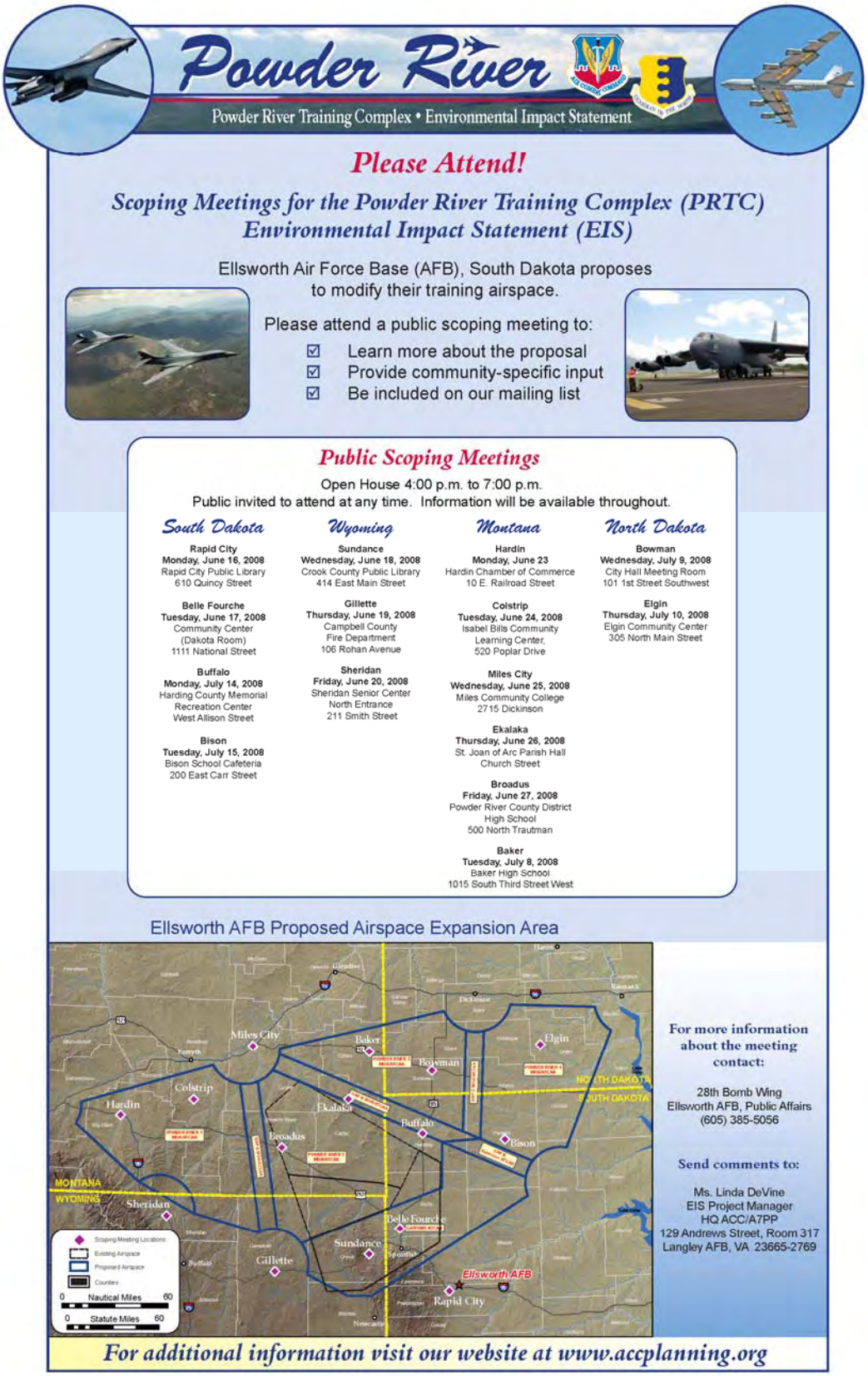
Increase Flight Operations: increase number, frequency and variety of sortie-operations.

Employ Large Force Exercises (LFE): use entire proposed PRTC for LFEs of 4 to more than 20 aircraft during scheduled exercises (typically once a quarter).

Support Training Transmitters: support additional ground based simulated emitters under the MOAs.

Permit Supersonic Flight: authorize above 10,000 feet AGL within the proposed PRTC.

Authorize Defensive Countermeasures: allow training chaff and flare deployment throughout the proposed PRTC.


Powder River
Powder River Training Complex • Environmental Impact Statement
Please Attend!
Scoping Meetings for the Powder River Training Complex (PRTC)
Environmental Impact Statement (EIS)
Ellsworth Air Force Base (AFB), South Dakota proposes
to modify their training airspace.
Please attend a public scoping meeting to:
☑ Learn more about the proposal
☑ Provide community-specific input
☑ Be included on our mailing list
Public Scoping Meetings
Open House 4:00 p.m. to 7:00 p.m.
Public invited to attend at any time. Information will be available throughout.
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Rapid City Public Library
610 Quincy Street
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Community Center
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NORTH DAKOTA
SOUTH DAKOTA
Sheridan
Belle Fourche
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Ellsworth AFB
Rapid City
Scoping Meeting Locations
Existing Airspace
Proposed Airspace
Counties
0 Nautical Miles 60
0 Statute Miles 60
For more information about the meeting contact:
28th Bomb Wing
Ellsworth AFB, Public Affairs
(605) 385-5056
Send comments to:
Ms. Linda DeVine
EIS Project Manager
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769
For additional information visit our website at www.accplanning.org

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Global Power For America

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Global Power For America

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Town Clerk
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Hulett, WY 82720

Neiman Sawmill
Attn: Wes Bush
PO Box 218
Hulett, WY 82720

Wes Bush
PO Box 472
Hulett, WY 82720

Devil's Tower National Park
Dorothy Fire Cloud
Hwy 110 Bldg 170
Devils Tower, WY 82714

SAMPLE IICEP LETTER 8

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

The Honorable Jon Tester
United States Senator
Granite Tower
222 N 32nd St, Suite 101
Billings, MT 59101

Dear Senator Tester:

The United States Air Force (USAF) is in the process of preparing an Environmental Impact Statement (EIS) to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

The proposed action would restructure and reconfigure the existing Powder River Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspaces (ATCAAs). The PRTC proposal would establish two air refueling routes, create additional low altitude MOA (500 feet Above Ground Level [AGL] up to, but not including, 18,000 feet above Mean Sea Level [MSL]) and high-altitude ATCAA (18,000-60,000 MSL) combinations in portions of South Dakota, North Dakota, Wyoming, and Montana. The proposal would support additional ground-based assets to simulate threats and an increase in aircraft training flights, permit the use of training chaff and flares, and authorize supersonic flight above 10,000 AGL. Three action alternatives and a no-action alternative have currently been identified for analysis and are discussed in the attached meeting brochure (Atch 1). All or portions of the following locations have the potential to be affected by the proposal's overhead training airspace due to one or more of the alternatives: ***Montana***—Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***—Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***—Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

The Air Force is committed to community outreach. Recognizing that open communication of issues is a critical element of the EIS process, the Air Force will host public meetings in communities underlying and/or adjacent to the proposed airspace (Atch 2). Community meetings are also being coordinated on each Native American Reservation. Meetings with public, agency, and Native American stakeholders during this scoping process will help identify the full range of reasonable alternatives, potential impacts, and key issues to be considered in the environmental impact analysis process.

Global Power For America

The scoping meetings will be in an open-house format, during which Air Force representatives will describe the proposed action and alternatives, explain the National Environmental Policy Act, outline opportunities for public involvement, and answer questions about the proposal. The public meetings will be held from 4:00 to 7:00 p.m., and interested parties are welcome to come at any time information will be provided throughout the duration of the open house. The Air Force will publish notices of EIS preparation and upcoming public scoping meetings in local newspapers.

Public and agency comments received during the meetings, as well as written comments received by the Air Force during the scoping period and throughout the environmental process, will be considered in the preparation of the EIS. The Air Force will accept comments at any time during the environmental process; however, to ensure the Air Force has sufficient time to consider public input in the preparation of the Draft EIS, comments should be submitted to Ms. Linda DeVine, HQ ACC/A7PP, 129 Andrews Street, Rm 317, Langley AFB VA 23665-2769, by August 4, 2008.

If you any specific questions about this proposal, please contact Ms. Linda DeVine at (757) 764-9434 or via e-mail at acc.prtc@langley.af.mil. Thank you in advance for your assistance in this matter.

Sincerely,

ROBERT J. STAIB
Colonel, USAF
Acting Director of Installations and Mission Support (A7)

Attachments:
1. Scoping Meeting Brochure
2. Flyer

Global Power For America

Powder River
Powder River Training Complex • Environmental Impact Statement

Scoping Meetings
for the Powder River Training Complex (PRTC)
Environmental Impact Statement (EIS)

Welcome!

The United States Air Force is conducting scoping meetings for the PRTC EIS. The Air Force is preparing an EIS to determine the potential environmental consequences of a proposal to expand the Powder River Complex to create the PRTC. The PRTC would allow for more effective use of limited resources and finite flying hours by providing, locally, the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth and Minot AFBs. The options being analyzed could:

1. Restructure and reconfigure the existing PRC Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspace (ATCAA) and add new MOA/ATCAA airspace with a floor of 500 feet above ground level (AGL).
2. Increase sortie-operations (aircraft training) in the new and modified training airspace.
3. Support additional ground-based simulated threat emitters under the MOAs.
4. Authorize use of training chaff and flares throughout the new and modified airspace.
5. Permit supersonic flight above 10,000 feet AGL.

Meeting Agenda

Open House.....4:00 p.m. - 7:00 p.m.

- View video presentation
- Visit information booths
- Discuss proposal with Air Force personnel
- Submit written comments

The Air Force is committed to community outreach and will consider your input to determine the scope of the issues to be addressed and to help identify the significant environmental issues to be analyzed in depth. Your involvement and input are vital to help us focus the environmental analysis.

Why is the PRTC Needed?

- Aircrews need adequately sized, configured, and available airspace to train as they fight during worldwide deployment.
- Increasing training in local airspace optimizes the limited amount of training hours allocated.
- Reducing commute time to remote training ranges like Nevada Test and Training Range (NTTR) reduces fuel consumption.
- Use of chaff and flares allows aircrews to deploy defensive countermeasures as they would in combat.
- Supersonic training assists aircrews to train for show of force and for quick reaction to enemy threats in combat.
- More effectively use limited resources and finite flying hours.

Scoping meetings provide the public an opportunity to learn about the proposed PRTC and provide input into this environmental impact analysis process. The scoping process helps us identify and address community-specific issues and concerns regarding the proposed airspace use.

The National Environmental Policy Act guides the PRTC EIS.

NEPA requires federal decision makers to consider potential environmental consequences of proposed actions and reasonable alternatives, including a No-Action Alternative in an EIS. The EIS complies with environmental regulations and documents potential impacts to the natural and human environment.

Resources initially identified for analysis in the EIS include (but are not limited to) the following:

- **Airspace Operations** Airspace, Noise, Air Quality, and Safety (ground and air)
- **Natural Resources** Physical and Biological Resources
- **Cultural Resources** Cultural, Native American, Traditional, and Historic Resources
- **Human Resources** Land Use, Quality of Life, Socioeconomics, and Environmental Justice

The EIS Process Timeline

Opportunities for Public Involvement

Notice of Intent (NOI) Published in Federal Register → **Scoping** → Preparation of Draft EIS → Notice of Availability of Draft EIS → **60-Day Public Comment Period** → Preparation of Final EIS → Notice of Availability of Final EIS → 30-Day Waiting Period → Record of Decision

Your input is essential to the environmental analysis process!

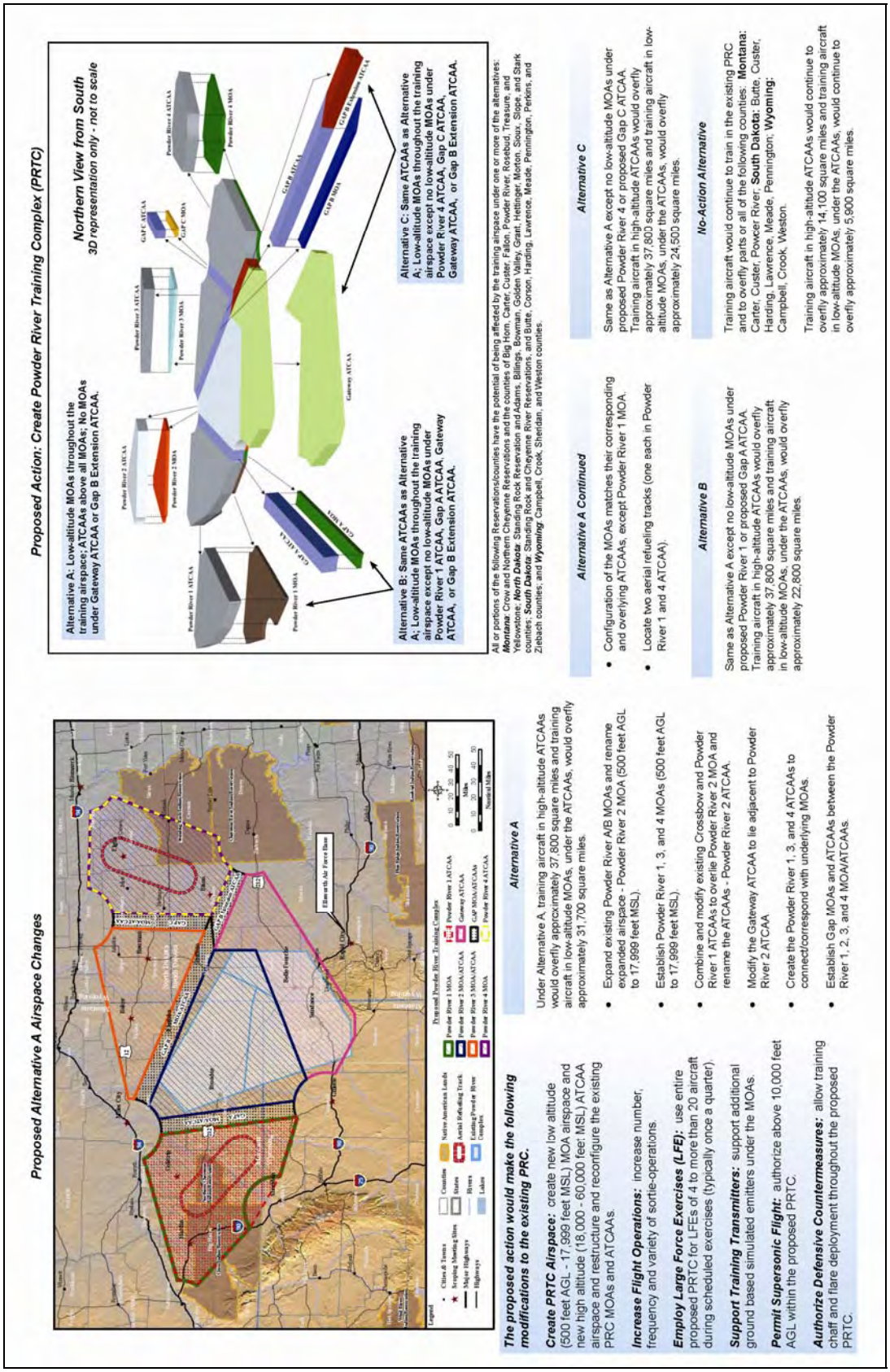
Providing Comments

To provide comments, please fill out a comment sheet. Please give your comments to an Air Force representative or place it in the comment box. Comment forms, or your own letter, may also be mailed to:

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

To ensure your comments are considered in the Draft EIS, please submit your comments before ***August 4, 2008.***

Public comments on this Draft EIS are requested pursuant to the NEPA, 42 USC 4321, et seq. All written comments received during the comment period will be made available to the public and considered during EIS preparation. Your provision of private address information with your comment is voluntary. Your private address information will not be released in the EIS or for any other purpose, unless required by law. However, your private address information will be used to compile the mailing list for EIS distribution. Failure to provide such information will result in your name not being included on the distribution list.


Proposed Action: Create Powder River Training Complex (PRTC)
Northern View from South
3D representation only - not to scale
Alternative A: Low-altitude MOAs throughout the training airspace; ATCAAs above all MOAs; No MOAs under Gateway ATCA or Gap B Extension ATCAA.
Alternative B: Same ATCAAs as Alternative A; Low-altitude MOAs throughout the training airspace except no low-altitude MOAs under Powder River 1 ATCAA, Gap A ATCAA, Gateway ATCAA, or Gap B Extension ATCAA.
Alternative C: Same ATCAAs as Alternative A; Low-altitude MOAs throughout the training airspace except no low-altitude MOAs under Powder River 4 ATCAA, Gap C ATCAA, Gateway ATCAA, or Gap B Extension ATCAA.
All or portions of the following Reservations/counties have the potential of being affected by the training airspace under one or more of the alternatives: **Montana**: Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; **North Dakota**: Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; **South Dakota**: Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, and Ziebach counties; and **Wyoming**: Campbell, Crook, Sheridan, and Weston counties.
Alternative A Continued
Configuration of the MOAs matches their corresponding and overlying ATCAAs, except Powder River 1 MOA.
Locate two aerial refueling tracks (one each in Powder River 1 and 4 ATCAA).
Alternative B
Same as Alternative A except no low-altitude MOAs under proposed Powder River 1 or proposed Gap A ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 22,800 square miles.
Alternative C
Same as Alternative A except no low-altitude MOAs under proposed Powder River 4 or proposed Gap C ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 24,500 square miles.
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Training aircraft would continue to train in the existing PRC and to overfly parts or all of the following counties: **Montana**: Carter, Custer, Powder River; **South Dakota**: Butte, Custer, Harding, Lawrence, Meade, Pennington; **Wyoming**: Campbell, Crook, Weston.
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The proposed action would make the following modifications to the existing PRC.
Create PRTC Airspace: create new low altitude (500 feet AGL - 17,999 feet MSL) MOA airspace and new high altitude (18,000 - 60,000 feet MSL) ATCAA airspace and restructure and reconfigure the existing PRC MOAs and ATCAAs.
Increase Flight Operations: increase number, frequency and variety of sortie-operations.
Employ Large Force Exercises (LFE): use entire proposed PRTC for LFEs of 4 to more than 20 aircraft during scheduled exercises (typically once a quarter).
Support Training Transmitters: support additional ground based simulated emitters under the MOAs.
Permit Supersonic Flight: authorize above 10,000 feet AGL within the proposed PRTC.
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Expand existing Powder River A/B MOAs and rename expanded airspace - Powder River 2 MOA (500 feet AGL to 17,999 feet MSL).
Establish Powder River 1, 3, and 4 MOAs (500 feet AGL to 17,999 feet MSL).
Combine and modify existing Crossbow and Powder River 1 ATCAAs to overlie Powder River 2 MOA and rename the ATCAAs - Powder River 2 ATCAA.
Modify the Gateway ATCAA to lie adjacent to Powder River 2 ATCAA.
Create the Powder River 1, 3, and 4 ATCAAs to connect/correspond with underlying MOAs.
Establish Gap MOAs and ATCAAs between the Powder River 1, 2, 3, and 4 MOA/ATCAAs.

Powder River

Powder River Training Complex • Environmental Impact Statement

Please Attend!

Scoping Meetings for the Powder River Training Complex (PRTC) Environmental Impact Statement (EIS)

Ellsworth Air Force Base (AFB), South Dakota proposes to modify their training airspace.

Please attend a public scoping meeting to:

- ☑ Learn more about the proposal
- ☑ Provide community-specific input
- ☑ Be included on our mailing list

Public Scoping Meetings

Open House 4:00 p.m. to 7:00 p.m.
Public invited to attend at any time. Information will be available throughout.

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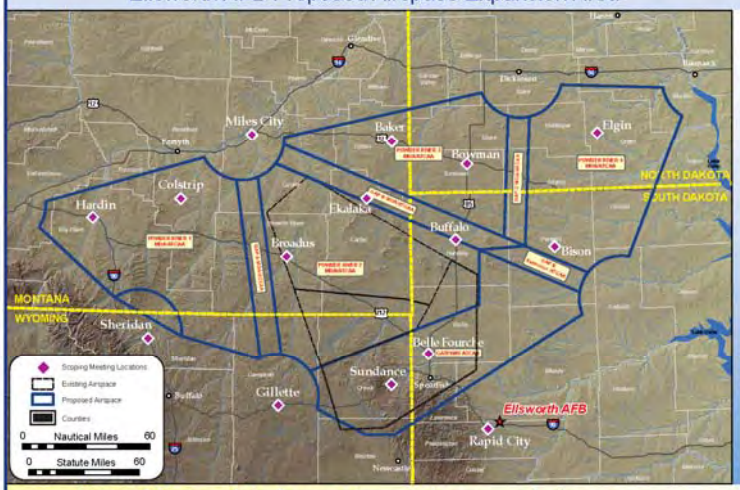
Elgin Community Center
305 North Main Street

Ellsworth AFB Proposed Airspace Expansion Area



For more information about the meeting contact:

28th Bomb Wing
Ellsworth AFB, Public Affairs
(605) 385-5056

Send comments to:

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EIS Project Manager
HQ ACC/A7PP
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Langley AFB, VA 23665-2769

For additional information visit our website at www.accplanning.org

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SAMPLE IICEP LETTER 9

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

MEMORANDUM FOR DISTRIBUTION

FROM: HQ ACC/A7P
129 Andrews Street, Room 317
Langley AFB VA 23665-2769

SUBJECT: Powder River Training Complex, Environmental Impact Statement (EIS)

1. The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

2. The proposed action would restructure and reconfigure the existing Powder River Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspaces (ATCAAs). The PRTC proposal would establish two air refueling routes, create additional low altitude MOA (500 feet Above Ground Level [AGL] up to, but not including, 18,000 feet above Mean Sea Level [MSL]) and high-altitude ATCAA (18,000-60,000 MSL) combinations in portions of South Dakota, North Dakota, Wyoming and Montana. The proposal would support additional ground-based assets to simulate threats and an increase in aircraft training flights, permit the use of training chaff and flares, and authorize supersonic flight above 10,000 AGL. Three action alternatives and a no-action alternative have currently been identified for analyses and are discussed in the attached meeting brochure (Atch 1). All or portions of the following locations have the potential of being affected by the proposal's overhead training airspace due to one or more of the alternatives: ***Montana***—Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***—Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***—Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

3. Recognizing that open communication of issues is a critical element of the EIS process, the Air Force will host numerous public meetings in communities underlying and/or adjacent to the proposed action (Atch 2). Meetings with public and agency stakeholders during this scoping process will help identify the full range of reasonable alternatives, potential impacts, and key issues throughout the environmental impact analysis process. The Federal Aviation Administration has accepted the Air Force's request to be a cooperating agency for this action

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and has appointed the Central Service Area as their office of primary responsibility for this environmental impact analysis process.

4. The Air Force is committed to community outreach and as an additional effort to inform the public of these meetings, we request your assistance in posting the enclosed Scoping Meeting flyer in a conspicuous place within your community. The scoping meetings will be in held in an open-house format, where Air Force representatives will describe the proposed action and alternatives, the National Environmental Policy Act process which we are undertaking, outline opportunities for public involvement, and answer questions on the proposal. The meetings will last from 4:00 to 7:00 pm at all locations, and interested parties or citizens are welcome to come at any time since information will be provided throughout the duration of the open house.

5. The Air Force will accept comments at any time during the environmental process. However, to ensure the Air Force has sufficient time to consider public input in the preparation of the draft EIS, comments should be submitted to Ms. Linda DeVine, HQ ACC/A7PP, 129 Andrews Street, Room 317, Langley AFB VA 23665-2769 by August 4, 2008.

6. Please direct specific questions about this proposal to the public affairs office at Ellsworth AFB SD, 605-385-5056. You may also obtain information including the two attachments to this letter, from our website at www.accplanning.org. Thank you in advance for your assistance in this matter.

BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

Attachments:
1. Scoping Meeting Brochure
2. Flyer

Global Power For America

Powder River

Powder River Training Complex • Environmental Impact Statement

Scoping Meetings for the Powder River Training Complex (PRTC) Environmental Impact Statement (EIS)

Welcome!

The United States Air Force is conducting scoping meetings for the PRTC EIS. The Air Force is preparing an EIS to determine the potential environmental consequences of a proposal to expand the Powder River Complex to create the PRTC. The PRTC would allow for more effective use of limited resources and finite flying hours by providing, locally, the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth and Minot AFBs. The options being analyzed could:

1. Restructure and reconfigure the existing PRC Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspace (ATCAA) and add new MOA/ATCAA airspace with a floor of 500 feet above ground level (AGL).
2. Increase sortie-operations (aircraft training) in the new and modified training airspace.
3. Support additional ground-based simulated threat emitters under the MOAs.
4. Authorize use of training chaff and flares throughout the new and modified airspace.
5. Permit supersonic flight above 10,000 feet AGL.

Scoping meetings provide the public an opportunity to learn about the proposed PRTC and provide input into this environmental impact analysis process.

The scoping process helps us identify and address community-specific issues and concerns regarding the proposed airspace use.

Meeting Agenda

Open House.....4:00 p.m. - 7:00 p.m.

- View video presentation
- Visit information booths
- Discuss proposal with Air Force personnel
- Submit written comments

The Air Force is committed to community outreach and will consider your input to determine the scope of the issues to be addressed and to help identify the significant environmental issues to be analyzed in depth. Your involvement and input are vital to help us focus the environmental analysis.

Why is the PRTC Needed?

- Aircrews need adequately sized, configured, and available airspace to train as they fight during worldwide deployment.
- Increasing training in local airspace optimizes the limited amount of training hours allocated.
- Reducing commute time to remote training ranges like Nevada Test and Training Range (NTTR) reduces fuel consumption.
- Use of chaff and flares allows aircrews to deploy defensive countermeasures as they would in combat.
- Supersonic training assists aircrews to train for show of force and for quick reaction to enemy threats in combat.
- More effectively use limited resources and finite flying hours.

The EIS Process Timeline

Opportunities for Public Involvement

- Notice of Intent (NOI) Published in Federal Register
- **Scoping**
- Preparation of Draft EIS
- Notice of Availability of Draft EIS
- **60-Day Public Comment Period**
- Preparation of Final EIS
- Notice of Availability of Final EIS
- 30-Day Waiting Period
- Record of Decision

The National Environmental Policy Act guides the PRTC EIS.

NEPA requires federal decision makers to consider potential environmental consequences of proposed actions and reasonable alternatives, including a No-Action Alternative in an EIS. The EIS complies with environmental regulations and documents potential impacts to the natural and human environment.

Resources initially identified for analysis in the EIS include (but are not limited to) the following:

- **Airspace Operations** Airspace, Noise, Air Quality, and Safety (ground and air)
- **Natural Resources** Physical and Biological Resources
- **Cultural Resources** Cultural, Native American, Traditional, and Historic Resources
- **Human Resources** Land Use, Quality of Life, Socioeconomics, and Environmental Justice

Your input is essential to the environmental analysis process!

Providing Comments

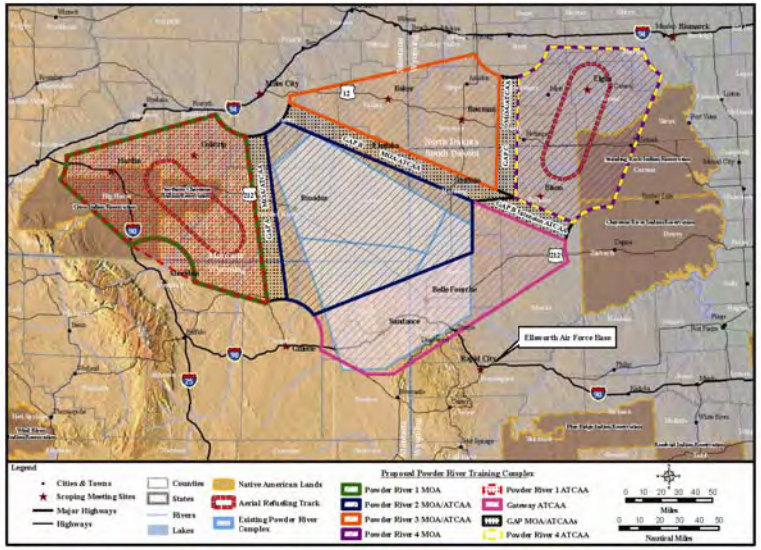
To provide comments, please fill out a comment sheet. Please give your comments to an Air Force representative or place it in the comment box. Comment forms, or your own letter, may also be mailed to:

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

To ensure your comments are considered in the Draft EIS, please submit your comments before ***August 4, 2008.***

Public comments on this Draft EIS are requested pursuant to the NEPA, 42 USC 4321, et seq. All written comments received during the comment period will be made available to the public and considered during EIS preparation. Your provision of private address information with your comment is voluntary. Your private address information will not be released in the EIS or for any other purpose, unless required by law. However, your private address information will be used to compile the mailing list for EIS distribution. Failure to provide such information will result in your name not being included on the distribution list.

Proposed Alternative A Airspace Changes



The proposed action would make the following modifications to the existing PRC.

Create PRTC Airspace: create new low altitude (500 feet AGL - 17,999 feet MSL) MOA airspace and new high altitude (18,000 - 60,000 feet MSL) ATCAA airspace and restructure and reconfigure the existing PRC MOAs and ATCAAs.

Increase Flight Operations: increase number, frequency and variety of sortie-operations.

Employ Large Force Exercises (LFE): use entire proposed PRTC for LFEs of 4 to more than 20 aircraft during scheduled exercises (typically once a quarter).

Support Training Transmitters: support additional ground based simulated emitters under the MOAs.

Permit Supersonic Flight: authorize above 10,000 feet AGL within the proposed PRTC.

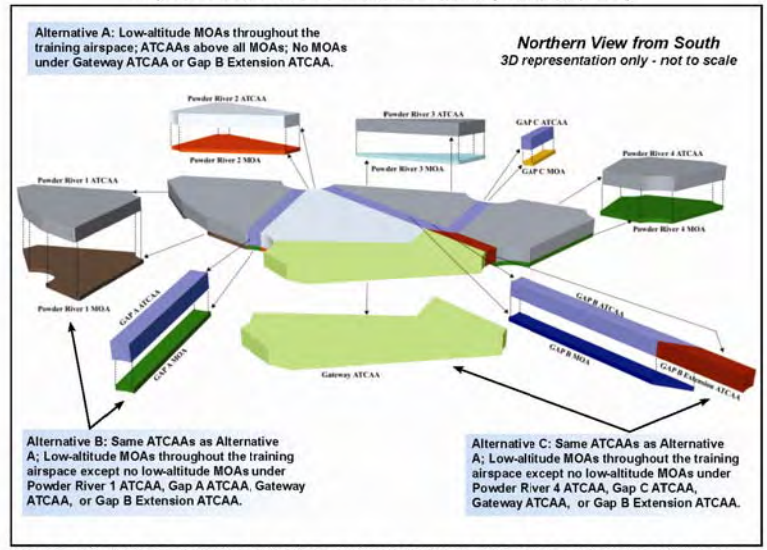
Authorize Defensive Countermeasures: allow training chaff and flare deployment throughout the proposed PRTC.

Alternative A

Under Alternative A, training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 31,700 square miles.

- Expand existing Powder River A/B MOAs and rename expanded airspace - Powder River 2 MOA (500 feet AGL to 17,999 feet MSL).
- Establish Powder River 1, 3, and 4 MOAs (500 feet AGL to 17,999 feet MSL).
- Combine and modify existing Crossbow and Powder River 1 ATCAAs to overlie Powder River 2 MOA and rename the ATCAAs - Powder River 2 ATCAA.
- Modify the Gateway ATCAA to lie adjacent to Powder River 2 ATCAA.
- Create the Powder River 1, 3, and 4 ATCAAs to connect/correspond with underlying MOAs.
- Establish Gap MOAs and ATCAAs between the Powder River 1, 2, 3, and 4 MOA/ATCAAs.

Proposed Action: Create Powder River Training Complex (PRTC)



All or portions of the following Reservations/counties have the potential of being affected by the training airspace under one or more of the alternatives: ***Montana***: Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***: Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***: Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, and Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

Alternative A Continued

- Configuration of the MOAs matches their corresponding and overlying ATCAAs, except Powder River 1 MOA.
- Locate two aerial refueling tracks (one each in Powder River 1 and 4 ATCAA).

Alternative B

Same as Alternative A except no low-altitude MOAs under proposed Powder River 1 or proposed Gap A ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 22,800 square miles.

Alternative C

Same as Alternative A except no low-altitude MOAs under proposed Powder River 4 or proposed Gap C ATCAA. Training aircraft in high-altitude ATCAAs would overfly approximately 37,800 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would overfly approximately 24,500 square miles.

No-Action Alternative

Training aircraft would continue to train in the existing PRC and to overfly parts or all of the following counties: **Montana:** Carter, Custer, Powder River; **South Dakota:** Butte, Custer, Harding, Lawrence, Meade, Pennington; **Wyoming:** Campbell, Crook, Weston.

Training aircraft in high-altitude ATCAAs would continue to overfly approximately 14,100 square miles and training aircraft in low-altitude MOAs, under the ATCAAs, would continue to overfly approximately 5,900 square miles.

Please Attend!

Scoping Meetings for the Powder River Training Complex (PRTC) Environmental Impact Statement (EIS)

Ellsworth Air Force Base (AFB), South Dakota proposes to modify their training airspace.

Please attend a public scoping meeting to:

- ☑ Learn more about the proposal
- ☑ Provide community-specific input
- ☑ Be included on our mailing list

Public Scoping Meetings

Open House 4:00 p.m. to 7:00 p.m.
Public invited to attend at any time. Information will be available throughout.

South Dakota

Rapid City
Monday, June 16, 2008
Rapid City Public Library
610 Quincy Street

Belle Fourche
Tuesday, June 17, 2008
Community Center
(Dakota Room)
1111 National Street

Buffalo
Monday, July 14, 2008
Harding County Memorial
Recreation Center
West Allison Street

Bison
Tuesday, July 15, 2008
Bison School Cafeteria
200 East Carr Street

Wyoming

Sundance
Wednesday, June 18, 2008
Crook County Public Library
414 East Main Street

Gillette
Thursday, June 19, 2008
Campbell County
Fire Department
106 Rohan Avenue

Sheridan
Friday, June 20, 2008
Sheridan Senior Center
North Entrance
211 Smith Street

Montana

Hardin
Monday, June 23
Hardin Chamber of Commerce
10 E. Railroad Street

Colstrip
Tuesday, June 24, 2008
Isabel Bills Community
Learning Center,
520 Poplar Drive

Miles City
Wednesday, June 25, 2008
Miles Community College
2715 Dickinson

Ekalaka
Thursday, June 26, 2008
St. Joan of Arc Parish Hall
Church Street

Broadus
Friday, June 27, 2008
Powder River County District
High School
500 North Trautman

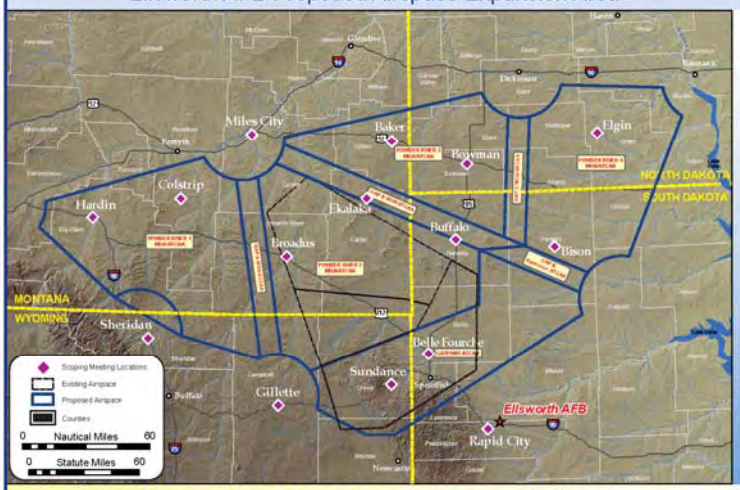
Baker
Tuesday, July 8, 2008
Baker High School
1015 South Third Street West

North Dakota

Bowman
Wednesday, July 9, 2008
City Hall Meeting Room
101 1st Street Southwest

Elgin
Thursday, July 10, 2008
Elgin Community Center
305 North Main Street

Ellsworth AFB Proposed Airspace Expansion Area



For more information about the meeting contact:

28th Bomb Wing
Ellsworth AFB, Public Affairs
(605) 385-5056

Send comments to:

Ms. Linda DeVine
EIS Project Manager
HQ ACC/A7PP
129 Andrews Street, Room 317
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For additional information visit our website at www.accplanning.org

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Perkins County Commissioners
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Bison, SD 57620-0126

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Custer, SD 57730-1951

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336 Pacific Avenue
Mott, ND 58646

Carter County Commissioners
214 Park Street
PO Box 315
Ekalaka, MT 59324-0315

Powder River County Commissioners
PO Box 270
Broadus, MT 59317-0270

Big Horn County Commissioners
PO Box 908
121 3rd Street
Hardin, MT 59034-0908

Treasure County Commissioners
307 Rapelje
Hysham, MT 59038-0392

Rosebud County Commissioners
1200 Main Street
Forsyth, MT 59327-0047

Yellowstone County Commissioners
PO Box 35000
Billings, MT 59107-5000

Haakon County Commissioners
PO Box 698
Philip, SD 57567-0698

Golden Valley County Commissioners
107 Kemp Street
Golden Valley, MT 59074

Custer County Commissioners
1010 Main Street
Miles City, MT 59301-3419

Global Power For America

Grant County Commissioners
106 2nd Avenue NE
Carson, ND 58529

Bowman County Commissioners
104 1st Street NW
Bowman, ND 58623

Butte County Commissioners
839 Fifth Avenue
Belle Fourche, SD 57717-1729

Ziebach County Commissioners
PO Box 68
Dupree, SD 57623-0068

Corson County Commissioners
PO Box 255
McIntosh, SD 57641-0255

Aurora County Commissioners
PO Box 397
Plankinton, SD 57368-0397

Perkins County Commissioners
PO Box 126
County Courthouse
Bison, SD 57620-0126

Commissioners
Emmons County
PO Box 905
Linton, ND 58552

Sioux County Commissioners
302 2nd Avenue
Fort Yates, ND 58538

Slope County Commissioners
206 S Main Street
Amidon, ND 58620

Pennington County Commissioners
315 St. Joseph Street
Rapid City, SD 57701-2885

Meade County Commissioners
1425 Sherman Street
Sturgis, SD 57785-1403

Pennington County Commissioners
315 Saint Joseph Street, Ste. 156
Rapid City, SD 57701

Crook County Commissioners
PO Box 37
Sundance, WY 82729-0037

Lawrence County Commissioners
90 Sherman Street
Deadwood, SD 57732

Sheridan County Commissioners
224 S. Main St., Ste. B1
Sheridan, WY 82801

Adams County Commissioners
602 Adams Avenue
Hettinger, ND 58639

Lawrence County Commissioners
90 Sherman Street
Deadwood, SD 57732

Harding County Commissioners
PO Box 26
Buffalo, SD 57720-0026

Fall River County Commissioners
906 N River Street
Hot Springs, SD 57747-1390

Fallon County Commissioners
10 West Fallon
PO Box 846
Baker, MT 59313-0846

Commissioners
Burleigh County
PO Box 5518
Bismarck, ND 58506

Dennis Johnson
Commission President
Dickinson City Commission
99 2nd Street East
Dickinson, ND 58601

Commissioners
Oliver County
115 W Main Street Box 188
Center, ND 58530

Global Power For America

Commissioners
Mercer County
PO Box 39
Stanton, ND 58571

Commissioners
Dunn County
205 Owens Street
Manning, ND 58642

Commissioners
McKenzie County
201 5th St NW
PO Box 543
Watford City, ND 58854

Commissioners
Morton County
210 2nd Avenue NW
Mandan, ND 58554

Eleanor Marousek
Butte County Historical Society
1119 Elkhorn Drive
Belle Fourche, SD 57717

Rosalee Brimmer
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104 North Bighorn Avenue
PO Box 70
Moorcroft, WY 82721

Ruth Benson
Executive Director
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PO Box 3948
201 W Lakeway Rd, Suite 1004

Dewey County Commissioners
PO Box 277
Timber Lake, SD 57656-0277

Campbell County Commissioners Office
500 S Gillette Avenue, Suite #1100
Gillette, WY 82716

Sturgis City Council
1040 Second St., Suite 103
Sturgis, SD 57785

Butte County Commissioners
839 Fifth Avenue
Belle Fourche, SD 57717

Gillette City Council
201 E 5th Street
PO Box 3003
Gillette, WY 82717

Lavina Town Office
117 Main Street
Lavina, MT 59046

City of Halliday
Halliday, ND 58636

Meade County Commissioners
1425 Sherman Street
Sturgis, SD 57785

Josh Lindstrom
President
Bowman Area Chamber of Commerce
PO Box 1143
13 1/2 East Divide
Bowman, ND 58623-1143

Robert Nelson
President
Flasher City Commission
106 N Main Street
Flasher, ND 58535

City of Regent
PO Box 86
Regent, ND 58650

Fromberg Town Hall
118 W River
Fromberg, MT 59029

City of Bridger
201 S B
Bridger, MT 59014

Roxanne Schrantz
Auditor
City of Hazelton
342 Main Street
Hazelton, ND 58544

Prairie County Commissioners
217 W Park
Terry, MT 59349-0125

Powder River County Commissioners
PO Box 270
Broadus, MT 59317-0270

Stillwater County Commissioners
400 3rd Avenue North
Columbus, MT 59019-7165

Global Power For America

Pete Lehmann
Government Analyst
Air Traffic Services
Aircraft Owners and Pilots Association
421 Aviation Way
Frederick, MD 21701-4798

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Director
North Dakota Aeronautics Commission
2301 University Dr., Building 1652-22
PO Box 5020
Bismarck, ND 58502

John Boe
Chairman
Langdon Airport Authority
324 8th Ave
Langdon, ND 58249

Powder River Chamber of Commerce
119 E. Wilson Street
Broadus, MT 59317

Dickinson Area Chamber of Commerce
314 3rd Ave West
Dickinson, ND 58602

Sonja Woods
Library Director
Miles City Public Library
One South Tenth Street
Miles City, MT 59301

Bill Cochran
Library Director
Parmly Billings Library
510 North Broadway
Billings, MT 59101

Patty Myers
Executive Director
Campbell County Public Library
2101 South 4J Road
Gillette, WY 82718

Linda Kerr
President
Carter County Chamber of Commerce
PO Box 108
Ekalaka, MT 59324

Dannette Cremer
President
Miles City Area Chamber of Commerce
511 Pleasant Street
Miles City, MT 59301

Randy Hansen
Government Relations Director
Experimental Aircraft Association (EAA)
PO Box 3086
Oshkosh, WI 54903

Forsyth Area Chamber of Commerce and Agriculture
PO Box 448
Forsyth, MT 59327

Mike Schulte
Acting President
Wyoming Pilots Association
3904 Central Avenue, Suite A#134
Cheyenne, WY 82001

Darlene Staffeldt
State Librarian
Montana State Library
PO Box 201800
1515 East 6th Avenue
Helena, MT 59620-1800

Doris Ott
State Librarian
North Dakota State Library
604 E Boulevard Avenue
Bismarck, ND 58505-0800

Sharon Henry
Library Director
Grace Balloch Memorial Library
625 Fifth Street
Spearfish, SD 57783

Larry Taborsky
Vice President
North Dakota Pilots Association
PO Box 5020
Bismarck, ND 58502

Russ Dahl
President
Montana Pilots' Association
498 BIA RT 1
Nashua, MT 59248

Grove Rathbun
President
South Dakota Pilots Association
1265 Duffer Drive
Rapid City, SD 57702

Karol Zachmann
President
Baker Chamber of Commerce
Box 549
Baker, MT 59313

Marci Mock
Circulation Manager
Sheridan County Fulmer Public Library
335 W Alger Street
Sheridan, WY 82801

Jeanette Lundquist
Director
Deadwood Public Library
435 Williams Street
Deadwood, SD 57732

Pat Engebretson
Librarian
Belle Fourche Public Library
905 5th Avenue
Belle Fourche, SD 57717

Dan Siebersma
State Librarian
South Dakota State Library
Mercedes MacKay Building
800 Governors Drive
Pierre, SD 57501

Global Power For America

Jill Mackey
Director
Crook County Public Library
414 Main Street
PO Box 910
Sundance, WY 82729

Diana Oedekoven
Library Director
Gillette College Library
300 W Sinclair
Gillette, WY 82718

MaryKay Bullard
Branch Librarian
Bicentennial Library
415 Willow Avenue
Colstrip, MT 59323

Vera Abrams
Library Director
Fallon County Library
6 West Fallon Avenue
Baker, MT 59313

Sarah Regan Snavely
Library Director
Bowman Regional Public Library
18 East Divide Street
Bowman, ND 58623

Sheridan College Griffith Memorial Library
3059 Coffeen Avenue
PO Box 1500
Sheridan, WY 82801

Greta Chapman
Director
Rapid City Public Library
610 Quincy Street
Rapid City, SD 57701

Diane Stuver
Library Director
Henry A Malley Memorial Library
102 South Lincoln
Broadus, MT 59317

Cheryl Tollefson
Library Director
Dickinson Area Public Library
139 3rd Street West
Dickinson, ND 58602

Jennifer Cole
Library Director
Ekalaka Public Library
115 S Main Street
Ekalaka, MT 59324

Cheryl Heser
Library Director
Rosebud County Library
201 North 9th Avenue
Forsyth, MT 59327

Lesley Boughton
State Librarian
Wyoming State Library
516 S Greeley Hwy
Cheyenne, WY 82002

Global Power For America

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Cooperating Agency Correspondence

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DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

OFFICE OF THE ASSISTANT SECRETARY

SEP 2 8 2007

SAF/IEE
1665 Air Force Pentagon
Washington DC 20330-1665

Ms. Nancy B. Kalinowski
Director, System Operations
Federal Aviation Administration
Airspace & Aeronautical Information Management
800 Independence Avenue, S.W.
Washington DC 20591

Dear Ms. Kalinowski

In accordance with the President's Council on Environmental Quality National Environmental Policy Act Regulations 40 CFR § 1501.6, *Cooperating Agencies*, the Air Force requests the participation of the Federal Aviation Administration (FAA) as a cooperating agency in the preparation of two unrelated Air Force Environmental Impact Statements (EIS) for:

a. Extension and modifications to the White Elk Military Operating Area in Nevada. This airspace initiative would support Ready Aircrew Program training of the 388 Fighter Wing, Hill AFB, Utah, during times when the Utah Test and Training Range is being used for higher priority testing.

b. Modification of the Powder River Training Complex in Montana, Wyoming, North Dakota and South Dakota. This airspace initiative would support the 28th Bomb Wing, Ellsworth AFB, South Dakota, among others, by providing realistic combat training that maximizes valuable aircrew flying hours while saving millions of dollars annually.

As a cooperating agency, the Air Force requests the FAA participate in various portions of the EIS development as may be required. Specifically, the Air Force asks the FAA to support as a cooperating agency by:

- Participating in the scoping process
- Assuming responsibility, upon request by the Air Force, for developing information and preparing analyses on issues for which the FAA has special expertise; and
- Making staff support available to enhance interdisciplinary review capability.

Please respond in writing to this request. Should you or your staff have any questions regarding this memo, our Headquarters Air Combat Command points of contact are Ms Sheryl K. Parker, A7PP, (757) 764-9334 for the White Elk, and Ms Linda DeVine, A7PP, (757)-764-9434 for the Powder River.

Sincerely

FOR

KEVIN W. BILLINGS
Deputy Assistant Secretary
(Environment, Safety and Occupational Health)

10/23/07 15:31 FAX 001

U.S. Department
of Transportation
Federal Aviation Administration

RECEIVED OCT 15 2007

System Operations Airspace and
Aeronautical Information Management
800 Independence Ave., SW.
Washington, DC 20591

OCT 10 2007

Kevin W. Billings
Deputy Assistant Secretary
(Environment, Safety and Occupational Health)
SAF/IEE
1665 Air Force Pentagon
Washington, DC 20330-1665

Dear Mr. Billings:

Thank you for your letter of September 28, 2007 requesting Federal Aviation Administration participation in the environmental processes associated with two unrelated U. S. Air Force (USAF) proposals. We understand that the USAF is proposing to extend and modify the White Elk Military Operations Area (MOA) in Nevada; and, is also proposing to modify the Powder River Training Complex (PRTC), which includes airspace in the Montana, Wyoming, North Dakota, and South Dakota areas.

We are pleased to participate as a cooperating agency, in accordance with the National Environmental Policy Act of 1969, as Amended, and its' implementing regulations. Since the proposals contemplate activities associated with Special Use Airspace (SUA), the FAA will cooperate following the guidelines described in the Memorandum of Understanding between the FAA and the Department of Defense Concerning SUA Environmental Actions, dated October 4, 2005.

The FAA Western Service Area will be the primary focal point for matters related to the White Elk MOA, while the Central Service Area will be the primary focal point for matters related to the PRTC environmental processes. I have forwarded a copy of this letter and your letter to the Western System Support Group Manager, Mr. Clark Desing who can be contacted directly at (425) 917-6700; and to the Central System Support Group Manager, Mr. Don Smith who can be contacted directly at (817) 222-5530. The FAA looks forward to working with the USAF on the environmental process associated with the two proposals identified above.

Sincerely,

Edith V. Parish,
Acting Director

cc: Central and Western Service Areas, System Support

Consultation and Coordination Letters

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STATE HISTORICAL SOCIETY OF NORTH DAKOTA

John Hoeven
Governor of North Dakota

North Dakota State Historical Board

Albert I. Berger
Grand Forks - President

Chester E. Nelson, Jr.
Bismarck - Vice President

Gereld Gerntholz
Valley City - Secretary

A. Ruric Todd III
Jamestown

Diane K. Larson
Bismarck

Marvin L. Kaiser
Williston

Richard Kloubec
Fargo

Sara Otte Coleman
Director
Tourism Division

Kelly Schmidt
State Treasurer

Alvin A. Jaeger
Secretary of State

Douglass Prchal
Director
Parks and Recreation Department

Francis Ziegler
Director
Department of Transportation

Merlan E. Paaverud, Jr.
Director

Accredited by the American Association of Museums

June 18, 2008

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street
Langley AFB VA 23665-2769

ND SHPO 08-0893: Powder River Training Complex, Environmental Impact Statement (EIS), North Dakota

Dear Ms. DeVine;

We received your preliminary information regarding ND SHPO 08-0893: Powder River Training Complex, Environmental Impact Statement (EIS) in North Dakota and other western states. We seek additional information regarding practices that have the potential to impact cultural resources, including low-altitude training, the nature and distribution of "chaff" and "flares" and the type and distribution of "ground-based assets."

Thank you for the opportunity to review this project. We look forward to further consultation regarding this project. If you have any questions please contact Susan Quinnell, Review and Compliance Coordinator at (701) 328-3576, squinnell@nd.gov or Paul Picha, Chief Archaeologist, (701) 328-3574.

Sincerely,

Merlan E. Paaverud, Jr.
State Historic Preservation Officer (North Dakota)

North Dakota Heritage Center • 612 East Boulevard Avenue, Bismarck, ND 58505-0830 • Phone 701-328-2666 • Fax: 701-328-3710
Email: histsoc@nd.gov • Web site: http://www.nd.gov/hist• TTY: 1-800-366-6888

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SouthDakota Department of Tourism and State Development

July 7, 2008

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

Project: 080604006F – Power River Training Complex, Environmental Impact Statement
Location: Multiple Counties
(DOD/Air Force)

Dear Ms. DeVine:

Thank you for the opportunity to comment on the above referenced project. The South Dakota Office of the State Historic Preservation Officer (SHPO) would like to provide the following list of areas in South Dakota that may be considered Traditional Cultural Properties and/or places of religious and cultural significance to Indian Tribes. The list also includes contact information for each land managing agency associated with the resource.

Bear Butte National Historic Landmark:	Bear Butte State Park PO Box 688; E Hwy 79 Sturgis, SD 57785
National Park Service:	Ernest Quintana, Regional Director National Park Service, MWRO 601 River Front Drive Omaha, NE 68102
Black Hills:	District Ranger Black Hills National Forest Northern Hills Ranger District 2014 N. Main Street Spearfish, SD 57783
Custer National Forest:	Forest Supervisor Custer National Forest 1310 Main Street Billings, MT 59105

Office of Tourism
Governor's Office of Economic Development
Tribal Government Relations
711 E Wells Ave / Pierre, SD 57501-3369
Phone: 605-773-3301 / Fax: 605-773-3256
travelsd.com / sdgreatprofts.com /
sdtribalrelations.com

South Dakota Arts Council
800 Governors Dr. / Pierre, SD 57501-2294
Phone: 605-773-3131 or 1-800-423-6665 in SD
Fax: 605-773-6962
sdac@state.sd.us / sdarts.org

South Dakota State Historical Society
900 Governors Dr. / Pierre, SD 57501-2217
Phone: 605-773-3458 / Fax: 605-773-6041
sdhistory.org

South Dakota Housing Development Authority
PO Box 1237 / Pierre, SD 57501-1237
Phone: 605-773-3181 / Fax: 605-773-5154
sdhda.org

Please note the above list is not all inclusive. For additional information concerning the identification of historic properties, we recommend contacting the appropriate consulting parties as outlined in 36 CFR part 800 – Protection of historic properties. For your convenience a list of Indian Tribes and contact information has been included.

Should you require additional information, please contact Paige Hoskinson Olson, Review and Compliance Coordinator, at (605) 773-6004. Your concern for the non-renewable cultural heritage of our state is appreciated.

Sincerely,

Jay D. Vogt
State Historic Preservation Officer

Paige Hoskinson Olson
Review and Compliance Coordinator

Enclosure: South Dakota Tribal Chairman and Tribal Historic Preservation Offices

South Dakota Tribal Chairman and Tribal Historic Preservation Offices

Chairman: Joseph Brings Plenty
Cheyenne River Sioux Tribe
PO Box 590
Eagle Butte, SD 57625-0590
Phone (605) 964-4155
Fax (605) 964-4151

THPO:
Cheyenne River Sioux Tribe
Tribal Historic Preservation Office
PO Box 590
Eagle Butte, SD 57625
Phone (605) 964-7554
Fax (605) 964-7552

Chairman: Brandon Sazue Sr.
Crow Creek Sioux Tribe
PO Box 50
Ft. Thompson, SD 57339-0050
Phone (605) 245-2221
Fax (605) 245-2470

Chairman: Josh Weston
Flandreau-Santee Sioux Tribe
PO Box 283
Flandreau, SD 57028-0283
Phone (605) 997-3512
Fax (605) 997-3878

Chairman: Michael Jandreau
Lower Brule Sioux Tribe
PO Box 187
Lower Brule, SD 57548-0187
Phone (605) 473-5561
Fax (605) 473-5606

Cultural Resources: Scott Jones
Lower Brule Sioux Tribe
PO Box 187
Lower Brule, SD 57548-0187
Phone (605) 473-5561
Fax (605) 473-5606

Chairman: John Yellow Bird Steele
Oglala Sioux Tribe
PO Box 2070
Pine Ridge, SD 57770-2070
Phone (605) 867-5821
Fax (605) 867-1449

Cultural Resources: Joyce Whiting
Oglala Sioux Tribe
US Highway 18
Behind Tribal Building
Pine Ridge, SD 57770
(605) 867-1271

Chairman: Rodney Bordeaux
Rosebud Sioux Tribe
PO Box 430
Rosebud, SD 57570-0430
Phone (605) 747-2381
Fax (605) 747-2243

THPO: Russell Eagle Bear
Rosebud Sioux Tribe
Tribal Historic Preservation Office
PO Box 658
Rosebud, SD 57570-0658
Phone (605) 747-2381
Fax (605) 747-4227
Kathy Arcoren
Phone (605) 747-4255
rstthpo@yahoo.com

Chairman: Mike Selvage
Sisseton-Wahpeton Oyate
PO Box 509
Agency Village, SD 57262-0509
Phone (605) 698-3911
Fax (605) 698-3708

Chairman: Ron His Horse Is Thunder
Standing Rock Sioux Tribe
PO Box D
Ft. Yates, ND 58538-0522
Phone (701) 854-8500
Fax (701) 854-7299

Chairman: Robert Cournoyer
Yankton Sioux Tribe
PO Box 248
Marty, SD 57361-0248
Phone (605) 384-3641
Fax (605) 384-5687

Chairman: Marcus D. Wells, Jr.
Mandan, Hidatsa & Arikara Nation
Three Affiliated Tribes
404 Frontage Road
New Town, ND 58763
Phone: (701) 627-4781
Fax (701) 627-4748

THPO: Dianne Desrosiers
Sisseton-Wahpeton Oyate
PO Box 907
Sisseton, SD 57262
Phone (605) 698-4972
Fax (605) 698-7054

THPO: Tim Mentz, Sr.
Standing Rock Sioux Tribe
Tribal Historic Preservation Office
PO Box D
Fort Yates, ND 58538
Phone (701) 854-2120
Fax (701) 854-2138

THPO:
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404 Frontage Road
New Town, ND 58763
Phone: (701) 627-4781
Fax (701) 627-4748

THPO: Brady Grant
Turtle Mountain Band of Chippewa
PO Box 900
Belcourt, North Dakota 58316
(701) 477-2604

THPO: Pam Halverson
Lower Sioux Indian Community
PO Box 308
39527 Res Hwy 1
Morton MN 56270
(507)697-6185

THPO: Curley Youpee
Fort Peck
PO Box 836
Poplar MT 59255
(406) 768-5155

THPO: Joanne White
Northern Arapaho Tribe
533 Ethete Rd
Ethete, WY 82520

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
420 South Garfield Avenue, Suite 400
Pierre, South Dakota 57501-5408

June 13, 2008

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Suite 122
Langley Air Force Base, Virginia 23665-2769

Re: Powder River Training Complex,
Environmental Impact Statement,
Multiple Counties in South Dakota

Dear Ms. DeVine:

This letter is in response to your request dated June 3, 2008, for environmental comments regarding the above referenced project involving the expansion and enhancement of the existing Powder River Complex near Ellsworth Air Force Base. The area under consideration includes Standing Rock and Cheyenne River Reservations and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, and Ziebach Counties in South Dakota.

Please consult National Wetlands Inventory maps (available online at http://wetlands.fws.gov/) for any wetlands that exist in the area of proposed activity. If a project may impact wetlands or other important fish and wildlife habitats, the U.S. Fish and Wildlife Service (Service), in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) and other environmental laws and rules, recommends complete avoidance of these areas, if possible; then minimization of any adverse impacts; and finally, replacement of any lost acres; in that order. Alternatives should be examined and the least damaging practical alternative selected. If wetland impacts are unavoidable, a mitigation plan addressing the number and types of wetland acres to be impacted and the methods of replacement should be prepared and submitted to the resource agencies for review.

Work requiring the alteration or disturbance of wetlands or streams may require a permit from the U.S. Army Corps of Engineers (Corps) according to the regulations set forth in section 10 of the Rivers and Harbors Act or section 404 of the Clean Water Act. You may contact the Corps' Regulatory Office at 28563 Powerhouse Road, Room 118, Pierre, South Dakota 57501, Telephone No. (605) 224-8531.

Enclosed is a list of endangered species by county. In accordance with section 7(c) of the Endangered Species Act, as amended, 16 U.S.C. 1531 et seq., we have determined that the following federally listed species may occur in the project area (this list is considered valid for 90 days):

Species	Status	Expected Occurrence
Whooping crane (Grus americana)	Endangered	Migration.
Least tern (Sterna antillarum)	Endangered	Migration, Nesting.
Piping plover (Charadrius melodus)	Threatened	Migration, Nesting.
Black-footed ferret (Mustela nigripes)	Endangered/Proposed (Experimental Populations Only)	Potential Resident in Pennington County
Topeka shiner (Notropis topeka)	Endangered	Known Resident.
Bald eagle (Haliaeetus leucocephalus)	Delisted	Migration, Winter Resident, Possible Nesting.

Whooping cranes migrate through South Dakota on their way to northern breeding grounds and southern wintering areas. They occupy numerous habitats such as cropland and pastures; wet meadows; shallow marshes; shallow portions of rivers, lakes, reservoirs, and stock ponds; and both freshwater and alkaline basins for feeding and loafing. Overnight roosting sites frequently require shallow water in which they stand and rest. Should construction/activities occur during spring or fall migration, the potential for disturbances to whooping cranes exists. Disturbance (flushing the birds) stresses them at critical times of the year. We recommend that you remain vigilant for these birds. There is little that can be done to reduce disturbance besides ceasing construction at sites where the birds have been observed. The birds normally do not stay in any one area for long during migration. Any whooping crane sightings should be reported to this office.

Least terns and piping plovers are known to nest on the Missouri River and the Cheyenne River, and they may occur along the Moreau River. These species use sparsely vegetated interchannel sandbars, islands, and shorelines for nesting, foraging, and brood-rearing. They are sensitive to human disturbances which often limit reproduction. Surveys for nesting piping plovers and least terns should be performed prior to any construction, and no construction should take place within one-quarter (1/4) mile of any known piping plover or least tern nest. The birds typically breed in South Dakota between the dates of May 1 and August 15.

Several populations of black-footed ferrets have been reintroduced into South Dakota. Sustainable black-footed ferret populations are exclusively dependent on black-tailed prairie dog colonies for food and habitat. Any black-tailed prairie dog towns >80 acres in size or any towns that are part of a ≥1,000 acre complex of prairie dog colonies may be considered black-footed ferret habitat, and surveys for black-footed ferrets may be required prior to any construction on colonies meeting the above requirements.

Topeka shiners are known to occupy numerous small streams within eastern South Dakota, and most are concentrated within the Big Sioux, Vermillion, and James River watersheds. If any work/activities will be conducted in streams, please contact our office to determine which best management practices would minimize potential adverse impacts to the Topeka shiner.

Although the bald eagle has been delisted from the Endangered Species List, it is still protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Bald eagles occur throughout South Dakota, and new nests are appearing each year. The birds are associated with large trees, such as cottonwoods, and large lake or river systems, such as the Missouri River. New nests may have been constructed this spring. The best means of avoiding impacts to these birds is by performing activities outside the nesting season of January to August. No construction should occur within one-quarter (1/4) mile of any known active bald eagle nest, and the Service requests notification if any nests are found within one (1) mile of a proposed construction site. Any nests found should be reported to this office.

If the Federal action agency or their designated representative determines that the project "may adversely affect" listed species in South Dakota, it should request formal consultation from this office. If a "may affect - not likely to adversely affect" determination is made for this project, it should be submitted to this office for concurrence. If a "no effect" determination is made, further consultation may not be necessary. However, a copy of the determination should be sent to this office. For more information regarding Federal action agency responsibilities as related to section 7 of the Endangered Species Act, please refer to the Service's Endangered Species Act Consultation Handbook, available online at http://endangered.fws.gov/consultations/index.html.

If changes are made in the project plans or operating criteria, or if additional information becomes available, the Service should be informed so that the above determinations can be reconsidered.

The Service appreciates the opportunity to provide comments. If you have any questions on these comments, please contact Charlene Bessken of this office at (605) 224-8693, Extension 231.

Sincerely,

Pete Gober
Field Supervisor
South Dakota Field Office

Enclosure

cc: Corps/Regulatory; Pierre, SD
(Attention: Steve Naylor)
SAIC; Carpinteria, CA
(Attention: Dr. Thomas W. Mulroy)

U.S. Fish & Wildlife Service

Mountain-Prairie Region
South Dakota Ecological Services Field Office

ENDANGERED SPECIES BY COUNTY LIST
(updated 18 December 2007)

STATE: SOUTH DAKOTA

The Bald Eagle was removed from the List of Endangered and Threatened Wildlife effective August 8, 2007. The protections provided to the bald eagle under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act will continue to remain in place after the species is delisted. National Bald Eagle Management Guidelines have been developed. This rule change does not affect the bald eagle's status as a threatened or endangered species under State laws or suspend any other legal protections provided by State law.

T - Threatened
E - Endangered
XN - Proposed/Experimental Population
CH - Critical Habitat
PCH - Proposed Critical Habitat

COUNTY	GROUP	SPECIES	CERTAINTY OF OCCURRENCE	STATUS
AURORA	BIRD	CRANE, WHOOPING	KNOWN	E
	FISH	SHINER, TOPEKA	KNOWN	E
BEADLE	BIRD	CRANE, WHOOPING	KNOWN	E
	FISH	SHINER, TOPEKA	KNOWN	E
BENNETT	BIRD	CRANE, WHOOPING	KNOWN	E
	INSECT	BEETLE, AMERICAN BURYING[2]	KNOWN	E
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED[1]	POSSIBLE	T
BON HOMME	BIRD	PLOVER, PIPING	KNOWN	T (CH)
		TERN, LEAST	KNOWN	E
	FISH	STURGEON, PALLID	KNOWN	E
BROOKINGS	INSECT	BEETLE, AMERICAN BURYING[2]	POSSIBLE	E
	FISH	SHINER, TOPEKA	KNOWN	E

	PLANT	ORCHID, WESTERN PRAIRIE FRINGED[1]	POSSIBLE	T
BROWN	BIRD	CURLEW, ESKIMO	EXTREMELY RARE	E
	FISH	SHINER, TOPEKA	KNOWN	E
BRULE	BIRD	CRANE, WHOOPING	KNOWN	E
		PLOVER, PIPING	POSSIBLE	T
	FISH	STURGEON, PALLID	KNOWN	E
BUFFALO	BIRD	CRANE, WHOOPING	KNOWN	E
		PLOVER, PIPING	POSSIBLE	T
	FISH	STURGEON, PALLID	KNOWN	E
BUTTE	BIRD	CRANE, WHOOPING	KNOWN	E
CAMPBELL	BIRD	CRANE, WHOOPING	KNOWN	E
		PLOVER, PIPING	KNOWN	T (CH)
		TERN, LEAST	KNOWN	E
	FISH	STURGEON, PALLID	POSSIBLE	E
CHARLES MIX	BIRD	CRANE, WHOOPING	KNOWN	E
		PLOVER, PIPING	KNOWN	T (CH)
		TERN, LEAST	KNOWN	E
	FISH	STURGEON, PALLID	KNOWN	E
CLARK	BIRD	CRANE, WHOOPING	KNOWN	E
	FISH	SHINER, TOPEKA[3]	KNOWN	E
CLAY	BIRD	PLOVER, PIPING	KNOWN	T (CH)

		TERN, LEAST	KNOWN	E
	FISH	SHINER, TOPEKA	KNOWN	E
		STURGEON, PALLID	POSSIBLE	E
	MOLLUSK	MUSSEL, SCALESHELL[6]	HISTORICAL, MISSOURI RIVER	E
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED[1]	POSSIBLE	T
CODINGTON	BIRD	CRANE, WHOOPING	KNOWN	E
	FISH	SHINER, TOPEKA	POSSIBLE	E
CORSON	BIRD	CRANE, WHOOPING	KNOWN	E
		PLOVER, PIPING	KNOWN	T (CH)
		TERN, LEAST	KNOWN	E
	FISH	SHINER, TOPEKA	HISTORICAL	E
		STURGEON, PALLID	POSSIBLE	E
CUSTER	MAMMAL	FERRET, BLACK-FOOTED	KNOWN	E
DAVISON	FISH	SHINER, TOPEKA	KNOWN	E
DAY	BIRD	PLOVER, PIPING	KNOWN	T
DEUEL	FISH	SHINER, TOPEKA[3]	KNOWN	E
DEWEY	BIRD	CRANE, WHOOPING	KNOWN	E
		PLOVER, PIPING	KNOWN	T (CH)
		TERN, LEAST	KNOWN	E

	FISH	SHINER, TOPEKA	HISTORICAL	E
		STURGEON, PALLID	KNOWN	E
	MAMMAL	FERRET, BLACK-FOOTED[4]	KNOWN	XN
DOUGLAS	BIRD	CRANE, WHOOPING	KNOWN	E
EDMUNDS	BIRD	CRANE, WHOOPING	KNOWN	E
FALL RIVER				
FAULK	BIRD	CRANE, WHOOPING	KNOWN	E
GRANT	FISH	SHINER, TOPEKA[3]	POSSIBLE	E
GREGORY	BIRD	CRANE, WHOOPING	KNOWN	E
		PLOVER, PIPING	KNOWN	T (CH)
		TERN, LEAST	KNOWN	E
	INSECT	BEETLE, AMERICAN BURYING[2]	KNOWN	E
	FISH	STURGEON, PALLID	KNOWN	E
	MAMMAL	FERRET, BLACK-FOOTED[4]	POSSIBLE	XN
HAAKON	BIRD	CRANE, WHOOPING	KNOWN	E
		PLOVER, PIPING	KNOWN	T
		TERN, LEAST	KNOWN	E
	INSECT	BEETLE, AMERICAN BURYING[2]	POSSIBLE	E
HAMLIN	FISH	SHINER, TOPEKA[3]	KNOWN	E
HAND	BIRD	CRANE, WHOOPING	KNOWN	E
HANSON	FISH	SHINER, TOPEKA	KNOWN	E
HARDING				
HUGHES	BIRD	CRANE, WHOOPING	KNOWN	E
		PLOVER, PIPING	KNOWN	T (CH)

		TERN, LEAST	KNOWN	E
	FISH	STURGEON, PALLID	KNOWN	E
HUTCHINSON	FISH	SHINER, TOPEKA	KNOWN	E
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED[1]	POSSIBLE	T
HYDE	BIRD	CRANE, WHOOPING	KNOWN	E
JACKSON	BIRD	CRANE, WHOOPING	KNOWN	E
	MAMMAL	FERRET, BLACK-FOOTED[4]	POSSIBLE	XN
JERAULD	BIRD	CRANE, WHOOPING	KNOWN	E
	FISH	SHINER, TOPEKA[3]	KNOWN	E
JONES	BIRD	CRANE, WHOOPING	KNOWN	E
KINGSBURY	BIRD	CRANE, WHOOPING	KNOWN	E
		PLOVER, PIPING	KNOWN	T
	FISH	SHINER, TOPEKA[3]	KNOWN	E
LAKE	FISH	SHINER, TOPEKA[3]	KNOWN	E
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED[1]	POSSIBLE	T
LAWRENCE	BIRD	CRANE, WHOOPING	KNOWN	E
LINCOLN	FISH	SHINER, TOPEKA	KNOWN	E
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED[1]	POSSIBLE	T
LYMAN	BIRD	CRANE, WHOOPING	KNOWN	E
		PLOVER, PIPING	POSSIBLE	T
MARSHALL				
MCCOOK	FISH	SHINER, TOPEKA	KNOWN	E
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED[1]	POSSIBLE	T
MCPHERSON	BIRD	CRANE, WHOOPING	KNOWN	E
MEADE	BIRD	CRANE, WHOOPING	KNOWN	E
		TERN, LEAST	KNOWN	E
MELLETTE	BIRD	CRANE, WHOOPING	KNOWN	E
	MAMMAL	FERRET, BLACK-FOOTED[4]	POSSIBLE	XN
MINER	FISH	SHINER, TOPEKA	KNOWN	E
	PLANT	ORCHID, WESTERN PRAIRIE	POSSIBLE	T

		FRINGED[1]		
MINNEHAHA	FISH	SHINER, TOPEKA	KNOWN	E
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED[1]	POSSIBLE	T
MOODY	FISH	SHINER, TOPEKA	KNOWN	E
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED[1]	POSSIBLE	T
PENNINGTON	BIRD	CRANE, WHOOPING	KNOWN	E
		TERN, LEAST	KNOWN	E
	MAMMAL	FERRET, BLACK-FOOTED[4]	KNOWN	XN
PERKINS	BIRD	CRANE, WHOOPING	KNOWN	E
POTTER	BIRD	CRANE, WHOOPING	KNOWN	E
		PLOVER, PIPING	KNOWN	T (CH)
		TERN, LEAST	KNOWN	E
	FISH	STURGEON, PALLID	KNOWN	E
ROBERTS	PLANT	ORCHID, WESTERN PRAIRIE FRINGED[1]	POSSIBLE	T
SANBORN	FISH	SHINER, TOPEKA	KNOWN	E
SHANNON	BIRD	CRANE, WHOOPING	KNOWN	E
	MAMMAL	FERRET, BLACK-FOOTED[4]	KNOWN	XN
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED[1]	POSSIBLE	T
SPINK	BIRD	CRANE, WHOOPING	KNOWN	E
	FISH	SHINER, TOPEKA[3]	POSSIBLE	E
STANLEY	BIRD	CRANE, WHOOPING	KNOWN	E
		PLOVER, PIPING	KNOWN	T (CH)
		TERN, LEAST	KNOWN	E
	FISH	STURGEON, PALLID	KNOWN	E
SULLY	BIRD	CRANE, WHOOPING	KNOWN	E
		PLOVER, PIPING	KNOWN	T (CH)
		TERN, LEAST	KNOWN	E
	FISH	STURGEON, PALLID	KNOWN	E
TODD	INSECT	BEETLE, AMERICAN BURYING[2]	KNOWN	E
	MAMMAL		KNOWN	XN

		FERRET, BLACK-FOOTED[4]		
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED[1]	POSSIBLE	T
TRIPP	BIRD	CRANE, WHOOPING	KNOWN	E
	INSECT	BEETLE, AMERICAN BURYING[2]	KNOWN	E
	MAMMAL	FERRET, BLACK-FOOTED[4]	POSSIBLE	XN
TURNER	FISH	SHINER, TOPEKA	KNOWN	E
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED[1]	POSSIBLE	T
UNION	BIRD	PLOVER, PIPING	KNOWN	T
		TERN, LEAST	KNOWN	E
	INSECT	BEETLE, AMERICAN BURYING[2]	POSSIBLE	E
	FISH	SHINER, TOPEKA	KNOWN	E
		STURGEON, PALLID	POSSIBLE	E
	MOLLUSK	MUSSEL, SCALESHELL	Historic, Missouri River	E
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED[1]	POSSIBLE	T
WALWORTH	BIRD	CRANE, WHOOPING	KNOWN	E
		PLOVER, PIPING	KNOWN	T (CH)
		TERN, LEAST	KNOWN	E
	FISH	STURGEON, PALLID	POSSIBLE	E
YANKTON	BIRD	CURLEW, ESKIMO	EXTREMELY RARE	E
		PLOVER, PIPING	KNOWN	T (CH)
		TERN, LEAST	KNOWN	E
	FISH	SHINER, TOPEKA[3]	POSSIBLE	E
		STURGEON, PALLID	POSSIBLE	E
	MOLLUSK	MUSSEL, SCALESHELL[6]	Historic, Missouri River	E
		PEARLYMUSSEL, HIGGINS EYE[5,6]	One Dead Specimen Found	E
	PLANT	ORCHID, WESTERN PRAIRIE FRINGED[1]	POSSIBLE	T
ZIEBACH	BIRD	CRANE, WHOOPING	KNOWN	E
		PLOVER, PIPING	KNOWN	T (CH)
		TERN, LEAST	KNOWN	E
	MAMMAL	FERRET, BLACK-FOOTED[4]	POSSIBLE	XN

[1] The counties indicated for the Western Prairie Fringed Orchid are counties with potential habitat. Currently, there are no known populations of this species in South Dakota. Status surveys have been completed for the orchid in South Dakota. However, because of the ecology of this species, there is a possibility that plants may be overlooked.

[2] The American Burying Beetle is presently known to occur in Gregory, Tripp and Todd counties. One specimen was recently trapped in Bennett County. A comprehensive status survey has never been completed for the American burying beetle in South Dakota. Until status surveys have been completed, the beetle could and may occur in any county with suitable habitat. Suitable habitat is considered to be any site with significant humus or topsoil suitable for burying carrion.

[3] Although Topeka Shiners have not been formally documented within Clark, Grant, Jerauld, Kingsbury, Lake, Spink, or Yankton Counties, the shiners may still occur in these areas because the counties contain portions of known Topeka Shiner inhabited rivers and/or tributary streams.

[4] Block clearance is a strategy developed by the Service to determine the likelihood of black-footed ferret occurrence in a geographic area and provide sufficient information to allow the Service to assess an area for the biological potential for contributing to recovery of the ferret. The act of block clearing an area negates the need to conduct future ferret surveys to comply with section 7 of the Endangered Species Act. The exception is for National Park Service lands and US Fish and Wildlife Service lands - ferrets are considered threatened in those areas. Black-footed ferrets have been reintroduced in Badlands National Park, Buffalo Gap National Grasslands and Cheyenne River Sioux Tribe Reservation.

[5] A fresh dead shell of a Higgins Eye Pearlymussel was found below Gavins Point Dam on October 27, 2004.

[6] Shells of these species have been found, but no populations have been located.

Any corrections or additions to this list should be submitted to Pete Gober, U.S. Fish and Wildlife Service, South Dakota Field Office, Ecological Services, 420 South Garfield Avenue, Pierre, SD; Telephone (605)224-8693, ext. 224.

Return to SD Endangered Species Page FWS South Dakota Home Page

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

May 17, 2011

MEMORANDUM FOR Mr. Scott Larson, Field Supervisor
USFWS Ecological Services Field Office
420 Garfield Avenue, Suite 400
Pierre, South Dakota 57501-5408

The U.S. Fish and Wildlife Service concurs with your conclusion that the described project will not adversely affect listed species. Contact this office if changes are made or new information becomes available.
5/24/11 Scott Larson
Date SD Field Supervisor USFWS

FROM: HQ ACC/A7P
129 Andrews Street, Suite 337
Langley AFB VA 23665-2969

SUBJECT: Proposed Powder River Training Complex (Telecom April 7, 2011)

1. The Air Force appreciates the opportunity to consult with your office under Section 7 of the Endangered Species Act (ESA) with regards to potential affects to endangered species as identified in the Draft Environmental Impact Statement (EIS) for the proposed creation of the Powder River Training Complex (PRTC).

2. Based on your teleconference with Ms. Linda DeVine on April 07, 2011, the U.S. Air Force understands that your primary concern is based on the potential for adverse effects to endangered whooping crane (*Grus Americana*) during the spring (March/April) and fall (September/October) migration periods. The Air Force acknowledges that whooping crane activity has been known to occur in the counties of Corson, Ziebach and Perkins SD and Sioux, Adams, Grant and Hettinger ND; all of which lie beneath the proposed Powder River 4 Low Military Operations Area (MOA).

3. In accordance with the Endangered Species Act, the U.S. Air Force requests your concurrence with the Air Force's determination of may affect, not likely to adversely affect, federally listed threatened and endangered species. This determination is made based on the findings contained in Sections 3.6.3 and 4.6.3 of the Draft EIS for the PRTC. To further minimize the potential for a bird strike to occur with the endangered whooping crane, the Air Force would observe the following conditions: .

a. The 28 OSS would avoid use of the proposed Powder River 4 Low (500' AGL through 12,000' MSL) MOA when notified by the USFWS of whooping crane activity during their spring and fall migration periods, typically occurring during the months of March, April, September and October. The USFWS, Pierre SD would notify the 28 OSS/OSO and request avoidance of the proposed Powder River 4 Low MOA due to whooping crane activity/sightings in the counties of Corson, Ziebach and Perkins SD, and Sioux, Adams, Grant and Hettinger ND; all of which lie beneath the proposed Powder River 4 Low Military Operations Area (MOA). The USFWS, Pierre SD would notify the 28 OSS/OSO once whooping cranes have migrated through the area. The Air Force

understands that migration activity typically takes a couple of days, but it could last as long as 4-6 days if adverse weather conditions are present.

b. Ellsworth AFB would send a letter to the USFWS SD Field Office (Field supervisor), Pierre SD, in March of each year providing updated names and telephone numbers of Ellsworth AFB's point of contact to be notified of whooping crane sightings. The letter would include projected scheduled use times of the proposed Powder River 4 Low MOA to the extent practicable.

5. Please contact the EIS Project Manager, Ms. Linda DeVine, at (757) 764-9434 with any questions you may have, to discuss this determination request, or to discuss any additional consultation requirements. Thank you for your continued assistance in this matter.

DIMASALANG F. JUNIO
Colonel, USAF
Chief, Programs Division (A7P)

Cc: Mr. Robert F. Stewart, REO, USDOI
28 OSS/OS
28 CES/CC

Global Power For America

DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER
JOINT BASE SAN ANTONIO LACKLAND TEXAS

30 May 14

MEMORANDUM FOR MR. SCOTT LARSON
USFWS Ecological Services Field Office
420 Garfield Avenue, Suite 400
Pierre, SD 57501-5408

FROM: AFCEC/CZN
2261 Hughes Ave. Ste 155
JBSA Lackland, TX, 78236-9853

SUBJECT: Proposed Powder River Training Complex

1. The Air Force appreciates the continuing opportunity to consult with your office under Section 7 of the Endangered Species Act (ESA) with regards to the potential effects to endangered species related to creation of the Powder River Training Complex (PRTC).

2. Our 2010 Draft Environmental Impact Statement (DEIS) identified five federally listed animal species (the endangered interior least tern [*Sterna antillarum athalassos]*, the threatened piping plover [*Charadrius melodus]*, the endangered whooping crane [*Grus Americana]*, the endangered Black-footed ferret [*Mustela nigripes]*, and Topeka shiner [*Notropis Topeka]*), and two candidate species (the western distinct population segment of the yellow-billed cuckoo [*Coccyzus americanus]* and the greater sage grouse [*Centrocercus urophasianus])* as known to occur or having potential to occur under the proposed PRTC airspace. In May 2011, the Air Force determined, based on the findings contained in Sections 3.6.3 and 4.6.3 of the DEIS, that the PRTC "may affect, [but was] not likely to adversely affect, federally listed threatened and endangered species." Your office concurred with this determination on 24 May 2011.

3. Minimizing the likelihood of aircraft striking whooping cranes was an important part of our 2011 discussions. At that time, the Air Force agreed to avoid use of the Powder River 4 Low Military Operations Area (MOA) (500 feet above ground level [AGL] through 12,000 feet mean sea level [MSL]) when notified by the USFWS of whooping crane activity during their spring and fall migration periods, typically occurring during the months of March, April, September, and October. In response to public comment and agency correspondence, the Air Force recently modified its proposed action and removed this low MOA from the current proposal. This action should alleviate any present concerns related to whooping crane migration through Corson, Ziebach, and Perkins counties in South Dakota, and Sioux, Adams, Grant, and Hettinger counties in North Dakota. We encourage USFWS to contact the 28th Operations Support Squadron (28 OSS) per previous correspondence if any new concerns regarding the whooping crane arise.

4. Since 2011, the Air Force has identified new species of concern for inclusion in the Final Environmental Impact Statement (FEIS). Earlier this year, we reviewed the USFWS species by county lists (http://www.fws.gov/endangered/) for the following counties:

- ***Montana***: Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, and Treasure
- ***North Dakota***: Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark
- ***South Dakota***: Butte, Corson, Harding, Lawrence, Mead, Perkins, and Ziebach
- ***Wyoming***: Campbell, Crook, Sheridan, and Weston

Five additional federally listed species were identified (one bird, two mammals, one fish, and one plant) and will be added to the discussion of effects on threatened, endangered, and other special status species in Sections 3.6.3.3 and 4.6.3 of the FEIS. The FEIS is currently in revision and we expect to release it to the public in the near future. Based on that information, which is summarized in Attachment 1 to this letter, the Air Force has determined that its modified proposed action will not affect the Pallid sturgeon *(caphirhynchus albus),* and may effect, but is unlikely to adversely affect the Red knot *(Calidris canutus rufa)*, Northern long-eared bat *(Myotis septentrionalis)*, Canada lynx *(Lynx Canadensis)*, and Ute ladies'-tresses *(Spiranthes diluvialis)*. We request your concurrence with that determination.

5. Finally, the Air Force understands USFWS concerns related to protection of the greater sage grouse, particularly during the mating season at the end of April and beginning of May. While the Air Force cannot avoid all overflight of greater sage grouse habitat, the project team noted during the 22 May 14 teleconference with your office that seasonal avoidance of sensitive habitats from sunrise to 1000 local time could significantly decrease potential impacts on the sage grouse. Therefore, 28 OSS will establish voluntary, reasonable, and temporary avoidance procedures to minimize potential impacts to sensitive areas identified by USFWS. We request that you provide a list of sensitive dates and habitats to 28 OSS annually. The Air Force looks forward to a continuing partnership with USFWS to conserve sage grouse habitat while performing critical combat training in the region.

6. Thank you for your continuing support of this project. Please contact me at (210) 925- 3175 or Ms. Judy Keith at (210) 925-3367 at any time if you would like to discuss any further concerns.

D. JASON MURLEY, Capt, USAF
Deputy Chief, AF NEPA Center

Attachment 1: Additional Federally Listed Species Identified with Potential to Occur under the Proposed PRTC Airspace

Attachment 1

Additional Federally Listed Species Identified with Potential to Occur under the Proposed PRTC Airspace

Common Name	*Scientific Name*	*AIRSPACE STATES AND COUNTIES OF OCCURRENCE*				*FED*[1]	*Expected Occurrence and Habitat*	*Effects determination*
		ND	*SD*	*MT*	*WY*			
Birds								
Red knot	*Calidris canutus rufa*		All Counties			PT	Potential during migration. Long-distance migrants flying more than 9,300 miles from south to north in spring and repeat in reverse every autumn. Stopover habitat includes aquatic areas where easily digested foods can be readily consumed. Breeding occurs outside of the ROI in the central Canadian Arctic from northern Hudson Bay to the southern Queen Elizabeth Islands.	Rare migrant in ROI. The potential for a bird-aircraft strike is so low as to be discountable. Chaff and flare use would not adversely affect the species due to the wide dispersion and low density of chaff fibers and the low likelihood of project-related fire coupled with the species' use of wetland habitats. Behavioral response to infrequent low-level overflights would be insignificant and not be expected to reach the level at which take would occur. Effects determination: The project **may affect, but is not likely to adversely affect the red knot.**
Mammals								
Northern long-eared bat	*Myotis septentrionalis*		All Counties		County-level range not defined	PE	Historical occurrence within the ROI. Species range includes 39 states. Roost in caves, mines, and both live and dead trees.	Possible occurrence in ROI. The potential for a bat-aircraft strike is so low as to be discountable. Chaff and flare use would not adversely affect the species. Behavioral response to infrequent low-level overflights would be insignificant and not be expected to reach the level at which take would occur. Effects determination: The project **may affect, but is not likely to adversely affect the Northern long-eared bat.**

Attachment 1

Additional Federally Listed Species Identified with Potential to Occur under the Proposed PRTC Airspace

Common Name	*Scientific Name*	*AIRSPACE STATES AND COUNTIES OF OCCURRENCE*				*FED*[1]	*Expected Occurrence and Habitat*	*Effects determination*
		ND	*SD*	*MT*	*WY*			
Canada lynx	*Lynx canadensis*				Sheridan	T	Historical occurrence documented along the western border of Sheridan County, outside of the ROI. Live in subalpine/coniferous forests. Critical habitat limited to western Wyoming.	Canada lynx is not known to be resident within the ROI and therefore the effects determination is **no effect of the project on Canada lynx**. Should the Canada lynx enter the ROI the following would apply: Chaff and flare use would not adversely affect the species. Behavioral response to infrequent low-level overflights would be insignificant and not be expected to reach the level at which take would occur. Effects determination should the Canada lynx enter the project ROI: The project **may affect, but is not likely to adversely affect the Canada lynx** should it enter the ROI.
Fish								
Pallid sturgeon	*Scaphirhynchus albus*	Morton, Sioux	Corson	Custer		E	Historical occurrence within the ROI. Large-river ecosystems and associated floodplains, backwaters, chutes, sloughs, islands, sandbars, and main channel waters.	Since the pallid sturgeon is not present within the ROI, the effects determination is **no effect of the project on pallid sturgeon**. Chaff and flare use would not adversely affect the species' historic habitat due to dispersion; behavioral response to low-level overflights is not known or expected in fish.
Plants								
Ute ladies'-tresses	*Spiranthes diluvialis*				All Counties	T	Historical occurrence across ROI. Primarily associated with stream terraces, floodplains, oxbows, seasonally flooded river terraces, sub-irrigated or spring-fed abandoned stream channels and valleys, and lakeshores.	Chaff and flare use would not adversely affect the Ute ladies-tresses' historic habitat due to dispersion of chaff, very low likelihood of a flare reaching the ground and starting a fire and lack of susceptibility of the habitat to unlikely range fire. Behavioral response to low-level overflights is not known or expected in plants. Effects determination: **The project may affect, but is not likely to adversely affect the Ute ladies'-tresses**

Note: 1. Federal Listing as E=endangered; PE = Proposed Endangered; T=threatened; PT=proposed threatened.
Source: USFWS 2014a, USFWS 2014b, USFWS 2014c, USFWS 2014d, USFWS 2014e

References:

United States Fish and Wildlife Service (USFWS). 2014a. USFWS Species Profile – Red knot (*Calidris canutus rufa*) Available at http://www.fws.gov/northeast/redknot/pdf/Redknot_BWfactsheet092013.pdf.

____. 2014b. USFWS Species Profile – northern long-eared Bat (*Myotis septentrionalis*) Available at http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A0JE

___. 2014c. USFWS Species Profile - Canada Lynx (*Lynx canadensis*) Available at http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A073

____. 2014d. USFWS Species Profile - Ute ladies'-tresses (*Spiranthes diluvialis*) Available at: http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q2WA

____. 2014e. USFWS Species Profile – Pallid sturgeon (*Scaphirhynchus albus*) Available at: http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E06X

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
420 South Garfield Avenue, Suite 400
Pierre, South Dakota 57501-5408

June 27, 2014

D. Jason Murley, Captain, USAF
Deputy Chief, AF NEPA Center
Air Force Civil Engineer Center
2261 Hughes Avenue, Suite 155
JBSA Lackland, TX 78236-9853

Re: Section 7 Consultation for the Proposed Powder River Training Complex

Dear Mr. Murley:

We have received your request dated June 16, 2014, for additional consultation under Section 7 of the Endangered Species Act (Act) for the creation of the Powder River Training Complex (PRTC). We previously consulted on five federally listed species; the Piping plover (*Charadrius melodus*), Whooping crane (*Grus americana*), Interior least tern (*Sterna antillarum athalassos*), Black-footed ferret (*Mustela nigrpes*), and Topeka shiner (*Notropis topeka*) contained in Table 3.6-4 (Attachment 2) of the Draft Environmental Impact Statement (*DEIS*) issued in 2010. Your office made a "may affect, not likely to adversely affect" determination for those species which we concurred with on May 24, 2011. Your recent June 16, 2014 request, identifies five additional species (Attachment 1), four of which; the Red Knot (*Calidris cantus rufa*), Northern long-eared bat (*Myotis septentrionalis*), Canada lynx (*Lynx canadensis*), and Ute ladies'-tresses (*Spiranthes diluvalias*) you determined the PRTC "may affect, but is not likely to adversely affect" and one species, the Pallid sturgeon (*Caphirynchus albus*), you determined "no effect" and then asked for our concurrence on those determinations. We concur with your "may affect, not likely to adversely affect" determination for the four additional species and inform you that there is no requirement under the implementing regulations of the Act (50 CFR Part 402) for action agencies to receive concurrence with "no effect" determinations, therefore the responsibility for "no effect" determinations remains with your agency.

In regards to the Whooping crane, you had proposed in the DEIS to create a Powder River 4 Low and High Military Operations Area (MOA) which would have expanded low level flight operations into the whooping crane migration corridor in South and North Dakota. Your June 16, 2014 letter indicates the low MOA will be eliminated which should minimize the likelihood of an aircraft strike with migrating whooping cranes passing through the low MOA. Additionally you indicated that the 28th Operations Support Squadron (28 OSS) would continue to work with us in the future if new concerns in regards to the whooping crane arise. We support this change and will work with the 28 OSS if concerns arise in the future.

In regards to the greater sage-grouse (GSG), a candidate species originally identified in the DEIS, you proposed in your June 16 letter to "*establish voluntary, reasonable, and temporary*" avoidance measures to minimize potential impacts to the species. This is intended to minimize impacts to GSG during lek attendance (or mating season). In your letter you identified "*the end of April and*

beginning of May" as the dates of lek attendance with the time period from sunrise to 10:00 am local time when low levels flights would be restricted to minimize potential impacts to the GSG. While we believe the time period of sunrise to 10:00 am local time may be sufficient, we note that lek attendance generally occurs from early-March through mid-May (Connelly et al. 2011) and recommend those dates be included rather than the end of April to beginning of May.

Additionally, you requested that we provide a list of sensitive dates and areas to be avoided and that we provide this in an annual update to the 28 OSS. In order to meet your request we recommend an avoidance period of sunrise to 10:00 am local time from early-March through mid-May in those areas identified by the individual states of South Dakota, North Dakota, Montana, and Wyoming as core GSG areas. We have also provided a map to the Ellsworth personnel working on this issue that identifies the GSG core areas that are within the PRTC and recommend these core area maps (Attached) form the basis where the date and timing restrictions to minimize impacts to GSG are employed. There may be opportunities on an annual basis to identify more specific areas where restrictions might apply and we will continue to work with the Ellsworth Air Force Base annually to provide the latest information.

The U.S. Fish and Wildlife Service is evaluating the GSG for a listing decision anticipated in 2015. If this species becomes listed, the Air Force should revisit your determinations to update your section 7 consultation for this species.

If changes are made in the project plans or operating criteria, or if additional information becomes available, the Service should be informed so that the above determinations can be reconsidered.

The Service appreciates the opportunity to provide comments on this project. If you have any questions on these comments, please contact Terry Quesinberry of this office at (605) 224-8693, Extension 234.

Sincerely,

Scott Larson

Scott V. Larson
Field Supervisor
South Dakota Field Office

Enclosures (3)

Literature Cited

Connelly, J.W., C.A. Hagen, and M.A. Schroder. 2011. Characteristics and dynamics of Greater Sage-Grouse populations. Pp 53-67 *in* S.T. Knick and J. W. Connelly (editors). Greater Sage-Grouse: ecology and conservation of a landscape species and its habitats. Studies in Avian Biology (vol. 38), University of California Press, Berkley, CA.

Attachment 1

Additional Federally Listed Species Identified with Potential to Occur under the Proposed PRTC Airspace

Common Name	*Scientific Name*	*AIRSPACE STATES AND COUNTIES OF OCCURRENCE*				*FED*[1]	*Expected Occurrence and Habitat*	*Effects determination*
		ND	*SD*	*MT*	*WY*			
Birds								
Red knot	*Calidris canutus rufa*		All Counties			PT	Potential during migration. Long-distance migrants flying more than 9,300 miles from south to north in spring and repeat in reverse every autumn. Stopover habitat includes aquatic areas where easily digested foods can be readily consumed. Breeding occurs outside of the ROI in the central Canadian Arctic from northern Hudson Bay to the southern Queen Elizabeth Islands.	Rare migrant in ROI. The potential for a bird-aircraft strike is so low as to be discountable. Chaff and flare use would not adversely affect the species due to the wide dispersion and low density of chaff fibers and the low likelihood of project-related fire coupled with the species' use of wetland habitats. Behavioral response to infrequent low-level overflights would be insignificant and not be expected to reach the level at which take would occur. Effects determination: The project **may affect, but is not likely to adversely affect the red knot.**
Mammals								
Northern long-eared bat	*Myotis septentrionalis*		All Counties		County-level range not defined	PE	Historical occurrence within the ROI. Species range includes 39 states. Roost in caves, mines, and both live and dead trees.	Possible occurrence in ROI. The potential for a bat-aircraft strike is so low as to be discountable. Chaff and flare use would not adversely affect the species. Behavioral response to infrequent low-level overflights would be insignificant and not be expected to reach the level at which take would occur. Effects determination: The project **may affect, but is not likely to adversely affect the Northern long-eared bat.**

Attachment 1

Additional Federally Listed Species Identified with Potential to Occur under the Proposed PRTC Airspace

Common Name	*Scientific Name*	*AIRSPACE STATES AND COUNTIES OF OCCURRENCE*				*FED*[1]	*Expected Occurrence and Habitat*	*Effects determination*
		ND	*SD*	*MT*	*WY*			
Canada lynx	*Lynx canadensis*				Sheridan	T	Historical occurrence documented along the western border of Sheridan County, outside of the ROI. Live in subalpine/coniferous forests. Critical habitat limited to western Wyoming.	Canada lynx is not known to be resident within the ROI and therefore the effects determination is **no effect of the project on Canada lynx**. Should the Canada lynx enter the ROI the following would apply: Chaff and flare use would not adversely affect the species. Behavioral response to infrequent low-level overflights would be insignificant and not be expected to reach the level at which take would occur. Effects determination should the Canada lynx enter the project ROI: The project **may affect, but is not likely to adversely affect the Canada lynx** should it enter the ROI.
Fish								
Pallid sturgeon	*Scaphirhynchus albus*	Morton, Sioux	Corson	Custer		E	Historical occurrence within the ROI. Large-river ecosystems and associated floodplains, backwaters, chutes, sloughs, islands, sandbars, and main channel waters.	Since the pallid sturgeon is not present within the ROI, the effects determination is **no effect of the project on pallid sturgeon.** Chaff and flare use would not adversely affect the species' historic habitat due to dispersion; behavioral response to low-level overflights is not known or expected in fish.
Plants								
Ute ladies'-tresses	*Spiranthes diluvialis*				All Counties	T	Historical occurrence across ROI. Primarily associated with stream terraces, floodplains, oxbows, seasonally flooded river terraces, sub-irrigated or spring-fed abandoned stream channels and valleys, and lakeshores.	Chaff and flare use would not adversely affect the Ute ladies-tresses' historic habitat due to dispersion of chaff, very low likelihood of a flare reaching the ground and starting a fire and lack of susceptibility of the habitat to unlikely range fire. Behavioral response to low-level overflights is not known or expected in plants. Effects determination: **The project may affect, but is not likely to adversely affect the Ute ladies'-tresses**

Note: 1. Federal Listing as E=endangered; PE = Proposed Endangered; T=threatened; PT=proposed threatened.
Source: USFWS 2014a, USFWS 2014b, USFWS 2014c, USFWS 2014d, USFWS 2014e

Attachment 2

Table 3.6-4. Federally Listed Species Known to Occur or with Potential to Occur under the Proposed PRTC Airspace
(Page 1 of 2)

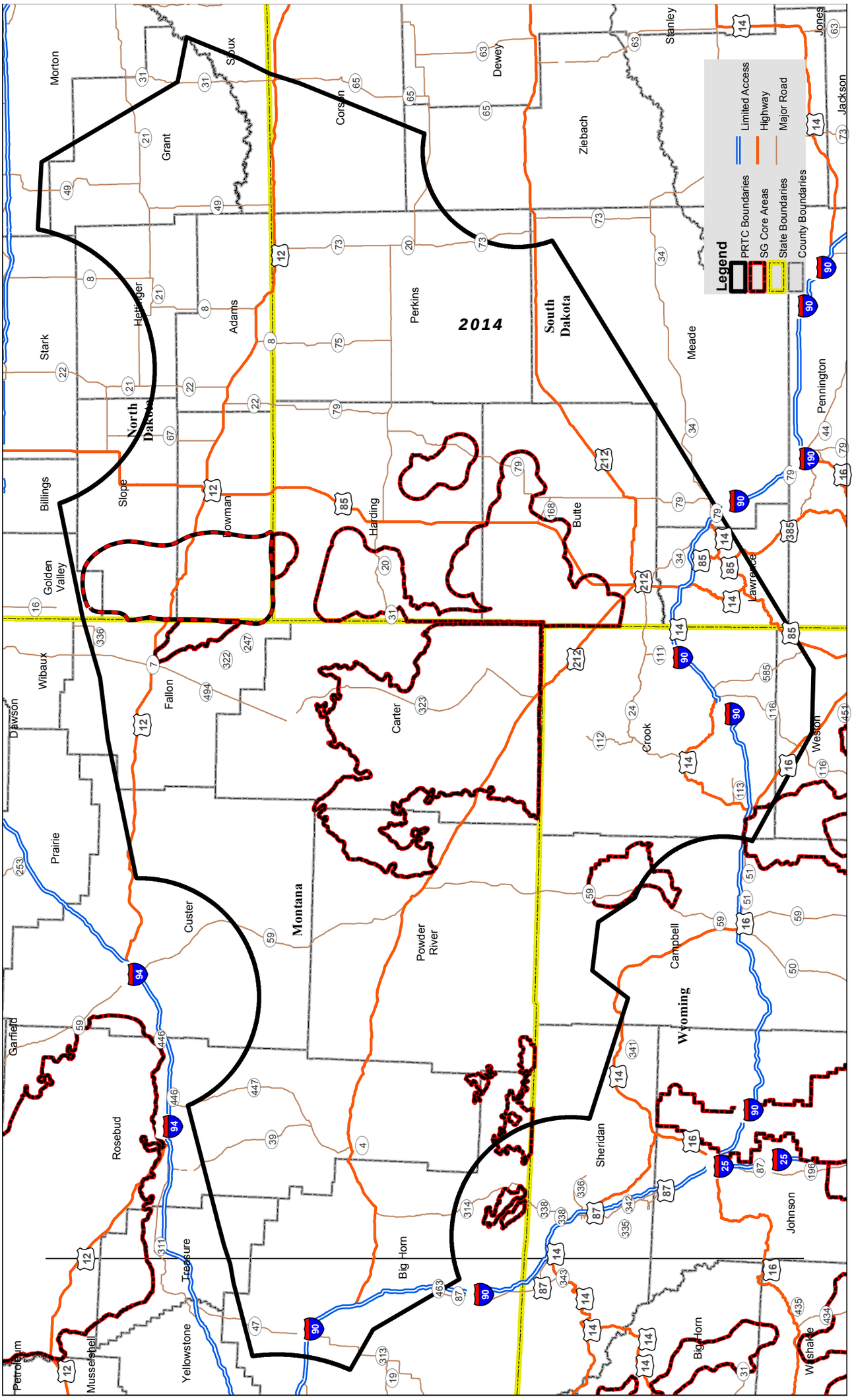
Common Name	Scientific Name	Airspace States and Counties of Occurrence				FED[1]	Expected Occurrence and Habitat
		ND	SD	MT	WY		
Birds							
Piping plover	*Charadrius melodus*	All Counties – rare	Corson	Fallon, Custer?		T	Potential during migration, nesting occurs along Missouri and Cheyenne rivers and may occur along Moreau River. Uses sandbars, islands, shorelines.
Whooping crane	*Grus americana*	All counties - rare	Butte, Corson, Meade, Perkins, Pennington, Ziebach	Custer, Fallon, Yellowstone	Very rare migrant	E	Potential during migration. Uses sloughs, marshes, rivers, lakes, ponds, croplands, and pastures.
Interior least tern	*Sterna antillarum athalassos*	Morton, Sioux	Meade	Custer, Rosebud		E	Potential during migration, nesting occurs along Missouri and Cheyenne rivers and may occur along Moreau River. Uses sandbars, islands, shorelines.
Yellow-billed cuckoo	*Coccyzus americanus*				Crook, Sheridan	C	Cottonwood –riparian areas
Greater sage-grouse	*Centrocercus urophasianus*	Bowman, Slope, Golden Valley	Butte, Harding, with incidental observations in Perkins and Meade	Carter, Fallon, Custer, Powder River, Rosebud, Big Horn, Treasure	Campbell, Crook, Sheridan, Weston,	C	Dependent upon large stands of mature sagebrush year round for foraging and cover. Flat, open grassland needed for breeding (leks). Historically occurred across the entire ROI; eastern portion of range has subsided.

Attachment 2

Table 3.6-4. Federally Listed Species Known to Occur or with Potential to Occur under the Proposed PRTC Airspace
(Page 2 of 2)

Common Name	Scientific Name	Airspace States and Counties of Occurrence				FED[1]	Expected Occurrence and Habitat
		ND	SD	MT	WY		
Mammals							
Black-footed ferret	*Mustela nigripes*		Six parcels in western portion of state, includes Badlands and Wind Cave national parks	Four parcels in state, one in southeastern portion on N. Cheyenne Reservation		E, N/E in MT, WY, SD	Historical occurrence across ROI. All current populations have been re- introduced; suitable habitat includes prairie dog towns >80 acres or any towns part of a >1,000 acre complex of prairie dog colonies
Fish							
Topeka shiner	*Notropis topeka*		Corson (historical)			E	Historical occurrence only. All current populations are found in small streams within eastern SD, within the Big Sioux, Vermillion, and James River watersheds

Note: 1. Federal Listing as N/E = Nonessential Experimental, referring to reintroduced populations
"?" indicates uncertainty as to county occurrence.
Sources: USFWS 2006; USFWS 2007; USFWS 2008a; WY Natural Diversity Database (WYNDD) 2003; Montana Sage Grouse Work Group 2005; SD Wildlife Division, Department of Game, Fish and Parks 2008; McCarthy and Kobriger 2005.


Legend
PRTC Boundaries
SG Core Areas
State Boundaries
County Boundaries
Limited Access
Highway
Major Road
2014
North Dakota
South Dakota
Montana
Wyoming
Morton
Grant
Sioux
Corson
Dewey
Ziebach
Stanley
Jones
Jackson
Stark
Hettinger
Adams
Perkins
Meade
Pennington
Billings
Slope
Bowman
Harding
Butte
Golden Valley
Lawrence
Wibaux
Dawson
Fallon
Carter
Crook
Weston
Prairie
Custer
Powder River
Campbell
Garfield
Rosebud
Sheridan
Johnson
Treasure
Big Horn
Yellowstone
Musselshell
Petroleum
Wash

List of Repositories

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Bowman ND 58623

Rita Ennen
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Dickinson ND 58601

Lesley Boughton
Wyoming State Library
2800 Central Avenue
Cheyenne WY 82002

Daria Bossman
South Dakota State Library
MacKay Building
800 Governors Drive
Pierre SD 57501

Sharon Henry
Grace Balloch Memorial Library
625 N. Fifth Street
Spearfish SD 57783

Jeanette Chaney-Moodie
Deadwood Public Library
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Deadwood SD 57732

Terri Lesley
Campbell County Public Library
2101 South 4J Road
Gillette WY 82718

Jill Mackey
Crook County Public Library
414 Main Street
Sundance WY 82729

Marci Mock
Sheridan Fulmer Public Library
335 W Alger Street
Sheridan WY 82801

Sheridan College Griffith Memorial Library
3059 Coffeen Avenue
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Diane Adler
Gillette College Library
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Belle Fourche Public Library
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Belle Fourche SD 57717

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201 North 9th Avenue
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Vera Abrams
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6 West Fallon Avenue
Baker MT 59313

Diane Stuver
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APPENDIX F
RELEVANT STATUTES, REGULATIONS, AND GUIDELINES

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APPENDIX F RELEVANT STATUTES, REGULATIONS, AND GUIDELINES

GENERAL

National Environmental Policy Act (NEPA) of 1969 (Public Law [PL] 91-190, 42 United States Code [USC] 4347, as amended). Requires federal agencies to take the environmental consequences of proposed actions into consideration in their decision-making process. The intent of NEPA is to protect, restore or enhance the environment through well informed federal decisions. The Council on Environmental Quality (CEQ) was established under NEPA to implement and oversee federal policy in this process.

40 Code of Federal Regulation (CFR) Parts 1500-1508 Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act. Parts 1500 through 1508 of this title provide regulations applicable to and binding on all federal agencies for implementing the procedural provisions of the National Environmental Policy Act of 1969, as amended (Pub. L.91-190, 42 USC 4321 *et seq*.) (NEPA or the Act) except where compliance would be inconsistent with other statutory requirements.

Air Force Instruction 32-7061, Environmental Impact Analysis Process (EIAP), as promulgated at 32 CFR Part 989. Air Force implementation of the procedural provisions of NEPA and CEQ regulations.

***AFPD 32-70, Environmental Quality*.** Requires that the Air Force comply with applicable federal, state, and local environmental laws and regulations, including NEPA. Executive Order (EO) 11514, Protection and Enhancement of Environmental Quality, as amended by EO 11991, sets policy directing the federal government in providing leadership in protecting and enhancing the environment.

Intergovernmental Coordination Act and EO 12372, Intergovernmental Review of Federal Programs. Requires federal agencies to cooperate with and consider state and local views in implementing a federal proposal. AFI 32-7061 requires proponents to implement a process known as Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), which is used for the purpose of agency coordination and implements scoping requirements.

Ensuring Quality of Information Disseminated to the Public by the Department of Defense. This memorandum, signed February 10, 2003 requires that all components of the Department of Defense adopt standards of data quality for information they disseminate.

AIRSPACE

Federal Aviation Act of 1958. Created the Federal Aviation Administration (FAA) and charges the FAA Administrator with ensuring the safety of aircraft and the efficient utilization of the National Airspace System, within the jurisdiction of the United States.

Federal Aviation Administration Regulation 14 CFR Part 71 (1975). Delineates the designation of federal airways, area low routes, controlled airspace, and navigational reporting points.

Federal Aviation Administration Regulation 14 CFR Part 73 (1975). Defines special use airspace and prescribes the requirements for the use of that airspace.

Federal Aviation Administration Regulation 14 CFR Part 91 (1990). Describes the rules governing the operation of aircraft within the United States.

FAA Order JO 7400.2. Includes policy, criteria, and procedures applicable to modification and the establishment of Special Use Airspace, including Military Operations Areas.

FAA Order 7110.65. Prescribes air traffic control procedures and phraseology for use by personnel providing air traffic control services in the United States.

RANGE MANAGEMENT

AFI 13-212 Range Planning and Operations (9 August 2012). Ensures that Air Force ranges are planned, operated, and managed in a safe manner; that all required equipment and facilities are available to support range use, and that proper security for range assets is present.

NOISE ENVIRONMENT

Executive Order (EO) 12088 Federal Compliance with Pollution Control Standards (1978). Requires the head of each executive agency to be responsible for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution, including noise pollution, with respect to federal facilities and activities under the control of the agency.

Federal Interagency Committee on Urban Noise (1980). Defines noise levels for various land uses and may result in areas that will not qualify for federal mortgage insurance. Additional sections allow for noise attenuation measures that are often required for HUD approval.

United States Environmental Protection Agency (USEPA) Report 550/9-74-004 Information of Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety (1974). This USEPA report summarizes the findings of numerous studies related to sleep disturbance, speech interference, and other potential noise impacts to human health and welfare and establishes guidelines based on these findings.

SAFETY

AFI 32-2001 Fire Emergency Services Program (27 February 2014). Defines the requirements for Air Force installation fire protection programs, including equipment, response times, and training.

AFI 32-3001 Explosive Ordnance Disposal Program (8 October 2004). Regulates and provides procedures for explosives safety and handling. Defines criteria for quantity distances, clear zones, and facilities associated with ordnance.

AFI 91-202 The US Air Force Mishap Prevention Program (5 August 2011). Establishes mishap prevention program requirements, assigns responsibilities for program elements, and contains program management information.

AFI 91-301 Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) (1 June 1996). Program implements AFPD 91-3, Occupational Safety and Health by outlining the AFOSH Program. The purpose of the AFOSH Program is to minimize loss of Air Force resources and to protect Air Force people from occupational deaths, injuries, or illnesses by managing risks.

Air Force Manual 91-201 Explosives Safety Standards (12 January 2011). Establishes safety standards, provides planning guidance, and defines safety requirements for explosives operations of any

kind (including testing, disassembling, modifying, storing, transporting, and handling explosives or ammunition) at Air Force facilities.

Department of Defense Flight Information Publication. Indicates locations of potential hazards (e.g., bird aggregations, obstructions, and noise sensitive locations) under military airspace and defines horizontal and/or vertical avoidance measures. Updated monthly to present current conditions.

MATERIALS MANAGEMENT

Hazardous Materials Transportation Act (HTMA) of 1975 Title I Section 101. Establishes criteria for shippers and carriers that manage hazardous materials and includes training and qualifications of persons handling hazardous materials.

Resource Conservation and Recovery Act (RCRA) of 1976. Regulates the storage, transportation, treatment, and disposal of hazardous waste that could adversely affect the environment.

Occupational Safety and Health Administration (OSHA) Asbestos Standard (29CFR 1926.58) (1970). Lists federal requirements during construction activities for handling and removal of asbestos from equipment and building structures. The chemical hazard communication program (29CFR 1910.120) requires the identification, information, and training on chemical hazards to be available to employees using hazardous materials and instituted material safety data sheets (MSDS) which provide this information.

Solid Waste Disposal Act (SWDA) and Amendments of 1980. Amends RCRA with additional regulation of energy and materials conservation and the establishment of a National Advisory Council.

Hazardous and Solid Waste Amendments (HSWA) of 1984. Significantly expands the scope and requirements of RCRA and mandated underground storage tank (UST) regulations.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 and the Superfund Amendments and Reauthorization Act (SARA) of 1986. Provides liability and compensation for cleanup and emergency response from hazardous substances discharged into the environment and the cleanup of hazardous disposal sites.

AFI 32-7080 Pollution Prevention Program (12 May 1994).

AFI 32-7042 Waste Management (15 April 2009).

AFI 32-7005 Facility Environmental Protection Committee (25 February 1994).

AFI 32-7086 Hazardous Material Management (24 March 2008).

AFI 32-4002 Facility Hazardous Emergency Planning and Response (1 December 1997).

Military Munitions Rule, Title 40 CFR Part 266, Subpart M, "Military Munitions."

PHYSICAL RESOURCES

Federal Water Pollution Control Act of 1948. Establishes procedures and programs for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters, thus protecting habitat conditions in aquatic and wetland ecosystems.

Clean Water Act of 1977 (33 USC 1251-1387). Requires a National Pollution Discharge Elimination System (NPDES) permit for all discharges into waters of the United States to reduce pollution

that could affect any form of life. Section 404 of this act regulates development in streams and wetlands and requires a permit from the U.S. Army Corps of Engineers.

EO 19988 Floodplain Management (1977). Requires that governmental agencies, in carrying out their responsibilities, provide leadership and take action to restore and preserve the natural and beneficial values served by floodplains.

BIOLOGICAL RESOURCES

Lacey Act of 1900 (16 USC 3371-13378). Brings the unlawful taking of fish, wildlife, and plants under federal jurisdiction by prohibiting specimens taken illegally from being shipped across state boundaries.

Migratory Bird Treaty Act of 1918 (16 USC 701-715s). Establishes protection for migratory birds and their parts (including eggs, nests, and feathers) from hunting, capture, or sale.

Bald Eagle Protection Act of 1940 (16 USC 668-668c). Protects bald eagles and golden eagles by prohibiting the take, possession, or transportation of these species, dead or alive, and includes protection of their nests and eggs.

Fish and Wildlife Coordination Act of 1958 (16 USC 661-666c as amended). Provides for conservation and management of fish and wildlife by encouraging cooperation between the U.S. Fish and Wildlife Service and other federal, state, public, and private agencies.

Wilderness Act of 1964 (16 USC 1131). Directs the Secretary of the Interior to review every roadless area greater than or equal to 5,000 acres and every roadless island (regardless of size) within National Wildlife Refuge and National Park Systems and to recommend to the President the suitability of each such area or island for inclusion in the National Wilderness Preservation System. The act provides criteria for determining suitability and establishes restrictions on activities that can be undertaken on designated areas.

Endangered Species Act of 1973 (16 USC 1531-1544, as amended). Establishes measures for the conservation of plant and animal species listed, or proposed for listing, as threatened or endangered, including the protection of critical habitat necessary for their continued existence.

EO 11990 Protection of Wetlands (1977). Requires the governmental agencies, in carrying out their responsibilities, to provide leadership and take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. Factors to be considered include conservation and long-term productivity of existing flora and fauna, species and habitat diversity and stability, hydrologic utility, fish, and wildlife.

Fish and Wildlife Conservation Act of 1980 (16 USC 2901-2911 as amended). Promotes state programs, and authorizes funding for grants, aimed at developing and implementing comprehensive state non-game fish and wildlife management plans.

North American Wetlands Conservation Act (16 USC 4401-4412) (1989). Supports the management and preservation of waterfowl by funding the implementation of the North American Waterfowl Management Plan and the Tripartite Agreement on wetlands between Canada, the U.S., and Mexico.

CULTURAL RESOURCES

***National Historic Preservation Act of 1966*, as amended.** Provides the principal authority used to protect historic properties, establishes the National Register of Historic Places (NRHP), and

defines, in Section 106, the requirements for federal agencies to consider the effects of an action on properties listed on, or eligible for, the NRHP.

Archaeological Resources Protection Act (ARPA) of 1979 (16 USC section 470aa-47011). Ensures the protection and preservation of archaeological sites on federal or Native American lands and establishes a permitting system to allow legitimate scientific study of such resources.

Protection of Historic and Cultural Properties (36 CFR section 800) (2000). Provides an explicit set of procedures for federal agencies to meet their obligations under the National Historic Preservation Act including inventorying resources and consultation with State Historic Preservation Officers (SHPOs) and federally recognized tribes.

Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001-3013). Requires protection and repatriation of Native American burial items found or, or taken from, federal or tribal lands, and requires repatriation of burial items controlled by federal agencies or museums receiving federal funds.

AFI 32-7065 Cultural Resource Management (1 June 2004). Sets guidelines for protecting and managing cultural resources on lands managed by the Air Force.

American Indian Religious Freedom Act of 1978 (42 USC section 1996). States that it is the policy of the United States to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonial and traditional rites.

EO 13007 Indian Sacred Sites (1996). Requires that, to the extent practicable, federal agencies accommodate access to, and ceremonial use of, sacred sites by Native American religious practitioners, and to avoid adversely affecting the physical integrity of sacred sites.

EO 13084 Consultation and Coordination with Indian Tribal Governments (1998). Requires that federal agencies have an effective process to permit elected officials and other representatives of Indian tribal governments to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.

***Department of Defense (DoD) American Indian and Alaska Native Policy (21 November 1999*).** This policy emphasizes the importance of respecting and consulting with tribal governments on a government-to-government basis and requires an assessment, through consultation, of proposed DoD actions that may have the potential to significantly affect protected tribal resources, tribal rights, and Indian lands before decisions are made by the services.

LAND USE

Department of Transportation Act of 1966 (49 USC 303), Section 4(f) (formerly 49 USC 1651 (b)(2) and 49 USC 1653f). Protection of certain public lands and all historic sites was originally mandated in Section 4(f) of the 1966 Department of Transportation Act. Public law 90-495 (amended in 1968) amended Section 4(f) to its most commonly known form. In 1983, PL 97-449 re-codified the Act from 49 USC 1651 to 49 USC 303. Congress has amended this Act three other times without substantive changes. It is referred to as Section 4(f) in the Federal Highway Administration Environmental Procedures (23 CFR 772). It declares a national policy to preserve, where possible, "the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites." It protects cultural resources that are on or eligible for the National Register of Historic Places.

Section 6(f) (3)-Land and Water Conservation Funds Act. Section 6(f)(3) of the 1964 Land and Water Conservation Funds (L&WCF) Act requires that all property acquired or developed with L&WCF assistance be maintained perpetually in public recreation use. Title 36, Chapter 1, Part 59 describes post-completion compliance responsibilities. These responsibilities apply to each 6(f) property regardless of the extent of program participation. The State is responsible for compliance and enforcement of these provisions and to ensure consistency with the contractual agreement with the National Park Service.

ENVIRONMENTAL JUSTICE

EO 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1995). Requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The essential purpose of EO 12898 is to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

AF Guidance, Interim Guide for Environmental Justice Analysis with the Environmental Impact Analysis Process (November 1997). Provides guidance for implementation of EO 12898 in relevant Air Force environmental impact assessments.

EO 13045 Protection of Children from Environmental Health Risks and Safety Risks (1998). This Executive Order directs federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children.

APPENDIX G
DRAFT EIS COMMENTS AND RESPONSES

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APPENDIX G. DRAFT EIS PUBLIC COMMENTS AND RESPONSES

This appendix contains comments received from federal, state, and local agencies, the general public, and Native Americans during the public comment period for the *Draft Powder River Training Complex Ellsworth Air Force Base, South Dakota Environmental Impact Statement* (EIS). The Notice of Availability for the Draft EIS (DEIS) appeared in the Federal Register on August 20, 2010. The Air Force encouraged public and agency representatives to provide oral and written comments during the public hearings or mail written comments on or before the comment period closing date of November 15, 2010. By request, the comment period was reopened and extended to January 20, 2011.

The Federal Aviation Administration (FAA) submitted inputs as a Cooperating Agency and in compliance with its Order on Procedures for Handling Airspace Matters. The Air Force has addressed FAA input in Appendix H, using a format similar to the public comment response process in this appendix.

The Air Force received a broad variety of oral and written comments. While all comments submitted were fully considered by the Air Force, only substantive comments were carried forward and responded to in this appendix. The Air Force addressed substantive comments in a collective fashion in order to harmonize interpretation of the inputs and address the inputs in a reasonably efficient manner. As discussed in the main body of the Final EIS (FEIS) (Chapter 2.12.1.1), non-substantive comments—to which the Air Force did not specifically respond—are generally considered those comments that express a conclusion, an opinion, or a vote for or against the proposal itself, or some aspect of it; that only state a position for or against a particular alternative; or that otherwise state a personal preference or opinion. Public and agency comments received were taken into consideration by the Air Force in its decision-making process. The following presents the Air Force's Comment and Response Process.

1.1 COMMENT RECEIPT AND REVIEW

Comment Receipt: Comments on the DEIS included written correspondence via U.S. Mail (letters), faxes, or emails, and oral testimony received during the public comment period. All comments received during that period are included in the Comments section.

Comment Review: In accordance with 40 Code of Federal Regulations (CFR) 1503.4, comments were assessed and considered as follows:

- Each letter or testimony was assigned a unique identification number. All submitted comments and oral testimonies were then carefully read and reviewed.
- Within each comment letter or testimony, substantive comments were identified and marked with brackets. Three guidelines were used for determining substantive comments:
  1. The comment questions the Proposed Action, conditions/location of an alternative, or other components of the PRTC action.
  2. The methodology of the EIS (analysis and/or results) was questioned.
  3. The use, adequacy, or accuracy of data was questioned.
- The Air Force reviewed all the comments submitted. In some cases, comments addressing similar issues were assigned the same response. If the same comment was repeated within the same letter or oral comments, it was bracketed the first time it appeared.

- Individually bracketed comments were assigned a number and assigned an appropriate response. These responses are organized by the primary resource area they address and consecutively by number. The responses to comments appear in the Responses section of this volume.

Comment Organization: The comment letters are printed in numerical order and are organized into three sections:

- Written comments and submitted letters from Individuals and members of the general public – begin with 1000
- Public hearing transcripts of oral testimonies – begin with 2000
- Agency/Organization/Company letters – begin with 3000

1.2 LOCATING COMMENTS

A directory begins on page G-3 to locate commenters' names. As noted on the public displays, sign-in, comment forms, and copies of the DEIS and Executive Summary, providing your name in the EIS process meant that you understood that your name and comment would be made a part of the public record for this EIS. An identification number was assigned to your comment letter and is labeled on the letter or next to your oral comments. All comments are organized according to these comment numbers in the Comments section immediately following the directions.

The directory provides an alphabetical listing by last name of those who commented. Look for your last name and note the comment identification number in the fourth column. This is a number that was assigned to your comment and is labeled on your letter or next to your oral comments.

1.3 LOCATING RESPONSES TO COMMENTS

Air Force responses to comments are located in the Responses section of this volume, immediately following the comment section (Section 1.8). All substantive comments within each comment letter and oral comments from public hearings were assigned a response number, which are printed next to the brackets in the right margin of the page (Section 1.5). Every bracketed comment has a corresponding response, designed to be read along with the comment it addresses. Comment codes and responses are organized alphabetically by response code.

The responses refer to both the DEIS and Final EIS (FEIS) documents, as appropriate. For example, if the commenter suggests a deficiency in the Draft document, the response may refer to the DEIS for clarification. If the FEIS includes amended information, including mitigations, the reader will be directed to that section of the FEIS.

Public and agency involvement is an important part of the NEPA process, and all comments, whether bracketed or not, are taken into consideration by the Air Force in its decision-making process.

1.4 ALPHABETICAL DIRECTORY FOR INDIVIDUAL LETTERS, AGENCY/ORGANIZATION/COMPANY LETTERS, AND PUBLIC HEARING TRANSCRIPTS

1.4.1 *ALPHABETICAL DIRECTORY FOR INDIVIDUAL LETTERS*

Individual Letters					
Last Name	***First Name***	***City***	***State***	***Letter #***	***Comment Codes Applied***
Above	Shannon Rock	Crow Agency	MT	1078	NO-5
Adams	Dennis	Mandan	ND	1091	AM-12, SA-7
Appleman	Craig	Broadus	MT	1090	AM-8, AM-12, GE-1
Atkinson	Tom	Bismarck	ND	1071	NP-3
Becker	Upton F.	Elgin	ND	1068	GE-13, NP-1, NP-2, PN-2, SA-5, SO-2, SO-10
Bell	George	Carson	ND	1027	DO-3, SO-13
Bertsch	Brandon	Carson	ND	1029	DO-3, SO-13
Bertsch	Sheila	Carson	ND	1030	DO-3, SO-13
Best	Leslie	Big Horn	MT	1055	SA-9, SO-13
Bierne	Sister Kathleen	Aberdeen	SD	1052	GE-2, SA-14
Bishop	Warren	North Platte	NE	1107	AM-6, GE-11, GE-9, PN-2, SA-7, SO-7
Blake	Clark	Belle Fourche	SD	1119	BI-3, SO-1, SO-5, SO-15, SO-27
Blank	D.L.	Whitefish	MT	1003	GE-2, NO-5, PN-2, SA-27, SO-25
Boehm	Peggy	Aberdeen	SD	1052	GE-2, SA-14
Bowers, Jr.	James H.	Broadus	MT	1044	AM-3, AM-12, SA-1
Brandner	Sister Joan M.	Aberdeen	SD	1052	GE-2, SA-14

Individual Letters					
Last Name	**First Name**	**City**	**State**	**Letter #**	**Comment Codes Applied**
Brooks	Harold Eugene	Bowman	ND	1004	AM-12, GE-2, GE-5, GE-9, PN-2, SO-14
Burdick	Russell L.	Baker	MT	1065	GE-2, PN-2, SA-7, SO-9
Carlson	Mike	Glendive	MT	1061	BI-1, CM-4, GE-1, LU-7
Carter	Charles	Broadus	MT	1010	BI-1, GE-1
Castleberry	Betty Jo and Fulton	Ekalaka	MT	1086	BI-4, GE-2, SA-5, SA-27, SO-1, SO-11
Clark	Michele A.	Fort Yates	ND	1077	GE-1, GE-11
Clary	Family	Carson	ND	1014	DO-3, SO-13
Crosby	Dean	Bison	SD	1075	GE-1
Daml	Sister Donata	Aberdeen	SD	1052	GE-2, SA-14
DeCastro	Edward A.	Laramie	WY	1093	GE-2, GE-3, GE-6, PN-2
Dedic	Barbara	New Underwood	SD	1002	BI-4, GE-2, PN-2, SA-9
Dinstel	Delbert	Colstrip	MT	1037	GE-2, LU-2, NO-5, PN-2, SA-7, SO-1, SO-7, SO-8, SO-9
Doering	Ray A.	Litchfield	MN	1057	GE-12
Doherty	Lisa Y.			1054	BI-4, EJ-2, GE-2, GE-9, EJ-2, SA-1, SA-5, SA-14
Drayton	Dennis R.	Lemmon	SD	1039	AM-5, BI-6, BI-7, GE-2, GE-7, EJ-1, LU-1, NO-4, NP-11, SA-7, SA-9, SA-14
Drayton	Dennis R.	Lemmon	SD	1074	LU-2, LU-3, NP-1
Drayton	Dennis			1076	EJ-1, LU-1, NP-2, SO-1
Edinger	Gequita	Carson	ND	1016	DO-3, SO-13
Egan	Bailey	Forsyth	MT	1085	GE-2, GE-3, PN-2

Individual Letters					
Last Name	**First Name**	**City**	**State**	**Letter #**	**Comment Codes Applied**
Ellison	Dean and Lila	Lemmon	SD	1036	GE-2, GE-8
Fisher	Alex	Rapid City	SD	1114	DO-4, SO-2, SO-7
Franklin	Chuck			1089	GE-2
Fruit	Tracy	Broadus	MT	1007	AM-15, BI-4, GE-8, NO-10, SA-9, SA-17
Fuchs	Melodie	Carson	ND	1026	DO-3, SO-13
Gay	Glenn	Broadus	MT	1070	AM-12, SA-7
Geraets	Mary L.	Aberdeen	SD	1052	GE-2, SA-14
Giese	Janice K.	Carson	ND	1021	DO-3, SO-13
Griffin	William	Rapid City	SD	1069	GE-1, BI-1, SO-1
Hamilton	Jim	Decker	MT	1098	PN-2, SA-27, SA-28, SO-1, SO-13
Harmon	Roger	Carson	ND	1018	DO-3, SO-13
Harmon	Mary Jane	Carson	ND	1019	DO-3, SO-13
Harrington	Homer	Ekalaka	MT	1106	EJ-2, GE-2, LU-2, SA-5, SA-14, SA-19, SA-21, SO-13, SO-24, SO-25
Hauge	Patricia L.	Leith	ND	1025	DO-3, SO-13
Hayes	Francis J.	Alzada	MT	1041	GE-1, GE-9, SO-29
Hintz	Barbara	Carson	ND	1013	DO-3, SO-13
Hoff	Jody	Richardton	ND	1047	GE-2, SO-7
Howard	Lee	Hysham	MT	1102	PN-2, SA-1, SA-5
Hurdle	Joan		MT	1048	AQ-1

Individual Letters					
Last Name	**First Name**	**City**	**State**	**Letter #**	**Comment Codes Applied**
Iekel	Penny	Busby	MT	1059	AM-12, BI-4, LU-2, PN-1
Johnson	Sister Annrita	Aberdeen	SD	1052	GE-2, SA-14
Johnstone	Jim	Ekalala	MT	1099	SO-13
Jones	James O.	Hulett	WY	1045	EJ-2, GE-2, LU-1, LU-2, NP-11, NO-5, PN-2, SA-5, SA-9, SA-14, SO-1, SO-9
Kammerer	Marvin	Rapid City	SD	1104	GE-2, SA-14, SA-27, SO-1, SO-12
Kammerer	Marvin	Rapid City	SD	1105	GE-3, LU-3, SA-22, SO-22
Kari	Dennis	Bison	SD	1040	GE-1, GE-9
Kelley	Sister Verna	Aberdeen	SD	1052	GE-2, SA-14
Kimbell	Roy E.	Spearfish	SD	1066	AM-6, PN-5, SA-7, SA-11
Knapp	Rhonda	Ekalaka	MT	1109	AM-14, LU-1, LU-2, NO-5, PN-2, SA-5, SA-20, SO-13
Kraemer	Norma J.	Deadwood	SD	1058	AM-3, AM-6, GE-2, PN-2, PN-3, PN-6, SA-3, SA-5, SA-7, SA-11, SA-27, SO-10, SO-11, SO-14, SO-24
LaBeau	Lawrence O.	San Angelo	TX	1101	PN-2, PN-3, SA-5, SO-7, SO-12, SO-14
LaBree	Anna	Elkalaka	MT	1005	GE-2, SA-7, SO-2, SO-7, SO-11, SO-15, SO-17
Lang	Jerry	Baker	MT	1096	AM-14, BI-4, DO-4, GE-2, GE-11, NO-5, NP-1, PN-2, SA-3, SA-7, SA-19, SO-1, SO-2, SO-5, SO-6, SO-8, SO-13, SO-16, SO-17
Lee	Kenneth	Sturgis	SD	1073	AM-12, AQ-2, AQ-3, GE-2, PN-2, SA-3, SA-7, SO-1, SO-2, SO-3
Lee	Anita	Sturgis	SD	1083	BI-4, GE-8, SA-7, SO-2, SO-12
Lewis	Anthony	Fort Yates	ND	1072	GE-1, SA-20
Lundberg	Wayne R.	Kettering	OH	1115	BI-4, NO-3, SO-1

Individual Letters					
Last Name	**First Name**	**City**	**State**	**Letter #**	**Comment Codes Applied**
MacPherson	Jeanne	Helena	MT	1095	AM-6, SO-10
McDowall	Gene	Carson	ND	1033	DO-3, SO-13
McEwen	Dennis	Broadus	MT	1038	NO-2, SO-16
McKenna, Jr.	John J.	Bozeman	MT	1118	AM-6, AM-21, GE-2, PN-2, SA-7, SO-24
Mehling	Frank	Baker	MT	1094	AM-12, GE-2, LU-3, SA-19, SA-21, SO-2, SO-11, SO-12, SO-15
Mekling	Charlene	Baker	MT	1011	AM-12, BI-4, GE-2, LU-1, PN-2, SA-19, SA-21, SO-2, SO-11, SO-15
Merriman	Don		SD	1117	AM-14, NP-1, NP-8, SA-27, SO-13
Metter	Todd	Carson	ND	1032	DO-3, SO-13
Moose	Dwight and Kathleen	Hulett	WY	1062	GE-1, GE-9, LU-7
Nelson	Mary	Recluse	WY	1053	GE-2
Nelson	Larry	Buffalo	SD	1100	AM-4, BI-3, BI-5, SA-7, SA-9, SA-5, SA-6, SA-12, SA-13, SO-1, SO-15, SO-16
Norhton	Dan	Helena	MT	1116	AM-6, GE-2, NP-8, SA-7, SO-7, SO-24
Nostrano	Olga I.	Sheridan	WY	1079	SA-14
Ogle	Kathy Mueller	Cheyenne	WY	1050	AQ-3, GE-2, LU-2, PN-2, SA-5, SA-6, SA-14, SA-27
Olson	Allen	Box Elder	SD	1082	AM-2, BI-2, CU-1, LU-2, NO-4, SA-5, SA-6, SA-17, SA-22, SO-1, SO-3, SO-17
Ongstad	Anne Whitman	Robinson	ND	1006	GE-2, SA-1, SO-8, SO-10
Parker	Charles	Pacifica	CA	1034	AM-1, AM-12, GE-2, PN-2, PN-3
Parnell	Mike	Fort Smith	MT	1056	AM-20, BI-4, GE-2, LU-2, NO-4, PN-2, PN-5, SO-1, SO-7, SO-9

Individual Letters					
Last Name	**First Name**	**City**	**State**	**Letter #**	**Comment Codes Applied**
Penfield	Shane C.	Lemmon	SD	1113	BI-7, LU-1, LU-2, SA-27, SO-16
Pierret	Sister Kathleen	Aberdeen	SD	1052	GE-2, SA-14
Pinnow	Wanda	Baker	MT	1008	AM-12, SA-19, SA-21, SO-2, SO-11, SO-15, SO-16
Power	Greg, Maj Gen (Ret)		NC	1042	GE-1, GE-11, NO-10
Quinn	Sister Carol	Aberdeen	SD	1052	GE-2, SA-14
Rath	Michael	Baker	MT	1060	AM-3, AM-4, AM-21, SA-3, SA-7, SO-7, SO-10, SO-22
Reder	Monte	Miles City	MT	1080	GE-2, LU-2, SA-7
Reynolds	Sidney	Miles City	MT	1112	GE-9
Richards	David A.	Sturgis	SD	1035	GE-2, LU-3, SO-13
Richards	Duane	Hammond	MT	1092	BI-1, GE-1
Richardson	Lee	Miles City	MT	1081	SO-10
Rieger	Steve and Janelle	Ismay	MT	1111	AM-12, BI-4, GE-2, LU-1, LU-2, NO-2, PN-2, SA-7, SO-1, SO-13
Ronning	Kayleen	Billings	MT	1049	GE-2
Rosencranz	Bill and Ruth	Spearfish	SD	1087	GE-9
Rosencranz	Bill and Ruth	Spearfish	SD	1088	GE-9
Rosenkrantz	Jean	Rapid City	SD	1046	GE-2, GE-3, LU-2, PN-2, SA-26, SO-7
Rusley	J. Robert	Baker	MT	1043	BI-2, GE-2, LU-2, SA-5, SA-14, SA-15, SA-19, SO-1, SO-13, SO-16
Rusley	Wilma	Baker	MT	1063	BI-4, GE-2, GE-5, LU-1, PN-2, SA-5, SA-14, SA-19, SO-1, SO-5, SO-10, SO-13, SO-14, SO-16
Rusley	Phillip and Lori	Baker	MT	1064	GE-3, NP-1, PN-2, PN-7

Individual Letters					
Last Name	**First Name**	**City**	**State**	**Letter #**	**Comment Codes Applied**
Schlosser	Jim D.	Hulett	WY	1097	BI-4, GE-9, GE-11, SO-13
Schmid	Sandra A.	Carson	ND	1015	DO-3, SO-13
Schmid	Michael	Carson	ND	1017	DO-3, SO-13
Schmid	John R.	Mandan	ND	1020	DO-3, SO-13
Schmid	John G.	Carson	ND	1024	DO-3, SO-13
Simek	Thomas	Sun City West	AZ	1001	CM-2, SO-1, SO-12, SO-13
Simmers	Joshua	Mandan	ND	1051	GE-2, GE-5, SO-1, SO-6, SO-7
Swanda	Antone	Oshoto	WY	1084	GE-2, PN-2, SA-5, SA-6, SO-1, SO-13
Thom	Loran	Lemmon	SD	1103	BI-4, LU-2, NO-2, SO-1, SO-13
Tronstad	Chad	Baker	MT	1009	AM-14, EJ-2, GE-2, GE-5, NP-1, NP-9, PN-2, SA-17, SO-1, SO-6, SO-9
Viviano	Pamela	Hulett	WY	1108	GE-2, EJ-2, LU-1, LU-2, NP-8, SA-5, SA-9, SA-10, SA-14, SA-27, SO-5, SO-9, SO-22
Wash	William Glenn	Broadus	MT	1012	AM-12, GE-2, NP-7
Welander	Terry D.	Chisholm	MN	1067	AM-9, AM-11, PN-2
White	Richard F.	Minot	ND	1110	GE-1, NO-10
Wolfe	Carol N.	Newcastle	WY	1120	No PRTC-related comments
Zenker	Cherie	Carson	ND	1022	DO-3, SO-13
Zenker	Alton	Carson	ND	1023	DO-3, SO-13
Zenker	Steven	Carson	ND	1028	DO-3, SO-13
Zenker	Brett	Flasher	ND	1031	DO-3, SO-13

1.4.2 *ALPHABETICAL DIRECTORY FOR PUBLIC HEARING TRANSCRIPTS*

Comments From Public Hearing Transcripts						
Last Name	***First Name***	***Agency***	***Hearing Location***	***State***	***Letter #***	***Comment Codes Applied***
Above	Shannon Rock		Crow Agency	MT	2111	LU-1, NO-5
Abrahamson	Pine	Bowman County Commissioner	Bowman	ND	2040	SO-10
Adams	Fred	Basin Electric Power Cooperative	Bismarck	ND	2062	AM-1, AM-3, AM-5, GE-2, SO-7
Alke	Debbie		Billings	MT	2117	AM-5, GE-9, PN-2, SA-7, SO-6, SO-10, SO-24,
Baldwin	John		Miles City (aft)	MT	2085	AM-12, NO-5, SA-1, SA-7, SO-13
Bergerson	Bob		Billings	MT	2114	PN-3, PN-4, PN-6
Bergslin	Wade	True Oil Company	Gillette	WY	2094	AM-27, AM-6, AM-19, GE-9, GE-11, NP-4, SA-7, SO-6, SO-7
Blake	Clark		Belle Fourche	SD	2017	GE-2, NO-5, SO-11
Bourland	Gregg	Cheyenne River Sioux Tribal Council	Eagle Butte	ND	2140	NA-7, NA-9, SA-5, SA-20
Bowman	Bill	Senator, District 39	Bowman	ND	2039	GE-10
Braun	Doug		Billings	MT	2120	GE-1, GE-9
Bush	Richard		Billings	MT	2122	AM-27, GE-1, PN-2, SO-7
Campbell	John		Gillette	WY	2095	AM-12, AM-20, AM-21, AM-22, NP-8, PN-2, SA-1, SA-3, SA-9, SO-5, SO-7, SO-24

Comments From Public Hearing Transcripts						
Last Name	***First Name***	***Agency***	***Hearing Location***	***State***	***Letter #***	***Comment Codes Applied***
Capra	Lawrence		Broadus	MT	2065	GE-1, PN-1
Carlson	Kay		Billings	MT	2112	NO-11
Carsrud	Jeff		Rapid City	SD	2012	GE-1
Carsrud	Jeff	Ellsworth Task Force	Gillette	WY	2098	GE-1, GE-11, PN-3, SO-24
Cebulski	Wade		Billings	MT	2119	AM-21, GE-2, SA-7
Cook	Ardys	Cheyenne River Sioux Tribal Council	Eagle Butte	ND	2130	DO-7, LU-1, LU-6, NA-7, NP-8, NP-10
Davila	Matt		Fort Yates	ND	2052	DO-1
Dinstel	Del		Hardin	MT	2106	AM-12, AM-17, AM-25, GE-2, PN-2, PN-3, PN-6, SA-7, SO-1, SO-24
Dinstel	Sharon		Hardin	MT	2110	NO-4, NO-5
Dinstel	Del		Billings	MT	2113	LU-5, PN-2, PN-3, SA-7, SO-1, SO-9, SO-24
Drayton	Dennis		Bison	SD	2032	LU-1, NP-1, NP-2, NO-5
Drayton	Dennis		Elgin	ND	2050	EJ-1, LU-2, NP-2, NP-4, SO-1
Drayton	Mr.		Ekalaka	MT	2083	CM-2, CU-3, GE-2, LU-1, NP-2, NP-4, NP-10, PN-2, PN-3,
Drown	Mr.		Bison	SD	2038	GE-1, SO-17

Comments From Public Hearing Transcripts						
Last Name	***First Name***	***Agency***	***Hearing Location***	***State***	***Letter #***	***Comment Codes Applied***
Duffield	Willie		Baker	MT	2076	DO-4, GE-2, GE-9, PN-2, SA-3
DuPris	Maynard	Cheyenne River Sioux Tribal Council	Eagle Butte	ND	2127	GE-2, GE-5
Edwards	Guy		Belle Fourche	SD	2014	AM-5, AM-6, SO-9, SO-10,
Edwards	Guy		Belle Fourche	SD	2022	AM-8, SA-7
Egan	Bailey	Montana Community Airport Association	Colstrip	MT	2103	AM-3, AM-12, CU-3, LU-1, NA-2, NA-6, SA-3, SA-7, SA-14
Ferguson	Mike	Aircraft Owners and Pilots Association	Hardin	MT	2109	AM-3, AM-12, AM-26, PN-2, SA-7, SA-26, SO-7
Gilbert	Linda		Buffalo	SD	2025	AM-3, AM-4, SA-7, SA-12, SO-15
Glen	John		Billings	MT	2123	GE-1, GE-9, NP-8, PN-3
Goeres	Georgene		Elgin	ND	2047	GE-9, NP-3, PN-2, PN-3,
Goodhouse	Cedric		Fort Yates	ND	2055	NA-4, NA-8
Griffin	William		Rapid City	SD	2005	BI-1, GE-1
Hammond	Kate	National Park Service, Little Bighorn Battlefield National Monument	Hardin	MT	2105	AM-24, CU-2, DO-2, LU-2, NO-2, SO-9
Hauck	William		Belle Fourche	SD	2016	SA-10
Hayes	Frances		Broadus	MT	2069	BI-1, GE-1, LU-7

Comments From Public Hearing Transcripts						
Last Name	***First Name***	***Agency***	***Hearing Location***	***State***	***Letter #***	***Comment Codes Applied***
Heidgerken	Robert		Rapid City	SD	2008	GE-3, NO-1, NO-2, NO-3
Helland	David		Bowman	ND	2042	AM-14, SA-1, SA-17
Howard	Mr.		Belle Fourche	SD	2024	NP-1, PN-2
In the Woods	Bryce	Cheyenne River Sioux Tribal Council	Eagle Butte	ND	2124	AM-15, AM-17, CU-4, GE-2, NA-8, NA-9, NA-11, NA-13, NP-2, PR-1, SA-5, SO-25
Ironshield	George		Fort Yates	ND	2056	NA-7, SA-14
Jilek	Ray	Black Hills Airport	Rapid City	SD	2010	AM-3, AM-4, SA-7, SA-8, SO-5, SO-6
Jilek	Ray	Black Hills Airport	Belle Fourche	SD	2020	AM-3, AM-7, AM-9, AM-11, SA-7, SA-11, SA-27, SO-6, SO-14
Johnson	Jim		Belle Fourche	SD	2018	NO-6, NO-7, NO-8, SA-1, SA-7
Johnson	Gene		Belle Fourche	SD	2021	BI-3, NO-5, SA-7, SO-1, SO-11
Kammerer	Marvin		Rapid City	SD	2006	BI-2, BI-3, PN-2, PN-3, LU-3, SO-1, SO-4
Kammerer	Matthew		Rapid City	SD	2011	GE-5, SO-1
Kammerer	Marvin		Billings	MT	2116	AM-4, BI-2, BI-3, GE-6, LU-1, NO-11, NP-8, PN-3, SA-5, SA-14, SO-12, SO-14, SO-15, SO-17
Keckler	Kevin	Cheyenne River Sioux Tribal Council	Eagle Butte	ND	2141	NA-9, NP-8

Comments From Public Hearing Transcripts						
Last Name	***First Name***	***Agency***	***Hearing Location***	***State***	***Letter #***	***Comment Codes Applied***
Kehler	Kelly		Hardin	MT	2107	AM-3, GE-2, NO-10, NP-3, SA-1, SA-5, SA-7, SA-10, SO-2, SO-9, SO-24
Kinnischtzke	Roger		Elgin	ND	2046	GE-5, LU-5, PN-2, PN-3
Kiper	Cherril		Gillette	WY	2097	GE-9, PN-1
Kling	Jerry	Kling Ranch	Elgin	ND	2044	AM-15, BI-4, GE-8, GE-9, SO-6, SO-18
Knife, Jr.	Ted		Eagle Butte	ND	2135	GE-2
Krause	Cody	USDA Wildlife Services	Bison	SD	2028	SA-1
Krutzfeldt	Lewis		Miles City (eve)	MT	2092	BI-2, GE-2, NO-5, PN-2, SA-5, SA-27, SO-1
Lafferty	Joe	Mnikoju Tribe (Cheyenne River Sioux)	Eagle Butte	ND	2139	GE-2, GE-7, NA-6, NA-8
Lane	Bill		Baker	MT	2071	AM-3, BI-2, GE-2, LU-2, NP-1, SA-5, SA-7, SO-1, SO-5, SO-6, SO-7, SO-9, SO-13, SO-16, SO-23, SO-24
Lane	Tom		Miles City (aft)	MT	2086	PN-2, SO-13, SO-14
Lane	Bill		Miles City (eve)	MT	2091	AM-1, AM-12, GE-2, GE-11, SA-7, SO-1, SO-13, SO-16
Langerud	Darin	North Dakota Atmospheric Resource Board	Bowman	ND	2041	AM-12, AM-13, GE-11, SA-15, SA-16, SO-28

Comments From Public Hearing Transcripts						
Last Name	***First Name***	***Agency***	***Hearing Location***	***State***	***Letter #***	***Comment Codes Applied***
Lannine	Danny		Broadus	MT	2066	AM-4, AM-14, AM-17, NP-7, SA-1
Larson	Gary	U.S. Department of Agriculture Wildlife Services Program	Bismarck	ND	2063	AM-3, SA-1, SA-7, SA-14, SO-5
Larson	Jack		Miles City (eve)	MT	2093	BI-4, CU-2, GE-2
LeBeau	DeAnna	Cheyenne River Sioux Tribal Council	Eagle Butte	ND	2125	NP-1, SA-5
LeBeau	Robin	Cheyenne River Sioux Tribal Council	Eagle Butte	ND	2126	DO-7, GE-2, NA-9
LeBeau	Ryman	Cheyenne River Sioux Tribal Council	Eagle Butte	ND	2129	GE-2, NA-7
LeBeau	Marcella		Eagle Butte	ND	2138	GE-2
LeCompte	Dixie		Eagle Butte	ND	2133	GE-2, PR-1
Lee	Anita		Rapid City	SD	2004	SO-1, SO-2, SO-3, SO-7, SO-8
Lee	Anita		Belle Fourche	SD	2015	GE-7, GE-8, SO-1, SO-2, SO-9, SO-12, SO-13
Lee	Anita		Bison	SD	2031	GE-7, GE-8, SO-1, SO-2, SO-12, SO-13
Lee	Chuck	Fallon County	Baker	MT	2077	AM-3, EJ-2, LU-2, PN-2, SA-16, SA-20, SA-21
Lee	Sharon	Cheyenne River Sioux Tribal Council	Eagle Butte	ND	2131	GE-2, NA-9

Comments From Public Hearing Transcripts						
Last Name	***First Name***	***Agency***	***Hearing Location***	***State***	***Letter #***	***Comment Codes Applied***
Lensegrav	Les		Bison	SD	2033	GE-2, LU-1
Lensegrav	Dave		Bison	SD	2036	BI-4, SA-14, SA-27, SO-1
Lien	Chris	Ellsworth Task Force	Rapid City	SD	2002	GE-1
Lifto	Patrick	Montana Pilots Association	Miles City (eve)	MT	2089	AM-8, AM-20
Lubnau	Tom		Gillette	WY	2100	AM-12, BI-3, GE-5, GE-9, PN-2, SA-6, SO-18, SO-27
Maas	Ms.		Belle Fourche	SD	2023	BI-4, NO-5
Maher	Dan		Elgin	ND	2049	SA-5, SO-12
Mastrangelo	Phil	U.S. Department of Agriculture Wildlife Services Program	Bismarck	ND	2061	SA-7, SO-15
McDowell	Don		Broadus	MT	2070	GE-5
McFarland	Liz		Billings	MT	2121	BI-2, DO-1, GE-2, GE-10, LU-9, PN-2, PN-3, SA-1, SA-5, SA-26, SO-1
McLaughlin	Jeff		Fort Yates	ND	2058	GE-2, NA-7, NA-8
McNaney	Dave		Colstrip	MT	2104	PN-4, SA-7
Meggers	Roger	Baker Municipal Airport	Baker	MT	2072	AM-4, AM-12, AM-17, GE-2, GE-9, GE-10, NP-5, NP-8, PN-5, SA-1, SA-7, SA-16, SA-21, SO-7, SO-10, SO-17, SO-25

Comments From Public Hearing Transcripts						
Last Name	***First Name***	***Agency***	***Hearing Location***	***State***	***Letter #***	***Comment Codes Applied***
Meggers	Darin		Baker	MT	2073	AM-3, SA-7, SA-9, SA-19, SO-5, SO-6, SO-7, SO-10, SO-26
Mirehouse	James	Ellsworth Task Force	Rapid City	SD	2003	GE-1, PN-1
Nash	Dennis		Bison	SD	2037	AM-9
Nelson	Merrill	USDA Wildlife Services	Rapid City	SD	2001	SA-1
Nelson	Larry		Buffalo	SD	2026	BI-3, BI-5, CM-1, SA-12, SA-13, SO-15,
Newpower	Scott		Billings	MT	2118	AM-6, AM-21
Nieme	David		Buffalo	SD	2027	SO-16
Olson	Allen		Rapid City	SD	2009	AM-2, CU-1, GE-4, GE-6, NO-4, SA-5, SA-6
Parnell	Mike		Hardin	MT	2108	CM-3, GE-2, LU-2, NP-3, SO-1, SO-7, SO-9
Patterson	John		Billings	MT	2115	AM-12, SA-9
Petik	Jerry		Bison	SD	2034	AM-3, AM-12, GE-9, PN-3
Pittman	Darrel	EAA, NOPA, CAP	Bismarck	ND	2060	AM-5, AM-12,
Ranum	Deb	Fallon County Commission	Baker	MT	2082	GE-2, SA-14, SO-1, SO-9
Raper	Bob		Miles City (aft)	MT	2087	AM-12, AM-19, GE-1

Comments From Public Hearing Transcripts						
Last Name	***First Name***	***Agency***	***Hearing Location***	***State***	***Letter #***	***Comment Codes Applied***
Rebenitsch	Ron	Basin Electric Power Cooperative	Bismarck	ND	2064	NP-6, SO-17
Reichert	Ross		Bison	SD	2030	LU-2, NO-5, SO-15
Reinhold	Larry		Rapid City	SD	2013	LU-1, LU-2, SA-9, SO-1
Reyna	Petra		Fort Yates	ND	2057	BI-6, CU-2, NP-5, NA-7, SA-14, SO-18
Reynolds	Sidney B., Capt (ret. Army)		Miles City (aft)	MT	2088	GE-9
Richardson	Lee	Montana Pilots Association	Miles City (eve)	MT	2090	GE-2, SO-10
Rieger	Donald	Fallon County Commission	Baker	MT	2074	BI-3, GE-5, LU-8, NP-4, SA-5, SA-19, SA-23, SO-10, SO-17
Rusley	J. Robert		Baker	MT	2078	SO-1, SO-11, SO-13, SO-16
Russell	Scott	Crow Nation	Crow Agency	MT	2142	CU-4, GE-9
Schaaf	Rodney		Bowman	ND	2043	AM-3, DO-4, NP-2, SO-5
Schlosser	Demarest		Broadus	MT	2067	GE-3, LU-2, NO-5
Schwietert	David, Dr.		Rapid City	SD	2007	AM-1, AM-3, SA-2, SA-3, SA-4, SO-7
Sikorski	Wade		Baker	MT	2079	BI-4, SA-9, SO-17
Simmers	Bob	Bismarck Aero Center, Bismarck Airport	Bismarck	ND	2059	AM-12, AM-16, SA-1, SA-18, SO-2, SO-5, SO-10, SO-17, SO-22, SO-30

Comments From Public Hearing Transcripts						
Last Name	***First Name***	***Agency***	***Hearing Location***	***State***	***Letter #***	***Comment Codes Applied***
Smith	John		Broadus	MT	2068	AM-3, GE-9, NP-3, SA-7
Snyder	Val		Sheridan	WY	2101	NO-9, NP-9, PN-2, SA-14, SA-27, SA-28, SO-1, SO-6, SO-14, SO-17
Soulek	Paul	South Dakota Aviation Association	Belle Fourche	SD	2019	SA-7
Stewart	Dan	Grant County Commission	Elgin	ND	2048	GE-9, LU-1, LU-3, PN-2, SO-12, SO-13
Stoltz	Frank		Miles City (aft)	MT	2084	SA-1, SA-24, SA-26, SA-27
Taken Alive	Jesse	Standing Rock Tribal Government	Fort Yates	ND	2053	CM-3, CU-2, GE-2, NA-1, NA-3, NA-4, NA-5, NA-6, NA-8
Thompson	Frank		Eagle Butte	ND	2137	NA-9
Tronstad	John		Baker	MT	2080	GE-2, LU-2, SA-1, SA-22, SO-1, SO-18
Tunby	Randy		Baker	MT	2081	AM-1, AM-12, SA-7, SO-15, SO-16
Twedt	Dennis	Baker Municipal Airport	Baker	MT	2075	AM-14, NP-9, PN-5, SA-7
Unhoch	Bill		Sheridan	WY	2102	PN-2, PN-5, SO-1, SO-24
Uses the Knife, Jr.	Raymond		Eagle Butte	ND	2136	GE-1, GE-9
Vance	Steve	Cheyenne River Sioux Tribe	Eagle Butte	ND	2143	LU-9, NA-5, NA-7
Vig	Dwayne C.		Bison	SD	2029	GE-5, SA-5, SO-1

Comments From Public Hearing Transcripts						
Last Name	***First Name***	***Agency***	***Hearing Location***	***State***	***Letter #***	***Comment Codes Applied***
Von Flatern	Michael		Gillette	WY	2096	AM-1, AM-5, SA-7, SA-25, SO-6, SO-7
Waddell	Holly		Bison	SD	2035	LU-2, LU-3, SA-5, SA-7, SA-14, SO-17
Walters	Bob	Cheyenne River Sioux Tribal Council	Eagle Butte	ND	2132	DO-7, GE-2, LU-3, NA-4, NA-9, NP-2
Wegher	Linda		Gillette	WY	2099	BI-4, LU-1, SA-5, SA-14, SO-10
Weishaar	Shawn		Elgin	ND	2045	CM-2, GE-9, LU-2, LU-4, NO-10, SO-1, SO-2, SO-17, SO-19, SO-20, SO-21, SO-22
Weishaar	Ben		Elgin	ND	2051	AM-1, SA-10
White Bull	Merrie Miller	Cheyenne River Sioux Tribal Council	Eagle Butte	ND	2128	EJ-2, GE-2, PN-2
Widow	Edward		Eagle Butte	ND	2134	AM-30, GE-9, PN-2,
Young	Phyllis		Fort Yates	ND	2054	GE-2, GE-7, NA-4, NA-7

1.4.3 *ALPHABETICAL DIRECTORY FOR AGENCY/ORGANIZATION LETTERS*

Agency Comments						
Agency	***Last Name***	***First Name***	***City***	***State***	***Letter #***	***Comment Codes Applied***
Adams County	Nelson	Howard	Hettinger	ND	3011	GE-2, LU-2, SA-9
Air Dakota Flite Inc.	Lindquist	Charles Q.	Hettinger	ND	3004	GE-2, SA-7, SA-8, SO-2, SO-5, SO-6, SO-17, SO-26
Aircraft Owners and Pilots Association	Kramer	Thomas E.	Frederick	MD	3052	AM-5, AM-6, AM-12, AM-26, GE-2, GE-11, PN-5, SA-5, SA-7, SA-16, SA-26, SO-5, SO-7, SO-8, SO-10, SO-26
Alaska Airlines	Beck	Gary	Seattle	WA	3050	GE-2, GE-11, SA-3, SO-7, SO-8
Allegiant Air	Hanson	E. Keith	Las Vegas	NV	3005	GE-2, SA-1, SA-7, SO-7, SO-8, SO-10
American Airlines	Osborne	Jeffrey B.	DFW Airport	TX	3078	GE-2, GE-14, SO-7, SO-22
Aviation Organizations of Montana	Cebulski	Wade	Seeley Lake	MT	3051	GE-2, SA-7, SO-7, SO-22
Baker Municipal Airport Commission	Meggers	Roger	Baker	MT	3012	AM-3, AM-4, AM-21, BI-3, GE-2, NP-1, NP-9, PN-2, PN-5, PR-1, SA-7, SA-10, SO-1, SO-5, SO-10, SO-22, SO-26
Basin Electric Power Cooperative	Adams	Fred E.	Bismarck	ND	3025	AM-1, AM-3, AM-5, AM-12, GE-2, NP-8, PN-7, SA-5, SA-7, SO-7, SO-22
Basin Electric Power Cooperative	Rebenitsch	Ron	Bismarck	ND	3047	NP-6
Basin Electric Power Cooperative	Harper	Ronald R.	Bismarck	ND	3053	AM-3, AM-5, GE-11

Agency Comments						
Agency	**Last Name**	**First Name**	**City**	**State**	**Letter #**	**Comment Codes Applied**
Big Horn River Alliance	Harris	Hale	Fort Smith	MT	3080	AM-4, AM-20, BI-4, GE-2, LU-1, LU-2, NO-4, PN-2, PN-4, PN-5, SO-1, SO-9, SO-10
Bismarck Aero Center	Simmers	Bob	Bismarck	ND	3026	AM-12, AM-16, AM-31, LU-4, SA-15, SA-18, SA-19, SO-5, SO-7, SO-8, SO-9
Bismarck Airport	Haug	Gregory B.	Bismarck	ND	3054	AM-3, AM-5, AM-12, GE-2, SA-1, SA-3, SA-7, SO-5, SO-6, SO-7, SO-8, SO-10, SO-11, SO-17
Bowman County Auditor	Tivis	Sandra K.	Bowman	ND	3001	DO-4, SO-6, SO-10
Bowman County Commissioners	Bowman	Bill	Bowman	ND	3001	DO-4, SO-6, SO-10
Bowman County Commissioners	Braaten	Rick	Bowman	ND	3001	DO-4, SO-6, SO-10
Bowman County Commissioners	Steiner	Kenneth	Bowman	ND	3001	DO-4, SO-6, SO-10
Bowman County Commissioners	Abrahamson	Pine	Bowman	ND	3001	DO-4, SO-6, SO-10
Bowman County Commissioners	Brackel	Lynn	Bowman	ND	3001	DO-4, SO-6, SO-10
Bowman County Development Corporation	Alderson	Ashley	Bowman	ND	3044	AM-5, LU-2, NP-3, SA-16, SO-17
Bowman North Dakota Airport Board			Bowman	ND	3057	DO-4, DO-5, SO-10
BP Wind Energy	Folks	Larry	Houston	TX	3007	GE-11, SO-17

Agency Comments						
Agency	**Last Name**	**First Name**	**City**	**State**	**Letter #**	**Comment Codes Applied**
Bureau of Land Management, Miles City Field Office	Raper	M. Elaine	Miles City	MT	3056	AM-3, AM-12, AM-27, AM-33, CM-2, DO-2, GE-2, GE-11, NP-10, PN-2, SA-1, SA-4, SA-5, SA-19, SA-27
Bureau of Land Management, Wyoming High Plains District	Connolly	Stephanie	Casper	WY	3055	AM-12, GE-1, SA-5
Carter County Board of Commissioners	Courtney	Jim	Ekalaka	MT	3009	AM-3, GE-1, LU-7
Carter County Board of Commissioners	Loehding	Bill	Ekalaka	MT	3009	AM-3, GE-1, LU-7
Carter County Board of Commissioners	Rosencranz	Steve	Ekalaka	MT	3009	AM-3, GE-1, LU-7
Carter County Sheriff	Jardee	Rusty	Ekalaka	MT	3046	GE-9
City of Lemmon	Pinnow	Neal	Lemmon	SD	3014	EJ-2, GE-7, PN-2, SA-5, SO-1, SO-8, SO-17
City of Minot	Zimbelman	Curt	Minot	ND	3015	GE-1, GE-9
City Service Valcon	Burlison	Breezy	Kalispell	MT	3058	AM-11, AM-26, SA-7, SO-5
Crook County Land Use Planning & Zoning Commission	Whalen	Jeanne	Sundance	WY	3008	GE-11, NO-10, SA-5, SA-19, SO-6, SO-17, SO-22
Dakota Rural Action	James	Frank	Brookings	SD	3002	BI-5, PN-4, SA-5, SO-2, SO-12, SO-13

Agency Comments						
Agency	**Last Name**	**First Name**	**City**	**State**	**Letter #**	**Comment Codes Applied**
Dakota Rural Action	Waddell	Holly	Brookings	SD	3048	LU-1, NO-5, NP-3, NP-10, SA-5, SA-14, SA-16, SO-1, SO-7, SO-17
Delta Airlines	Cass	Lorne	Atlanta	GA	3059	AM-12, GE-2, PN-5, SO-7
Dickinson Theodore Roosevelt Regional Airport	Remynse	Matthew	Dickinson	ND	3036	GE-2, SO-5, SO-8, SO-10, SO-22
Eagle Aviation	Jilek	Ray A.	Spearfish	SD	3061	AM-3, AM-4, AM-6, AM-11, AM-21, AM-26, SA-7, SA-11, SO-5, SO-7, SO-10, SO-22
Ellsworth Task Force	Lien	Chris	Rapid City	SD	3013	GE-1, GE-9, GE-11
Essential Air Service Task Force	Rabenberg	John	Fort Peck	MT	3063	AM-6, GE-2, SO-5, SO-6, SO-7
Executive Air Taxi Corporation	Vetter	Paul	Bismarck	ND	3020	GE-2, SA-19, SO-5, SO-8, SO-10
Fallon County Commission	Randash	William	Baker	MT	3010	BI-4, GE-2, LU-2, SA-7, SO-7, SO-17
Fallon County Commission	Ranum	Deb	Baker	MT	3010	BI-4, GE-2, LU-2, SA-7, SO-7, SO-17
Fallon County Commission	Rieger	Donald	Baker	MT	3010	BI-4, GE-2, LU-2, SA-7, SO-7, SO-17
Fallon County Commission	Randash	William L.	Baker	MT	3045	PN-1, SO-10
Grant County JDA	Dart	Luann	Elgin	ND	3049	AM-1, AM-27, SA-19, SA-24, SO-17
Harding County	Glines	Kathy	Buffalo	SD	3021	AM-4, AM-12, PN-4

Agency Comments						
Agency	**Last Name**	**First Name**	**City**	**State**	**Letter #**	**Comment Codes Applied**
International Association of Natural Resource Pilots	Faught	Jeff	Bismarck	ND	3022	GE-2, SA-7, SO-8
Lantis Enterprises, Inc.	Lantis	Travis	Spearfish	SD	3064	AM-3, AM-26, NO-5, NO-11, SA-5, SA-7, SA-26, SO-7, SO-8, SO-9, SO-10, SO-12, SO-13, SO-22
Lawrence County Commissioners	Douglas	Connie H.	Deadwood	SD	3023	AM-3, AM-4, AM-6, AM-7, AM-21, SA-7, SO-9, SO-10, SO-22
Minot Area Chamber of Commerce	Kramer	Brekka	Minot	ND	3016	GE-1, NO-10, PN-2
Minot Area Chamber of Commerce	MacMartin	L. John	Minot	ND	3016	GE-1, NO-10, PN-2
Minot Area Chamber of Commerce	Carlson	Bruce	Minot	ND	3017	GE-1, NO-10, PN-2
Montana Airport Managers Association	Ploehn	Kevin		MT	3065	AM-3, GE-3, SA-9, SO-7, SO-9, SO-24
Montana Department of Transportation	Lynch	Jim	Helena	MT	3028	AM-3, AM-4, AM-5, PN-2, PN-5, SA-7, SO-7
Montana Department of Transportation	Alke	Debbie	Helena	MT	3066	NP-5
Montana Historical Society	Warhank	Josef J.	Helena	MT	3031	CU-2
Montana Pilot's Association, Inc.	Cebulski	Wade	Helena	MT	3067	GE-2
Mott Airport Authority	Kelsch	Rex J.	Mott	ND	3027	GE-1
National Business Aviation Association, Inc.	Lamond, Jr.	Robert G.	Washington	DC	3024	AM-3, GE-9, PN-3, SO-22

Agency Comments						
Agency	**Last Name**	**First Name**	**City**	**State**	**Letter #**	**Comment Codes Applied**
North Dakota Aeronautics Commission			Bismarck	ND	3043	AM-5, DO-4, DO-5, GE-8, NA-2, SA-15, SA-18, SO-1, SO-5, SO-7, SO-9, SO-13, SO-15, SO-26, SO-28
North Dakota Atmospheric Resource Board	Langerud	Darin	Bismarck	ND	3006	AM-13, GE-11, SA-16, SO-28
North Dakota Business Aviation Association	Simmers	Jonathan P.	Bismarck	ND	3068	SA-19, SO-5, SO-8
North Dakota Farm Bureau	Aasmundstad	Eric	Fargo	ND	3035	BI-4, EJ-2, GE-2, SA-5, SO-13
North Dakota Game and Fish Department	Faught	Jeff	Bismarck	ND	3042	GE-2, SA-8
North Dakota Stockmen's Association	Schmidt	Jason	Bismarck	ND	3041	BI-4, CM-2, LU-2, SA-5, SA-7, SO-13
Northern Cheyenne Tribe Administration	Spang	Leroy A.	Lame Deer	MT	3079	AQ-5, AQ-6, AQ-7, BI-4, EJ-2, GE-2, LU-5, LU-9, NA-4, NA-10, NO-5, NO-9, SA-1, SA-5, SA-6, SO-6, SO-10
Powder River Board of County Commissioners	McDowell	Don	Broadus	MT	3070	AM-3, GE-5, SA-19, SO-2, SO-9, SO-12, SO-15, SO-17
Powder River Board of County Commissioners	Thompson	Les	Broadus	MT	3070	AM-3, GE-5, SA-19, SO-2, SO-9, SO-12, SO-15, SO-17
Powder River Board of County Commissioners	Traub	Ray	Broadus	MT	3070	AM-3, GE-5, SA-19, SO-2, SO-9, SO-12, SO-15, SO-17
PPL Montana	Neumiller	William L.	Billings	MT	3040	AM-12

Agency Comments						
Agency	**Last Name**	**First Name**	**City**	**State**	**Letter #**	**Comment Codes Applied**
Recreational Aviation Foundation	McKenna, Jr.	John	Bozeman	MT	3003	AM-3, PN-2, SA-7, SA-9, SO-10
South Dakota Public Utilities Commission	Hanson	Gary	Pierre	SD	3030	GE-9, SO-17
South Dakota Public Utilities Commission	Johnson	Dustin	Pierre	SD	3030	GE-9, SO-17
South Dakota Public Utilities Commission	Kolbeck	Steve	Pierre	SD	3030	GE-9, SO-17
South Dakota Stock Growers Association	Nachtigall	Margaret	Rapid City	SD	3039	AM-12, BI-3, GE-2, LU-1, PN-4, SA-5, SA-7, SO-2, SO-15
South Dakota Wind Energy Association	Wegman	Steve	Pierre	SD	3029	SO-17
Standing Rock Sioux Tribe	Murphy	Charles W.	Fort Yates	ND	3071	BI-4, GE-9, NA-4, NA-5, NA-6, NA-12, PN-4, PN-5, SA-5
Standing Rock Sioux Tribe	Murphy	Charles W.	Fort Yates	ND	3072	NP-5
State Historical Society of North Dakota	Paaverud, Jr.	Merlan E.	Bismarck	ND	3069	CU-2, LU-2, NO-2
State of South Dakota	Rounds	M. Michael	Pierre	SD	3019	GE-1
State of South Dakota	Rounds	M. Michael	Pierre	SD	3034	GE-1
Sundown Ranches Home Owners Association	Evans	Scott	Upton	WY	3038	GE-1

Agency Comments						
Agency	**Last Name**	**First Name**	**City**	**State**	**Letter #**	**Comment Codes Applied**
True Drilling Company	Bergslien	Wade	Casper	WY	3033	AM-1, GE-2, SO-7, SO-17, SO-22
True Drilling Company	Campbell	John	Casper	WY	3073	AM-12, NP-7, SA-3, SO-7, SO-14
True Drilling Company	Bergslien	Wade	Casper	WY	3081	AM-6, SO-6, SO-7
U.S. Congress	Lummis	Cynthia M.	Cheyenne	WY	3032	GE-12
U.S. Department of the Interior, Office of Environmental Policy and Compliance	Stewart	Robert F.	Denver	CO	3060	AM-24, BI-4, BI-6, BI-8, BI-9, CM-2, CU-2, DO-2, DO-5, GE-2, GE-11, GE-15, LU-2, LU-9, NA-4, NO-2, NO-4, SA-5, SA-13
U.S. Environmental Protection Agency, Region 8	Svoboda	Larry	Denver	CO	3062	DO-6, GE-16, PN-7, SA-5
United Airlines	Stull	Timothy L.	Elk Grove	Il	3037	AM-21, AQ-4, GE-11, GE-14, SO-7, SO-22
University of North Dakota Aerospace	Taylor	Benjamin	Grand Forks	ND	3077	AM-6, AM-21, PN-3
USDA, Forest Service, Custer National Forest	Erickson	Mary C.	Billings	MT	3074	AM-1, AM-12, AM-32, BI-9, CU-2, LU-5, NO-2, SA-5, SA-13, SA-19, SO-6
Verendrye Electric Cooperative	Hauck	Randy	Velva	ND	3018	GE-1, PN-2
Weather Modification Incorporated	Ahlness	Hans	Fargo	ND	3075	AM-13, SA-1, SA-3, SA-15, SA-19, SO-28
Wyoming State Historic Preservation Office	Laughlin	John P.	Cheyenne	WY	3076	NP-10

1.5 INDIVIDUAL LETTERS

Scanned copies of individual letters, bracketed for comment responses are provided in this section.

1001

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews St, Room 337
Langley AFB, VA 23665-2769

Ms, Linda DeVine, January 10, 2011.

I would like to comment on the Powder River Training Complex initiative.

I own property in Perkins County, South Dakota.

Description: **Township 15 North, Range 11 East**
Section 9; SW ¼ Black Hills Meridian.

The Air Force should *further* consider the ranchers who live at the *corridors* to ***Gap C*** and ***Gap B.*** Assuredly, they will endure loss of income, through loss of livestock and countless other problems , which they have already presented to your committee. SO-13

It appears where Gap C and Gap B intersect. With **Gap C** to the *South* and **Gap B** to the *South East* would be a area of added problems to to the area ranchers. Including those with- in a 25 mile circular radius from where Gap C & Gap B corridors actually intersect.

The Air Force should have a a *simple & fast* policy of reimbursement for proven losses to cash strapped ranchers, resulting from any mishap due to the newly proposed activity. SO-12

I feel this entire area will incur property value decline. There is so much land for sale to ranchers, retires and hobby ranchers, I am sure they would look elsewhere to where Air Force Corridors do not exist. Those forced to sell ,would have to take a lower value should The Powder River initiative take effect. SO-1

Hopefully, you can reengage dialogue on these points.

Would you please tell me who to contact in the Air Force about the possible leasing of our property for any purpose needed by the Air Force. (Example) Microwave Towers, Data Collection or ?. I believe we have a excellent location for Air Force needs that arise from the *Gap C & B ingress corridors.* There are no buildings on the property and is a accessible and secure (Prime Location). CM-2

I would also like to request a hard copy of the Powder River Training Complex report.

Regards,

Thomas Simek

Thomas Simek
[redacted]

1002

1-17-2011

[redacted]

Linda DeVine:

I would like to voice opposition to a larger Powder River training area. GE-2

I believe cattle and especially horses will never get used to the noise pollution. Ranchers work to keep their livestock calm and to provide a quality product for consumers. Sudden loud noises can make animals flighty putting their caretakers in harms way. Cattle won't gain as well and horses can easily hurt a rider. BI-4, SA-9

The air Force seems to be doing very well with the training area they have. I feel it should be left as is. PN-2

Sincerely,

Barbara Dedier

1003

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 12/29/2010

PLEASE PRINT

Please do not expand the training area- especially into Montana. Montana already has too much disruption from military flights around the Great Falls area. It does not make sense to subject eastern Montana to more excessive noise, and falling garbage like chaff from training exercizes, especially when Ellsworth has been listed for closure. GE-2 PN-2 NO-5 SA-27 SO-25

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	D. L. Blank
ORGANIZATION:	self
ADDRESS:	[redacted]
CITY/STATE/ZIP:	

Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format) ___ hard copy format
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Please hand this form in at a public scoping meeting or mail before November 13, 2010 to:
Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

[redacted]

Oct. 28, 2010 1004

To Whom It May Concern,

I am writing this letter to protest increasing the Powder River MOA. GE-2

I am an airplane owner and pilot at the Bowman, N.D. airport. Occasionally I have friends ask me to give them airplane rides. I don't think I should have to call FSS to see if the area is active before every local flight of half an hour or so. AM-12

At the first meeting you had at Bowman, N.D. it was mentioned that it would be so much more economical if your bombers didn't have to fly all the way to Nevada to practice. The government has never tried to save money in the past; so what makes you think they would start now? Anyway, we the taxpayers are paying all of the Air Force bills. PN-2 SO-14

I know we need the Air Force, and I am proud of them. GE-9

It bothers me though that they don't mind stepping on whoever they want to, to get what they want.

It seems to me that the Air Force, FAA, and the airlines and others are trying to get rid of general aviation. GE-5

Sincerely yours,

Harold Eugene Brooks

[redacted]

1005

November 9, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Dear Ms. DeVine;

I am opposed to the proposed Powder River Training complex. GE-2

My concern is for the local pilots, the ranchers who fly to check on their livestock, the crop sprayers, predator control pilots, charter flights and Great Lakes Airlines. They all play an important part in our economy. Our local pilots would be endangered by the wake of those big aircraft. It is important that ranchers can check on their stock from the air as some of the terrain is difficult and time consuming to check any other way. Ranching is very important to the economy of our part of the state. Pilots, who fly for predator control, are important to the ranching industry. The crop sprayers are important to our farmers. Farming also plays a big part in the economy of our area. Charter flights and Great Lakes Airlines play a big role in transporting people who are involved with the oil and mineral exploration that is going on in our part of the state. This exploration is important not only to our state, but also to our whole country. It plays a role in helping make our country less dependent on foreign oil. SA-7, SO-11, SO-15, SO-2, SO-7, SO-17

My concern is for lives of our local small aircraft pilots and the effect of proposed Powder River Training complex would have on our economy. SO-7

Thank you for considering my concerns.

Sincerely,

Anna LaBree
[redacted]

1006

November 12, 2010

Anne Whitman Ongstad
[redacted]

I have been a pilot since I was 17. I am firmly opposed to the expansion of the Powder River MOA. It will be a real detriment to aviation in North Dakota. I don't want to knock a bomber out of the air in my back pasture.!!!

GE-2
SO-8/SO-10
SA-1

ANNE ONGSTAD

1007

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 10-12-2010

PLEASE PRINT

Broadus, Montana hearing:

I would like to start by thanking all of the service men and women who protect and serve. Thank you.

My only concern is that when flying your training missions is that you don't fly over our home or our corrals. There are many old abandoned ranch houses and out buildings that you can use for simulation rather than where we live and work. For an example, on Oct 4, 2010 at 10:30 A.M. Mountain Standard time a fighter or B1 flew NO-10 AM-15

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME: Tracy Fruit
ORGANIZATION: [redacted]
ADDRESS: [redacted]
CITY/STATE/ZIP: [redacted]

Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format)
X hard copy format
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Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Reca 11/21

1007

directly over my shop while my father + I was working. It was so low that we could almost see the rivets in the planes body. Not to mention the noise was deafening. Our dogs ran for safety in the shop.

In 2008 I went to Miles City, MT to their meeting to express my concerns, which are: don't fly over our dwellings or corrals. And don't buzz us when we are moving our cattle.

The air force at that meeting had a Major Bowdeen conducting the meeting. When I voiced my concerns he said that it was just a fluke that we [redacted] may get buzzed when moving our cattle, because they pre plan the flights 24 hrs in advance, and that they don't intentionally fly over us. Well I can attest to many times that the planes will fly by at some distance and go out of sight and circle around and buzz us. Thats not a pre-planned flight. SA-17

I have also been riding young horses and been flown over and had them spook and or buck. And let me tell you if that happens to one of my family and they get hurt, you will here from me. It is uncalled for to fly over us when we are working. There are many other livestock in our area that don't have riders around them. SA-9

We have had planes fly over our house at night as late as midnight. They don't need to do that our yard light is always on, they know it is a home.

I have also called public affairs about the night runs over our home and have been passed from one person to the next trying to discourage me from airing my complaint. After several minutes someone finally would listen and said they would take care of it. But just after hanging up the phone and going back to bed we got buzzed again. So again I called and they said they would take care of it. They did quit that night, but we felt like the more we complained the more they would fly over our home. GE-8

All we ask is that you don't fly over our homes and corrals period. And when we move our cattle, respect us as we do you. BI-4

Sincerely,

[redacted]

P.S. Major Bowdeen also said that he flys evertime w/ the trainees and that he wouldn't let them buzz us. I'd like to know how he can be in 2 planes at one time! I didn't question Major Bowdeen any more. He proved his arrogance.

1008

Bracket Butte Ranch
Craig and Wanda Pinnow
[redacted]
November 9, 2010

MS. Linda Devine

This letter is in regards to the air space you wish to take over.
You say you will take over 35,200 square miles of our space. When asked why you are taking our space? The answer back was "***You are a non populated area and a non producing area.***" {Apparently we live out here and do nothing}. Was that really your answer? "How could anyone think that, just because we're not bumper to bumper with traffic?"

Here are some points to think about. If the Air Force have all of the air space controlled how will these jobs take place? (I would like a response to these)

1. How will The Oil Company's and Natural Gas Companies check there pipelines? Planes fly daily checking for leaks. SA-21
2. How will the crop dusters work? They fly when the wind does not blow. They would have to wait till the Air Force is done with practice runs. SO-2
3. Those of us who have the state trapper fly for predator control; He will no longer be able to fly. SO-15
4. Ranchers who check their cattle and sheep by flying over will have to go a different route. SO-11
5. This one really worries me, before the Air Ambulance can come to our town they have to get cleared airspace from the Air Force. They say they will give it but how fast will that reply come back? SA-19
6. The Local person who owns their own aircraft, when will they be able to fly? AM-12
7. Yes they will leave chaff from their practice runs; no comment has been made as to taking care of the sheep producer if his wool is discounted for having chaff in it. SO-16

These seven things do affect us and our operation on this Ranch. I believe that you need to rethink your routing.
I would much appreciate it you can take the time to answer my questions.

Bracket Butte Ranch

Wanda Pinnow

Wanda

1009

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 10-18-10

PLEASE PRINT

The current MOA training area is large enough. Airforce has been serving Afghanistan and Iraq with huge success. I am all for our military and troops but enough is enough with running all over the citizen/taxpayer. Keep the current training area in place. The proposed expansion will kill our local economy such as land values, livestock fires noise and the horseplay that the military performs during training. B-1 bombers flying under 500 ft. shining spotlights on those harvesting crops at night. Explain how the B-1 crash in 1997 in Carter county happened!!! A B-1 with 4 experienced crew that PN-2 GE-5 SO-1 SO-9 SA-17 AM-14

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	Chad Tronstad
ORGANIZATION:	
ADDRESS:	[redacted]
CITY/STATE	

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Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1009

caught a wing in the ground and crashed. What happened there with the 500 ft. rule. Growing up in and around an MOA I have been witness to several acts of horseplay and being bothered by military aircraft such as low inverted fly overs that I could near see the whites of the pilots eyeballs. Think a little people before you dump on your MOA expansion which sounds like you just picked the poorest area in the country to dump on like a nuclear waste site. We are tax paying citizens that have a say or do we. This is a huge act you are trying to perform or should I say pull the wool over the peoples eyes. Your presentation is vague with nothing but poor lip service. We the people need more clarification and answers than you are giving. You will basically put this area in a depression with this expansion, driving people & major business away. Open your eyes and get the picture The Big Picture!!! Put yourself in my shoes and think a little. Many jobs and business dollars at stake here, including myself. Thanks for your time and please consider someone other than the government. I oppose the expansion 100%.

AM-14
SA-17
EJ-2
NP-1
NP-9
SO-6
GE-2

1010

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! DATE: 10/18/010

PLEASE PRINT

We like The planes going over take all the air space you need! We need the Training to protect our Country. Many Thanks For Training your Men- I really like see them Fly over- they don't seem to brother our live stock. GE-1 BI-1

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME: Charles Carter Ranch
ORGANIZATIO [redacted]
ADDRESS:
CITY/STATE/Z

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HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Attention: 1011
Ms. Linda Devine
HQ ACC/A7PS
129 Andrews St. Room 337 — Langley AFB, Va

They will take over 35,200 square miles of our space. When asked why [redacted] you are taking our space? The answer back was "***You are a non populated area and a non producing area***." {Apparently we live out here and do nothing}. We are a populated area, just not like back east + we feel we are as important as they Here are some points to think about. If they have all of our air space controlled by them. PN-2

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2. How will the crop dusters work? They fly when the wind does not blow. They would have to wait till the Air Force is done with practice runs. SO-2
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6. The Local person who owns their own aircraft, when will they be able to fly? AM-12

Yes they will leave chaff from there practice runs, no comment has been made as to taking care of the sheep producer if his wool is discounted for having chaff in it.

I am against having the training area operating in this vicinity as it appears to be more disadvantages to our needs and way of life than there will be advantages. I am a cattle rancher & handle cattle by horseback. In the past I have experienced "sonic booms" that caused my horse to nearly unseat me & the cattle I was sorting miped up again. GE-2 LV-1 BI-4

Charlene Mehling
[redacted]

1012

[redacted]
Nov. 11, 2010

Ms. Linda DeVine HQ ACC/A7PS
129 Andrews St
Room 337
Langley AFB, VA 23665-2769

RE: Powder River MOA Proposed Expansion

To Whom It May Concern:

I have had an FBO "IN" the Powder River MOA for 20 years. I am a CFI with 22,000 hours in a single engine airplane. My observations and opinion is that the expansion of the current MOA wouldn't be all that bad if the Air Force would abide by their own rules.] NP-7

I have seen military aircraft out of the MOA. I have had a fly-by by two military fighters while I was on pipeline patrol at 100 feet AGL. I had a "buzz-job" on my ranch strip 34 miles from the MOA. I have seen military aircraft within two miles of Broadus, MT.

For the above reasons, I object to the expansion of the Powder River MOA.] GE-2

As far as Flight Service, I have done this many times and the answer is always the same: "The route is hot today from 600 hours to 1800 hours. If you ask for them to be more specific, they tell you they can't be more specific because of "National Security".] AM-12

Sincerely,

William Glenn Wash
[redacted]
William Glenn Wash

1013

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

RE: Expansion of Powder River MOA

Dear Ms. DeVine,

I would like to comment on the expansion of the Powder River MOA. I recommend that the expansion of the Power River MOA be less drastic. I would like the floor of the expansion to be at least 5,000 feet above ground level and no supersonic flight. My local economy relies heavily on livestock production. This low level flight may cause cattle to run through fences and stampede. This will be very detrimental to our area. The loud noises from aircraft will also be a very negative for our community's future. Thank You.

DO-3
SO-13

Sincerely,
Barbara Hintz
[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1014

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

RE: Expansion of Powder River MOA

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DO-3

SO-13

Sincerely,

Cheryl 11-8-10

[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1015

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

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DO-3

SO-13

Sincerely,

Sandra A. Schmid

Sandra A. Schmid

[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1016

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

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DO-3

SO-13

Sincerely,

Leguita Edwards

[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1017

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

RE: Expansion of Powder River MOA

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DO-3
SO-13

Sincerely,

[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1018

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

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DO-3

SO-13

Sincerely,

Roger Harmon

[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1019

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

RE: Expansion of Powder River MOA

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Thank You.

DO-3

SO-13

Sincerely,

Mary Jane Harmon

[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1020

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

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DO-3

SO-13

Sincerely,

John R Schmid

[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1021

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

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DO-3

SO-13

Sincerely,

Jami K. Seré

[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
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1022

Linda DeVine
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129 Andrews St., Room 337
Langley AFB, VA 23665-2769

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DO-3
SO-13

Sincerely,

Chere Zander [redacted] 11-9-10

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1023

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

RE: Expansion of Powder River MOA

Dear Ms. DeVine,

I would like to comment on the expansion of the Powder River MOA. I recommend that the expansion of the Power River MOA be less drastic. I would like the floor of the expansion to be at least 5,000 feet above ground level and no supersonic flight. My local economy relies heavily on livestock production. This low level flight may cause cattle to run through fences and stampede. This will be very detrimental to our area. The loud noises from aircraft will also be a very negative for our community's future. Thank You.

DO-3

SO-13

Sincerely,

Alton Jenkins

[redacted]

9-10-10

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1024

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

RE: Expansion of Powder River MOA

Dear Ms. DeVine,

I would like to comment on the expansion of the Powder River MOA. I recommend that the expansion of the Power River MOA be less drastic. I would like the floor of the expansion to be at least 5,000 feet above ground level and no supersonic flight. My local economy relies heavily on livestock production. This low level flight may cause cattle to run through fences and stampede. This will be very detrimental to our area. The loud noises from aircraft will also be a very negative for our community's future. Thank You.

DO-3

SO-13

Sincerely,

John G Schmid

[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1025

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

RE: Expansion of Powder River MOA

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DO-3

SO-13

Sincerely,

Patricia L Hauge

[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1026

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

RE: Expansion of Powder River MOA

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DO-3

SO-13

Sincerely,

Melodie Fuchs

[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1027

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

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Dear Ms. DeVine,

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DO-3

SO-13

Sincerely,

[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1028

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

RE: Expansion of Powder River MOA

Dear Ms. DeVine,

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DO-3

SO-13

Sincerely,

Steven Zenker

[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1029

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

RE: Expansion of Powder River MOA

Dear Ms. DeVine,

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DO-3

SO-13

Sincerely,

Brandon Burton

[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1030

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

RE: Expansion of Powder River MOA

Dear Ms. DeVine,

I would like to comment on the expansion of the Powder River MOA. I recommend that the expansion of the Power River MOA be less drastic. I would like the floor of the expansion to be at least 5,000 feet above ground level and no supersonic flight. My local economy relies heavily on livestock production. This low level flight may cause cattle to run through fences and stampede. This will be very detrimental to our area. The loud noises from aircraft will also be a very negative for our community's future. Thank You.

DO-3
SO-13

Sincerely,

Sheila Bertsch
[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1031

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

RE: Expansion of Powder River MOA

Dear Ms. DeVine,

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DO-3

SO-13

Sincerely,

Brett Zaday

[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1032

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

RE: Expansion of Powder River MOA

Dear Ms. DeVine,

I would like to comment on the expansion of the Powder River MOA. I recommend that the expansion of the Power River MOA be less drastic. I would like the floor of the expansion to be at least 5,000 feet above ground level and no supersonic flight. My local economy relies heavily on livestock production. This low level flight may cause cattle to run through fences and stampede. This will be very detrimental to our area. The loud noises from aircraft will also be a very negative for our community's future. Thank You.

D0-3

SO-13

Sincerely,

[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1033

Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

RE: Expansion of Powder River MOA

Dear Ms. DeVine,

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DO-3

SO-13

Sincerely,

Dean McDonald

[redacted]

cc: Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Att. Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 10-AGL-6NR

1034

Dear Sir or Madam,

I object to the expansion of restricted airspace in the Powder River area. Substantial restricted areas already in place currently impede East West access to air traffic. On a flights to Las Vegas and Lake Havasu City from the West Coast, I have many times had to detour around 2515 and/or squeeze through the gap between that and 2501N. In fairness to those controlling agencies, they will permit transition of 2515 on Sunday's, although prior to 9/11 it was allowed Monday through Sunday unless it was hot. On a not so long ago flight to Saint George, Utah, I was required to detour around 4808N, 4807 A and B as well as 4806W although the controller admitted it was not hot at that time. It might be deemed more acceptable if the controlling agencies allowed transitions through these areas when they are not hot. The real problem as I see it, is one of attitude. We, in the civilian population regard the airspace as ours, on loan for use to the military, whereas the military regards the airspace belonging to them and is to be kept free of non-military users. The total amount of airspace denied to citizen use is unsupportable given we are not at war. The commanders of the controlling agencies should be required to make the airspace available to civil use when not actually conducting exercises.

GE-2
PN-2
AM-12
PN-3
AM-1

Charles Parker
[redacted]

P.S.
Linda Devine? Come on, you zoomies are pulling our chains, right?

1035

[redacted]

January 3, 2011

Linda DeVine, HQ ACC/A7PS
129 Andrews St. Suite 337
Langley AFB, VA 23665-2769

Dear Ms. DeVine:

I oppose expanding the space by four times that Ellsworth Air Force planes can fly over for training purposes. GE-2

My 8,000 acre ranch has lots of cross fences to keep the cattle where they can do the best. Airplanes flying fast and low would panic cattle and they'd stampede through fences injuring themselves and creating chaos. SO-13

Cattle and sheep ranching are important to the economy of South Dakota and they help to feed the nation. The proposed training complex would undermine the rural economy and threaten a way of life for ranch families and the social fabric of the area. LU-3

We respect and honor those who serve in the military. Please explore less destructive ways to provide training.

Sincerely,

David Richards

David A. Richards

1036

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! DATE: 11-18-10

PLEASE PRINT

We strongly object to being in the flight path of planes in training maneuvers. We were in this path previously, and it caused numerous problems for our ranching operation. When we reported the problems, response was very poor. GE-2 GE-8

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME: Dean & Lila Ellison

ORGANIZATION: Farmer/rancher

ADDRESS: [redacted]

CITY/STATE/ZIP: [redacted]

Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format) ___ hard copy format

No, please do not include me in the mailing list for distributing the Final EIS. I do not wish to receive an EIS or further information.

PLEASE NOTE: This Draft EIS is provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) NEPA Regulations (40 CFR §§1500-1508), and 32 CFR §989, Environmental Impact Analysis Process (EIAP).

The EIAP provides an opportunity for public input on Air Force decision-making, allows the public to offer inputs on alternative ways for the Air Force to accomplish what it is proposing, and solicits comments on the Air Force's analysis of environmental effects.

When making an oral comment, please clearly state your name and the name of the organization, if any, which you are representing before you begin your comments. Please do not provide any other personal information, such as your home address and phone number when making an oral comment. Your oral comments will be used to develop a transcript and permanent record of this meeting. This transcript will be will be published in the FEIS. If you would like a copy of the Final EIS or other associated documents, you may state that on a written comment card or add your name and address to the mailing list.

Providing personal information is voluntary. If you choose to not provide personal identifying information, your comments will be given the same weight and consideration as any other comments submitted. Private addresses provided will be compiled to develop the mailing list for those requesting copies of the Final EIS. Only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EIS.

Please hand this form in at a public hearing or mail before November 13, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1037

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** NOV. 11. 2010

PLEASE PRINT

TO WHOM IT MAY CONCERN:
MY NAME IS DELBERT DINSTEL, I LIVE AT COLSTRIP MT. WHERE WITH MY WIFE WE OWN A HOME AND MANGER. I BASE MY CESSNA AIRCRAFT AT THE COLSTRIP MT. AIRPORT. I AM A RETIRED HEAVY EQUIPTMENT OPERATOR AND OWN RANCH LAND IN SOUTH WEST CARTER CO. MONTANA. I FLY VFR BETWEEN MY HOME AT COLSTRIP AND THE RANCH WHICH IS 5 MILES NORTH OF RIDGE MT. I GREW UP ON THE ADJOINING W-BUTTE RANCH WHICH I OWN A 10% INTREST IN.
I AM WRITING THIS ON VETERANS DAY. AND I AM PROUD OF THE MILITARY SERVICE THAT MY FAMILY HAS GIVEN THIS

OVER →

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	DELBERT DINSTEL
ORGANIZATION:	
ADDRESS:	[redacted]
CITY/STATE/ZIP:	[redacted]

☒ Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format) ___ hard copy format

☐ No, please do not include me in the mailing list for distributing the Final EIS. I do not wish to receive an EIS or further information.

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Please hand this form in at a public hearing or mail before November 15, 2010 to:
Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

PAGE 1

1037

COUNTRY, AND AM THANKFUL FOR ALL OF SACRIFICES THAT OUR SERVICEMEN & WOMEN HAVE GIVEN ALL OF US. I AM HERE BECAUSE AN ARMY AIRFORCE PILOT DROPPED A HYDROGEN BOMB ON HIROSHIMA. MY FATHER WAS IN THE INFANTRY ON THE ISLAND OF OKINOWA TRAINING FOR THE INVASION OF THE JAPANESS MAINLAND WHEN THE BOMB WAS DROPPED. THERE WAS A GOOD CHANCE THAT HE WOULD NOT HAS SURVIVED THAT INVASION. I WAS BORN 7 YEARS LATER.

THE AIR FORCE NEEDS TO TRAIN. THEY ALREADY HAVE LARGE M.O.A'S TO TRAIN IN IN UTAH AND NEVADA. OR THE AIR FORCE COULD PUT ALL OF THE M.O.A IN NORTH AND SOUTH DAKOTA. PN-2

THE RAPID CITY JOURNAL NEWSPAPER EDITORIAL BOARD ARTICLE WRITTEN JULY 30TH 2010 SAYS "ELLSWORTH AIR FORCE BASE EMPLOY'S ABOUT 5,000 PEOPLE AND GENERATES $10 MILLION IN SALES TAXES FOR THE LOCAL COMMUNITY. CLOSING IT WOULD ADVERSELY IMPACT THE STATE TO THE TUNE OF $324 MILLION PER YEAR. THERE IS PROBABLY A SIMALAR ABOUT GENERATED FOR THE AIR FORCE BASE AT MINOT, NORTH DAKOTA.

THE IMPACT THAT I MOST FEAR IS BEING HIT AT 550 M.P.H. BY A B1 BOMBER WITH MY FAMILY ON BOARD OUR CESSNA. "SEE AND AVOID" DOESN'T WORK AT SPEEDS OF 550 M.P.H. SA-7

HAVING AN M.O.A. OVER RANCH LAND WILL HAVE A NEGATIVE IMPACT ON THE RESALE VALUE OF THAT LAND SO-1

HAVING AN M.O.A. OVER RANCH LAND WILL HAVE A NEGATIVE EFFECT ON ANY HUNTING OUTFITTING RANCH TOURISM BUSINESS, OR AVIATION BUSSINESS THAT I MAY WANT TO START ON THAT LAND SO-9

EVEN GITTING ANY REST WILL BE IMPOSIBLE DURING THE THE 4 TIMES PER YEAR THAT THE AIRFORCE WILL BE CONDUCTING THEIR "LARGE FORCE EXERCISES." ND-5

THE MONEY THAT I HAVE INVESTED IN MY AIRCRAFT AND HANGER WILL BE NEGATIVY EFFECTED. THE RESALE VALUE OF MY HANGER AND HOME WILL GO DOWN BECAUSE VERY FEW AIRCRAFT OWNERS WILL WANT TO BASE THEIR AIRCRAFT UNDER A M.O.A. SO-1

PEACE, QUIET AND WIDE OPEN SKYS DO HAVE A VALUE. AND THAT WILL BE GONE AFTER THE M.O.A. IS IN EFFECT. THAT IS A NEGATIVE EFFECT. LU-2

PAGE 2

1037

FLYING COMMERCIAL OR HAVING ANYTHING SHIPPED AIR FREIGHT WILL COST MORE AFTER THE M.O.A. IS IN EFFECT. THAT WILL BE A NEGATIVE EFFECT. I.F.R. TRAFFIC WILL HAVE DELAYS OR WILL HAVE TO DIVERT AROUND THE THE M.O.A. SO-7 SO-8

AS A TAXPAYER, PILOT, AIRCAFT OWNER, AND LANDOWNER I OPPOSE ANY EXPASION OF THE POWDER RIVER TRAINING COMPLEX. AND I FEEL THAT THE EXISTING POWDER RIVER M.O.A.'S SHOULD BE REMOVED AND THE BOMBERS SHOULD BE MOVED TO UTAH OR NEVADA. GE-2

SINCERLY,

Delbert Dinstel

Page 3

1038

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 10-23-10

PLEASE PRINT

We raise sheep for wool - it's a very unique wool for Hand Spinners - need to know what Test You have run on The chaff affecting The Micrane, Spin Count, & ~~Color~~ Color of wool when it Lands on Sheep - SO-16

Grew up in Northern Nevada where Mountain Home Air Force ran Their Jets over us causing all kinds of Hell with The Sonic Booms - Some Old Adobe buildings Collaps & had Lots of cracked windows & Mt Home told us To prove They caused it - NO-2

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	Dennis McEnew
ORGANIZATION:	Sheep ranches
ADDRESS:	[redacted]
CITY/STATE/ZIP:	[redacted]

Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format) ___ hard copy format

No, please do not include me in the mailing list for distributing the Final EIS. I do not wish to receive an EIS or further information.

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Please hand this form in at a public hearing or mail before November 13, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1039

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 11-9-10

PLEASE PRINT

See Attached

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME: Dennis R. Drayton

ORGANIZATION: Drayton Ranch of the Dakotas

ADDRESS: [redacted]

CITY/STAT [redacted]

(Yes,) please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format)
_X_ hard copy format

No, please do not include me in the mailing list for distributing the Final EIS. I do not wish to receive an EIS or further information.

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Please hand this form in at a public hearing or mail before November 13, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1039

November 9, 2010

Comments on the Draft EIS on the PRTC.

Appendix page F-1 Intergovernmental coordination act and EO 12372, Intergovernmental review of Federal programs requires agencies to cooperate with and consider state and local views in implementing a Federal proposal, "after attending hearings in Montana, North Dakota and South Dakota, there was not one comment for the record that was in favor of the proposed expansion. All comments were against any expansion of the PRCT, for the "No Action Alternative." GE-2

Page F-1 AFPD 32-70 Enviornmental Quality and EO 11991, (sets policy directing the Federal government to provide leadership in protecting and enhancing the environment): " A proposed expansion cannot in any way, (as evidenced by the draft itself) protect or enhance the environment." NP-11

Appendix F-6 Environmental Justice and EO 12898 1995 (essentially) to insure the fair treatment of all people regardless of race, color, national origin or income. "I believe the Air Force is showing discrimination by acknowledging the various tribe's religious, cultural and traditional activities. "Is the time I spend contemplating and reflecting and sharing time with family in our hills and buttes any less important?" EJ-1

Appendix H - Noise Page H-13 2.3 "Annoyance" Using DNL of 65 Db as a criterian which protects those most impacted by noise (1992 interagency on noise) corresponds to about 12% of the exposed population being highly annoyed. This figure is hard to substantiate as pertaining to where it was accumulated, and not adqequate to assess the impacts. NO-4

Draft EIS Page 4-19 (other general aviation) General aviation pilots commented at scoping that they considered an active MOA air space UNSAFE under see and avoid conitions (VFR). Some pilots would see the ATC information as "inaccessible", the risk of flying VFR too great and limited communications for IFR flight too sketchy: All of the above having a significant impact to general aviation around any airports and airfields under the expanded PRTC. SA-7

Correspondence from NPS (midwest) Aug. 7, 2008. To Linda Devine from Mr. Quintana, says "the NPS is concerned about the potential of the proposed action to adversely affect the "soundscapes" of these parks." Quintana continues, "the NPS evaluates Federal actions which may impact the human and natural environment within our Parks with respect to our "organic act" mandates, including "to conserve the scenery and the natural historic object and the wildlife therein, and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpared for the enjoyment of future generations." End of letter. "Is asking to have our lands left unimpared for future generations on deeded ground and private property any less important?" LU-1

Perkins County resolution of 2008
City of Lemmon resolution of 2010
GAO1 NSAID-98-219 Human health and safety risk: GAO found in the report for the Senate that the Air Force has been lax in conducting further tests on the effects of chaff on animals and humans. "I would further point out that there were no studies included on the potential effects of chaff on our thousands of honey bee colonies. Any negetive impacts there could potentially affect SA-14

1039

the food production process carried out by the bees in this area of the country. SA-14

Draft 3-97 Waterfowl 3.6 3.1 North American Wetlands Conservation Act 16 USC 4401-4412 Due to limited extent of water bodies under the ROI, any disturbance of these areas is of considerable importance, i.e. the convergence of several principle routes of both the Central and Missippi flyways. "it also appears that Shadehill Reservoir, south of Lemmon, an important waterfowl refuge, by the way, and an important staging and over-wintering area for ducks and geese has been omited from any maps of surface waters. Page 383 Figure 3.5-2 BI-6 BI-7

Page ES14 Public Airports and Private Airfields LFEs could be viewed as of significant impact to airspace users. ES14 Jet Routes and ATCAAs; Daily impacts of from 43 to 244 High Altitude Commercial Flights. AM-5

EIS page 4-58; "I agree with the conclusion of the EIS that low level concurrances and the resulting safety impacts could be seen as significant by any individual experiencing them, i.e. horseback riding for work or pleasure. SA-9

Draft page 3.1 3.1.1 Definition of Resource "I am skeptical that the US Government has exclusive soverignty of air space over private property from ground level to 500 feet. GE-7

1039

RESOLUTION 2008-15

WHEREAS, *The United States Air Force and Ellsworth Air Force Base is proposing an expansion to its Powder River Training Complex, and*

WHEREAS, *there is concern among the citizens of Perkins County and the Board of County Commissioners regarding the safety of the citizens if the expansion is approved, and*

WHEREAS, *the expansion has the potential to endanger the local pilots and aircraft that regularly fly within the airspace in Perkins County for ranching and agricultural purposes, and*

WHEREAS, *because the citizens of Perkins County enjoy the safety and tranquility that comes with the lack of population and enjoy and practice a "western way" of life, and*

NOW, THEREFORE, BE IT RESOLVED, *that the Perkins County Board of Commissioners strongly oppose the expansion of the Powder River Training Complex within the boundaries of Perkins County, and feel that it is the County's responsibility to protect the safety, livelihood and way of life of the citizens of the County.*

Dated this 20th day of August, 2008.

PERKINS COUNTY

Norman Miles, Chairman

ATTEST:

Sylvia Chapman, Finance Officer

1039

City of Lemmon
State of South Dakota
Resolution 2010-5

Whereas, the United States Air Force has announced the expansion of the Powder River Training Complex to encompass the City of Lemmon and its surrounding regional trade area; and

Whereas, the City of Lemmon consists of many patriotic citizens that support our military forces with their personal sacrifice and moral support; and

Whereas, the City of Lemmon has contributed, along with the state and federal government, to the improvement and expansion of the Lemmon Municipal Airport at Ray Kolb Field; and

Whereas, the expansion of the Powder River Training Complex would adversely affect air traffic in and around the Lemmon area; and

Whereas, the interruption of air traffic for any specified period of time will undoubtedly cause negative economic impact; and

Whereas, wind development and any other types of tower development may be stymied by the expansion of the Powder River Training Complex; and

Whereas, our larger sister cities of Spearfish, Rapid City, Sturgis, Belle Fourche and larger cities lying outside of South Dakota including Dickinson, Bismarck, Miles City and Gillette will not be included in the Powder River Complex Expansion and unfairly targeting lower population areas to carry the brunt of this training area; and

Whereas, the City of Lemmon derives its economic base and existence from agriculture, including the production of livestock and management of thousands of acres of grassland that could be endangered by the increase risk of fire; and

Whereas, agricultural producer's property values will likely suffer from the military activity that will take place in many cases five hundred fifty feet above their property, cause noise, inconvenience and a breach of quiet enjoyment of their property; and

Whereas, the private property rights of area landowners will be infringed upon by the expansion of the Powder River Complex Expansion; and

Whereas, other private property owners are compensated when the government devalues property and are deemed a taking; and

Whereas, the Air Force has alternatives for training exercises and the expansion of the Powder River Complex is not necessary; and

estimated that a bundle of the new chaff will cost about 40 percent more than it does currently.

NO SYSTEMATIC FOLLOW-UP ON
OPEN QUESTIONS

---------- Letter :5.5

Studies by DOD and others, including some carried out years ago, continue to create questions in the public's mind about the health and environmental effects of chaff. Department records indicate that DOD has not systematically followed up on these reports to determine the merits of any outstanding question or the costs and benefits of addressing them.

While none of the studies we reviewed demonstrated significant operational or environmental effects of chaff, 9 of the 10 reports cited gaps in information on potential effects. Six of the nine made no recommendations but cited missing data, suggested additional studies or long-term monitoring, or cited possible long-term chronic effects. Three reports recommended additional studies covering chaff toxicity, long-term exposure, weathering, or other study areas. However, DOD has not reviewed the recommendations and information gaps cited in the reports in a comprehensive and systematic way to assess their merits for further actions. For example, the Army's January 1992 report cites data gaps and recommends that the long-term risk and chronic exposure of inhaled fibers be evaluated. Specifically, it recommends

-- future research on the resuspension rates of uncoated and coated fibers;

-- studies to establish the weathering rates and chemical fate of metal coatings in soils, fresh water, and marine waters;

-- a comprehensive review of threshold metal toxicity values for humans, animals, and important fresh water and marine organisms;

-- a series of experiments to evaluate the potential impacts of fibers;

-- an examination of the respirability of fibrous particles in avian species;

-- aquatic and marine studies to establish the potential impacts of fibers; and

-- future research on the pathology of inhaled fibers.

The second and third of the above recommendations were partially addressed in the Army's September 1992 report. Two other reports also partially addressed the second recommendation.\13 We found limited evidence of follow-up on the other five recommendations.

The 1997 Air Force study and its technical reports also cite the need for data and further research, including long-term studies. Two of the three technical reports recommend further research. One suggests long-term studies to monitor chaff accumulation on water bodies in high-use areas and the effects on animals using those water bodies. Another states that consideration could be given to monitoring programs for highly sensitive environments subjected to repeated chaff releases and conducting bioassay tests to further assess the toxicity of chaff to aquatic organisms. The final report noted that in some cases it might be appropriate to analyze the potential for impacts to highly sensitive aquatic habitats that support threatened

CONCLUSIONS

---------- Letter :6

1039

DOD and the services have developed ongoing initiatives to address certain concerns raised by the military's use of chaff. These initiatives include plans for increased liaison with agencies such as BLM, FWS, and NWS. Nevertheless, the public, DOD studies, and other federal agencies continue to raise questions about the potential adverse effects of chaff. DOD has not systematically followed up to determine whether these questions merit further action. Further, the Navy has initiated a degradable chaff research and development program but has not yet completely analyzed the operational and environmental benefits it expects to achieve. Lastly, although lead-based chaff has not been produced since 1987 and is no longer reported used, it is still retained in DOD's inventory.

http://www.fas.org/man/gao/nsiad-98-219.htm 9/21/2010

1040

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input!

DATE: 10-4-10

PLEASE PRINT

I want a well trained military force, Air, Navy, Army, Marines. GE-9
I see nothing wrong with the Proposed Powder River Training Complex.
I am part Owner of 600 acres of land and you can fly over any GE-1
time you want to. I like to see jets flying over Ekalaka, where I live.
It makes me proud to see the airforce overhead. Keep up the good work.
You can drop bombs on my land if you want to.

**** CONTINUE ON BACK FOR MORE SPACE ****

NAME:	Dennis Kari
ORGANIZATION:	
ADDRESS:	[redacted]
CITY/STATE/ZIP:	

Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ✓ CD (electronic format) ___ hard copy format

No, please do not include me in the mailing list for distributing the Final EIS. I do not wish to receive an EIS or further information.

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Please hand this form in at a public hearing or mail before November 13, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1041

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 11-10-10

PLEASE PRINT

I am a rancher-pilot at Ridge, Mt within The Powder River M.O.A.

I have been flying on livestock for myself & surrounding ranchers for The past 59 years. I have had no Trouble with The Powder River MOA. or with military aircraft during This Time. I believe we who Need To fly on livestock can work with The military, As to Times AND AreAS That Are Active or non Active. SO-29

The USA is the best country on earth to live in. We must have defense Against enemy Aggression. The military must be trained & must have areas to be (over) GE-9

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	Francis J. Hayes
ORGANIZATION:	Rancher
ADDRESS:	[redacted]
CITY/STATE/ZIP:	[redacted]

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129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1041

Trained in.

In the 1930's & 1940's many Countries in Europe were invaded & Taken over by the enemy. Beautiful countries, that thought nothing like Aggression Take over would ever Take place. The people lost everything & many lives were lost. The suffering was indescribable.

This may have been because Those Countries didn't have enough military defence.

The USA must have a well trained military defence & They must have AREAS to train in, to ward off any further aggression. People think it will never happen here. GE-9

T-11 WAS A WAK up CALL

I am in favor of the expansion of the Powder River M.O.A. Training area. GE-1

Francis J Hayes

[redacted]

Rec'd 11/15/2010

1042

November 6, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Dear Ms DeVine:

As a former Commander of the 5th Bomb Wing at Minot AFB, ND (1998-2000), I am keenly interested in our flight crews continuing to have the opportunity for quality training. The downtown community, over the last number of years, proposed an expanded MOA in North Dakota for the exact type of training exercises that are envisioned to occur within the expanded Powder River Training Complex.

Having reviewed the Draft EIS, I support the preferred Alternative identified in the process for a number of reasons. First, the range offers the opportunity to "train like we fight." Additionally, the proximity to the training complex saves jet fuel in a time where we have constrained budgets. Finally, the proximity to the training complex would also mean a higher quality of life for the airmen and their families because of less time away from home for a TDY. I know first-hand the impact deployments and contingency operations have on our Air Force family members. GE-1

I noted a number of concerns identified by landowner groups located in and around the complex. We believe that those concerns can be met or mitigated by identifying avoidance zones similar to areas called out for avoidance because of Native American sacred grounds. Conceivably this could include round-up areas, birthing areas, watering holes and the like. We encourage the Air Force to pursue these types of arrangements with the affected landowners. NO-10 GE-11

Again, I support the preferred alternative identified in the draft EIS for the expanded Powder River Training Complex. GE-1

Very Respectfully,

Greg Power

Greg Power, Major General, USAF (retired)
[redacted]

Nov 11 10 08:20p 1043 p.1

Pg 1

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! DATE: Nov 10, 2010

PLEASE PRINT

The effect this will have on ag areas is great in many ways. Land values will be reduced, small aircraft used for crop spraying will have add hazard to watch for, Livestock will be scared and go thru fences, weaned calves will break out of corralls this I know it has happen at the ranch located Sec 12-13 - Twd 3N - Range 61E, fire hazard from flares. Also air craft used for medical attention will be in jeopardy. This aluminum coated silica is silica that causes cancer, also aluminum is known to caused All Timer, also these fragments will contamination of wool from sheep shorwn. Livestock conception rates have been known to be reduced. ON BACK

SO-1
SA-15
SO-13
SA-5
SA-19
SA-14
SO-16
BI-2

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	J. Robert Rusley
ORGANIZATION:	[redacted]
ADDRESS:	[redacted]
CITY/STATE/ZIP:	[redacted]

(Yes) please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format)
X hard copy format
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Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Nov 11 10 08:20p 1043 p.2
fg 2

I oppose this expansion because our small Towns will be very vulnerable to this fly zone. GE-2
Increase in fire danger because of flares. SA-5
The noise level will be very detrimental to the elder and people in outdoor activities. LV-2

Seems as if Ag areas are allways in line of fire for issues to devalve property. SO-1

J. Robert Rusley
[redacted]

1044

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 11/1/10

PLEASE PRINT

My concern is for the safety of both local pilots in the training area and the military pilots. Both need reliable information when actual training is in progress to avoid midair collisions. I am a pilot and I would like to have a transponder we could place in our planes that you could detect and see us. Should this not be feasible a phone number we could call before we fly to see if the training area is, or soon will be in use would be helpful. Whatever the method we need to know when the military is training so we can avoid each other. SA-1 AM-3 AM-12

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME: James H. Bowers Jr.
ORGANIZATION:
ADDRESS: [redacted]
CITY/STATE/ZIP: [redacted]

Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ✓ CD (electronic format)
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Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1045

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 10-11-2010

PLEASE PRINT

See Attached.

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	James O Jones
ORGANIZATION:	
ADDRESS:	[redacted]
CITY/STATE/ZIP:	[redacted]

☐ Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format)
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Please hand this form in at a public hearing or mail before November 15, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1045

WRITTEN COMMENT SHEET
PUBLIC HEARING FOR THE
PROPOSED POWDER RIVER TRAINING COMPLEX

The following statement is my public comment on the EIS for the Powder River Training Complex, put out in August 2010. I live in the Northeast corner of Wyoming, and I am not in favor of Alternatives A, B, or C. Our county's economy relies on ranching, tourism, revenue from hunters, and home and land resale; all of which will be negatively affected by these alternatives. These alternatives also will be detrimental to the environment, livestock, wildlife, and to our quality of life. GE-2 SO-9 SO-1 LU-1

I do not feel that the Air Force has submitted a true and honest EIS as the impacts for the proposed areas will have wide spread negative impacts on our area. The EIS seems to be swayed towards the needs of the Air Force not for the concern of the public and environment. NP-11

Noise

The EIS states that there will be environmental impacts from an increase in ambient noise levels, low-level startle effects, and sonic booms. This will definitely have negative impacts on the way of life and on wildlife in our area. We have already had our horses run through a fence due to the noise from a low level flight were we could actually see the pilot. LU-2

Some of the noise levels stated in the EIS are beyond EPA recommended levels for people to be exposed to for more than a couple of minutes with out causing hearing damage. Sonic booms it was stated will produce about 4 pounds of pressure per square foot. That relates to 139 db which is way beyond what the human ear should safely be exposed to. How can this effect be minimal? NO-5

The increased noise level will destroy a way of life for many persons living in the proposed area. We may not have a large population but we do have a population. LU-2

These increased noise levels also present a huge safety issue for the ranchers, cowboys, and recreational riders who work closely with livestock; doctoring them, shoeing them, riding them to round up cattle or for enjoyment, and all other forms of interaction. There is a great deal of chance of putting the people and animals in harm's way, due to animals' reactions to these sudden loud noises. A person working with a horse, or riding a horse when a sonic boom occurs could be thrown off, kicked, and even trampled. Serious injuries could easily occur around any livestock in this event; far more serious than being "annoyed". SA-9

Safety:

The dropping of chaff is not proven to be safe to humans and the environment and should not be performed were there is a population of people. We do not wish to be part of an experiment to find out what effects of dropping chaff on a population are. I do not agree that there will be no impact from the dropping of chaff. SA-14

1045

Dropping of flares is a safety issue that should be addressed. Dropping of flares in a populated area with high fire danger is not what I would call low impact. We do not need dudes or parts of flares dropping on our properties.
The biggest problem from the flares is that there is a high probability that these could cause a devastating wildfire. SA-5

In conclusion, I feel that the EIS has not addressed the full potential of the negative impacts to the areas that stand to be affected by this proposal. Just because there is a smaller population in these areas, does not mean that there should be less concern for our safety, our livelihoods, or our quality of life. It would be a huge disservice to those who have chosen to make our living and establish our homes in these areas, to allow this proposal to so negatively affect our lives. AS A VETERAN I UNDERSTAND THE IMPORTANCE OF GOOD TRAINING FOR OUR MILITARY BUT IT SHOULD NOT COME AT SUCH A HIGH COST TO OUR WAY OF LIFE THAT THEY FIGHT TO DEFEND. There are many remote areas without populations such as ours that they could perform these maneuvers and obtain the skills they need. Please do not rune our way of life do not change the current MOA or mode of operation. EJ-2 LU-1 PN-2 GE-2

[redacted]

1046

January 6, 2011

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews St., Room 337
Langley AFB, VA 23665-2769

Dear Ms. DeVine,

I am writing in protest of the expansion of the PRTC special-use air space. GE-2

Since the Air Force has made no plans to fully utilize the training value of the Hays MOA, why is this expansion even being considered? PN-2

The environmental damage as well as the disruption of ranching and farming in this area surely should be of greater consideration as well as the threat to commercial and private aviation jobs in the affected area. LU-2 SO-7

The deployment of flares and metallic chaff would be a serious hazard to non-participating VFR aircraft. SA-26

My husband and I live near the Ellsworth Air Force Base in air space that would be affected by this expansion. My husband is retired Air Force who spent 50 years serving his country. We are staunch supporters of the U.S. military, but both the human, commercial and environmental impact of this project is unnecessary and unconscionable. GE-3

Sincerely,

Jean Rosenkranz

Jean Rosenkranz
[redacted]

1047

[redacted]

October 25, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews St, Room 337
Langley AFB, VA 23665

RE: Powder River Military Operations Area

Ms. DeVine,

I am a private pilot based in Dickinson, ND. I fly my private airplane for business and personal travel. The proposed expansion of the Powder River Military Operations Area would hinder my flying operations adding time and expense to my travels. SO-7

I oppose the expansion of the Powder River Military Operations area. GE-2

Sincerely,

Jody Hoff

cc
Mathew Remynse
Dickinson Airport Manager

1048

[redacted]

October 26, 2010

RE: proposed expansion of training air space 1. air quality 2. fuel use

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews St, Room 337
Langley AFB, VA 23665-2769

Dear Ms. DeVine,

Please send me information about how the Powder River Training expansion might change the air quality in eastern Montana, and information on the quality and quantity of fuel that would be used in our Montana skies.] AQ-1

Sincerely,

Joan Hurdle
[redacted]

1048

DeVine, Linda A Civ USAF HQ AF ACC/A7PS

From: JoanHurdle [redacted]
Sent: Monday, November 08, 2010 9:43 AM
To: DeVine, Linda A Civ USAF HQ AF ACC/A7PS
Subject: Re: Proposed Expansion of Training Air Space

Linda,
Thank you very much for the link and opporunity to dig out this information.
Joan Hurdle
----- Original Message -----
From: "DeVine, Linda A Civ USAF HQ AF ACC/A7PS"
<linda.devine@langley.af.mil>
To: "JoanHurdle" [redacted]
Sent: Monday, November 08, 2010 7:08 AM
Subject: RE: Proposed Expansion of Training Air Space

Good morning. The Draft EIS details the potential environmental consequences to air quality in Chapter 4.4 (page 4-61). Details regarding the aircraft emission factors used to quantify the potential impacts can be found in Appendix J. Appendix J, Table 1 provides the fuel flow rate in Lb/HR (JP-8--6.8 lb/gallon) and can be used to estimate fuel consumption when used in concert with Table 2-16 which estimates time spent in each airspace unit (DEIS pg 2-63).

An electronic copy of the DEIS and its appendices can be found and downloaded at http://www.accplanning.org/open_for_comment.html#PRTC. Please let me know if you have difficulty downloading the document or if you would like me to mail you an electronic copy.

Thank you for your interest in this proposed action.

Linda

Linda A. DeVine, REM
ACC/A7PS
129 Andrews Street, Rm 337
Langley AFB VA 23665-2769
757-764-9434

-----Original Message-----
From: JoanHurdle [mailto:joanhurdle@bresnan.net]
Sent: Saturday, November 06, 2010 11:26 AM
To: DeVine, Linda A Civ USAF HQ AF ACC/A7PS
Subject: Re: Proposed Expansion of Training Air Space

Thank you Linda. My telephone number isd [redacted] However, I would prefer to communicate by email because of the qualitiy of telephone audio. In addition, I believe that my request was quite clear to start with: I am

1

1048

concerned about the use of Montana air space for air force training missions.
Therefore, (1)I asked about the quantities of fuel that would be used for the training. (2) I asked about how the use of that fuel might change air quality in Eastern Montana.
Again, thank you for your attention and response.
Joan Hurdle

AQ-1

----- Original Message -----
From: DeVine, Linda A Civ USAF HQ AF ACC/A7PS <mailto:linda.devine@langley.af.mil>
To: [redacted]
Sent: Friday, November 05, 2010 9:20 AM
Subject: Proposed Expansion of Training Air Space

Good morning Ms Hurdle. I received your letter dated Oct 26, 2010 requesting information regarding the PRTC and would like to contact you to better understand your request. If this is acceptable, please provide me with a telephone number you may be reached at and the best time to contact you [please note that I am located in the Eastern time zone]. I will not release your telephone number to any other party.

Thank You

Linda

Linda A. DeVine, REM

ACC/A7PS

129 Andrews Street, Rm 337

Langley AFB VA 23665-2769

Comm: 757-764-9434

2

1049

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 11/11/10

PLEASE PRINT

I am against expanding the powder River MOA.] GE-2

Kayleen Ronning

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	Kayleen Ronning
ORGANIZATION:	Private pilot
ADDRESS:	[redacted]
CITY/STATE/ZIP:	[redacted]

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Please hand this form in at a public scoping meeting or mail before November 13, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1050

Muller Ranch
[redacted]
November 8, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews St, Room 337
Langley AFB, VA 23665-2769

RE: Powder River Training Complex DRAFT EIS

Dear Ms. DeVine;

I would urge the United States Air Force to select the **no action alternative in the Powder River Training Complex DRAFT EIS.** Expanding the activities into additional areas is unnecessary. The United States Air Force has other areas where the described training activities can be conducted. GE-2 PN-2

The proposed activities will cause pollution from employment of chaff and flares, increase the potential of fires, cause noise pollution, and destroy the solitude of this remote area. AQ-3 SA-6

The Muller Ranch is a historic ranch located within and adjacent to the proposed PR-1BMOA in Wyoming and Montana. One of the true values of this remote ranch is the solitude. This proposal would destroy that value with increased ambient noises levels, sonic booms, and low-level startle noise effects. LU-2

The Muller Ranch makes a concerted effort to not have trash and pollutants on the ranch. This proposal will allow chaff and flares to fall to the ground as pollution. Since the chaff fibers may be dispersed by the wind and altitude, they may spread over a large area. The flares likewise leave debris on the ground as well as some live flares (1<%) on the ground as a hazard. There is the potential for harm to local residents from these duds. SA-27

This is a remote area and range fires are hard to contain due to rough terrain and distance to fire fighting equipment. The landowners in Sheridan County have been urged to join fire districts to combat this hazard. The Muller Ranch has joined such a fire district and is paying an additional assessment on its county taxes to cover this cost. It is unfair and economic burden to expect the local community to pick up this additional service burden for Ellsworth and Minot Air Force Bases. SA-5

It is projected that 8,300 bundles of chaff and 820 flares could be dropped annually in the area that the Muller Ranch lies in. This means that about 8 un-ignited flares (~1%) will be lying on the ground. Each flare will burn at approximately 1,202 degrees Fahrenheit. Each chaff bundle consists of about 5 million chaff fibers. Each year in the area around the ranch that would be 6.8 billion pieces of SA-27

1050

angel hair chaff would be release. The impact of the chaff on wildlife, air quality and general quality of the environment is unknown. Because it is fine texture, it has the potential to be ingested by wildlife such as sage grouse. These potential impacts along with the considerable noise and loss of solitude make this an undesirable and potentially environmentally harmful project. SA-27 SA-14

I would urge the United States Air Force to select the **no action alternative in the Powder River Training Complex DRAFT EIS.** GE-2

Sincerely,

Kathy Muller Ogle

1051

Linda DeVine

HQ ACC/A7PP

129 Andrews St, Rm 317

Langley AFB, VA 23665-2769

Joshua Simmers

[redacted]

[redacted]

Ms. DeVine,

Please accept my comments to the United States Air Force in opposition to the Powder River MOA expansion into the state of North Dakota. I do not believe that the benefit to the USAF equals the cost to the people of North Dakota. GE-2

It is my belief that the negative impacts on local aviation, commercial aviation, agriculture aviation, the difficulty of coexisting in active MOAs, adverse effects on ranching, establishing our state's FBOs as transcontinental stops, land values, increasing traffic due to our flourishing economy, etc, make this something we should all oppose. SO-7 SO-1 SO-6

Additionally, I think that it is important to highlight that the people of North Dakota have learned from experience to not trust the Air Force due to their *denial* of negative impacts in the past – environmental contamination, low flight, etc., and their over-complicated and under-compensation for reimbursements related to cattle stampeding, etc. GE-5

I ask you to take serious heed of the well laid out arguments put forth by other entities and know that although I support the military, this expansion is not necessary.

Joshua Simmers

1052

[redacted]
January 6, 2011

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews St. Room 337
Langley AFB, VA 23665-2769

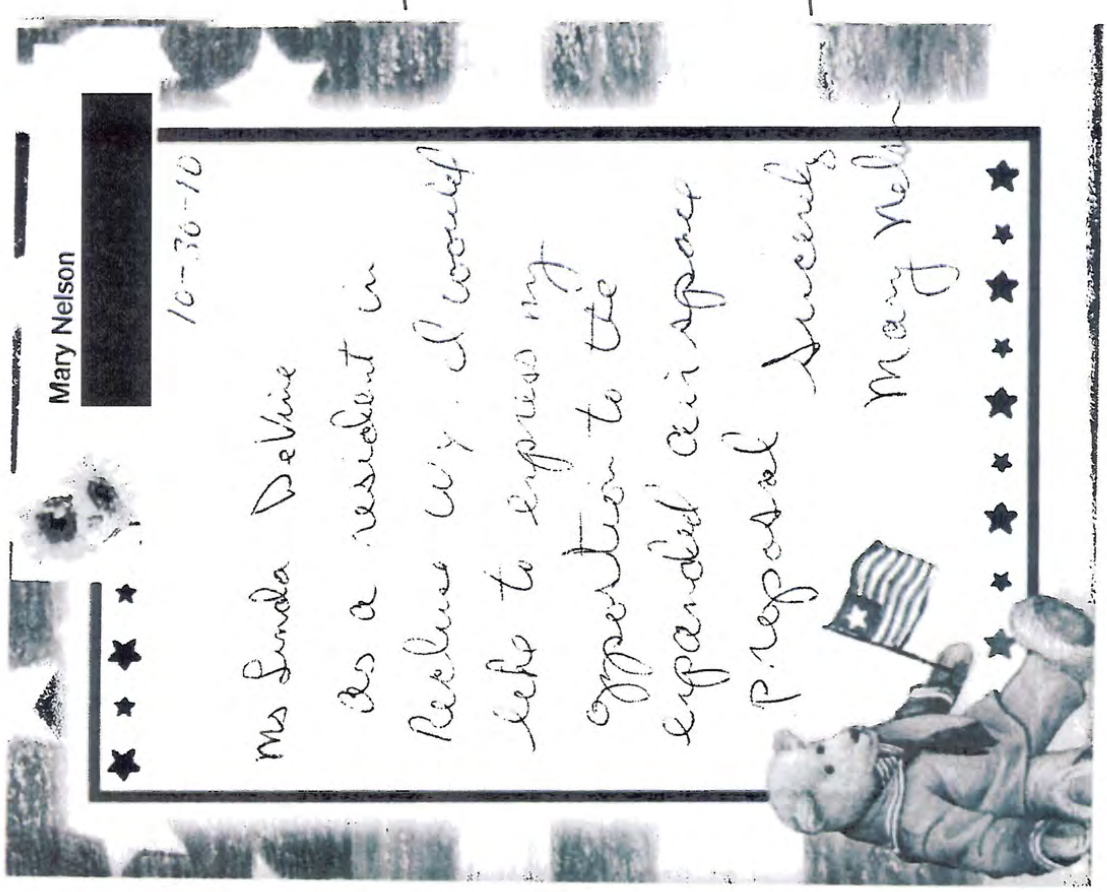
Dear Ms. DeVine,
We strongly oppose the expansion of the Powder River Complex. The comple would include deploying flares and metallic chaff -- a hazard to plants, animals and humans. GE-2 SA-14

Thank you for your attention and work to respect and care for our life-support system -- Earth.

Sincerely,
Mary L. Geraets
Peggy Boehm
Sr. Kathleen Bierne
Sr. Madonna Pierret
Sister Amrita Johnson
Sister Joan M. Brandner
Sister Carol Quinn
Sister Donata Dame
Sister Verna Kelley

1053

GE-2


Mary Nelson
10-30-10
Ms Linda DeVine
as a resident in
Recluse Wy. I would
like to express my
opportion to the
expanded airspace
proposal
Sincerely
Mary Nelson

1054

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews St, Room 337
Langley AFB, BA 23665-27

October 5, 2010

Dear Ms. DeVine,

I am writing in response to the proposed expansion of training air space and implementation of new flight training techniques. First of all, I appreciate our Air Force members and don't mind seeing the jet trails frequently crisscrossing the expansive blue sky above my home and community. However, the proposed changes concern me. GE-9

The occasional low flying aircraft we see can be disconcerting. They have at times spooked people, cattle, and horses. The occasional sonic booms can be alarming. As I mentioned, these are only "occasional" disturbances. The proposed numbers sound like these could become frequent disturbances. BI-4

In addition, wouldn't an enormous increase in flight training involving interaction between aircraft reenacting combat missions also increase the chance of crashes which would obviously be dangerous to the people below? SA-1

Another concern is the following information, "The planes would drop chaff – very fine strands of silica coated with aluminum that create a cloud-like decoy to hide planes from radar – and lit flares that would burn out before they reach the ground." Can the Air Force guarantee a lit flare will burn out before it reaches dry prairie grass? And what happens if these fine strands collect in areas where cattle or horses could ingest them? How will these decoys affect our birds or other wildlife? SA-5 SA-14

Here is another thought. Why is it military training tactics that would not be considered in, around, or above densely populated areas are considered benign in areas that lack large populations? Are rural residents' lives, environments, or livelihoods not just as important as those of urban Americans? Between the Army's attempts to expand Pinon Canyon and the Air Force's plans over the southwest, it sure seems that the U.S. military doesn't think so. EJ-2

Please report that the citizens of rural Southeast Colorado do not approve of these planned number increases or "drops". GE-2

Sincerely,

Lisa Y. Doherty

1055

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 10, 26 2010

PLEASE PRINT

I SPEND 80% OF MY TIME HORSE BACK RIDING TAKING CARE OF OUR CATTLE, IF THE PLANES I~~S~~FLY LOWE THE SCARE THE HORSES AND CAUSE A RISK IN MY JOB THAT I DONT NEED PLUS THE FACT IT BOTHERS THE CATTLE JUST AS MUCH OR MORE SO I CAN SURE LIVE WITH OUT THAT WE ARE 25 mi FROM TOWN SO IF SOME GETS HURT, ITS NO EASY TASK TO GET THEM TO THE HOSPITAL

THANK YOU Les Best

SO-13

SA-9

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	LESLIE. BEST
ORGANIZATION:	[redacted]
ADDRESS:	[redacted]
CITY/STATE/ZIP:	[redacted]

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☑ No, please do not include me in the mailing list for distributing the Final EIS. I do not wish to receive an EIS or further information.

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Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1056

10/27/10

To: Linda Devine
Fr: Mike Parnell

Please accept these comments and include them in the formal statements that will be provided to the agencies regarding the PRTC determination.

I object to the PRTC proposal to expand the PRTC airspace and training area proposed during their hearing in Hardin Montana on Friday, Oct 22, 2010. I base this objection on the following and would appreciate your confirmation that these points were received and submitted as part of the Environmental Impact assessment that is to be done.] GE-2

The PRTC did not provide factual evidence for several material claims and in some cases provided false data to support their efforts to expand the PRTC airspace. Specifically:

a. Stated in their testimony and power point presentation that decibel levels would be at or below 100db. In contrast to the Air Forces own data that shows decibel levels of over 150 db at flights above 2000'.] NO-4

b. Stated that the LFE would not have an impact on property values but did not support this statement of fact with any data and in contrast to affected property values related to train tracks, industrial sites, blasting or mining operations and transportation corridors.] SO-1

c. In the PRTC power point and in all of their printed and on line data they describe LFE as only 10 days /year but in reality it can be up to 12 days per year. Based on 20 aircraft this is an impact of 240 sonic boom events if each flight were to only generate 1 complaint or impact per flight.] PN-5

d. Significant impact to penned and free range livestock and wildlife.] BI-4

e. Will not reduce fuel consumption as non military aircraft will have to divert hundreds of miles whenever these proposed areas may be in use.] SO-7

BIG HORN RIVER ◊ MONTANA

1056

f. Current 9,748 sq miles is sufficient! PN-2

g. No provision was provided to create non military corridors thru the vast proposed PRTC airspace, separated by alternate altitudes for different classes of aircraft use. AM-20

The boundaries of this proposed airspace will also affect commerce and quality of life along the Bighorn River, which is one of the most significant economic engines in this area. This fragile Blue Ribbon Trout stream would be affected and a decline in recreational use and investment in these communities would be incurred. SO-9 LU-2

We request that the "No Action" alternative be selected to protect these resources and rights of the residents and visitors that would be adversely affected under the proposed PRTC airspace. GE-2

Respectfully,

Mike Parnell

1057

RAY A. DOERING

[redacted]

September 23rd, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Dear Linda,

As a pilot that flies often from Hulett, WY to Mosby, MT which I believe is in the proposed PRTC I am concerned how it will affect me.

Please send me any information that will help me understand what is proposed. Thank you.] GE-12

Sincerely,

Ray A. Doering

1058

NORMA J. KRAENER
[redacted]

October 12, 2010

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

Dear Ms. DeVine

After reading the current version of the proposed expansion of the Powder River Military Operations Area and attending one listening meeting, I still have strong objections to the Air Force's plans to increase the size and use of the Powder River MOA. GE-2

My first objection is the mere size of the area and its effects on the use of the air space by civilian aviation. The capabilities of radar and radio coverage of the area mean that military flights would prohibit civilian aircraft from safely using the area most of the time. While finding out current activity in the area is easy for the average military aircraft, a small aircraft would have to climb far above its routine operating altitudes to be able to reach air traffic advisories by radio. That assumes that the plane would have radio capabilities. Since this is uncontrolled air space. Radios are not required. That would waste the aircraft's fuel at the expense of the privately owned airplane. AM-6 AM-3

The huge footprint of the proposed MOA means that civilian aircraft would, for example, need to deviate many miles out of the way when flying from Rapid City to Billings. That would place them closer to the Big Horn mountains in Wyoming, often a source of turbulence and poor visibility when compared with a direct route. It would also affect the business at civilian airports that are in or border the proposed expanded MOA area. For example, Black Hills Airport at Spearfish, SD would see a vastly diminished use of its airport because of its proximity to the area. In recent years they have aggressively sought to upgrade their facilities to meet the demands of general aviation. That would essentially be wasting the taxpayer money that led to airport's improvements. SA-3 SO-10

The presenters at the hearings claimed that "see and avoid" would be a solution to keeping aircraft separated. The use of night missions without the military using their position lighting immediately makes me think that "see and avoid" is pointless. Since the three air traffic control centers that cover this area cannot give position reports to the surface, a civilian plane would have no way of knowing what was out there. "See and avoid" also has limitations to its usefulness in daylight hours. The closing rate of a military jet with a civilian aircraft cruising at 100 KTS or less, means that the civilian pilot would not have time to react to get out of the way. SA-11 SA-7

The documents in the Environmental Impact Analysis points out that 75 percent of the area in the

1058

proposed area are privately owned land, and not government land. While it is sparsely populated compared with many areas of the United States, it still is used by its occupants for their livelihood. The disruption of their business by keeping the owners from using their aircraft to check on their cattle safely is arrogant by the government. The dropping of chaff and flares over this area creates hazards to those below. The argument that the Air Force would refrain from dropping burning flares during "extreme" fire conditions misses the point of the fire hazard posed by using the flares anytime. At least the new documents provided no longer claim that the Air Force could respond in a timely manner to the prairie and forest fires the flare activity could create.

SO-11
SA-27
SA-5

At the hearing in Rapid City several local business people, who do not own land in the expanded Powder River MOA, gave a business boosters' view of the Air Force's economic importance to the Rapid City economy. I would suggest that they welcome the Air Force to do their training in the air space over Rapid City instead of the Powder River MOA. If they think the Air Force's training mission is so important, they should welcome it being done in the immediate Rapid City area. The planes would not need to spend any fuel to get to their practice area, therefore saving the taxpayers millions of dollars in operational expenses.

SO-24
PN-2

Colonel Taliaferro spent a good deal of his time explaining the use of the B-1 bomber in missions in Afghanistan in which it is used as an aerial platform to observe the enemy and respond to the threats they pose to ground troops. The B-1 was designed as a bomber, not as an observation aircraft. By the time the B-1 came into service at the end of the Cold War it was an aircraft looking for a way to fit into a new paradigm of warfare. I question the economics of using this large, expensive aircraft in its current role. Smaller aircraft, either manned or unmanned, could do the job for a whole lot less expense to the American taxpayer. The military has never been known for its economical use of resources. To me, this is another shining example of abusing the American taxpayer.

PN-6
SO-14

I grew up as the child of an Air Force officer. I have observed the group think of the military for my whole life. The people serving in our services are dedicated to protecting the best interests of America as long as they can keep their job. Historically, Americans have been unwilling to acknowledge the need for a strong military. However, the military and the politicians that send them on their missions, fail to look at the larger view of the needs of America to use it resources wisely. The expansion of the Powder River MOA is a poor choice of using our national resources. The harm this could create is greater than the benefits espoused by the proponents.

PN-3

The citizens of the proposed impacted areas are not the enemy. They need to be treated with respect for their life style and contributions to the well-being of the United States. To question their patriotism because they do not want their life changed dramatically is arrogant on the part of the government and the outside interests that would expand the Powder River MOA.

Sincerely,

Norma J. Kraemer

Norma J. Kraemer

1059

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** November 13, 2010

PLEASE PRINT

Please see enclosed paper

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	Penny Iekel
ORGANIZATION:	[redacted]
ADDRESS:	[redacted]
CITY/STATE/ZIP:	[redacted]

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Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1059

Nov. 13, 2010

The sudden, unexpected noise will be the biggest negative factor impacting our ranching operation in southeast Big Horn County, Montana. A reliable means of communicating and having the planes detour small areas for a few specified days would be helpful. I believe the biggest negative impact would be during sensitive cattle operations such as branding or shipping, which typically happen in spring or fall. LU-2 AM-12 BI-4

However, we also depend on our military for the protection of our country and the freedoms we enjoy to pursue our lifestyle. I would hate to think that young pilots will be sent on dangerous missions without the skills to attain the high level of expertise needed to execute low-flying combat missions. These skills can only be acquired through hands-on practice. PN-1

In 2008 when my husband was in the Wyoming state legislature, we had the opportunity to visit Elmendorf Air Force Base and learned that the Russians were constantly flying missions to test our air defense borders. The colonel who presented, also a pilot, made some very poignant statements. He emphasized the necessity for large land areas for low flight training so that the young pilots would be able to learn the skills needed to come back safely from missions. I especially remember his plea for this, as his son had volunteered for the Air Force and was currently in flight training.

Penny Ickel

1060

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street. Room 337
Langley AFB, VA 23665-2769

Ms. DeVine,

My name is Michael D. Rath. I am an active private pilot, a corporate pilot by profession, and a member of the Lawrence County Airport Board.

I am writing to express my dissatisfaction with the proposed Powder River MOA expansion. I will address how the proposed MOA will effect each of the areas listed above.

As a private pilot I have aircraft based at both Baker, MT (BHK) and Black Hills Airport (SPF). Both airports are located within the proposed MOA. I make the trip from Spearfish to Baker on a regular basis and my concern is that you have not done a impact statement on how this will effect VFR (Visual Flight Rules) traffic through the proposed MOA. The current Powder River MOA is restrictive but it is manageable. However, due to the huge proposed expansion of the MOA it will now be both economically and logistically impossible to circumnavigate the MOA when it is active on a route from Spearfish to Baker. A trip from SPF to BHK is approximately 125 miles. If you wanted to circumnavigate the proposed MOA the trip would increase to approximately 475 miles, making the trip impractical. I know that it is legal to transition the MOA but I feel it is at great risk to myself and my family considering military aircraft in the MOA could be in excess of 500 kts. At night they will be allowed to fly lights out. At those speeds, see and avoid is not an option, it is an accident waiting to happen. This proposed expansion does not give the average private pilot the safe alternative to avoid the proposed MOA.

AM-21

SA-7

As a professional pilot, I am a Captain on the Citation X. This proposed MOA will effect my company and our clients in many ways. First and foremost, the financial impact will be significant. As capable as the Citation X is, it will not be allowed to go under or over certain areas of the proposed MOA when active. Again, the only option will be to go around the MOA. The cost will be borne directly by the company. Next, is the ability to land at an airport that underlies the proposed MOA. If the weather is VFR it would be possible to cancel our IFR (Instrument Flight Rules) flight plan and continue to the airport under VFR flight rules. However, this again would be at great expense to the company. The Citation X burns approximately 300 gallons of fuel an hour at 41000 feet at a speed of 520 knots. In order to fly VFR in the MOA, the highest altitude allowed would be 17,500 feet MSL. At this altitude fuel burn increases to approximately 500 gallons an hour and speed would be significantly reduced. More importantly, we would be putting ourselves and our passengers at great risk because we would be required to see and avoid military traffic. The Citation X has a very capable traffic avoidance system but it would be useless because the military does not use the system. There is also a severe lack of radar coverage through out the proposed MOA. We would be back to see and

SO-7

SA-7

AM-3

1060

avoid but now we would be looking at a closing speed of up to 900+ knots. It is impossible to see and avoid at those speeds! If the weather is below VFR minimums or IFR, VFR would become impossible and there might be no other option but to avoid the airport that underlies the proposed MOA.

AM-3
SA-3

That brings me to my third and final point. As a member of the Lawrence County Airport Board, I can see the impact to the underling airports will be significant. Black Hills Airport with the backing of the FAA, State of South Dakota and Lawrence County will in the coming years invest approximately 17 million dollars into airport improvement. This alone shows the importance the Black Hills Airport has to Spearfish and the surrounding region. It is an insult to the community that Black Hills Airport is not even shown on your maps considering it was ranked #5 out of 34 public use airports in your study! During the time your data was compiled Black Hills Airport's primary runway was closed so it could be lengthened. This was at a cost of approximately 10 million dollars. Your data for the Black Hills Airport is not accurate and should be reevaluated.

SO-10

AM-4

Approximately 80% of our fuel sales are to transient aircraft. With the expansion of the MOA we will see a significant reduction in both VFR and IFR traffic. VFR pilots will avoid the underling airports whether the MOA is active or not because they are afraid of it. Due to the lack of radar coverage in the area, IFR traffic will be significantly impacted when the MOA is active. If pilots feel the Black Hills Airport is a hassle to use because it is located inside the MOA they will just learn to avoid it. The negative effects of the loss of traffic have in no way been accounted for in your impact study.

SO-10

This proposed Powder River MOA Expansion will have far reaching and detrimental effects to many individuals, companies and to the communities in our region. I do not believe that a thorough and comprehensive economic impact statement has been prepared to address these important issues.

SO-22

Sincerely,

Michael D. Rath

Michael D. Rath

1061

[redacted]
10/31/10

Linda Devine,
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB. VA 23665

Dear Sirs,

I would like to comment on the proposed expansion of the Powder River Complex for Air Force training flights out of Ellsworth Air Force Base in South Dakota. The proposed expansion of the training area would be in four states and in an area of southeast Montana which I am very familiar with.

I would like to express my support for these training flights in this remotely populated area as necessary for our pilots and staff in the Air Force and vital to our nation's security. GE-1

I know the low level flights will cause some temporary noise and may startle some livestock but I experienced these low level flights daily for 20 years. Our family ranch in west central North Dakota had daily flyovers by B-52's and small jets from Minot Air Force base. These began in the 1960's and lasted for 20 years. They were low and not without some noise but as kids we were interested to see these large planes flying that low. They came every day at the same time daily and we would wave at them. The small amount of foil they dropped was insignificant. Livestock might be startled and run a short distance but most times paid little attention. In those days jets breaking the sound barrier were a much larger issue and scared people but this will not be the case in this proposal. LU-7 BI-1

If these increased training flights are during the day and as few as proposed they should not be a significant issue. Also this area of SE Montana is being looked at for wind energy development. I do wind testing in this region and there are significant areas of Class 6 and 7 winds which lend themselves to future wind turbine placement. These wind farms would be on the high ridges and plateaus in this area. Future wind turbines would be less than 500 foot of height. This may be considered during this proposal's planning phase. CM-4

Thank you,

Mike Carlson

1062

[redacted]
September 15, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews St. Room 337
Langley AFB, VA 23665-2769

RE: Powder River Training Complex

The purpose of this letter is to support the expansion of the Powder River Training Complex. GE-1

Our place is within the current training area. When the training activities are occurring, occasionally planes fly over our place. There has been no observable negative impact on livestock, wildlife, or human occupants due to the noise or physical presence of the aircraft. I do not believe there will be any negative impact if the training area is expanded. LU-7

We also have a home in Rapid City, SD which is located west of Ellsworth Air Force Base about 6 or 7 miles. When the military is conducting training sessions at night we usually clearly hear the aircraft as it lifts off and flies NW of the Base. It is a comforting sound to know that the military personnel are honing their skills; thus, enabling them to be in a better position to protect and defend us in the times ahead. We have the same comforting feeling when the aircraft fly over our Wyoming place whether the aircraft is at low altitude or high altitude. GE-9

To date, I've heard nor read of any objections to the expansion of the Powder River Training Complex that I believe is credible. If the protection of our country will be enhanced by expanding the training area, expand it.

Sincerely,

Dwight F. Moose

Sincerely,

Kathleen N. Moose

R - '0 S - 30 - 2010

Nov 11 10 07:22p 1063 P.1

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! DATE: Nov. 11, 2010

PLEASE PRINT
2 sheets. following of Comments

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME: Wilma L Rusley
ORGANIZATION:
ADD[redacted]
CITY/STATE/ZIP[redacted]

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Please hand this form in at a public hearing or mail before November 13, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

FAX: 757 764-1775

Nov 11 10 07:22p 1063 p.2

WRITTEN COMMENT SHEET
Power River Training Complex

The air force says they need this new area for there training But at who's expense? The air force says lots of thing but most statements are for there benefit and what not to real life, and how it effects us living under the fly zone. SO-14 LV-1

We are worried and scared of what lies ahead of us that live under the fly zone. We have heard that they say one thing and lots of time they do different, and we that live here have to adjust to the situation. Oh they have gotten lots of comments and hearings on the matter, but attending the meetings and hearing you walk away with the feeling that they don't care and that they are going to get there way come high water. GE-5

We have been under the fly zones and they do scare cattle, and people. Especially in the middle of the night some flies over you are awaken out of a good sleep, then it takes for ever to go back to sleep, which is not good for the body. BI-4

The value of our property goes down and if we did want to sell, who would want to buy it {your property} if you lived under a fly zone. SO-1

The increase of the fire danger with them using the flares would increase greatly. They say they would monitor if in a drought area, mainly August. But we can have a drought season from June----September. SA-5

The speed the flares fall to the ground is unreal, up to 100 mph, and if they don't ignite and hit a person are any kind of livestock, or even wild life it would not be good. And this is acknowleded in the Air Force impact statement. SA-14

Even in there impact statement they say the dud flares are rare, but extremely dangerous. So why take a chance. Then they say if you fine a dud flare you have to call them and they will take care of it. Who has the time for all of this.

Also they can deploy chaff, and the inch long aluminum coated silica and these tiny fiber strands drift to earth and get into our stream, lakes,water tanks, in our grasses and our hay and we feed our livestock , .WE ALL KNOW THAT ALUMINUM CAUSES ALL TIMERS. AND THE TINY FIBERS COATED WITH SILICA CAUSES CANCER. We know what you folks think that it will not happen and it's not a danger to us, livetstock or the eviroment. We don't want to take the chance on this our life is important to us and our families. SA-14

What you folks are planning to do is destroying a way of life in the small rural towns and areas. and we don't like that, LV-1

Our airports will be in trouble, and there are comments that out of the area, state fliers will not come to here and have to cope with your low flying planes. Our medical air lift SO-10 SO-5

Pg 1

Nov 11 10 07:22p 1063 p.3

has said the same thing, so now you are endangering our lives, because we can not be air lifted out of here. I don't think we should be put in this kind of situation. SO-5 SA-19

Our little towns are having trouble staying afloat now, and this will just cause an other hardship upon us all.

There have been things that the EIS did not make any comment concerns on what the conception rate{rebreeding } of livestock and wild life would be, also the concern of the contamination of the sheep's wool by filaments{cancer causing agent in the chaff}. Again our lively hood is at stake. SO-13 SO-16

We that opposes this expansion is said to be non-patriotic which would not be the truth. We support our troops and there efforts, but not at our expense of our lively hood.
Facts we have learned: B-1 was developed as a long-range super-sonic bomber with low-level capabilities, but why does it have to tested at 500 ft.
The B-1 top speed is 830 mph,----13.84 miles per minute----1218 feet per second---4 seconds per mile.

THIS MOA BELONGS IN THE DESERTS OR OVER OPEN-WATER NOT WHERE THERE ARE PEOPLE, FARMES, RANCHES SMALL TOWN, AIRPLANES, AND VALUAVLE RRESOURCES. WE ARE IMPORTANT TO. PN-2

WE HAVE BECOME A TARGET FOR EVERYTHING THAT NOT GOOD
WE SUGGEST NO-ACTION ALTERNATIVE GE-2

Wilma Rusley
[redacted]

Pg 2

1064

November 8, 2010

Ms. Linda Devine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Ms. Devine,
I am writing to submit my comment on the proposed Powder River Training issue. Several years back, I submitted comment adamantly against this, as did several area residents of our state and neighboring states. I was disgusted that this went forward anyway. Virtually every person in the proposed area has voiced serious concerns over this issue, and it seems they have been largely ignored. Since this seems to be protocol, I will keep this short and not go into deep explanation as to why this should not and can not happen in this country to people who have so vehemently spoken out against it. Yes, we are fewer in numbers than some areas, but we are still citizens of this country. We have the undeniable right to protect our land, our health, our livelihoods, and our future generations from this kind of ridiculous experiment. NP-1

What you are proposing would be preposterous to people of any other area of the country, and it simply would not stand. I understand the need for training. I support our military. But we all know that future wars will not be fought in the air. They will be fought in and amongst the citizens. To train for this at the expense of United States citizens is appalling. An alternative to using real human "dummies" on the receiving end of this would perhaps to be using technology to simulate training. We can send astronauts to the moon, fly airplanes, and experience disasters via simulation. I find it hard to believe we cannot adequately train our fighter pilots to perform their duties through similar methods. If this is not possible, then go "train" where you are going to fight. There are adequate areas that are unpopulated and will give a more realistic picture of real-life scenarios in the landscape of your proposed war scenes. Leave us out of it. GE-3 PN-7 PN-2

Why should we have to risk our health, our safety, our lifestyle, and virtually every aspect that makes this area precious to us for your benefit? Does not the voice of the people outweigh the outcome? It most certainly should, and shame on whoever decides that we are not important enough to protect. We are feeding your country, Ma'am. Respect it. We are raising your future leaders. Respect it. We are contributing to the success of our country to sustain itself. Respect it. To do otherwise is the most horrendous insult to the very foundation of the United States of America. You have not heard one positive comment that would come as a result of this proposed air space usage. I strongly urge you to LISTEN. NP-1

Respectfully submitted,
Phillip + Lori Rusley
Phillip and Lori Rusley and family
[redacted]

1065

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input!

DATE: 11-8-10

PLEASE PRINT

I STRONGLY OBJECT TO THE AIRFORCE GETTING THE AIRSPACE OVER BAKER MONTANA DESIGNATED MOA. SMALL COMMUNITIES IN MONTANA LIKE BAKER STRUGGL FOR ECONOMIC SURVIVAL THIS WOULD HAVE GREAT NEGATIVE IMPACT TO THAT ECONOMY. IF THIS ISSUE WERE PUT TO A VOTE BY THE CITIZENS OF MONTANA, IT WOULD NOT PASS. GE-2 SO-9

MOA'S NEED TO BE LOCATED OVER UNPOPULATED AREAS SUCH AS DESERTS OR OCEANS, NOT POPULATED AREAS, NOT EVEN SPARSELY POPULATED AREAS. PN-2

GENERAL AVIATION WOULD BE SEVERLY RESTRICTED. I WILL NOT FEEL AS SAFE FLYING VFR IN A MOA WHERE SUPERSONIC TRAINING IS TAKING PLACE. WE NEED TO CLOSE SOME OF OUR NON PRODUCTIVE MILITARY AIR BASES LIKE ELSWORTH, NOT EXPAND THEM. SA-7 GE-2

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME: RUSSELL L. BURDICK

ORGANIZATION: SELF

ADDRESS: [redacted]

CITY/STATE/ZI[redacted]

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Langley AFB, VA 23665-2769

1066

To: Ms. Linda Devine
HQ ACC/A7PS
129 Andrews Street, Rm. 337
Langley AFB, VA 23665-2769

From: Roy E Kimbell
[redacted]

Cc: Senator John Thune, Representative Elect Kristi Noem

Subject: Powder River MOA Proposed Expansion

Dear Ms Levine, I am a private pilot and airplane owner based at Black Hills, Clyde Ice Field (SPF). I have recently become aware of the proposed expansion to the Powder River MOA and find it very disturbing for the following reasons:

- According to your Environmental Impact Statement (EIS) SPF will now be included in the Powder River MOA Gateway.
- According to your EIS, the MOA will be active four and one half days per week from 500ft to 60,000ft. PN-5
- According to your EIS, B1 Bombers will be flying low level sorties at 580 knots. "See and Avoid" does not work at those speeds and you have completely shut down my ability to fly when the MOA is "hot". SA-7
- Further more, IFR operations will be shut down when the MOA is "hot" over an area of 37,800 square miles. This seems unreasonable. AM-6
- Exemption #7960C indicates night operations will be conducted "lights off" for night vision goggle training. Again, this shuts down my ability to fly at night. SA-11

The proposed MOA expansion will severely limit my ability to fly. Please reconsider this expansion of the Powder River MOA.

Roy E Kimbell

1067

Sept. 10, 2010

Linda DeVine,
Program Manager ACC/A7PS,
129 Andrews St., Suite 337,
Langley AFB, VA 23665.

The published summaries of the proposed North Dakota Air Force Bombing range do not discuss or list all of the many alternative restricted air space already available for performing such operations.

AM-9

There is already way to much restricted airspace. Please use an existing restricting airspace for any practice bombing operations and stop trying to spread bombing practice along navigable airspace which restricts commerce; patently unlawful.

AM-11
PN-2

This unlawful proposal will only generate law suits if you persist with it.

Terry D. Welander

Terry D. Welander
[redacted]

Rec'd Sep 30, 2010

1068

Ms. Linda DeVine: 29 September 2010

I attended the Powder River hearing in Elgin, ND on September 23rd. I would like to submit the following comments.

(1) I was surprised that no questions were permitted. I believe they should have been, as they can or could have, provided answers and insight into the topic at hand. NP-2

(2) Regarding the use of "flares"; I remind you of the recent large fire in Utah, started at a military training facility by the National Guard during a live fire exercise. The "Commander" in charge, stated he did not know about the extreme fire hazard. Fire conditions in this part of the country, can and do change frequently. I would question the prudence of using "flares" and suggest that you remember "Murphy's Law"; if something can go wrong, it will. I would like to know, how the Air Force would do a better job of "Fire-Watch", if you will, than "ground based forces". I, for one, believe fires will/would be an issue. SA-5

(3) I see this expanded "Air Space", as one of convenience and not really needed. We already have the Nellis AFB and the Indian Springs AFB along with the large military restricted area, just NW of Las Vegas, Nevada. Our current President, The "Commander-in-Chief", has stated he will begin pulling troops out of Afghanistan by July of 2011. There was a comment made by one of the officers, that they need this added space for training as it relates to Afghanistan. The mountains in Nevada make this a better option and besides, the "missions" in a year, will be changing or diminished. We as a nation, cannot and should not, continue to engage in "un-funded" wars. This request for added/expanded space to train for bombing missions seems weak at best. PN-2

(4)It would have been nice to know who conducted the "studies" and where they were conducted, regarding information presented on safety, noise levels, physical and biological reactions, affects on structures, etc. Since no questions were permitted, those remain unanswered. I have lived through and experienced B-52 bombing missions and have no desire to go through that again. The noise and vibrations that the air craft produce are incredible. GE-13

(5) This much expanded airspace for training, would also affect the local air ports, crop dusters, pilots who seed clouds, live stock and our way of life. There are already two training spaces near Devils Lake and another I believe, scheduled for Grand Forks Air Base. SO-10 SO-2 PN-2

(6) Last but not least, do our comments carry any weight or has the decision to go ahead already been made; that is the question, one would like to have asked at the meeting. NP-1

Respectfully,

Upton F. Becker

Upton F. Becker
[redacted]

1069

WILLIAM GRIFFIN
[redacted]

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews St. Room 337
Langley AFB, VA 23665-2769

September 14, 2010

Dear Ms. DeVine:

I am an enthusiastic supporter of the proposed expansion of the Powder River Training Complex. GE-1

I spoke at the public meeting in Rapid City this evening. I am writing this letter to expand upon the remarks I made during the meeting.

I am a Veteran of the uniformed services. I served from 1970 to 1972.

I have been a property owner in this region for about 14 years. I have owned property in Keystone, Custer, and Rapid City, all of which are in South Dakota. I have lived here for seven years.

I live under the flight path of some of the aircraft that fly out of Ellsworth AFB. I do not find their noise to be disturbing. The deer, turkeys, horses, and other animals here seem to be able to live with the noise of the B1-B bombers. BI-1

I lived in France during the summer of 2010. In France, 60 million people are packed into a space the size of Texas. There are rural areas, like the small village where I lived. However, there are no "wide open spaces" like we have in the Great Plains of the US. But France wants to have a military. They need to train. So their jets fly over the rural areas. A couple of times a week, a fighter aircraft would fly over our village. The noise was a distraction, but not an inconvenience. People were accustomed to it. The chickens seemed to be able to lay eggs. The cows made milk that was made into superb cheese. In other words, the people and livestock were living with the occasional noise from the jet aircraft. BI-1

My professional training has been in environmental engineering and environmental law. I spent much of my career in work related to environmental impact assessment. I am not professionally

1069

involved in your project. Based on my professional background, it appears that the Air Force is doing a pretty good job of responding to people's concerns.

Several of the speakers at the public meeting expressed concerns about compensation. The format of the meeting did not provide an opportunity for the Air Force to respond, so I do not understand what the Air Force plans to do about the issue of compensation. Let me respond from my background as an environmental lawyer. I believe the expansion of the Training Complex constitutes a "partial taking" of people's land. Although the Air Force may need to use this air space for some years, this taking is not likely to be permanent. Therefore, on a temporary basis, I believe people will suffer reduced property valuations and reduced opportunities to make the best use of their land. In turn, the Air Force should compensate them on an annual basis, like an oil lease or easement. SO-1

Let me tell you a story about compensation which may shed some light on the challenges faced by land owners and the Air Force. I recall a situation from my youth when the Maryland State Roads Commission dramatically widened the road in front of our house. Aside from taking some of our land, they raised the level of the road. Our house became "buried" on two sides, so the noise level was much higher, the house was vibrating, and people in passing cars and trucks were looking down into our house. Moreover, our ability to enjoy the house was significantly reduced. The State of Maryland recognized this reality. Consequently, in addition to the $3000 that they paid us for the land that they took, they also paid us $3000 in "proximity damages." We felt that was a fair way to handle the situation. We continued to live there for two more years until we could pull together enough money to move to a house in a quieter neighborhood.

In conclusion, assuming the Air Force can create a satisfactory compensation scheme, I am an enthusiastic supporter of the proposal.

Sincerely,

1070

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

ank you for your input! DATE: 11/10/10

EASE PRINT

Please see on back Thanks

**** CONTINUE ON BACK FOR MORE SPACE ****

AME: Glenn Gay

RGANIZATION: [redacted]

DDRESS:

TY/STATE/ZIP:

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Langley AFB, VA 23665-2769

1070

My concern with the Powder River Training Complex will be sharing airspace with large, low altitude, fast moving military aircraft. I own a ranch within the proposed complex and use a small relatively slow moving airplane for ranching operations. Most of my flying is done early in the morning, at low altitudes and VFR. Since VFR is see-and-avoid, my concern is see-and-avoid with high speed military aircraft at low altitudes.

SA-7

If I knew when the MOA was active, most of the time I could adjust my flying to avoid the MOA. The EIS in Table 2-10 lists the Time of Use Monday thru Thursday 7:30 – 12:00 L etc. and other times by NOTAM. What would benefit me the most would be a way to find out when military aircraft are actually scheduled to be in the MOA. A phone number or preferably a website that I could access before I flew that listed which MOA and the time military aircraft are actually scheduled to be flying. For example, if I knew that military aircraft were going to be in the PR-2 MOA from 8:30 – 11:30 on a particular day I wanted to fly, I could avoid the MOA at that time. This information would need to be updated daily several hours before the departure of the military aircraft. Sections 2.2.1.3.1 thru 2.2.1.3.4 indicate there is plenty of planning time before takeoff to do this.

A website could also be used to inform when the LFE's are scheduled. I don't know how the LFE's will affect my ranching operations, hopefully not. But if there is a negative aspect, I might be able to schedule some of my operations on a different day. The earlier I know about the LFE schedule, the better. And I am sure there is plenty of planning time to allow this.

AM-12

The more current information I have access to, the better I will be able to mitigate any adverse impacts the proposed training complex will have on my operation. Thank you

Glenn Gay

Ranch Wheatland

1071

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 9/30/10

PLEASE PRINT

The presentation by the AF ACC representative (Ms Linda DeVine) was outstanding. Ms DeVine deserves a pay raise for her outstanding work. NP-3

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME: Tom Atkinson
ORGANIZATION:
ADDRESS: [redacted]
CITY/STATE/ZIP: [redacted]

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Langley AFB, VA 23665-2769

1072

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! DATE: 9/27/2010

PLEASE PRINT

My concerns? Who is responsible for any mishaps (ie crashes, unauthorized releases)? who will pay for such clean ups? SA-20

Other than that, I agree with the option A from the AF recommendations I don't believe any additional aspect can be affected by this proposal. Any accusation that it would is misleading GE-1

**** CONTINUE ON BACK FOR MORE SPACE ****

NAME:	Anthony Lewis
ORGANIZATION:	
ADDRESS:	[redacted]
CITY/STATE/ZIP:	[redacted]

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1073

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input!

DATE: Sept 15, 2010

PLEASE PRINT

1) We live in an area that has natural weather extremes. We should not have the problems associated with the size and scope of an expanded training and future increases in number and types of planes on it. SA-3 SA-7

There is a need to study the effects large and increased number of planes that will use the area. Sulfur has already been shown to modify the cloud properties. AQ-2

2) I no long produce livestock, but rely on farming for my livelyhood. A very important part of my operation lies on the timely application of pesticides & ing pesticides. Herein lies a major problem with the extended trainy over SO-2

**** CONTINUE ON BACK FOR MORE SPACE ****

NAME: Kenneth Lee

ORGANIZATION: Self

ADDRESS: [redacted]

CIT[redacted]

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1073

areas. The wind vortices from a B1 can extend to 900 feet when flying at 500 feet they can displace chemicals being applied. This could injure susceptible crops to injury and cause a liability issue. SO-2

The prime time for application is in the morning when temperature is low as well as calmer wind. Evening application is harder because of temperature inversions. AM-12

Calling Air Force personal to find out when they are flying is not an option.

3) Air Quality

Our air is not as good now as the Air Force would like us to believe because of [redacted] training now.

The increase in use of the expanded training area will greatly increase air pollution. The only sampling area used by the present training area that is located anywhere near is on the Crow Reservation in Montana. AQ-3

Increases in emission's as follows

Voc (fossil fuel)	1800%	increase
CO	721%	"
SOx	682%	"
NOx	692%	"
PM10-PM25	978%	"

These are increases in emissions, which is to say we are not being told about how much the area is going to be used over what it is now.

4) Land Values

Land values will be decreased by noise + air pollution as well. People will be not be interested in purchasing a house or property in this area. SO-1

This will put a tremendous burden on Local governments because of the decreased values SO-3

This expansion is not needed for the training for the simple reason all the other planes will have to use the fuel to get here. PN-2

If this is to proceed landowners + homeowners need to be compensated. I did not volunteer to give my land to the Air Force for any reason. SO-1

JF

1074

September 20, 2010

Concerning the "Powder River Training Complex" expansion:

It seems your request for an expansion is the norm for all of our government these days. In this particular case it is an attack on where we live and goes to the heart of our only weakness -- low population. But, as you can see by the attendance at these hearings, these few people not yet relegated to the cities, possess a big voice and an even bigger reason to protest your expansion. We grow weary of attending meetings where we express our concerns to some faceless bureaucracy, only to hear later that our concerns were for naught and plans will go ahead. NP-1

We that remain here value highly these expanses of relative peace and solitude where we accept the howl of winter storms and the roar of summer gales. Now you come to tell us you want to introduce the roar of Bomber jet engines and the afterburners of your fighters. To this request we give a resounding "NO". The only shadows we want to see over our lands are those of clouds and soaring hawks and eagles. LU-2

We stand by our County resolutions and will consider any expansion of flights, at the very least, an intrusion of our autonomy as citizens of these said States and Counties. We wish to continue as our Forefathers -- raising our children and grand-children, calving and lambing in their seasons and working the land, free of any further encroachments. For if there was only one of us left in the whole area and hewas against this expansion, that would be cause enough for you to abandon your memorandums. We believe the freedom of our country and the preservation of our Constitution hinges on these principles alone. Not on the expansion of the "Powder River Training Complex." LU-3

I am Sincerely,

Dennis R. Drayton

Dennis R. Drayton
[redacted]

1075

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! DATE: 9/20/10

PLEASE PRINT
I support this project] GE-1

**** CONTINUE ON BACK FOR MORE SPACE ****

NAME: Dan Cary
ORGANIZATION: [redacted]
ADDRESS:
CITY/[redacted]

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___ hard copy format
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Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1076

September 23, 2010

Concerning the Powder River Training Complex Expansion:

After scoping the Air Force's in depth study of the environmental impacts, they have considered all the aspects and most of the time come to the conclusions, as we have, that the whole plan , if implemented, will damage fences and corrals, disband sheep, make riding horses more risky, startle us, shake our homes and contribute in-general to a more stressful life for all. This is all a given. But, let us be clear, there is much more than the environment at stake. As my good friend and neighbor, Shawn Weissaar, said after looking at the map, "this is nothing, if not a "taking", clear and simple.

Well, ladies and gentlemen, he has hit the nail on the head. We are all here because we are property owners. And, as American citizens, we are endowed with certain inalienable rights ,of life, liberty and the pursuit of happiness. That includes the rights to what happens on or over our land. Even to the point of who we allow to enter. The land and skys above are a gift from our Maker and we thank him for the bounty it provides and for the peace and tranquility it adds to the lives of our families.

LU-1

All of our lands are historically important, having been trod on by the earliest man and animals to the present time. None are more important than what we personally own regardless of the lists that have been made. Now the governmant has parlied with the various tribes and found that the representatives all voiced their opposition to their inclusion in an expanded training complex. The Air Force has seeminly agreed that on certain circumstances they would try to avoid tribal life and activities. All the time being mindful of the impoverished children thereon. In contrast we other citizens of these areas come in even greater numbers to voice our opposition, while those we elect to Congress abandon us and essentially offer up our lands as sacrifice in the interest of keeping the air bases open. It's as simple as that.

EJ-1

So, don't spend too much time conferring with these representatives because they are not here to offer sympathy nor do they owe us any allegience in this matter. We must focus our efforts in making our congressmen and women accountable to our wishes.

NP-2

2nd comment period:

Did you notice that these representatives of the Air Force and other entities have brought no goods to trade with us, no offers of compensation or recompension. Remember, all the trading was done before they arrived here by the cooperating agencies and those whom we trusted to act in our best interests. All the federal agencies arrayed against us play nice with each other and hard ball with us.

SO-1

If we cannot prevail in this issue, if our voices and desires are not heeded, a black curtain will have been dropped over the faces at Mount Rushmore. Will we, just as the Lakota the Crow and the Cheyene before us, be left to cry a trail of tears? We will see, we will see.

Dennis Drayton Drayton Ranch of the Dakotas

1077

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! DATE: 9-27-10

PLEASE PRINT

I agree with what the Air Force is proposing. GE-1

We need an alliance with the Air Force in case anything was to happen to us as people. Hopefully the Air Force would be able to help us. GE-11

~~Four~~ Five people can't make a decision for all of our people. The people only voted that way to get the district meeting over with to get paid for door prizes.

**** CONTINUE ON BACK FOR MORE SPACE ****

NAME: Michele A. Clark
ORGANIZATION:
ADDRESS: [redacted]
CITY/STATE/ZIP [redacted]

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HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1078

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! DATE: 10-25-10

PLEASE PRINT

When I was 6 years old or so, I grew up a GARRYowen. The air force did their fight practice we could hear the sonic boom it would hurt our ears and scare our cattle. We would hide because we didn't know what it was. I don't know if we can live with that boom. And that noise. NO-5

**** CONTINUE ON BACK FOR MORE SPACE ****

NAME: Shannon Rock Above.
ORGANIZATION: Citizen of Crow Reservation.
ADDRESS: [redacted]
CITY/STATE/ZIP: [redacted]

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1079

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** _____

PLEASE PRINT

I wonder if any studies have been done on the safety of breathing in Chute, for animals and humans. SA-14

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	Olga I. Nostrand
ORGANIZATION:	
ADDRESS:	
CITY/STATE/ZIP:	[redacted]

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1080

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! DATE: 10/15/10

PLEASE PRINT

I do not support any of the MOA (Powderiver alternatives GE-2

I do a lot of low level flying 200 hrs/yr doing areial applications & crops & wildlife surveys, predator control, and flying back and forth from Miles City to Bison, SD. to my family ranch, and flying to the little communities in this area SA-7

Most of my flying is done in a Piper Cub which is very suseptable to turbulences and probably inacceptable to radar coverage. I like the peace & quiet in South east Montana. LU-2

**** CONTINUE ON BACK FOR MORE SPACE ****

NAME: Monte Reder
ORGANIZATION: Reder Flying Service
ADDRESS: [redacted]
CITY/STATE/ZIP: [redacted]

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1080

Even with flying VFR with the speeds the air force is operating at it would [illegible] put me and my passengers in a very unsafe situation. SA-7

1081

Public Hearing for Powder River MOA Expansion:

I will be attending the EIS hearing at Miles Community College on October 15, 2010 to oppose the expansion of the Powder River Military Operations Area for the same reasons expressed in the attached letter from Scott Newpower. I am a local pilot that frequently flies within the proposed area of expansion to do my work as an insurance adjuster. I am also the chairman of the Miles City Airport Commission and am opposed to the expansion on the grounds that this will greatly diminish the traffic and, therefore, revenue for the Miles City Airport. Thank you for any help you can provide in helping us preserve the air space we currently enjoy using. SO-10

Lee Richardson
[redacted]

1082

November 10,2010

Ms. Linda Devine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Dear Ms. DeVine:

On Table3.7-4, Ghost Towns Under proposed PRTC Airspace, you list Whitewood, SD as a ghost town. Whitewood, SD is a thriving small town with over 800 citizens of the Sovereign State of South Dakota. The question I would liked answered is this a reflection of the accuracy, of the draft environmental statement for the proposed PRTC or a look into the future of what the USAF plans for the area? CV-1

President Ronald Reagan signed executive order 12630 which said even a partial loss of property rights was a taking that should be compensated for. Why does executive order 12630 not apply to the PRTC since private property owners will suffer economic loss, social loss and possible loss of health or life through the startle effect?? As you know scaring to death is a crime SO-1

President Obama signed an executive order giving diplomatic immunity to Interpol, since there are at least fifteen nations that have fighter planes stationed in the United States, if a foreign pilot shoots up a school, like a national guard pilot did in New Jersey or some other structure or citizen of one of the Sovereign States of South Dakota, North Dakota, Montana or Wyoming will the foreign pilot be given diplomatic immunity?? What will be the response of the USAF when one of their pilots does an unauthorized show of force against a rural citizen of any sovereign State, Commonwealth or Republic of the United States?? Reference is made to the 17,000 acre Warren Grove fire started by a flare in an unauthorized show of force by a plane of the DOD of the United States. SA-17 SA-5

Why are the sounds of the B1B bomber put into dbl DNL when the Air Forces' own litetiture state that the B-1 sounds are not in dbl?? By averaging the noise level and the frequency of the pollution from the training as this is, it like averaging the impact of a bullet from 50 caliber gun. If averaged over the probability of a USAF fighter shooting a citizen in the MOA, say once in every 500 years, then the bullet would harmlessly bounce off. Thus all noise levels and sonic booms should always be in the maximum exposure. How does the USAF propose to keep the sonic booms inside the MOA boundaries?? NO-4

The draft EIS does not address the fact that wind energy development in the proposed PRTC will come to a stop, because of a lack of liability insurance SO-17

1082

availability in a MOA. How does the USAF propose to compensate the counties for the loss of property tax revenue?? SO-3

In comparing the "Life Cycle of Chaff and Flares" presented at the scoping meetings it states "In rare cases of fire Ellsworth AFB and local agencies would rapidly respond." In the draft EIS the information has been changed to "The Life Cycle of Dispensing Chaff and Flares" but the very troubling change is " In extremely rare cases of fire, local agencies would respond and notify Ellsworth AFB PA." Does this mean that the AF is not a good neighbor, as a good neighbor would quickly go to the aid of a neighbor especially if they had started the fire. It appears that the AF sees itself above the very people it says it is going to protect. SA-6

George Stone, airspace manager at Ellsworth in a Rapid City Journal article acknowledges that more planes will likely be using the complex after it is expanded, while in another article Col. Jeff Taliaferro says "While the size of the air space is going to increase the amount of traffic isn't. Does this mean that there will be more different plans that fly less or does the left hand not know what the right hand is saying??? Living a quite life under the flight path to and from the proposed MOA I am very concerned about my health, livelihood and the survivability of the eggs of the wild birds. As I am sure the information was inadvertently omitted concerning the vibration that B-1has on the survival of fertilized eggs. AM-2 SA-22 BI-2

This draft does not address the impact the increase air traffic will have on the citizens of the Sovereign State of South Dakota that are in the path of the planes coming and going day and night in a LFE which the GAO has said are a waste of money and disorganized. What makes the AF smarter than the GAO?? LU-2

Best Regards
Allen Olson
[redacted]

1083

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 9-28-2010

PLEASE PRINT

See attached letter

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME: Anita Lee
ORGANIZATION:
ADDRESS: [redacted]
CITY/STATE/ZIP [redacted]

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HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1083

September 28, 2010

Ms. Linda Devine
HQ ACC/A7PS,
129 Andrews St,
Langley AFB, VA 23665-2769

Dear Ms. Devine,

I am Anita Lee, I have lived on this farm with my husband Kenny for 41 years. I would like to explain what air space means to us.

We raise wheat, alfalfa, sunflowers, and millet. Starting the first of September, Kenny, and our son Rick, will spray all of the ground that is to be planted to winter wheat. They usually use ground sprayers with Roundup (name of chemical). Ground sprayers are self-propelled, or pulled by tractors and roll on the ground. Ground rigs are safer than spraying with air planes but they still have to watch weather conditions very carefully. The wind must be from the right direction to protect neighboring fields, trees and pastures, and not be over 20 miles per hour. The temperature must be between 50 and 85 degrees. In South Dakota, this is a challenge. The spraying is almost all done between 5 am and noon. By noon, the wind is usually too strong and sometimes the temperature is too high. Also, they must have several hours before a rain, so the chemical can be absorbed before it washes off. If the ground is muddy, they must hire a 'crop duster', which means a spray plane.

In this area, winter wheat should be planted between September 10th, and the end of October. The ground must be sprayed before the wheat is planted to kill the weeds. If it is not sprayed, the weeds will take all the moisture and the wheat will not come up. They can't spray the weeds after planting because Roundup will kill the little wheat plants. They plant about 2500 acres of winter wheat and it is always a grueling task to get it all done on time. Any day that they can't spray adds to the stress. Wheat must be planted by the end of October to qualify for crop insurance. Crop insurance is necessary for our financial security and peace of mind. Also, most lenders will not loan money to operate on if the farmer doesn't have insurance. (They want to be sure of getting their money back.) If wheat is planted earlier, there is more damage from grass hoppers and crop diseases. Since winter wheat is the biggest and best crop for this area, we need our air space from September 1st till October 31st.

Obviously a jet will not hit a ground rig and kill the pilot, but wing vortices can move the chemical to the neighboring field or trees. Since any spraying operation must avoid wind over 20 mph, a passing plane would disperse the chemical onto the wrong field and kill alfalfa, grass, etc. This would be like having a low flying jet pass over a car being painted. Suddenly, your beautiful red paint is all over your neighbors' cars, houses, windows, etc. Chemicals can't be 'removed' like paint.

SO-2

1083

September 28, 2010

International regulations require commercial airlines to be separated by 6 nautical miles to protect them from wing vortice interference. This is conservative since research has shown that wing vortices move about 90 knots per hour and remain about 10 miles behind the plane. **Small aircraft are supposed to stay at least 1000 feet below other aircraft.** Vortices stay longer in calm winds and dissipate faster in higher winds. Ag sprayers only work in calm to light wind conditions. Since the Air Force claims to be flying at 500 feet AGL, (and current residents of the Powder River MOA say it is more like 100 feet), clearly the wind vortices will be a problem for agricultural chemical application.

SA-7

From October till January the calves will be weaned and confined. Since the Air Force has already promised not to fly over us when these activities are taking place, we will not go into that. I think everyone understands the danger to humans and animals when they are confined and spooked by low-flying aircraft. Calving and lambing runs from January through June. Since the Air Force has promised not to fly over us then, I will not go into the even greater threat to animals and humans when animals are spooked at calving and lambing time.

BI-4

April brings us to the time when the winter wheat must be sprayed to kill the spring weeds. This is the most difficult spraying operation, and when many farmers who usually use ground rigs have to call crop dusters. This is the time when spring rains often make the fields too muddy to drive through. There is about a 2-week window when this has to be done. If it is sprayed too early, weeds will sprout up after spraying and choke out the wheat. If it is prayed too late, the wheat will be damaged. This time span is sometime in April through May. It varies with the maturity of each field. This varies because of planting time, weather, location, etc. If it is not done, the crop will be poor, or lost completely. We need our air space in April and May.

April through June brings us the completion of calving, and branding time. Branding takes a long time because each rancher picks his own days, reschedules for rain, days he helps his neighbors brand, etc. Since The Air Force has promised to avoid us during this time, we won't go into that.

April through June also brings the chemical application for the spring crops (spring wheat, corn, millet, sunflowers, safflower, oats, etc.) This is just like the fall spraying for winter wheat.

Some years, because of extra rainfall, the winter wheat must be sprayed again before harvest. This is usually done with a plane, so that the mature heads are not knocked off the wheat. This is done in July and August. Sunflowers are also sprayed in the late summer to kill insects. Sunflowers must be sprayed by air because they are too tall for a ground sprayer.

Alfalfa can be sprayed from April through September to kill insects. This brings us around to September again when we start spraying the winter wheat ground. Farmers spend as much time on their spray rigs as ranchers spend on their horses.

The north west corner of South Dakota raises 5 to 7 million bushels of winter wheat a year. This is a million loaves of bread a day. North Dakota raises more wheat than South Dakota. This doesn't count all the other crops. Cattle is the number one commodity to come from this corner of the state. The average farmer puts about $200,000 a year into the local economy and pays about $20,000 in state and local taxes. There are about 3,500 farms in this corner of South Dakota. My numbers only apply to the north west corner of South Dakota, covered by this training area. I do not have the Agricultural Statistics books from the other three states, so I left them out.

SO-2

This is a little idea of the number of people in the world who will go hungry if you take our air space. I hope you plan to reimburse us for our lost income and reimburse the state, counties and cities for the lost tax revenue and sales.

SO-12

1083

September 28, 2010

You may think this is more important than making 12 to 24 B-1s travel to Nevada to train, but I hope you understand that we DO NOT.

Another concern is the way damage claims are handled. I have spent some time studying how damage claims are handled in other MOAs and I have found they they are usually not handled. The EIS stated several times that claims would be handled out of the Ellsworth Public Affairs Office, and gives a phone number. I dialed that number to see what happened. I got an answering machine. I gave my home and cell phone number and requested a call back. That was 4 weeks ago and I have still not received my call. That is about the way other MOAs handle claims, according to the reports I have read. At the EIS meetings, the Air Force speakers talk about how few damage claims they receive. I can certainly believe that. They don't pay claims, so people just give up.

GE-8

Crop damage, like I described above is not covered by any type of private insurance. This is another reason that we **can not farm in a MOA**. A fair way to handle claims is to turn them over to local authorities. Whether it be the Sheriff, County Commission, or a special board, they should be accountable to an elected County official. If, as the Air Force claims, there will be no damage, this should not be a problem. If there is a problem, the fifth amendment says "*nor shall private property be taken without just compensation.*"

SO-12

Thank you!

Anita Lee
[redacted]

1084

October 8, 2010

Ms Linda DeVine
HQ ACC/A7PS
129 Andrews Street Room 337
Langley AFB VA 23665-2769

Dear Ms DeVine:

This letter is a follow up to my letter of July 31, 2008. I continue to be adamantly opposed to the Proposed Powder River Complex expansion. The Air Force may think this is desolate country but it is not! This area is one of the most productive areas in the State of Wyoming. GE-2

Having experienced low level fly overs, it would definitely affect my cow/calf operations, not to mention the huge abundance of wildlife in the area. Specifically, low flying aircraft, sonic boom disruptions, and the use of chaffs and flares will be a significant disruption/disturbance to my livestock, myself, and the wildlife on my ranch. Stress caused by this disruption from your training flights would decrease my breed back rate nearly 40% (documented by cases in Nevada). This would devastate my ranching livelihood! In addition, the wildlife and their reproduction would also suffer! SO-13

Chaffs and flares also being used during your night training will potentially cause large scale brush/grass fires. Your draft EIS might not have taken into account that in this portion of northwestern Wyoming we are not afforded the luxuries of fire equipment and personnel at every corner. We are ranchers and, therefore, depend on ourselves, our neighbors, and our local volunteer fire departments! In this area of Wyoming a small brush fire caused by one of your flares can get out of hand in a minutes time and devastate thousands of productive acres! SA-5 SA-6

I live and ranch in Crook County, Wyoming, which is within your proposed training expansion. This proposal would definitely and significantly devalue my property and livelihood. This would destroy any hope for future profits and retirement and, is certainly not the American Way! SO-1

1084

Perhaps the Air Force should use some land in a desert area or other non-productive land owned by the Government.] PN-2

Thanks for your consideration and understanding of the impact to our lives and our livelihood with this proposed expansion!

Sincerely,

Antone Swanda
[redacted]

cc: Senator John Barrasso
PO Box 22201
Casper WY 82602

Senator Mike Enzi
PO Box 33201
Casper WY 82602

1085

12 Nov. 2010

TO WHOM IT MAY CONCERN:

This letter is to express my opposition to the Powder River MOA Expansion. My interest in this matter comes from my back ground as a cattle ranch owner, Pilot, Chairman of the Montana Community Airport Association and citizen of Montana. I testified in both of the hearings at Colstrip Montana and do to the constraints of the system it was impossible to make it clear on all the things that you are mis-representing with inaccurate assumptions. Your input of what you consider important without consideration for the view and needs of others is shocking. Your grasp for this huge amount of airspace is unjustified considering what you actually require. I have been following this expansion proposal for a number of years and there is no need to reiterate the issues that you continue to cast aside as unimportant or negligible from your view point. You do not seem to understand the tremendous impact that you are creating upon our environment and economic lively hood here in Montana. Your disregard of personal property rights concerns me. You have come here with a presentation that is bias in nature to request far more airspace than you need and then try to hood wink the American public into thinking they are less than patriotic if they disagree with you. This behavior is far less than the standard that I would expect from our Armed Forces and Government. I think you have forgotten who and what you represent. With your less than honest presentation I am confident that the people of Montana can demonstrate that your requests for this huge airspace grab is unjustified. I'm convinced that this much airspace is not required for the training of our military at the level that you are suggesting. Rest assured that if you do not reconsider down sizing the magnitude of this expansion that you will bring resistance from all of Montana that will certainly cause you grief in this or any future expansion that you might attempt to justify. You are damaging your credibility with these kinds of presentations. The American public is fed up with this kind of power policies and I suggest that you begin here by reconsidering to down size this Powder River MOA expansion.

GE-2

PN-2

GE-3

Best Regards,

Bailey J. Egan

[redacted]

1086

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input!

DATE: Nov 6, 2010

PLEASE PRINT

I attended the meeting on the Powder River training Complex held in Ekalaka in 2008 and 2010.
We are still not convinced this is a good idea.
I wrote you before the first EIS came out. We received a copy of it and could hardly get it all read, and understood!
My Son and husband both fly. Our airstrip is just down the valley from Ekalaka. We feel these air Force planes would hinder our flying to check livestock, fences and water.
According to the maps. your Planes would be Flying (over) SO-11

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME: Betty Jo & Falcon Castleberry
ORGANIZATION: [redacted]
ADDRESS: [redacted]
CITY/STATE/ZIP: [redacted]

☒ Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format) ✓ hard copy format
☐ No, please do not include me in the mailing list for distributing the Final EIS. I do not wish to receive an EIS or further information.
I already signed up for this

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Please hand this form in at a public hearing or mail before November 15, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1086

Over Ekalaka and our airstrip. It would be a great inconvenience to have to call the Air Force when we need to check livestock in a hurry.

There are many ranchers, and other people who fly in Carter County, I'm sure it would inconvenience them also. SA-5

We are also afraid of Fires From the flares and the chaff would Pollute the landscape. SA-27

We're also afraid the Sonic Booms would Scare the livestock. BI-4

Let it be noted: We are against this proposed expansion of the Powder River Military Operations area. GE-2

We feel this is another Government "Takings" !! SO-1

Sincerely,
Betty Jo and Fulton Castleberry
[redacted]

Rec'd 11/6/2013

1087

September 17, 2010

Re: Powder River Training Complex
Environmental Impact Statement

Ruth and I attended this Environmental Impact session at the Belle Fourche Area Community Center on Wednesday, September 15th. It was a pleasure of meeting you there. Enclosed is a poem written by Ruth Rosencranz pertaining to the B1 Bomber that had crashed on our land in Montana.

Thank you for your time and have a great day.

Sincerely,
Ruth Rosencranz
Bill Rosencranz

Bill Rosencranz
Ruth Rosencranz

9-15-2010

1087

My comment regarding to the Air Force Environmental Impact Statement for the Powder River Training Complex that was held on Wednesday, September 15th, 2010 at Belle Fourche Area Community Center, Belle Fourche, SD:

The aircraft, such as the B1's and the B52's, the Air Force need to fly their missions to prepare protection for our country. We, Bill and Ruth Rosencranz are willing to let the Air Force fly over our land/ranch at anytime; we need them in the air, to protect us from foreign abroad.

GE-9

1087

SOARING THROUGH THE SKIES

The beautiful, clear, light blue southeastern Montana Skies
Grace the rolling and grassy plains below.
The animals roam with beauty,
And feed from the weathered prairies they know.

The gracious birds soar through the air,
And their companions come there to meet.
With the welcoming sight of the fast moving B-1 bomber,
Fulfilling this fresh air, with its greeting mission in flight.

Their whooshing sound that is often heard,
When quiet moments are greeting our mind.
Alerts us that our visitors have again returned,
And with a quick look, you might find.

One mid-September afternoon,
When area ranchers were involved in the basic fall chores.
A mushroom of smoke bellowed upon the sky,
And brought immediate fear into their eyes.

They rushed to their nearest equipment and phones,
And quickly, raced over the rolling plains.
To view this frightful and overwhelming event,
Of an unexpected B-1 bomber plane.

This devastating time in their lives,
Brought immediate and emergency attention to those near and far.
With love ones losing their main stay in life,
This day will never be forgotten where ever we are.

While the four men aboard perished into heaven above,
Leaving their love ones, and friends behind.
Our hearts with special and caring thoughts,
Honor these dedicated men who will never leave our minds.

Ruth Rosencranz

1088

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! DATE: 9/17/10

PLEASE PRINT

My Comment:

The aircraft, such as the B1's and the B52's the Air Force need to fly their missions to prepare protection for our country. We are willing to let the Air Force fly over our land/ranch in Montana at anytime; we need them in the air, to protect us from foreign abroad. GE-9

**** CONTINUE ON BACK FOR MORE SPACE ****

NAME: Bill or Ruth Rosencranz
ORGANIZATION:
ADDRESS: [redacted]
CITY/STATE/ZIP [redacted]

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X hard copy format
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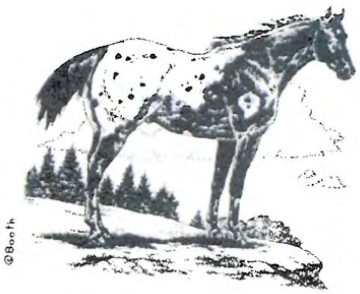
Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Sep 30, 2010

1089



12-29-10

Dear Ms DeLine,

I am writing to oppose the Powder River Training Complex proposed for areas of Wyoming, Montana & the Dakotas. It would be a major inconvenience & expense for those of us living & flying general aviation in this area. I ask that this all be considered in the decision making process. GE-2

Thank you.

Sincerely,
Chuck Ford

1090

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 11/7/10

PLEASE PRINT

I am in favor of expanding the Powder River MOA. GE-1
As an active pilot I feel we deserve a method
of notification when the airspace is active. I would be AM-12
in favor of a web site that would be real time
and would give a fair advanced notification. A [redacted]tw
hour notification would be adequate. Another option
that could work would be a beacon that is AM-8
installed in an aircraft. The Military aircrafts could
have a reciever to pick up the signals. Just my
thoughts. Have a good day.

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	Craig Appleman
ORGANIZATION:	
ADDRESS:	[redacted]
CITY/STATE/ZI	[redacted]

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HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1091

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Dear Ms. DeVine,

The proposed Powder River Training Complex flight area over North Dakota will occupy airspace I use most often while I pilot my Cessna 172, N 171VA. I fly out of Mandan ND for pure enjoyment in 171VA which is a 1979 aircraft I learned to fly in when I turned 60 years of age. This vintage and many of the 60 aircraft home based at our Mandan airport, Y19 have concerns sharing the skies with a computer pilot in the left seat while we have only basic equipment in our aircraft.

The way I understand the situation a (PRTC) training mission maybe activated at a moments notice which may make one of us violate unknowingly the airspace we are so comfortable in at the present time. The additional activity of low very big very fast aircraft may put one of us in jeopardy of loosing life limb or license. Please find a neighborhood less interested in what is going on in their airspace than your friends in Mandan, ND that love our skies just the way it is today and want to keep it that way.

AM-12
SA-7

Sincerely'
Dennis Adams
Dennis Adams

1092

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 10-22-10

PLEASE PRINT

As a landowner, livestock producer, grain farmer and pilot who has lived in the middle of the training area since it conception I would like to offer My comment. My livestock has become bored with B1's and rarely stop grazing. Conception in my livestock is in the upper 90% range and our shipping weights have increased The only time I am concerned about livestock is when I am riding a young horse. I can't imagine this expansion affecting My farming opperation. As for being BI-1

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	Duane Richards
ORGANIZATION:	
ADDRESS:	[redacted]
CITY/STATE/ZIP:	[redacted]

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129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1092

a pilot since 1978 flying a Piper Cub. I can say I have been closer than I felt comfortable but never was close to a problem and have not decreased my flying time due to military air traffic. I was one of the first volunteer firefighters to respond to the one B1 wreck in this area but considering the number of hours + flights that the air force has flown the safety rating must be very high. I am all for the expansion and look forward to seeing some different aircraft. I only wish they could stop and give me a ride. I also glad it is our military flying over and not someone else. GE-1

Thank You for the opportunity to respond

1093

Ms. Linda DeVine
Program Manager ACC/A7PS
129 Andrews St., Suite 337
Langley AFB, VA 23665

I oppose the expansion of the Powder River Airspace. Aside from interfering with aircraft in the area, the use of flairs and chaff will impact the environment as well as the livestock in the area.] GE-2

Reconsideration of this proposal is necessary. The Navy and Marine Corps have airspace stretching from California to Oregon, and the Air Force uses this space in Joint Training Operations. Continued militarization of the United States airspace is in conflict with the freedoms currently enjoyed in this nation.] PN-2

Citizens are watching the misapplication of the military while the military continues to push the edge of the envelop with respect to its limits under a Constitutional Government. Such expansion of the military, even into space, is discomforting to a populace currently experiencing what may well be an illegal war.] GE-3

Although war may be good business, it's bad policy. And a military constantly training to conduct war is bound to pursue warfare. The expansion of the Powder River Airspace for use by the military is a furtherance of continual warfare, aside from the interference civil aircraft and livestock producers will experience from the operations to be conducted in this airspace.] GE-6

I urge the rejection of this expansion.

Sincerely,

Edward A. DeCastro
[redacted]

1094

Attention:
Ms. Linda Devine
HQ ACC/A7PS
129 Andrews St. Room 337
Langley AFB, Va. 23665-2769

They will take over 35,200 square miles of our space. When asked why you are taking our space? The answer back was "***You are a non populated area and a non producing area***." {Apparently we live out here and do nothing}.
Here are some points to think about. If they have all of our air space controlled by them.

1. How will The Oil Company's and Natural Gas Companies check there pipelines? Planes fly daily checking for leaks. SA-21
2. How will the crop dusters work? They fly when the wind does not blow. They would have to wait till the Air Force is done with practice runs. SO-2
3. Those of us who have the state trapper fly for predator control, He will no longer be able to fly. SO-15
4. Ranchers who check their cattle and sheep by flying over will have to go a different route. SO-11
5. This one really worries me, before the Air Ambulance can come to your town they have to get cleared airspace from the Air Force. They say they will give it but how fast will that replay come back? SA-19
6. The Local person who owns their own aircraft, when will they be able to fly? AM-12

Yes they will leave chaff from there practice runs, no comment has been made as to taking care of the sheep producer if his wool is discounted for having chaff in it. SO-12

I am against having the training area operating in this vicinity, as it appears to have more disadvantages to our needs and way of life than there will be advantages. We produce a lot more than you realize, and having this operating in our area will not be beneficial to our output . GE-2
I am a cattle rancher, and we cannot pay the bills by doing a 40 hour week like most people do. These restrictions will just make the job we do more difficult and time consuming. LU-3

Frank Mehling
[redacted]

Nov-15-2010 02:25pm From- T-167 P.002/002 F-855 1095

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! DATE: November 15, 2010

PLEASE PRINT

Powder River complex expansion raises concern for GA operations for directly affected airports in the complex area and for the many GA aircraft transient flights. SO-10

I understand and respect the military's need to train. This proposed training complex is a massive amount of Montana airspace and it will have negative impacts on GA aviation AM-6

Please reconsider the amount of airspace to be used in the Powder River Training Complex.

Respectfully submitted
Jeanne F MacPherson

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME: Jeanne MacPherson
ORGANIZATION: Montana Pilot's Association/Safe Instructors
ADDRESS: [redacted]
CITY/STATE/ZIP: [redacted]

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Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769
Fax (757)-764-1975

email
ACC.A7PS@langley.af.mil

1096

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 11/03/2010

PLEASE PRINT

I attended the public hearing for expanding the Powder River Training Complex held October 13, 2010 at the Baker High School AV room in Baker, Montana. Through public hearing testimony, eleven or twelve local individuals from the Baker and Fallon county area voiced their concerns and opposition to this expansion. At least half of these individuals are also pilots. Probably the most important concern would involve the Air Ambulance aircraft that provides emergency medical service to eastern Montana having to obtain IFR clearance when the PRTC/MOA is in use. Other concerns mentioned related to business type private jets and other business related aircraft not being able to fly into the PRTC/MOA area due to IFR flight restrictions, economic hardship on the local FBO due to fewer business related aircraft landing at Baker Municipal Airport, local pilots being apprehensive to fly VFR into an active MOA

SA-19

SO-5

continued on back

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	Jerry Lang
ORGANIZATION:	Lang & Sons, Inc.
ADDRESS:	[redacted]
CITY/STATE/ZIP:	[redacted]

(Yes,) please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format) X hard copy format

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Langley AFB, VA 23665-2769

1096

that is frequented by large and much faster military aircraft flying at low altitudes, transient pilots stating they will not fly to an airport located within the newly expanded PRTC, the "startle" and other effects on domestic and wildlife animals, noise and annoyance issues from the military aircraft during training exercises, possible contamination issues related to the dropping of chaff, devaluation to properties and real estate underlying the proposed expansion of the PRTC, and economic impacts to the region if the expansion is approved. SO-5 SO-13 SO-1

Now, I would like to add my sentiments on the issues previously mentioned. The Air Ambulance aircraft, usually flying out of Billings, Montana, is of great concern! This aircraft provides life saving abilities to rural communities that cannot offer the medical facilities and/or doctoring capabilities provided for at the Billings hospitals. It is mentioned in the EIS Alternatives A through C that emergency -related flight activities, such as life flight, would have priority over the military training aircraft. ATC would notify the military training aircraft of the nature of the emergency, and the training aircraft would relocate or vacate the airspace. The question is "how long would it take for ATC and the training aircraft to release the MOA airspace for a life flight air ambulance to accomplish it's mission"? When the doctors make the decision to dispatch the ambulance airplane to any of the rural communities it serves due to a life threatening situation, that aircraft needs to get into the air and head towards it's destination as quickly as possible without any delays! SA-19

Eastern Montana, and western North Dakota are situated within a large and very active oil and natural gas producing field. The Baker Municipal airport is frequented regularly by company jets, and other corporate types of airplanes related to this type of resource development. It has been reported that these business aircraft are required to fly under IFR rules due to insurance requirements, and possibly a general requirement for the type of aircraft. If the PRTC expansion is authorized, this would cause a hardship for these business endeavors whereas the resource companies involved need their people to be in several locations as quickly as time will allow. SO-8

Baker Air Service, Inc. is the local FBO at the Baker Municipal Airport. This FBO relies on aviation services that includes fuel sales to incoming traffic. If business related aircraft cannot fly into the area due to IFR restrictions when the PRTC area is active, this will likely cause an economic hardship to this FBO due to lost revenue from fuel sales. This FBO also flies an extensive pipeline patrol for the energy and oil companies in this area. The weather in eastern Montana can change quickly, sometimes after the pipeline patrol pilot(s) have been in the air for awhile. Visibility problems could require the pilot(s) to initiate a GPS instrument approach for landing. How would this be possible under the "no IFR flight" in the PRTC? SO-5 SO-17 SA-3

Local pilots have expressed an apprehension about flying in the same airspace occupied by B-1 bombers and fighter aircraft. Most locals fly at 500' to 800' AGL and quite often are looking downwards instead of outwards. Try to imagine the closure rate between a light airplane versus a military jet. The Super Cub pilot will be the big loser! SA-7

Baker Municipal Airport receives a fair number of out-of-area transient pilot visitations SO-6

2

1096

per year. Some of these pilots also purchase aviation fuel, and may have Baker Air Service do maintenance on their aircraft. Some of these pilots have stated they possibly would not fly into Baker Municipal Airport in the future if the PRTC expansion takes effect. This would cause another hardship on our local FBO! SO-6

Another concern relates to the "startle effect" and spooking of domestic animals from the low flying military airplanes. I ,too, am also a rancher and farmer living east of Baker, and would be included in the newly expanded PRTC. I also own and fly a Cessna airplane, and have personally witnessed a "startle effect" on confined cattle while I flew over another rancher's corrals at 800' AGL. Another local rancher, who also gave testimony during the Baker meeting, spoke of the problems that low flying military jets created for his ranching activities during ground-based target training exercises occurring in the 1980s. He reported that spooked animals ran through barbed wire fences resulting not only in damage to the fence, but also injury to the animals. These animals also possess keen peripheral vision. And, this rancher also gave indication that the pilots were flying much closer to the ground than the allowable 500'. Airplanes are inherently noisy, and the larger and more powerful they are the more noise they create. Atmospheric conditions, i.e. cold and/or moist air, seem to increase the noise levels. BI-4

The local population may become quite annoyed at certain times of the day , especially after sunset, if they are able to hear one or several military aircraft in the PRTC practice area. This, in my opinion, could be very bothersome during a person's sleep period, especially if a sonic boom took place during this sleep period. NO-5

Another issue brought to light at this meeting was a concern over possible contamination from the dropping of chaff to the wool that is shorn from sheep. Our ranch does not raise sheep, but when considered, I would agree that this contamination issue is possible. No one person would be able to say where the chaff that is dropped would finally land, considering the direction and velocity of the winds. I do know of some ranchers in the area that raise both cattle and sheep. SO-16

Property devaluation for lands lying within and beneath the newly expanded PRTC was another concern that was mentioned. To the best of my knowledge, this issue has not been tested in our immediate area, and would be better answered by a property owner in the existing MOA. The EIS states that expected property devaluation would be minimal. A portion of our property, which lies within a very active oil and gas field, has been professionally appraised for surface damage, and the resulting devaluation was minimal. Oil and gas production, in my opinion, will visibly damage the property much more than air traffic above the property will. SO-1

Negative economic impacts from the expansion of the PRTC could result from the decrease of air travel in the area, hardships to the local FBO, conception problems in domestic livestock, possible contamination to fleece and wool from the dropping of chaff, and the "startle effect" on confined livestock, which could result in a loss of weight gain. SO-16 SO-13

3

1096

In concluding opinions and suggestive viewpoints, I would consider Alternatives A, B, and C to have negative impacts on the expansion region as a whole. It has been suggested at a previous public hearing to move the entire training fleet of aircraft to Nevada (NTTR), but the Air Force replied THAT airspace is already too congested. So, why not transport a certain number of training pilots to these other training areas on a rotation basis, and utilize the aircraft that is already stationed there? GE-2 PN-2

If the Air Force absolutely believes it needs the expanded PRTC to train in, I strongly believe and suggest modifications to the expansion would be needed. One suggestion would be to continue using the existing Powder River MOA for low altitude (500' AGL), and the newly expanded airspace for medium to high altitude training, with the floor not lower than a prescribed height of maybe 8,000' AGL or 10,000' AGL. This would be somewhat similar to the outer limits of FAA Class B airspace, and would allow for IFR flights to continue below the PRTC expansion. DO-4

While the No-Action Alternative is most appealing, many residents, as do I, have the feeling that the Air Force is going to do what they want regardless of the feelings of the local population. I have not witnessed any willingness by the Air Force to negotiate a plan for the PRTC expansion that would be more consensual for both the local residents and the USAF. NP-1

The feeling of apprehension the locals have relates back to observations and personal experiences from earlier ground-based target training when a target facility was installed, probably in the 1980s, just a short distance of three miles northeast of the Baker Municipal Airport. These training routes passed over many rural residential areas; and several local residents witnessed F-111 and B-52 aircraft flying at times much lower than the allowable 500' limit. This training route passed 1/2 to 1-1/2 miles west of our farm. While my father was tilling fallow ground during one of these target exercises, an F-111 bomber "buzzed" his tractor by banking left then right at a very low altitude to act as tractor and implement were an obstruction in the bomber's path. When the bomber initiated a fast climb maneuver, my father said the vortices from the wings swirled the dust in the farm ground. The bomber pilot also did a "wing wave" as he/they departed to the north. My father was not amused!

I have in my possession a short video clip of a B-52 and F-111 both making low passes over the aforementioned target base facility northeast of Baker, MT. This clearly shows these two aircraft flying very close to the ground, and exhibiting acrobatic and somewhat reckless maneuvers by the F-111 pilot. This video also shows the wingtip vortices creating swirling dust clouds by the close proximity of the aircraft to the ground. If the EIS states a flight limit of 500' AGL, what will keep these pilots from flying lower than 500' AGL? It is widely speculated that the crash of the B-1 in the 1990s in southeast Montana was caused by some part of the aircraft, maybe a wing, striking the earth during a banking turn. Only those lost souls that were on that B-1 know what the actual cause was. At any rate, this aircraft was most likely flying much lower than 500' AGL. AM-14

4

1096

In closing, and I myself being a licensed pilot, flight training adds proficiency to a pilot's skills. I just believe this expansion, as submitted, would be too detrimental for the residents living within the shadow of the PRTC. As I mentioned previously, the video clip showing the low-flying B-52 and F-111 over the ground-based target facility northeast of Baker, MT clearly shows a probable "startle" effect for unassuming people and animals. I would like to show this video to any person(s) who has not had the opportunity to witness the size, speed, effects of wingtip vortices, and problems these low flying aircraft could create.

BI-4

SO-2

I truly believe the USAF needs to re-evaluate this proposed expansion, and try working with the residents living within the PRTC to reach a mutual agreement.

GE-11

5

1097

October 13, 2010

Ms. Linda DeVine
HQ ACC/ A7PS
129 Andrews St, Room 337
Langley AFB, VA 23665-2769

Ms. DeVine,

My son and daughter-in-law attended the public hearing in Broadus, MT, October 12, regarding the proposed fly zone expansion. From the presentation they learned that you will not be using the flares mentioned on your website during county-imposed burn bans. The fire danger is a major concern for me as a rancher in northeast Wyoming. We are further pleased to hear that the chaff used in your training exercises quickly degrades. We work hard to keep our property clean and appreciate the fact you understand that. The sonic boom noise is a bit of an issue for us. The animals of the open prairie will most likely get used to it and most times have room to run if it does scare them. I'm sure occasionally the sound will push them through a fence. I guess we'll have to deal with that. It would be deeply appreciated if your pilots could avoid the flying near the buildings because it will push confined livestock into corners of steel pens and occasionally kill them. We experienced this when there were so many flights back in the early 80s. Is it possible for them to stay away from the buildings, possibly make it part of their training to avoid inhabited areas by a mile and a half or so, especially when breaking the sound barrier? Our coordinates are: N 44' 57.49 W 104' 46.46.

I truly support and appreciate a strong military and want to make it work. I recently watched a series of documentaries on World War II and the Nazis. It makes a person incredibly grateful to live in the United States. We don't want to impede the air force's progress but we do have to make a living and be able to sleep at night.

BI-4

SO-13

GE-9

GE-11

Sincerely,

Jim D. Schlosser
[redacted]

1098

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! DATE: 10/25/10

PLEASE PRINT

I own & operate a 10,000 acre cattle ranch in proposed area PR-1A/B MOA. Am an aircraft owner doing mostly lower level flying in the area. I see problems coming for local ranchers in this area if the proposal is enacted. Specifically livestock harassment, causing possible property damage or human or livestock injury. Also devaluing of land values, due to noise etc. Pollution from discarded chaff & flares. I regard this as a taking of our property rights. Let the infringing take place in the established areas Nevada etc. I attended the Sheridan WY meeting 10/19/10. No one there could give an answer about the amount of chaff that would fall on our lands. SO-13 SO-1 SA-27 PN-2 SA-28

Over

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	Jim Hamilton
ORGANIZATION:	Private Pilot & Rancher
ADDRESS:	[redacted]
CITY/STATE/ZIP:	[redacted]

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Please hand this form in at a public hearing or mail before November 15, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1098

I am in favor of a strong well trained Air Force and foresee the need for it considering the state of the world today. However I believe we have adequate training areas, in less populated areas of the USA.

1099

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! DATE: 11/06/10

PLEASE PRINT

The Low Flight Activity causes heightened excitability of Live stock especially cattle and horses. Therefore it would certainly benefit ranchers if this could be avoided during the months when livestock are concentrated or confined when risk of injury or damage could occur if they were "spooked".

For most ranchers in this area that would be in periods of calving (APR-MAY) and weaning (OCT-NOV) when livestock are most likely to be kept in small lots or corrals.

Your consideration of this situation would certainly make operating in these Low Flight zones more palatable. +!

SO-13

**** CONTINUE ON BACK FOR MORE SPACE ****

NAME: Jim Johnstone
ORGANIZATION: Owner C Lazy 3 Ranch
ADDRESS: [redacted]
CITY/STA[redacted]

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Please hand this form in at a public hearing or mail before November 15, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1100

Ms. Linda Devine, Program Manager
HQ ACC/A7PS
129 Andrews Street Suite 337
Langley AFB, VA 23665-2769

Dear Ms. Devine

I commented orally on the proposed Powder River MOA expansion at the Buffalo SD hearing on September 17, 2010 and want to follow up with written comments.

Effects on local civilian aviation:

On page ES-11 of the executive summary, the DEIS estimates that 129 civil operations could be impacted when Alternative A MOA's are activated Monday through Thursday an approximately one third that number on Friday morning. First, I think you need to look at the number of planes that FAA has registered in counties under the Alternative A proposed expansion. I have a list that shows well over three hundred airplanes registered to individuals in just the South Dakota counties under the proposed expansion. I personally know of 18 airplanes, almost all based on ranches, in my county of Harding, South Dakota. When ranchers like myself fly our planes to check pastures and livestock, we do not file flight plans with Flight Service because they are not geared to follow local flights below five hundred feet AGL that are checking livestock in the south pasture of some ones ranch. Therefore, I do not believe you are picking up all of the civilian air traffic in Harding County. I typically fly two hours every other morning all spring summer and fall. Like crop sprayers and pipeline check flights, ranch pilots are looking at the ground and typically fly under 500 feet AGL to avoid traffic which brings us to the proposed 500 ft floor of Alternative A. I learned when I was a student pilot, that wing vortices from heavy aircraft go down 900 feet below the aircrafts flight elevation and travel out in a forty five degree angle somewhere around twenty knots. If I am flying my 780 pound Piper PA-11 at 300 feet AGL, over my property looking for sheep, checking fences etc., and a B1 flies over me at 500 feet, the turbulence could cause me to crash. Approximately 19 years ago I was crossing a low level military training route north of Belle Fourche, Butte County SD in a BC 12D Taylorcraft. I was really scanning because I knew the route could be active. At the last minute, I looked back behind and saw a B1, wings swept back, at my elevation, less that one quarter of a mile away, turning toward and bearing right down on me. I dove for the ground and flew out at a 45 degree angle and fortunately, did not get in any turbulence. I don't believe they ever saw me. This MTR is clearly marked on sectional charts. It was my responsibility to watch for B1's and I was. Here is the point. A B1 with wings swept back coming toward you at low altitude several miles away does not have a large profile and is not easy to spot coming directly toward you even with the most vigilant scanning. At their speed of travel, they close on a small plane traveling at 70 knots before you can them coming. A small fabric plane is very difficult for them to see. For these reasons, the proposed 500 ft MOA floor is not safe for civil aviators or military flights and must be raised to two thousand feet because of the wing vortices.

AM-4

SA-9

SA-7

1100

Specific Impacts on Sheep Ranchers

Northwestern South Dakota and southeastern Montana is major sheep producing areas. There are 30,000 plus sheep each in Butte and Harding counties and around 18,000 sheep in Perkins county just in South Dakota. Center of the Nation Wool in Belle Fourche SD is a major wool shipping point in the United States. I know you have received testimony from Larry Praeger, manager of Center of the Nation Wool, about the importance of wool to the military coming from the area underlying the Alternative A proposed expansion. My 2010 wool production went into the military contract. The first point is: when chaff is dropped over pastures with sheep in them, will it contaminate wool on the sheep. This should be determined prior to any chaff deployment. My west ranch is under the current Powder River MOA, but we have, to my knowledge, not had chaff deployment. SO-16

The second point is the ability to conduct timely predator control with permitted airplanes under the MOA. I am permitted by South Dakota to conduct predator control with my airplane and work with my neighbor on the adjoining ranch that also runs sheep and is also permitted to do aerial hunting. We have been able to minimize sheep loss to predators on our ranches. Others are not so fortunate. I know of one ranch in Harding County that has lost 100 lambs this summer. If I start losing sheep to predators, and military flights down to 500 ft. in the proposed Powder River MOA expansion stop me from using my airplane to control predators, I will have to sell my sheep period. I cannot wait a few days and while continuing to lose animals to predators. This is true for all the sheep producers that I have talked to. SO-15

Flare and Chaff Deployment

In addition to potential contamination of wool, dropping chaff on pastures with sheep lambing and cows calving in the spring is not conducive to good animal husbandry. If the contamination question can be answered, chaff deployment should be done only in the winter time to minimize impact on young lambs and calves. BI-5

Flares are more problematic. Page ES 15 of the executive summary states that every three years a dud flare could fall and there is a slight potential for increased fire risk if flares are accidentally deployed substantially below authorized altitudes. The October 3rd issue of the Rapid City Journal reported that in 2007 a flare was accidentally deployed too low 25 miles north of Atlantic City NJ. at the Warren Grove Gunnery Range. 6000 people were evacuated, 17,000 acres burned and 13 homes were destroyed or damaged. This is what we are worried about. SA-5

If this happened on my ranch, who pays for the damage, and where do I move my livestock so they have grass to eat and who helps me do it? SA-6

There is a natural gas field on part of my ranch and parts of neighboring ranches in southwestern Harding County. There is another natural gas field southwest of Buffalo SD. From Buffalo SD north to Rhame ND and Bowman ND there is continuous oil field. SA-12

To my knowledge, there is no firefighting equipment capable of handling gas or oil field fires in Harding County should a flare start a fire like the New Jersey event. If flares are used, they should only be deployed in the winter to minimize fire danger and impacts on young livestock. SA-13

Finally, how do you determine that this fire risk is acceptable to people living in rural areas, but not acceptable to people in urban areas?

1100

Impacts on Sage Grouse

Since your scoping meetings were conducted, the US Fish and Wildlife Service listed the Sage Grouse as "warranted but precluded" under the Endangered Species Act. This is a first step to an endangered species listing. Marion Adkins, BLM area manager for South Dakota, was quoted in the Belle Fourche SD Butte County Post, saying that there are no studies on the effect of noise on Sage Grouse. I don't know if noise affects Sage Grouse or not. You, however, need to know before Alternative A is implemented. If noise, chaff, flares, or any other activity related to low flying military aircraft impacts Sage Grouse, the Air Force can stop flying. We cannot just walk away from our homes and ranches. We would be left with increased costs modifying our ranching practices to help a species that may be endangered from activity that we have had nothing to do with and no control over.

BI-3

SO-1

Thank you for the opportunity to submit comments on the Powder River MOA Draft Environmental Impact Statement.

Sincerely:

Larry Nelson
[redacted]

1101

28 Dec 2010

Ms. Linda DeVine
Program Manager ACC/A7PS
129 Andrews St., Suite 337
Langley AFB, VA 23665

Dear: Ms. DeVine

Please accept my opposition to the proposed Powder River airspace MOA expansion.

The expansion is not necessary. Dropping of flares is a fire hazard in the West. Dispensing metallic chaff is old technology and is a hazard to other aircraft and wildlife besides polluting the environment. Is the Air Force going to send out teams to pick-up the chaff and spent flare casings of different jurisdictions without leaving the land damaged? I think not.

PN-2
PN-3
SA-5
SO-12

The Powder River MOA is an artificial block to low altitude general aviation air traffic flying North and South along the front range because of the higher altitudes to the West. Expanding the MOA four fold will cause deviations and increased costs for those operators.

SO-7

In this day and age and what is on the horizon of austerity and cut-backs, is the Air Force willing to take on the additional liability costs and operating costs of four times the area?

SO-14

This proposal is a plain and simple self promotional activity for a Major to get promoted to Lt. Colonel etc. Have seen it happen many times in my civil service career with the Air Force.

I support AOPA's position and as a member.

Yours truly

Lawrence O. La Beau

Lawrence O. La Beau
[redacted]

1102

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! DATE: 11/5/10

PLEASE PRINT

As a rancher residing below the proposed PR-1A MOA, I'm extremely concerned of the mid-air potential. We have a Super Cub that we fly daily for approximately nine months of the year. We fly @ a 500'-1000' AGL over terrain that has an average relief of about the same. That places us in a quite vulnerable regime concentrating of terrain avoidance at the expense of the safe & sound environment. When in the bottom of a valley & flow up over the top of a ridge, I'll have little if any opportunity to see and avoid. SA-1

I'm also concerned about the flare hazard times. As an ex-fighter pilot, who dropped many flares, I'm (over) SA-5

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	LEE HOWARD
ORGANIZATION:	SELF
ADDRESS:	[redacted]
CITY/STATE/ZIP:	[redacted]

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Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1102

positive that some don't burn out as expected. Your agreement to discontinue the use of flares during peak fire season confirms my belief that you, too, expect an occasional flare/ground contact. Just last Oct (2009) a neighbor burned off 640 acres with a slash burn that got away. October certainly isn't peak fire season but grass still burns. I lost a half section of grass in April a few years ago by burning dead spears with a skiff of snow on the ground. My point is: Our grass will burn @ almost any time of the year if we have little or no snow cover. Your flares are unlikely going to result in huge fires. SA-5

I suggest that if you're going to expand the MOA, that you use a floor of at least 2000' AGL and you establish a minimum altitude of 10,000' AGL for dispensing flares.

On another note, since the Mont ANG is transitioning to the airlift mission, I suggest that you utilize the HAYES MOA which ~~[redacted]~~ already exists. PN-2

Jim Howard

ec'd 11/15/2010

1103

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 10-25-2010

PLEASE PRINT

We are Concerned with The expansion of The Powder River Training Complex for a Couple of reasons. The area North of Lemmon S.D. is where OUR Farm/Ranch is Located is in the Proposed training area. I grew up on this 101 year old Family homestead and remember when this area was part of the Fly zone before. Many Times we were supprised to the point of Shaking when Operating machinery or Concentrating on our work when with no advance notice you would see a Shadow or worse yet hear a Loud noise From a low Flying air craft and nearly scare you to death. I did not Like it then and don't think I would Like it now. Beyond personally being Surprised NO-2

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME: Loran Thom

ORGANIZATION:

ADDRESS: [redacted]

[redacted]

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Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

RECD 11/4/2010

1103

To the point of shaking, I also have livestock on our Farm/Ranch. Both myself and my wife have off Farm/Ranch employment that takes us away during the day. Unlike in the 1980's when they flew this area, someone was always here for the most part to round up spooked calves and cows after they were surprised by a low flying aircraft or from the noise. BI-4

Today because we have to be gone during the day no one will be around during the day to gather cattle and settle them back down as well as starting to repair fences and etc that got broken when they got surprised + spooked. SO-13

I am very careful with my livestock and if this is the way it will be I won't take the chance of this happening when we're not here to deal with hurt animals or worse. We will have to probably sell out our herd.

Beyond the concern for our animals we both have very busy weeks at work and very much look forward to coming home nights and weekends to enjoy the peace and quiet of this remote butte country. I can't see how all of this noise and surprise tension will be good for our lifestyle. LU-2

My other concern is for the value going forward of ours and many other "hobby Farm/Ranches" in this area when we can no longer offer the value of peace and quiet to enjoy our animals. SO-1

Thank you for allowing me this comment.

Sincerely

Tom Thom

1104

26 Apr 2010

Colonel Jeffrey B. Taliaferro
Commander, 28th Bomb Wing
1958 Scott Drive, Suite 1
Ellsworth AFB SD 57706-4710

Mr. J. Marvin Kammerer
[redacted]

Dear Mr. Kammerer

After our meeting last month, we had our staff investigate some of the specific concerns you and your neighbors shared with me. Specifically, that there were dangerous chemicals (perchlorates) in chaff/flare and that the grass heights around the field were a fire hazard. I've included some of the detailed work since I expect you'll be interested, but here's the executive summary:

1) Chaff has been tested extensively to ensure it doesn't have a negative impact on humans or cattle. We've attached a three page analysis of our research. If you have any contradictory evidence/studies that we couldn't find we'd be happy to review it.

2) Air Force guidance requires us to keep the grass near the airfield between 7 and 14 inches high to try and protect the area while also discouraging birds and other animals from being in the area. When aircraft run into animals either on the runway or in the air it can be catastrophic. This is also why Air Force guidance directs us not to have cattle grazing near the airfield.

3) The explosives in flares, just like fireworks or a road marker flare, do contain a minute amount of perchlorates. However, studies on the subject concluded they were "not considered a concern," to the environment in the same way fireworks or road flares are not a concern.

I apologize for not being able to provide these answers at our meeting, but very much appreciate gaining a better understanding of your concerns. If these answers do not sufficiently answer your questions, please get back to us with any further questions.

Thanks

JEFFREY B. TALIAFERRO, Colonel, USAF

I Am A member

1104

South Dakota Stockgrower's resolution opposing the Powder River training expansion

Whereas, The Air Force has proposed expanding The current Powder River training complex in Montana, South Dakota and Wyoming from 5,900 squares miles to 37,000 square miles in Montana, North Dakota, South Dakota, and Montana, and

Whereas, All areas will include flights, at 500 feet above ground level, and higher, with afterburners applied in every mission, and

Whereas, Magnesium flares, which burn at 2000 degrees, and chaff, which is extremely fine aluminum and fiberglass, will be discharged in all areas of the MOA, and

Whereas, Supersonic flight will be used in all areas of the MOA, even though civil aviation has been prohibited from flying at supersonic speeds over the mainland since the mid 1970's because sonic booms caused glass and structural damage, and

Whereas, Large force maneuvers, including forces from other countries, will train in the MOA on a quarterly basis, and

whereas, Low-level flights and sonic booms have been known to cause animals to bolt, stampede, throw riders, and cause injury to themselves, humans, and fences, and

Whereas, Low-level flights would prohibit farmers from using crop dusters during the morning and evening hours (when nearly all spraying must be done), and wing vortices could deflect spray up to 1000 feet, making chemical application with ground rigs dangerous, and

Whereas, Significant impacts on mining could result from electronics emissions inadvertently setting off mining or construction explosions, and

Whereas, Low level and supersonic flights have the potential to disturb loose soils on slopes, as is common in surface mining, and

Whereas, The Powder River Basin has 58% of the known coal reserves in the U.S., and

Whereas, Commercial air traffic will not be routed through an active MOA, and will face re-routes or an average wait of 2 hours on the ground, and

Whereas, Several hundred commercial air carrier flights use the proposed MOA airspace on a daily basis, and

1104

Whereas, This area is the severe weather re-route airspace for major airports throughout the Great Plains and Ohio Valley, and

Whereas, Inability to use this air space for the 80 to 100 days that it is now used in bad weather would create backlogs of aircraft waiting to depart at airports including, but not limited to: Seattle, Oakland, Kansas City, Chicago, Cleveland, Washington D.C., New York, Minneapolis, Chicago, and Detroit, and

Whereas, Small airports, as well as private airstrips, will be shut down during the usual Monday through Friday training and the Quarterly, weekend training sessions, and

Whereas, Delays and extra fuel used routing around the airspace will put a significant burden on already stressed commercial airlines, and

Whereas, The primary reason given by Ellsworth for needing this 4-state area, was fuel saving, not having to fly their 24 B-1s to 'remote' areas like Idaho or Nevada, and

Whereas, No offer of payment to land owners, or other impacted industries has been made, and

Whereas, Damage claims are supposed to be sent to the Ellsworth Public Affairs office, which has been ineffective in the past,

Therefore be it resolved, That the South Dakota Stockgrowers opposes expanding the Powder River Training Complex, or adding flares and chaff and supersonic flight in the current Powder River MOA, and] GE-2

Be it further resolved, That if this expansion is approved, damage claims be handled on a local level by elected officials of each county, city, or township, and] SO-12

Be it further resolved, That affected property owners be fairly compensated for the taking of their airspace.] SO-1

Pay Attention to Page 3.
Highlighted with yellow

1104

RR-188 B-1 Training Chaff & USAF Self Protection Flares

Source Document: Environmental Effects of Self-Protection Chaff and Flares, USAF Air Combat Command, Final Report August 1997

Q: Chemical composition of RR-188, training chaff and how does it decompose? Are there any hazards?

Composition

The Chemical composition of RR-188 training chaff is "aluminum-coated glass fibers". "The glass fiber dipoles are generally 1 mil (25.4 microns) in diameter, including the aluminum coating which is 0.12 mil thick" (p.3-3). In other words, each single piece of chaff is smaller than a single strand of (short length) human hair. Visually, it may look like tufts of animal hair on vegetation (if clumps—very unlikely).

The chaff is coated with 1 percent solution of NeoFat 18 (90 percent stearic acid and 10 percent palmitic acid) with naphtha as the solute. Naphtha is driven off during the curing process.

Stearic Acid is a naturally-occurring saturated fatty acid used as an emulsifier and emollient. It's found in many saturated oils like palmand coconut, but it can also be derived from animal sources...like cow fat or pig stomach. So found in vegetable oils and as a glyceride in animal fat. Most sources of stearic acid are from animal sources.

"Potential exposure to wildlife may primarily occur through ingestion; however, the quantities required to produce toxic effects are relatively high for most species. Literature review reveals that probable lethal dose (LD) for humans would be consumption of more than 2.2 pounds of stearic acid at any one time by an individual weighing 150 pounds" (3-12). A bundle of chaff weighs about 3.4 ounces and of this about 10 grams is stearic acid. Based on this is, it would take the consumption of 100 bundles of chaff to achieve a lethal dose of stearic acid.

> Note: Chaff made 10 years ago contained lead. No chaff used or manufactured today contains lead. "The specification for that chaff is no longer in effect, and Tracor has indicated that lead has not been used for over 10 years (Creel, personal communication, 1993)" (P.3-3).

The other source of chaff debris can be associated with how it is dispensed. The B-1 uses a pyrotechnic ejection and retains the tube that contains the RR-188 chaff. Debris is only from two 1 inch square pieces of plastic 1/8 inch thick (the piston and the end cap) and a felt spacer. Other aircraft may use a cardboard material, made from recycled kraft paper and is biodegradable.

11042

B-52s still use variations of RR-112 (RR-112A/AL and RR-112/AL) chaff. The A/AL is aluminum coated glass and the AL is aluminum foil.

Toxicity

"Based on reviews of numerous toxicological studies, the principal components of chaff (aluminum, silica glass fibers, and stearic acid) will not pose an adverse impact to human and environmental health". This is based on general toxicity of above elements and the dispersion patterns of chaff. The Toxicology of chaff is sourced from the U.S. EPA's TOMES database.

Silica is an abundant compound found in nature that is prevalent in soil, rocks, and sand. Silica is practically nontoxic if ingested. Other trace elements that can be found in the aluminum coating are: silicon, iron, copper, manganese, magnesium, zinc, vanadium, and titanium. Iron, like Silicon, are abundantly found in nature. Of the other trace elements, OSHA and CERCLA have reportable threshold standards of 5,000 pounds and 1,000 pounds for elements such as Copper and Zinc. However, these amounts are found only as trace elements in Chaff. At a range such as the Nellis Test and Training Range (NTTR) where Chaff is used on a much more frequent basis in comparison to the PRTC, "the total weight associated with annual chaff utilization would be about 20 lbs for each element" (p.3-11).

Safety

There are no documented incidences of injury due to falling chaff debris. Debris consists of chaff itself, possible cardboard (B-52) flat plastic package stiffeners, a small plastic piston, and a small plastic end cap. Under normal circumstances, all of those elements weigh so little, or create so much drag in comparison to their weight, that no injury would be anticipated if a person ever was in contact during fall.

If in the most remote likelihood that an unopened bundle of B-52 chaff were to impact a person it would be comparable to "an eight-pound sledge hammer dropped from a height of approximately 10 inches".

"Probability of occurrence is 1 in 63,000 or 1 in 42 years".

Soil Chemistry

There are no existing reports that provide substantive data regarding effects of chaff on soil. Some studies have inferred the potential for impacts based on chaff's elements, but there is no systematic analysis of chemical changes in the soil. Recall, the major components of chaff, silica, aluminum, and stearic acid, are generally prevalent in the environment. Aluminum is the 3rd most abundant element in the earth's crust. The solubility of aluminum is greater in acidic and highly alkaline soils than in neutral pH conditions. Stearic acid is an animal fat that

1104
3

degrades when exposed to light and air. Dissolution will be greatest where water content is high. Thus, weathering will be more rapid in wet, acidic environments than in dry, neutral and alkaline environments.

Livestock Studies

Several experiments have been conducted regarding ingestion of chaff by livestock but that essentially no field data have been collected to describe exposure of wildlife to chaff. Cattle and goats apparently avoided eating clumps of chaff placed in their feed. Calves fed chaff in dry meal would consume chaff only when it was coated with molasses and thoroughly mixed into the meal (Barret and Mackay 1972). A similar study using cattle and goats found that the animals avoided consuming intact chaff (Taylor 1983). No evidence of digestive disturbance or other clinical symptoms were observed in calves fed chaff (Barret and MacKay 1971). The experimental and control groups gained weight at the same rate, and blood samples showed no deviation from normal. Postmortem examinations showed no lesions of pathological significance that could be attributed to chaff.

Overall

Chaff contains naturally occurring elements in very low concentrations and the dispersion rates of chaff falling to the earth further mitigate the effects. Decomposition of chaff depends on the environmental conditions. In aquatic environments, chaff is expected to have no adverse impacts on water chemistry or aquatic life. On land, chaff would be subject to disintegration due to abrasion from surface features in arid areas and chemical processes in wet, acidic environments. In research studies, cattle avoid eating chaff and if ingested, chaff does not contain concentrated amounts of elements that could be harmful. To obtain a toxic intake amount is unrealistic in real-world conditions (reference 150 pound person consuming 2.2 pounds of chaff). In arid areas, the slow chemical decomposition is not expected to have an adverse effect. In wet climates decomposition is more rapid. Regardless, the constituents of chaff and chaff debris are either inert or already prevalent in the environment.

USAF Self Protection Flares

United States Air Force aircraft, such as the B-1, use self-protection flares to decoy Infra-red seeking missiles away. There are several different variants of self-protection flares used by the USAF to include, but not limited to: ALA-17 (B-52), MJU-7 B (F-16, C-130), MJU-7A B (F-15, F-16, & C-130), M-206 (A-10, AC-130, C-17, & F-16), MJU-10 B (F-15) and MJU-23 B (B-1). The MJU-23 B weighs approximately 43 oz.

Rec'd 11/22/2010

1104

P.S-
Dumping chaff into good grass is like urinating in your drinking water!
unless covered with molasses
They won't eat it!

SA-14
SA-27

1104

More opposing info
to Powder River M.O.A.

Yours
Marvin Kammerer

Signed
Marvin Kammerer

[redacted]

1105

[redacted]

Powder River Military Training Complex
Reply to NEPA impact statement.

To whom it may concern:

"Please submit the following Paper on "Air traffic noise effects on the heart." you might also read the Paper on military spending. SA-22

Consider, seriously the economic ~~and~~ And environmentaly effect on An already Struggling Culture The Provides us with food And fiber that we All need for nourishment + trade. SO-22

We need to keep The livestock + grain raisers Kids staying home after schooling to do what only they know how To Provide America with its food Sustennance. LU-3

We deserve far better than what the Powder River M.O.A. offers. Lets quit ~~of~~ feeding The Tiger. GE-3

Signed- Nov 13, 2010 Yours in Trust
travis Kammerer Marvin Kammerer

[redacted]

1105

Is living under a flight path bad for the heart?

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NEW YORK (Reuters Health) - Living with airplanes regularly thundering over your head could risk the healthy pumping of your heart, suggests a new Swiss study.

Based on 4.6 million adults across Switzerland, researchers found that dying from a heart attack was more common with increased exposure to aircraft noise.

"The effect was especially evident for people who were exposed to really high levels of noise, and was dependent on how long those people had lived in the noisy place," researcher Matthias Egger of the University of Bern, told Reuters Health.

This isn't the first time that noise has been linked to negative health effects, including cardiovascular risks. But it could be novel progress in determining whether the sound is

Davies pointed to two possible pathways by which noise could harm the body. The first is the well-known fight-or-flight response. "You hear a really loud noise and the first thing you do is jump into the air, literally startled," he told Reuters Health. "We're hard-wired for this response, and it's not something you can easily turn off."

The other path is more indirect: annoyance. Even if something isn't that loud or disturbing, such as a neighbor's radio, it can become really bothersome if they don't turn it off, he said.

At the end of both routes is the classic stress response, Davies added, which includes a rise in heart rate and blood pressure. Although usually not a problem when it's experienced in short, infrequent bursts, this kind of response can lead to significant wear and tear if it continues daily -- as it might if you live on a busy road or under a flight path.

Of course, road and air traffic produce different noise patterns that might not be easily comparable. Road traffic noise is much more constant and arguably easier to get used to than the startling roar of a plane taking off or landing, suggested Egger.

"Noise probably does have effects on health and it is important that we gain a better understanding of these," he said. "Our study can't prove a causal relationship, or be directly generalized. We need further studies."

An earlier study looking at noise exposure during sleep revealed a significant increase in blood pressure from aircraft noise, road traffic and other indoor sources such as snoring.

"This implies that it is the noise itself regardless of the sources that affects the blood pressure," Jenny Selander of the Karolinska Institute in Stockholm, Sweden, and who was not involved in the study, told Reuters Health in an e-mail. "I believe that applying these findings to other traffic-related noise sources would be fine."

As the evidence builds, the researchers suggest that further measures should be added to protect people. Sound barriers, controlling the speed and volume of traffic, and better home insulation can all help to reduce exposures, said Egger.

Pentagon Spending More Than All 50 States Combined

By Sherwood Ross

The U.S. spends more for war annually than all state governments combined spend for the health, education, welfare and safety of 308 million Americans.

Joseph Henchman, director of state projects for the Tax Foundation of Washington, D.C., says the states collected a total of $781 billion in taxes in 2008.

For a rough comparison, the total budget for what the Pentagon calls "defense" in fiscal year 2010 will be at least $880 billion and could possibly top $1 trillion. That's more than all the state governments collect.

Henchman says all American local governments combined (cities, counties, etc.) collect about $500 billion in taxes. Add that to total state tax take and you get over $1.3 trillion. This means Uncle Sam's Pentagon is sopping up nearly as much money as all state, county, city and other governmental units spend to run the country.

If the Pentagon figure of $1 trillion is somewhat less than all other taxing authorities, keep in mind the FBI, the various intelligence agencies, the VA and the National Institutes of Health (biological warfare) are also spending on war-related activities.

A question that describes the above and answers itself is: In what area can the federal government operate where states and cities cannot tread? The answer is: foreign affairs – raising armies, fighting needless wars, conducting diplomacy etc. And so Uncle Sam keeps enlarging this area. His emphasis is not on diplomacy, either.

For every buck spent by the State Department, which gets some $50 billion a year, the Pentagon spends $20. As for the Peace Corps, its budget is a paltry $375 million – hardly enough to keep the Pentagon elephant in peanuts.

"The total budget for what the Pentagon calls 'defense" in fiscal year 2010 will be at least $880 billion and could top $1 trillion."

Nobel Prize economist Joseph Stiglitz and finance authority Linda Bilmes write in their *The Three Trillion Dollar War: The True Cost of the Iraq Conflict*, "defense spending has been growing as a percentage of discretionary funding (money that is not required to be spent on entitlements like Social Security), from 48 percent in 2000 to 51 percent today. That means that our defense needs are gobbling up a larger share of taxpayers' money than ever before."

And they add, "The Pentagon's budget has increased by more than $600 billion, cumulatively, since we invaded Iraq." With its 1,000 bases in the U.S. and another 800 bases globally, the U.S. truly has become a warfare state. Today, military-related products account to about one-fourth of total U.S. GDP. This includes 10,000 nuclear weapons. Indeed, the U.S. has lavished $5.5 trillion just on nukes over the past 70 years.

No other nation has anything remotely like this menacing global presence. The Pentagon strengthens its grip by running joint "training" exercises with the military of 110 other nations, including outright dictatorships that suppress internal unrest.

The U.S. spends more on weaponry than the next dozen nations combined and is by far the No. 1 world arms peddler. "The government employs some 6,500 people just to coordinate and administer its arms sales program in conjunction with senior officials at American embassies around the world, who spend most of their 'diplomatic' careers working as arms salesmen," writes Chalmers Johnson in *Blowback: The Costs and Consequences of American Empire*.

Johnson goes on to say the U.S. military establishment today is "close to being beyond civilian control" and that despite its ability to "deliver death and destruction to any target on Earth and expect little in the way of retaliation" it demands more and newer equipment "while the Pentagon now more or less sets its own agenda" and "monopolizes the formulation and conduct of American foreign policy."

How long will it be before this tyrannical, anti-democratic colossus that is sucking up as much money for war as all states, counties and cities spend on peace – and which straddles the globe, boosts dictators and beats the war drums – turns on its own people" ★

Sherwood Ross is a public relations executive in Miami and has written for many ladies and arts services.

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1106

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** November 3, 2010

PLEASE PRINT

I am so against the proposed Powder River Training Complex expanding their area over Southeastern Montana in Carter County. We have lived here all of our lives. We didn't stay here because of making lots of money. We stayed because of the isolation and the peacefulness. IT is So quiet here. I can't imagine how much this country is going to change. We sit for hours and just watch the wildlife. Our weather is some of the most extreme in the United States. A prairie fire came within 200 yards of our home because of high winds Knocking down an REA pole. High winds are common here. Any risk of fire no matter how small of a (over GE-2 LV-2 SA-5

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME: Mrs Homer Harrington
ORGANIZATION:
ADDRE [redacted]
CITY [redacted]

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PLEASE NOTE: This Draft EIS is provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) NEPA Regulations (40 CFR §§1500-1508), and 32 CFR §989, Environmental Impact Analysis Process (EIAP).

The EIAP provides an opportunity for public input on Air Force decision-making, allows the public to offer inputs on alternative ways for the Air Force to accomplish what it is proposing, and solicits comments on the Air Force's analysis of environmental effects.

When making an oral comment, please clearly state your name and the name of the organization, if any, which you are representing before you begin your comments. Please do not provide any other personal information, such as your home address and phone number when making an oral comment. Your oral comments will be used to develop a transcript and permanent record of this meeting. This transcript will be published in the FEIS. If you would like a copy of the Final EIS or other associated documents, you may state that on a written comment card or add your name and address to the mailing list.

Providing personal information is voluntary. If you choose to not provide personal identifying information, your comments will be given the same weight and consideration as any other comments submitted. Private addresses provided will be compiled to develop the mailing list for those requesting copies of the Final EIS. Only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EIS.

Please hand this form in at a public hearing or mail before November 15, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1106

risk Somewhere else could be catastrophic here. The idea of small pieces of "plastic" or "chaff" falling from planes in our pastures and water cannot be dismissed lightly. Our cattle do not need to ingest this. We have oil and gas pipelines already going through our ranch. One ruptured pipelines cannot be flown over and checked often we are looking at possible disasters. We need medical planes to come in from Billings to fly our residents to Billings. The idea of getting a hold of The Air Force to cease their "bombing" missions so we can fly someone out is unacceptable to me. IT was mentioned many of the residents are at poverty level and there aren't very many people... would the Air Force see things differently if we were all wealthy. This does nothing to help The Montana economy. They closed the Glasgow Air Force Base several years ago. What benefit do Montanan's get? If Ellsworth wants to remain open and it is so safe... stay in South Dakota. I am pro-military but they have deserts to fly over. Their program can go on.

SA-5
SA-14
SA-21
SA-19
EJ-2
SO-24
SO-25

One Air Force plane already crashed in Carter County a few years ago.

We are older ranchers and go over our fences every year. Scared running cattle do destroy fences and corrals.

SO-13

The landscape is already changing from the oil and gas pipelines. We don't need fighting planes over the pipelines.

The next thing the Air Force will want is unmanned planes over us.... What next.

1107

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input!

DATE: 10 SEPT. 2010

PLEASE PRINT

I AM A LOYAL, PATRIOTIC AMERICAN CITIZEN THAT LOVES HIS COUNTRY. I FULLY SUPPORT OUR MILITARY (FAILING THE PHYSICAL EXAM PREVENTED MY JOINING THE ARMED FORCES) AND AM INDEBTED TO THE MEN AND WOMEN THAT HAVE AND CONTINUE TO PROTECT MY FREEDOMS AND COUNTRY. SO I UNDERSTAND THAT THE AIR FORCE NEEDS AIRSPACE IN WHICH TO PRACTICE MANEUVERS. I KNOW THAT AF JETS FLY MANY TIMES FASTER THAN MY SINGLE ENGINE PROP AIRPLANE, AND NEED AREAS LARGE ENOUGH TO PRACTICE THEIR MANEUVERS BEFORE HAVING TO TURN TO REMAIN INSIDE AN MOA. SO I CAN UNDERSTAND THE CURRENT POWDER RIVER MOA MAY NOT BE LARGE ENOUGH FOR ADEQUATE TRAINING. GE-9

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	WARREN BISHOP
ORGANIZATION:	
ADDRESS:	
CITY/STATE/ZIP:	[redacted]

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Please hand this form in at a public scoping meeting or mail before November 13, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1107

HOWEVER, THE PROPOSED EXPANSION SEEMS QUITE EXCESSIVE IN THAT IT APPEARS TO BE AT LEAST 3-4 TIMES LARGER THAN THE CURRENT POWDER RIVER MOA. AM-6

I DON'T LIVE IN OR NEAR THIS PROPOSED MOA, BUT DID VACATION THERE THIS PAST SUMMER. (WE PLAN TO AGAIN.) FORTUNATELY, IT WAS INACTIVE AT THAT TIME AND I WAS ABLE TO FLY DIRECTLY THROUGH THE PR-MOA FROM BUFFALO, WY TO BOWMAN, ND. ACCORDING TO THE MAP, HAD THE PROPOSED MOA BEEN IN PLACE AND ACTIVE, FLYING INTO BOWMAN WOULD EITHER HAVE TO BE CANCELED/PROPOSED OR "TAKE MY CHANCES" AND FLY THROUGH ANYWAY. I PREFER TO RESPECT ACTIVE MOA'S FOR MY SAFETY, OF COURSE, BUT ALSO A "STRAY AIRCRAFT" CAN CAUSE IMMEDIATE CANCELATION OF A MANEUVER. THIS ONLY COSTS MORE IN TIME AND FUEL TO COMPLETE THAT PRACTICE SESSION IN ADDITION TO THE SAFETY ASPECT. SO-7 SA-7

DOES THE AIR FORCE REALLY "NEED" THAT MUCH AIRSPACE? PN-2

ISN'T THERE A COMPROMISE WOULD WORK FOR THE AIR FORCE AND BE LESS INCONVENIENT AND RESTRICTIVE TO GA? GE-11

THANK YOU FOR RESPECTING MY THOUGHTS.

A Varien Bishop

1108

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 11/12/10

PLEASE PRINT

To begin with, the public comment meeting "announcements" left a lot to be desired. Our postcard was postmarked September 14, 10 and we received it in the mail on September 20, 2010. Unfortunately, the closest meeting to us was held on September 16, so by the time we knew of it, the meeting was over. To attend the next closest meeting, we had to drive 180 miles round trip. This is not good public outreach, and would seem that the Air Force did not really want a large public turnout. The remainder of my comment is attached. NP-8

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME: PAMELA VIVIANO
ORGANIZATION: Self
ADDR: [redacted]
CITY/STATE/ZIP: [redacted]

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Please hand this form in at a public hearing or mail before November 15, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1108

WRITTEN COMMENT SHEET
PUBLIC HEARING FOR THE
PROPOSED POWDER RIVER TRAINING COMPLEX

The following statement is my public comment on the EIS for the Powder River Training Complex, put out in August 2010. I live in the Northeast corner of Wyoming, and I am not in favor of Alternatives A, B, or C. Our county's economy relies on ranching, tourism, revenue from hunters, and home and land resale; all of which will be negatively affected by these alternatives. These alternatives also will be detrimental to the environment, livestock, wildlife, and to our quality of life. GE-2

I do not feel that the Air Force has shown that they can address the negative impacts of these proposed alternatives. I do not feel that the Air Force has researched the negative impacts thoroughly, and that they have minimized most if not all of the stated impacts. SO-22

Airspace/Air Traffic

We have limited flights from Rapid City, Gillette, and Casper already. These increased military flights will definitely impact the commercial flights in and out of these airports, resulting in loss of revenue for local commercial pilots, as well as inconvenience for private passengers. They could also endanger commercial flights, through inaccurate or non-existent communication of flight schedules. SO-5

Noise

The EIS states that there will be environmental impacts from an increase in ambient noise levels, low-level startle effects, and sonic booms. The EIS is definitely correct in stating these increases will "be perceived as a significant impact by residents under the airspace". This is true for many reasons.

To begin with, these increased noise levels will totally destroy our quality of life. We sacrifice the amenities of populated areas for the benefits that the rural life brings; benefits such as the peace and quiet, the wildlife, and the freedom from the anxieties of a more populated space. With the increased noise from the proposed alternatives, we stand to lose all that we cherish. LU-2

These increased noise levels also present a huge safety issue for the ranchers, cowboys, and recreational riders who work closely with livestock; doctoring them, shoeing them, riding them to round up cattle or for enjoyment, and all other forms of interaction. There is a great deal of chance of putting the people and animals in harm's way, due to animals' reactions to these sudden loud noises. A person working with a horse, or riding a horse when a sonic boom occurs could be thrown off, kicked, and even trampled. Serious injuries could easily occur around any livestock in this event; far more serious than being "annoyed". As an example, we are already in the MOA, and although they are not supposed to fly low over our houses at this time, it has occurred in the past. On one particular time, they appeared so suddenly and with such a sudden so-called "startle effect" that I physically feel to the ground holding my ears as I watched my cows and my horses bolt and run through the fences, tearing the fences down and causing extensive injuries to the livestock from barbed wire cuts. Fortunately I was not on SA-9

1108

one of the horses at the time, as I believe that injuries I would have sustained would have possibly been life threatening. Scheduling these flights to reduce the startle effect is a completely irrational idea when dealing with livestock, wildlife, small children, infants, and the elderly. Temporary avoidance areas for those who are branding or calving will be helpful, but not everyone who works around and/or rides horses is in an area that will be included in this. People in our area do not just ride horses when they are gathering or branding; it is a continuous part of our lives. Apparently those who have written this environmental impact statement have never worked with or around animals a single day in their lives.Therefore, the so-called "startle effect" has the potential to have a hugely negative safety impact on our area.

SA-9

Increased noise levels could also have a negative impact on our area economically. Our county's economy relies heavily on ranching, tourism, and revenue from hunters. Ranching can be affected, as flights within 500' of ground level will be stressful to livestock, and have a negative impact on breeding rates. Many people come to our area to experience the beauty and the quiet. With military jets flying over, there is a high probability that these tourists will take their dollars elsewhere. We also have Devil's Tower National Monument, the first National Monument in the nation. The impact on that spectacular area would be devastating to have such a loss of revenue from tourists. The same applies to areas near the Bighorn Mountains, which includes a wilderness area that could be affected by this plan. Each year thousands of hunters come from out of state, as well as within the state to our area to hunt deer, elk, turkey, antelope, and much other wild game. Hunting simply cannot take place in an area where jets will suddenly appear loudly out of nowhere. Again, the loss of hunters to our area will have a huge economic impact.

SO-22

SO-9

Safety:

Airline crashes have been known to be caused by bird strikes. These proposed areas are in large migratory flight patterns of several species of birds, including large species such as ducks, geese, and even Sandhill cranes. There is a huge probability of a bird strike, resulting in an airline crash, during the several weeks of migration in the spring and the fall.

SA-10

The dropping of chaff also present a huge safety issue for the residents of our area. There are many reports stating that the health impacts from chaff to humans and animals have not been studied completely, and that the residents of these areas should not be used as human guinea pigs. There has not been enough research on how the silica coated aluminum affects the respiratory system of humans or animals. The EIS states that "chaff are very fine (finer than human hair)", as if this makes it okay to drop on people and animals. The fact that it is finer than human hair makes it clear that it can be breathed by both people and animals. The EIS states that the larger pieces could fall with the "impact of a large hailstone". When people are out, they know when a hailstorm is about to be upon them, and they seek shelter. To have something the size of a large hailstorm fall randomly out of the sky is likely to cause injury to an unsuspecting human or animal.

SA-14

SA-27

Dropping of flares is another safety issues. The EIS states that the likelihood of a person finding a dud flare is very low. If it happens even one time, it is a safety

SA-14

1108

issue. To expect that every person and every child within these large flight areas would be educated about dud flares is a totally irresponsible stance to take by the air force. It is just as likely that a child or young person could find it and injure themselves, instead of "notifying a public safety authority of its location." SA-14

The biggest problem from the flares is that there is a high probability that these could cause a devastating wildfire. The EIS states that they will not drop these during severe fire conditions, but after seven years of drought, many of the proposed areas are under a constant state of severe fire condition. Even with the last couple years of rain, the residents remain extremely vigilant of fire hazards and conditions from late June through the first snow, which can be as late as the end of November. Just a few years ago, one lightening strike caused a fire that burned over 25,000 acres, killed livestock and wildlife, and threatened several homes. We cannot afford to have another possible cause of wildfires in our area, especially since we rely on a small force of volunteer fireman to fight our fires. To take that chance just to practice military maneuvers is simply unconscionable. SA-5

In conclusion, I feel that the EIS has not addressed the full potential of the negative impacts to the areas that stand to be affected by this proposal. Just because there is a smaller population in these areas, does not mean that there should be less concern for our safety, our livelihoods, or our quality of life. It would be a huge disservice to those who have chosen to make our living and establish our homes in these areas, to allow this proposal to so negatively affect our lives. EJ-2 LU-1

PAMELA VIVIANO [redacted]

1109

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 10-26-10

PLEASE PRINT

I am writing to comment on the proposed expansion of the training area for the Air Force. I am against the Proposal. More often than not when one of the planes go over they are so low that you can see the pilot and read the writing on the plane. It doesn't happen all the time but I have experienced being "buzzed" in my home & auto. AM-14

The proposed area is more sparsely populated than other areas but we are also the bread basket of the nation. LU-1

Whenever planes go over cattle and wildlife are spooked thus creating undue stress. We do not know SO-13

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	Rhonda Knapp
ORGANIZATION:	
ADDRESS:	[redacted]
CITY/STATE/ZIP:	[redacted]

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Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1109

what the long term effects are but ranchers depend on these cattle for their livelihood. They can not afford to lose even one animal. The loss of even one animal also shortens the food supply to those who depend on getting their meat from the grocery store. SO-13

The planes fly all times of the day & when they do our houses vibrate & our windows rattle. The noise alone is annoying. NO-5

There has already been one bomber crash in this area and a life was lost. Who is to say that won't happen again and this time innocent bystanders are harmed. The other worry is the use of flares and chaff. Our area is prone to wildfires and area residents are always on the lookout for fires from lightening. It is not right to increase that load and make them have to watch for fires from planes too. SA-20 SA-5

The last comment I have is this. If there is no danger to the public or livestock ~~by~~ from these fly-bys why don't you fly over Rapid City or over the Badlands of South Dakota? The Badlands are more like ~~the~~ Afghanistan than we are. It is not right that since our area is sparsely populated that we should be subjected to this air & noise pollution either. Our land & air is just as valueable to us as a highrise in the city is valueable to them, and the loss of any livestock, etc affects not just us but the whole nation. PN-2 LU-2

1110

Richard F. White
[redacted]

November 3, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Dear Ms DeVine:

I am writing to you as a member of the Minot Area Chamber of Commerce and as a longtime resident of North Dakota.

After reviewing the draft environmental impact statement (EIS) for expansion of the Powder River Training Complex, I support the preferred Alternative identified. I support this alternative for a number of reasons. First, the proximity of the training complex would allow the airmen flying the B-52 to train in a manner similar to real world situations. In addition, the proximity of the training complex would reduce training costs in a time when budgets will continue to be tight and training is a necessity for our airmen. Finally, the proximity to the training complex would also mean a higher quality of life for the airmen and their families because of less time away from home because of TDY on training exercises.

GE-1

I understand the concerns identified by some of the landowners located in and around the Powder River Complex. However, I believe those concerns can be mitigated by identifying avoidance zones similar to those identified for Native American sacred grounds.

NO-10

I appreciate the opportunity to support the preferred alternative identified in the draft EIS for the expanded Powder River Training Complex.

Respectfully,

Richard F. White

1111

Steve and Janelle Rieger
[redacted]

Nov. 11, 2010

Comments on the proposed Powder River Training Complex:

We oppose the expansion of the present Powder River Training Area. We have lived under one before and do not care to again. We were here first; this is our land and life and we do not feel that you should be able to impose on it just because you want to. GE-2 LU-1

Scares animals including humans. Low flying planes do scare livestock including dogs. We lived under a fly zone for awhile and though it did not bother the cattle in the pasture those locked up were apt to run. We lock our calves up when we wean and it does not take much to make them run and smash into a fence resulting in broken necks, knocked out eyes and other life altering or ending injuries. There are enough scary things out here; we do not need the added worry of low flying planes stampeding them. SO-13

I have known more then one person that has leapt off a swather or other machinery fearing it was going to come to pieces only to realize it was a bomber going over. One of them was me and I did not enjoy the "rush" I got thinking the swather was dying a noisy death and I better get away from it. NO-2

One sonic boom can send a good cow dog into hiding for the rest of the day. I think the chickens and turkeys reacted most to the planes. It looked like a huge chicken hawk to them. So I know it is a fact that both animals and humans are startled by the sound of a plane traveling so low over head. BI-4

Property values. Have any studies been done on property values? I do know we will soon be selling our place and looking at semi retirement on a smaller place. What a bummer if this fly area affects the price we should get for our land. I know that I will check for fly areas when we buy land and I will shun any with a military airspace overhead. I doubt I am the only one that feels that way. SO-1

Noise pollution. This is still cowboy country and I love riding with only nature to break the silence. I do not enjoy listening to airplanes. I do not want them intruding on my thoughts. I do not want them flying overhead when I am trying to talk to a friend. I DO NOT WANT THEM PEROD. LU-2

Local aviation. I always wanted to learn to fly and now finally we might be able to spare the money. (Some good things come with age!) If you win the right to fly over us willy nilly and we have to ask permission or try to be aware of your activities in the area every time we fly that will take away the freedom and enjoyment that a person should get out of flying. I am not sure I understand the see and avoid. Are you going to avoid us or do we have to avoid you? "See and avoid" has to work both ways. Is your pilot going to see me and think "oh my gosh this is a novice pilot she does not know where to go I better avoid her" or is it "I am here, I am bigger, get out of my way." You being able to put restrictions on when and where we can fly is not right. There are too many rules now. AM-12 SA-7

Plenty of other space to practice. I have looked it up and you have lots of other air space to practice in. There are also huge oceans out there with no one living under the sky. Go as low as you want whenever you want. See and avoid the ships. Move Ellsworth Air Force Base, take it to federally owned land—all that desert down south. PN-2

Eastern Montana is sparsely populated and that makes us one of the "last best places" it also makes us easy to over run with no regard to our lifestyles. LU-1

I repeat we oppose this expansion. GE-2

Janelle Rieger
Steve Rieger

1112

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 15 Oct 10

PLEASE PRINT

I'm a vetrom of the USAirforce and USArmy. I have 23 years of military service. I have seen the need for a well trained military force. I'm talking about all of our military forces but in this case the need of the USAF for a training air corridor or area over our western area. Powder river training Complex. It is possible for the military to ask for too much but a carful study EIS will demonstrate the need and the devious problems associated with it. over

GE-9

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	Sidney B Reynolds-Gy t USA Retired
ORGANIZATION:	VFW-DAV Retired USArmy
ADDRES	[redacted]
CITY/STATE/ZIP:	[redacted]

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HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1112

It is not possible to make every body happy. I think that the present world situation with the enemys abroad that we have makes a strong defence necessary.
As a combat vetron I see the need that in todays world with the sofisticated enemy that we have, and the Technology that we have, making the training of our young soldiers, airman and sailors of a very high priority that we as citizens need realize that some inconvinence may become necessary for us.
We could we called in to a full fleged war at any time. for us to send our young men in to this without proper training is to issue a death centance to them. We have done this in the past. let us learn from our mistakes. Let us trust our professional officers to do the best job that they can do. they may not need all they ask but let us give them enough.
As a rancher I have had the B1's and B52's flying over my ranch for years. No problem.
the radar site out of Miles City and the Bomb site at forsyth - no problem.
I personaly trust my brother officers to do what they need to do to train our young men and to keep our military forces the best in the world.

GE-9

1113

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 11-8-2010

PLEASE PRINT

Please see document attached

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	Shane C. Penfield
ORGANIZATION:	[redacted]
ADDRESS:	[redacted]
CITY/STATE/ZIP:	[redacted]

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1113

The expansion of the proposed Powder River Training Complex will have several negative environmental impacts to Northwest South Dakota as demonstrated in the Draft Environmental Impact Statement. I am currently the Perkins County State's Attorney, serve as the City Attorney for the City of Lemmon and maintain my own private law practice in Lemmon, South Dakota. In addition, I have ranching interests in northeastern Perkins County.

One major environmental concern is the fact that the second largest body of water in a complex training area has been completely admitted from the Draft EIS Report.

Shadehill Reservoir is located at the confluence of the North Fork and South Fork of the Grand River, twelve miles south of Lemmon, South Dakota. Shadehill is used for recreation purposes and is a larger fishery. It is also a major stop for migratory waterfowl. How this large prairie lake has been omitted from the Draft EIS Surface Water Maps is perplexing. This reservoir has a storage of 100,057 acre feet. Shadehill Reservoir is the second largest lake in Western South Dakota in surface area and is the largest lake in a one hundred (100) mile radius.

BI-7

The noise level created by the craft and the expanded training complex will result in significant environmental impacts and disrupt ranching operations, along with other recreational businesses within the affected area. The air force has stated that there are no human health or safety risks due to the chaff that will be deposited on this land. Obviously, an outside substance such as this will have a significant impact on the enviroment. Additionally, on September 22, 1998, the GAO stated, "It found that the air force had been lacked in conducting further tests on the effects of chaff on animals and humans." It is apparent that more study needs to be done to determine whether or not this chaff will affect animals or humans.

LU-2

SA-27

This expansion will not only cause serious environmental impacts to private landowners but will also jeopardize the federal government's land holdings in this area. Grand River National Grasslands covers nearly 155,000 acres of prime grassland in Northwest South Dakota and is within the new boundary change of the Power River Training Complex. In addition, to the forest service land, there are also several thousands of acres of South Dakota Game, Fish and Parks Property, Bureau of Reclamation Property and Bureau of Land Management property. Until it can be determined that this training expansion will not cause any environmental detriment, whether it be chemical or sound, the Powder River Training Complex should not be expanded to include this area in Northwest South Dakota.

LU-1

One significant point that has not addressed in the Draft EIS is the fact the release of the chaff from these aircrafts will fall upon the ground that is often subject to downpours and spring melts which all create rapid flash flooding and would accumulate chaff in certain areas. While average rainfall is not significant in the expansion area, thunderstorms do produce flash flooding due to the amount of rain that falls and also due to the rapid changes in elevation. There also appears that there is no significant study on the effects of chaff in sheep's wool.

SA-27

SO-16

1114

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input!

DATE: 10/17/10

PLEASE PRINT

I have concerns regarding the impact of the Train'g Complex on general and business aviation. This may have a serious and permanent impact on our day-to-day operations. It will kill charter operations, and may kill aerial application operations. I belive the Floor of the Training Complex should be set @ 10,000 MSL to allow for existing aviation operations to continue. SO-7 SO-2 DO-4

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME: Alex Fisher

ORGANIZATION:

ADDRESS: [redacted]

CITY/STATE/ZIP: [redacted]

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129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1115

18 Jan 11

PRTC Project Manager
Ms Linda DeVine
ACC/A7PS
129 Andrews St Ste 337
Langley AFB VA 23665-2701

I have a few concerns regarding the accuracy and scientific integrity on B-1 aircraft noise predictions, particularly as they pertain to the Powder River Training Complex draft Environmental Impact Statement.] NO-3

(1) Ambient Noise Levels: Noise levels produced by high-altitude or long-range flight operations are typically under-predicted by both NoiseMap and, in this case, MR_NMap. Although derived from measurements included in NoiseFile records, the NoiseFile data were recorded at altitudes from 198 to only 1043 feet Above Ground Level (AGL), at lateral offsets up to 5000ft. Low-altitude high-speed noise measurements of the B-1B were made to correct known over-predictions experienced under military training routes. Over-predicted noise levels adversely affect high-performance aircraft operational frequency. Empirical corrections were implemented in MR_NMap.

Aircraft noise predictions are made using a 1000ft baseline reference spectrum. The methodology which over-predicts noise levels at altitudes below 1000ft, will under-predict noise levels at altitudes above 1000ft. Lacking an empirical basis above 1000ft, MR_NMap may not make scientifically well-founded prediction at high altitudes or long ranges. An openly published analysis of B-1B noise measurements using Training Route power setting was included in an AIAA Aeroacoustics conference paper 2006-2702, copy attached.

As such, affects of high-altitude aircraft operations on ambient noise levels are very likely underestimated in this (and other) EISs.] NO-3

(2) Low-level Startle Affects: The B-1Bs 500ft AGL SELs discussed in this EIS are directly related to the 472ft AGL measurements analyzed in the attached AIAA technical paper.] BI-4

Startle affects are an innate animal response to loud noises. Startle affects/responses in animals and humans are reduced through conditioned response. That is, as the animal's experience shows that the noise source is harmless, it tends to be less startled. Of course, this requires that loud noise sources (e.g. B-1B climb in afterburner) be confined to a fairly small area. Thus the environmental, animal and human response, impacts would be reduced to the extent that extremely loud operations are localized. This of course implies some sort of land-use agreement and perhaps compensation.] SO-1

Wayne R. Lundberg, Ph.D.
Aerospace Engineer
[redacted]

12th AIAA/CEAS Aeroacoustics Conference (27th AIAA Aeroacoustics Conference)
8 - 10 May 2006, Cambridge, Massachusetts

AIAA 2006-2702
1115

Extent of Nonlinear Aeroacoustic Propagation from Single Frequency-Domain Measurements

Wayne R. Lundberg*
Aeroacoustician, Kettering, Ohio, 45420

The Simplified Nonlinear Aeroacoustic Propagation (SNAP) formulation was tested against published BAC 1-11 hushkit flight noise. Both aeroacoustic directivity and nonlinearity were found to influence the measurements. Aeroacoustic directivity effects have long been considered as a high-speed "forward flight effect." A survey of aeroacoustic directivity was conducted for a large high-speed aircraft with measurements at multiple altitudes. Significant departures from spherical spreading loss were documented. A brief assay of published NoiseMap reference spectra using third-octave band analysis for many aircraft at 325m altitude concluded that nonlinear propagation is common to aircraft with low bypass ratio engines during takeoff and evident in all flight operations using afterburner.

I. Introduction

RECENT studies of high-speed jet noise from flight,[1] ground runup[2] and facility[3] measurements have proven the existence of nonlinear acoustic propagation effects. Several different approaches to modeling the effect have been proposed.[4,5,6] However, development of a broad-band noise propagation model applicable to aeroacoustic sources has severe constraints owing to practical limitations stemming from previous operational noise measurement methods. This paper seeks to address the common practice of recording only frequency-domain third-octave band reference spectra at a single altitude.

Nonlinear propagation effects may be explicitly modeled as a waveform propagated in time.[6,7] This approach has been investigated for broadband aeroacoustic noise generated by the F-18E/F.[6] However accurate, propagation of a noise waveform is computationally intensive and thus infeasible for application in community noise models where very large numbers of flight operations are assessed. A time-domain approach also cannot predict the extent of nonlinear effects for sources with existing third-octave band noise measurements. Aircraft flight and rocket launch noise predictions are normally carried out in the frequency domain by propagating a measured (~325m reference) third-octave band noise spectrum over distance.

Recent field measurements studies of F-18E/F runups[2] were considered for analysis by the SNAP technique. Narrow-band analysis of the recordings was reported, even though aeroacoustic turbulence effects which might effect high frequency noise production were not found. Third-octave band spectra were not available for analysis.

The NoiseMap community noise model uses a duration correction coefficient approach[8] to modeling aeroacoustic directivity as a forward flight effect. High-speed flight decreases aircraft noise duration relative to spherical spreading losses generated by a general slow-moving source. A cumulative duration coefficient of 6 was derived from multiple aircraft noise measurements and applied to model aeroacoustic flight noise. Spherical spreading loss would produce a duration correction coefficient of 10. A direct comparative analysis using flight noise measurements from the 1981 study was not possible. Directional spreading losses were computed from multi-altitude noise measurements from a large high-speed aircraft to document aeroacoustic directivity for further study.

The parameters of the SNAP model were previously characterized as predictable from the band 37 Sound Pressure Level (SPL) of the measured source spectrum.[5] These preliminary results were used to produce formulas for the three parameters of the exponential function relating effective source radius (or equivalently, band 37 SPL) to the arrays of relative amplitudes. An established family of such functions makes prediction of the extent of nonlinearity for sources of any intensity possible. The functional relationships which were derived to characterize nonlinear and aeroacoustic directivity from aerospace sources having multiple-range measurements could not be tested or further refined in this study due to administrative problems which caused technical difficulties. However, it was possible to assess what types of aircraft operations are influenced by the nonlinear propagation effect.

* Physical Scientist, Air Force Materiel Command Environmental Division, 4225 Logistics Ave, Wright-Patterson Air Force Base, OH 45433-5747, AIAA Member.

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II. Application of SNAP to Existing Multi-Altitude Spectra

The SNAP model was applied to existing flight noise measurements of the BAC 1-11 with a six-chute hushkit (meteorological and flight noise data used with permission of G. P. Howell).[9]

The SNAP parameters were adjusted to yield a good (but not analytically 'best') fit to the measured third-octave band spectra at 406.9m and 905.6m and above 5kHz. The coefficient of spreading loss was also adjusted to yield a good fit to measurements near 1kHz. The results are shown in Figure 1.

Further analysis of the inter-relationship between SNAP model parameters for aeroacoustic directivity and nonlinearity was conducted using flight noise measurements from another small high-performance aircraft. Directional losses with spreading loss exponent of 1.5 – 3.0 were shown to influence the nonlinear relative amplitudes.

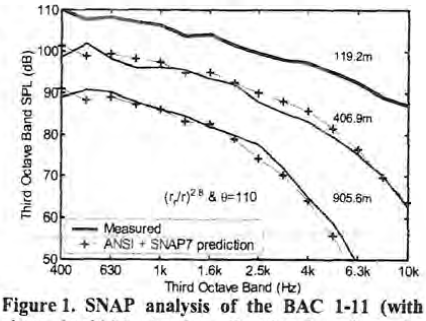

Figure 1. SNAP analysis of the BAC 1-11 (with 6-chute hushkit) showing directional and nonlinear propagation.

III. Aeroacoustic Directivity for Large Aircraft

An exploration of the extent of aeroacoustic directivity was conducted for the B-1B aircraft. The B-1B in Training Route power produces little noise in the high-frequency range that is usually associated with nonlinear propagation effects.

The B-1B has four low-bypass turbofan engines installed in pairs separated by many nozzle diameters. The directional propagation of this large aircraft's flight noise is influenced by the Raleigh distance required for these sources to merge as well as by the aeroacoustic directivity of individual jet noise.

Acoustic merging is evidenced by a nearly cylindrical spreading loss coefficient near vertical propagation (Figure 2). Aeroacoustic directivity is evidenced by rapid transition to a spreading loss coefficient of ~3 near 130 degrees emission angle (Figure 4).

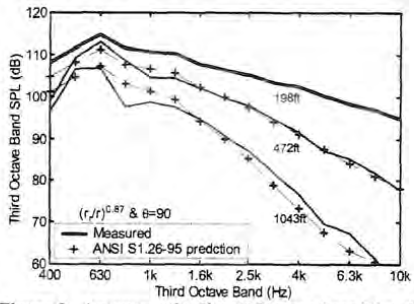

Figure 2. Aeroacoustic directivity produced by the B-1B in high-speed flight, at 90 degrees emission.

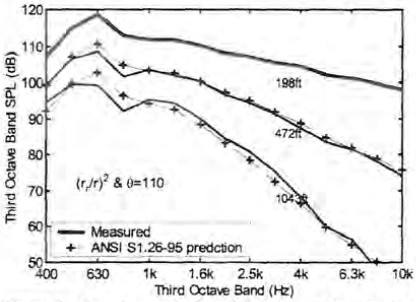

Figure 3. Aeroacoustic directivity produced by the B-1B in high-speed flight, at 110 degrees emission.

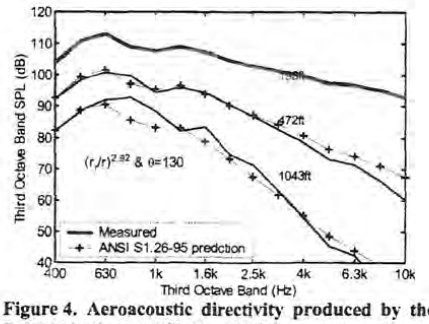

Figure 4. Aeroacoustic directivity produced by the B-1B in high-speed flight, at 130 degrees emission.

IV. Estimation of Extent of Nonlinearity from Single Frequency-Domain Measurements

Functional relationships between SNAP model parameters and the band 37 SPL were proposed to characterize the threshold and extent of nonlinear propagation.[5] The threshold of nonlinearity was estimated to be approximately 70 dB band 37 SPL.

Environmental noise prediction in the U.S. and many NATO countries is conducted with the NoiseMap community noise model. That model is based on aircraft flight reference spectra normalized to Standard Day conditions. These reference spectra are published as part of NoiseMap distribution and assessed here to determine whether nonlinear effects are present in existing community noise predictions.

The top four third-octave band SPLs for the loudest aircraft in the NoiseMap reference files are plotted in Figure 5. These partial spectra were rank-ordered according to their band 37 SPL values. Figure 5 includes F-18E/F Afterburner[6] flight noise data, but not the F-4C Training Route[1] dataset – which is ~3 dB below the quietest spectrum included.

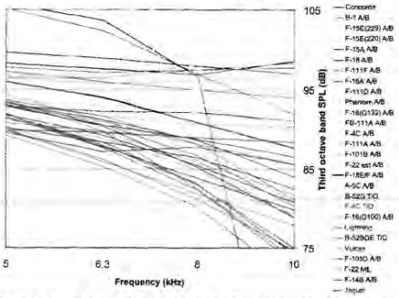

Figure 5. Noisefile reference spectra at the high-frequency third-octave bands influenced by nonlinear propagation.

V. Conclusions

Application of SNAP model results for prediction of the extent of nonlinearity in existing community noise model techniques demonstrates that nonlinear propagation effects are common to low-bypass turbofan engines in Takeoff power and occur in *all* aircraft flight operations using Afterburner. Only the SNAP approach has the capability to predict nonlinear aeroacoustic propagation where limited operational noise data exist.

Further, it was found that although aeroacoustic directivity effects are included in the NoiseMap duration correction, this effect of necessity varies according to airspeed, engine type and power setting – which are not treated as variables in existing community noise prediction models.

Acknowledgments

The author thanks the Air Force Research Laboratory, Human Effectiveness Directorate, Battlespace Acoustics Branch for providing flight noise data and Richard L. McKinley, Principal Engineer, for his encouragement.

References

[1]Lundberg, W. R. "Nonlinear Aeroacoustics: Experimental Evidence from the F-4C," *Proceedings of the Sixth International Symposium on Long-Range Sound Propagation*, compiled by David I. Havelock and Michael R. Stinson, National Research Council, Ottawa, 1994, pp 1-20.

[2]Gee, K. L., Gabrielson, T. B., Atchley, A. A. and Sparrow, V. W., "Preliminary Analysis of Nonlinearity in F/A-18E/F Noise Propagation," *AIAA Aeroacoustics Conference*, CP3009, AIAA, Washington, DC, 2004.

[3]Petitjean, B. P. and McLaughlin, D. K. "Characterizing Acoustic Pressure Waveforms in Jet Noise Experiencing Nonlinear Acoustic Propagation," *AIAA Aeroacoustics Conference*, CP3017, AIAA, Washington, DC, 2004.

[4]Lundberg, W. R. "Prediction of Nonlinear Acoustic Propagation Effects for High-Intensity Aerospace Noise Sources in the Natural Far-Field Environment," Ph.D. Dissertation, Mechanical and Aerospace Engineering Dept., Univ. of Dayton, Dayton, OH, 2003.

[5]Lundberg, W. R. "Characterization of Nonlinear Aeroacoustic Propagation in Relation to Source Intensity," *AIAA Aeroacoustics Conference*, CP2993, AIAA, Washington, DC, 2005.

[6]Gee K. L., et al, "Nonlinear Modeling of F/A-18E/F Noise Propagation," *AIAA Aeroacoustics Conference*, CP3089, AIAA, Washington, DC, 2005.

[7]Pestorius, F. M., "Propagation of Plane Acoustic Noise of Finite Amplitude," Applied Research Laboratory, Technical Report ARL-TR-73-23, The University of Texas at Austin, TX, Aug 1973.

[8]Speakman, J. D. "Effect of Propagation Distance on Aircraft Flyover Sound Duration" Air Force Aeromedical Research Laboratory, Technical Report AFAMRL-TR-81-28, 1981

[9]Howell, G. P., "Nonlinear Propagation of Aircraft Noise in the Atmosphere," Ph.D. thesis, Univ. of Southampton, 1982.

1116

November 12, 2010

Ms. Linda Devine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Dear Ms. Devine:

I am writing in **opposition** of the proposed enormous expansion of the Powder River MOA.] GE-2

I own and operate a FAA part 135 charter operation based out of Helena, Montana. We routinely transport passengers and patients throughout Montana and nation wide on a daily basis so are intimately familiar with aircraft operations in and around MOA's.

I can tell you first hand that access into an active MOA while on an instrument flight plan is virtually impossible. The FAA my not have a policy against this but ATC will not clear you through this airspace while "active". This requires a reroute around the airspace costing valuable time and at great expense. In my opinion, VFR flight in an active MOA with supersonic aircraft is extremely risky and unsafe.] SO-7] SA-7

This expansion could essentially block off a huge portion of eastern Montana up to 240 days per year. This would affect not only air traffic in and out of the MOA but also over flight traffic as well.] AM-6

I also find it concerning that this proposed expansion has not been more widely publicized. This expansion will affect far more commercial operators, businesses and pilots than just those under the airspace in the proposed expansion.] NP-8

This expansion provides no positive economic benefit to Montana and will have a huge negative financial impact by limiting commerce and accessibility to these communities.] SO-24

Montana is already home to two existing MOA's.

Please **do not** allow the proposed expansion of the Powder River MOA.] GE-2

Sincerely

Dan Norhton
Owner

1117

Baxter, Rachel D.

From: Don Merriman [redacted]
Sent: Wednesday, January 12, 2011 10:26 PM
To: ACC/A7PS Sustainable Installations
Subject: www.a7zpintegratedplanning.org

Expansion of the Air Force training area in Montana, Wyoming and South Dakota has been brought to my attention. I understand that an impact and environmental study had been made but if there is one I cannot find it. My name is Donald Merriman, my farm and livestock headquarters are immediately below the Shadehill Dam , 12 miles south of Lemmon South Dakota.

A few years ago a large hill on the south side of the Lake was used as a target by bombers from Ellsworth Air Force Base , some passes were so low and fast that they broke the sound barrier. This spooked cattle that I had in the feed lot causing them to break out. I complained to the commander at the Base near Rapid City , which brought a apology and inquiry as to how much damage had been caused . Fortunely no cattle died but a few planks wear broken which I did not put a claim in for damages. Being a WW2 veteran myself I know the necessity of training but told the commander I thought they could accomplish the goal without breaking the sound barrier. It never happened again. SD-13

Some of the concerns of ranchers seem to come from the supposed dropping of chaff and flares. Also that there might be flights lower than 500 feet above ground which could possibly cause problems with livestock such as I have mentioned. Apparently those who are making a request to expand the target area have done so without a comprehensive environmental assessment which is causing concern. I'm not involved on the farm anymore as my son has taken over the operation, I doubt as he even knows about this plan but he does know of the earlier problem we had. I sincerely hope that you will do a better job of informing those effected by this plan than has been to this date. Thank you Don Merriman [redacted] SA-27 AM-14 NP-1 NP-8

1

1118

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 10-04-2010

PLEASE PRINT

DEAR FOLKS:

I would like to go on the record as opposed to additional expansion of the Powder River Training Complex. GE-2

I have read the material and find little need to create this Additional AREA at the expense of so MANY. As ONE who travels via G.A. aircraft in that area on a regular basis, and can see where it will cause great interferance with operations of a civilian nature. I AM always very PN-2 AM-6 cautious in MOA area's & usually try to avoid them for the obvious reasons. This expansion however would cover such a large piece of real estate that it would

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME: John J. McKENNA JR

ORGANIZATION:

ADDRESS: [redacted]

CITY/STATE/ZIP: [redacted]

Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format) ___ hard copy format

No, please do not include me in the mailing list for distributing the Final EIS. I do not wish to receive an EIS or further information.

PLEASE NOTE: This Draft EIS is provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) NEPA Regulations (40 CFR §§1500-1508), and 32 CFR §989, Environmental Impact Analysis Process (EIAP).

The EIAP provides an opportunity for public input on Air Force decision-making, allows the public to offer inputs on alternative ways for the Air Force to accomplish what it is proposing, and solicits comments on the Air Force's analysis of environmental effects.

When making an oral comment, please clearly state your name and the name of the organization, if any, which you are representing before you begin your comments. Please do not provide any other personal information, such as your home address and phone number when making an oral comment. Your oral comments will be used to develop a transcript and permanent record of this meeting. This transcript will be will be published in the FEIS. If you would like a copy of the Final EIS or other associated documents, you may state that on a written comment card or add your name and address to the mailing list.

Providing personal information is voluntary. If you choose to not provide personal identifying information, your comments will be given the same weight and consideration as any other comments submitted. Private addresses provided will be compiled to develop the mailing list for those requesting copies of the Final EIS. Only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EIS.

Please hand this form in at a public scoping meeting or mail before November 13, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1118

be difficult if not time consuming to avoid. AM-21
Further it appears there are ample other
places to train and perhaps the military could
do a little more in the way of scheduling their PN-2
own training in existing areas w/o impacting
so many others, and such a large piece of
our state.

As a business owner, G.A. pilot, life long resident SO-24
of MT I see little if any benefit to our state and
yet see a great inconvenience, hardship and serious SA-7
safety concerns.

Thank you,

John McKenna JR

1119

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input!

DATE: 11/12/10

PLEASE PRINT

I am a rancher and president of the Multi-County Predator Control District, which includes Harding, Butte, Meade, & Lawrence Counties in South Dakota. My livelihood and the livelihoods of all the ranches in this district are dependent on the use of aircraft to control predators to keep them from killing our livestock. Our pilots fly 200 hrs per year and kill about 500 predators per year. We are assisted by an airplane from APHIS Wildlife Services which flies about 700 hrs per year and kills several hundred more predators per year. Even with all these efforts we still incur livestock loss due to predators. Over SD-15

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	Clark Blake
ORGANIZATION:	Self
ADDRESS:	[redacted]
CITY/STATE/ZIP	[redacted]

Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format) ___ hard copy format

No, please do not include me in the mailing list for distributing the Final EIS. I do not wish to receive an EIS or further information.

PLEASE NOTE: This Draft EIS is provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) NEPA Regulations (40 CFR §§1500-1508), and 32 CFR §989, Environmental Impact Analysis Process (EIAP).

The EIAP provides an opportunity for public input on Air Force decision-making, allows the public to offer inputs on alternative ways for the Air Force to accomplish what it is proposing, and solicits comments on the Air Force's analysis of environmental effects.

When making an oral comment, please clearly state your name and the name of the organization, if any, which you are representing before you begin your comments. Please do not provide any other personal information, such as your home address and phone number when making an oral comment. Your oral comments will be used to develop a transcript and permanent record of this meeting. This transcript will be will be published in the FEIS. If you would like a copy of the Final EIS or other associated documents, you may state that on a written comment card or add your name and address to the mailing list.

Providing personal information is voluntary. If you choose to not provide personal identifying information, your comments will be given the same weight and consideration as any other comments submitted. Private addresses provided will be compiled to develop the mailing list for those requesting copies of the Final EIS. Only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EIS.

Please hand this form in at a public hearing or mail before November 13, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1119

With this expansion that is proposed our ability to protect our livestock and livlihoods is going to be negatively impacted. If anyone of our producers is loosing livestock and the pilots can't fly due to a large force exercise with their ability to come down to 500 ft above ground level the cost in lost revenue to a rancher may be devestating. SO-15

There are over 300 aircraft registered in the South Dakota counties to be under this Training Complex. All of these general aviation aircraft are going to be affected at some time by these training exercises. This needs to be considered in all states affected by this. SO-5

Another concern is the Sage Grouse. This species is being considered to be placed on the Endangered Species list. If these exercises negatively effect these birds it will be a terrible blow to this area. In the 1960's and early 1970's we experienced sonic booms from military aircraft in this area. At the time I remember newspaper articles saying these booms were affecting the nesting success of the Sage Grouse. I don't know if any studies were done on this and other birds but some need to be done before this proceeds. BI-3

If this expansion causes the Sage Grouse or any other species to be listed as endangered it will alter grazing practices and probably have other impacts that will lower property values and incomes in an industry that is barely hanging on now. SO-27 SO-1

1120

Oct 23 - 2010

Ms Carol Wolfe
[redacted]

Dear Ms. Devine;
I have Called Gus Malonus in Seattle repeatedly about the trains blowing their Whistles from the edge of town all the Way through. All of the engineers don't, but Most do all day & all nite. I live about a block from the tracks & when the train is going through I can't even hear my T.V. We have about a 100 trains a day. They are supposed to blow 3 short blasts before each Crossing. Gillette, upton, & Osage have a Whistle free Zones in their towns, how Can We get that here. My dog just howls because it hurts her ears so bad & it hurts mine too, then there are people who live right beside the track. I don't think it's fair to them to be exposed to this either. Thank you for any help you Can provide

Sincerely
Carol M. Wolfe

[redacted]

1.6 PUBLIC HEARING TRANSCRIPTS

Bracketed scans of public hearing transcripts, as applicable, for the following hearings are provided in this section. Note that the general introductory language by the Air Force was nearly identical at each hearing and so only the first hearing's full transcript is provided in its entirety in this section; for subsequent hearings, only the public comment portion of the transcript is provided here.

*Indicates Native American consultation and/or hearing took place on tribal land

1.6.1 *SEPTEMBER 14, 2010 IN RAPID CITY, SD*

See page G-220

1.6.2 *SEPTEMBER 15, 2010 IN BELLE FOURCHE, SD*

See page G-276

1.6.3 *SEPTEMBER 16, 2010 IN SUNDANCE, WY (NO PUBLIC COMMENTS)*

No public comments were received.

1.6.4 *SEPTEMBER 17, 2010 IN BUFFALO, SD*

See page G-298

1.6.5 *SEPTEMBER 20, 2010 IN BISON, SD*

See page G-310

1.6.6 *SEPTEMBER 21, 2010 IN DICKINSON, ND (NO PUBLIC COMMENTS)*

No public comments were received.

1.6.7 *SEPTEMBER 22, 2010 IN BOWMAN, ND*

See page G-335

1.6.8 *SEPTEMBER 23, 2010 IN ELGIN, ND*

See page G-348

1.6.9 **SEPTEMBER 27, 2010 IN FORT YATES, ND*

See page G-369

1.6.10 *SEPTEMBER 28, 2010 IN BISMARCK, ND*

See page G-408

1.6.11 *OCTOBER 12, 2010 IN BROADUS, MT*

See page G-430

1.6.12 *OCTOBER 13, 2010 IN BAKER, MT*

See page G-440

1.6.13 *OCTOBER 14, 2010 IN EKALAKA, MT*

See page G-484

1.6.14 *OCTOBER 15, 2010 IN MILES CITY, MT (AFTERNOON)*

See page G-495

1.6.15 *OCTOBER 15, 2010 IN MILES CITY, MT (EVENING)*

See page G-509

1.6.16 *OCTOBER 18, 2010 IN GILLETTE, WY*

See page G-520

1.6.17 *OCTOBER 19, 2010 IN SHERIDAN, WY*

See page G-550

1.6.18 *OCTOBER 20, 2010 IN COLSTRIP, MT*

See page G-560

1.6.19 *OCTOBER 22, 2010 IN HARDIN, MT*

See page G-570

1.6.20 ** OCTOBER 25, 2010 IN CROW AGENCY, MT*

See page G-597

1.6.21 *OCTOBER 26, 2010 IN BILLINGS, MT*

See page G-607

1.6.22 ** DECEMBER 7, 2010 IN LAME DEER, MT*

No public comments were received.

1.6.23 ** DECEMBER 9, 2010 IN EAGLE BUTTE, ND*

See page G-648

9-14-10

POWDER RIVER EIS PUBLIC HEARING

BEFORE: COLONEL RON GREGORY - HEARING OFFICER

DATE: September 14, 2010 at 6:00 p.m.

PLACE: Holiday Inn
505 North 5th Street
Rapid City, South Dakota

A P P E A R A N C E S

COLONEL JEFFREY TALIAFERRO
Commander of the 28th Bomb Wing
Ellsworth Air Force Base, South Dakota

MS. LINDA DeVINE
on behalf of Headquarters
Air Combat Command
Langley Air Force Base, Virginia

Reported By: Cindy K. Pfingston, RPR
Registered Professional Reporter
Apex Court Reporting
(605) 877-1806

P R O C E E D I N G S

THE HEARING OFFICER: Good evening and welcome to the public hearing for the Powder River Training Complex Environmental Impact Statement or "EIS". I'm

9-14-10

Colonel Ron Gregory. I'll be your hearing officer tonight. I'm a military judge on the Air Force Court of Criminal Appeals based in D.C. I'm not assigned to Ellsworth Air Force Base or air combat command. My job is to review trials by court martial that are taken up on appeal in criminal cases. I'm also not here as a legal advisor to the air force representatives for this proposal tonight. My role as the hearing officer is simply to ensure that we have a fair, orderly and an impartial hearing and to provide you folks an opportunity to provide comments. In summary, I'm essentially just the moderator, an impartial moderator for this hearing tonight. And before we begin, I'd just remind you if you could turn off your cell phones, pagers or at least put them where they're on that vibrate mode so they don't ring during the presentations.

We're here tonight because the air force is analyzing the environmental impacts of the proposed expansion of the Powder River air space. Tonight

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the air force will present information on the Powder River Training Complex EIS and a project description. The air force will also discuss the environmental impact analysis process.

This hearing is being held in accordance with the provisions of the National Environmental Policy Act and the regulations that are published by the council on environmental quality. The purpose of this hearing is to receive your comments on the

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draft Environmental Impact Statement.

Before we begin with the presentation, I'd like to note that representatives from headquarters, air combat command, Ellsworth Air Force Base and the Federal Aviation Administration, all of whom are involved in this project, are present tonight.

I'd like to introduce Mr. Roger McGrath from the FAA. He's the representative attending the hearing tonight, and he's the fellow raising his hand in the back there.

The hearing will be conducted in two parts. First, Colonel Jeffrey Taliaferro, Commander of the 28th Bomb Wing here at Ellsworth Air Force Base, will make a presentation on the proposed action and the alternatives. Then Ms. Linda DeVine from Headquarters Air Combat Command at Langley Air Force

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Base in Virginia will provide an overview of the National Environmental Policy Act or NEPA, as well as summarize the potential environmental consequences of the proposal.

The second part of this hearing will be your opportunity to provide comments and statements for the record. The input that you give will provide the decision-makers for the Powder River Training Complex Proposal the benefit of your knowledge of the local area and your concerns about the environmental analysis.

The public hearing serves as just one of several opportunities for public comment. Throughout this hearing please keep in mind that this public hearing is not a debate; it's not a vote

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on the draft EIS, nor is it primarily designed as just a question-and-answer session.

The hearing is about the adequacy of the environmental analysis and the potential environmental impacts associated with the proposal being studied by the air force and the FAA as a cooperating agency. Concerns related to the National Historic Preservation Act, Section 106 consultation process are also welcome. However, concerns about other non-environmental issues should

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not be raised at the hearing since they will not add to the decision-making process and will simply take away time from the other attendees' opportunity to comment.

To ensure the accuracy and full documentation of the hearing we have a stenographer, Cindy Pfingston, sitting over here to my right who is taking all of this down. Again, you'll be making your comments after the air force presentation, and I'll provide you this microphone. Come down front and I'll hand you the mike, and you can make your comments. And, again, they'll all be transcribed.

If you'd like to provide your comments in writing, written comment sheets are available at the registration table for your use. You can turn these sheets in at the end of the evening, or you can mail or fax them later at your convenience. If you mail your comments or fax them, send them to the address shown on the slide. The address is also printed on the brochure and the comment sheets.

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The air force will consider comments throughout the environmental impact analysis process. To make sure your comments are considered and documented in the final EIS though, please submit your comments by November the 15th, 2010.

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I'd now like to turn the presentation over to Colonel Taliaferro who will provide you specific details on the proposal.

Colonel?

COLONEL TALIAFERRO: All right, thanks a lot.

Great to see a lot of our neighbors here today, a lot of folks that we've already had a chance to meet. And if while not really a part of this presentation or this process, if you'd like to talk to me after, I'll stay after outside and answer any personal questions you may have for me.

As we mentioned, I'm Colonel Jeff Taliaferro. I'm the Commander of the 28th Bomb Wing. And in Ellsworth parlance or air force parlance, I'm the installation or base commander at Ellsworth Air Force Base.

First I'll review the existing air space and its limitations with respect to -- oh, I'm sorry, let me back up.

I'm here to explain the proposed expansion of Ellsworth Air Force Base's Powder River military training airspace.

The purpose of the proposed Powder River Training Complex is to provide local airspace that would support primarily Ellsworth and Minot Air

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9-14-10

Force Bases with the capability necessary to adequately train aircrews and ensure their readinesses to succeed and survive in combat.

First, I will review the existing airspace and its limitations with respect to our current training requirement to support overseas combat operations.

Second, I'll discuss the Powder River Training Complex proposal, its advantages, why it is needed, and how we are addressing common concerns of the proposal.

The current Powder River military training airspace, as depicted on this chart, sits just northwest of Rapid City and Ellsworth Air Force Base. The airspace covers about 9,748 square miles. It's located over portions of South Dakota, Wyoming, and Montana. The lowest altitude we currently fly is 500 feet above the ground, and the highest altitude is flight level 450 (or about 45,000 feet).

The current airspace encompasses six private and seven public airfields supporting over a hundred registered light aircraft. Today, in the Powder River airspace, military aircraft must avoid FAA charted airports by 1,500 feet and 3 nautical miles. Known private airstrips uncharted by the FAA are avoided by a thousand feet and one nautical mile.

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Residents living under the Powder River airspace may request that Ellsworth Air Force Base's airspace manager temporarily restrict overflight of areas sensitive to noise, such as acreage utilized during calving seasons, or cultural and traditional

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ceremonies. Currently, 17 noise-sensitive areas are charted and avoided by military aircraft flying in the Powder River airspace. And you can see that on this chart with the red circles on the map.

The proposed expansion would nearly quadruple the airspace available for combat training, depicted on this chart in blue. Just like the current Powder River airspace, depicted on the chart in black, the flight altitudes are proposed to remain 500 feet above the ground level to at least as high as flight level 450 or 45,000 feet above mean sea level. Under the proposed action, the airspace would cover about 12 private and 19 public airfields. The public and private airfields would remain protected as they are now. Noise-sensitive areas would also continue to be avoided.

During a typical flying day, aircraft from Ellsworth Air Force Base, South Dakota, Minot Air Force Base, North Dakota and Offutt Air Force Base, Nebraska, use the existing airspace. Currently

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flight training operations are generally conducted from 9:00 a.m. to midnight, Monday through Friday. Occasionally, the airspace is used on the weekends or at later times. The majority of this flight time is flown above 18,000 feet. Under this proposal the air force would not regularly schedule training in the proposed airspace weekday afternoons (noon to 6:00) or weekends (noon Friday through to 7:30 a.m. Monday). When training is needed, though, during those hours, the air force would schedule the airspace with the FAA, and the public would be

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notified of this by NOTAM (or Notice to Airmen), just as we do today in the current airspace.

The proposed expansion would provide the airspace needed to conduct local realistic training for Ellsworth and Minot aircrews.

U.S. Air Force flight crews have used the Powder River airspace since the 1980s. As seen on this chart in red, the routes used then crisscrossed the area of the proposed expansion and were predominantly low-level routes. They were designed in the 1980s to ensure bomber crews were prepared to employ nuclear weapons. Many are no longer used and since have been decommissioned.

The current Powder River airspace was a part of

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this network of training routes. It's been used extensively since the 1980s with only a single military aircraft crash in 1997. This accident did not harm any civilians. Military crews using the Powder River airspace have maintained an outstanding safety record. During this period there were zero hazardous air traffic reports, zero high accident potential reports, zero traffic collision avoidance system resolutions, zero air traffic control violations, and zero mid-air collisions.

Over the last two decades, the mission of the U.S. Air Force has evolved significantly. For bomber operations, the mission has changed drastically to the point that the current Powder River airspace has inadequate space and diversity to accommodate necessary B-1 and B-52 training

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requirements for combat.

The current airspace and low level routes permit a single aircraft, or a single two-aircraft formation, to practice low altitude attacks into simulated air defenses. However, today's combat operations require bomber crews to roam vast areas and to quickly respond with a variety of weapons to support ground troops spread across entire countries. As this slide shows, the expansion

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airspace better permits this type of training to prepare our aircrews for combat in Afghanistan.

Additionally, we must train against a variety of emerging threats. These threats range from insurgent fighters employing guerrilla tactics with conventional weapons to an adversary employing a large military with advanced fighter aircraft and long-range state-of-the-art radar and missile defenses. 25 years ago our forces traditionally faced surface-to-air threats that reached out 20 to 30 miles, and we employed bombs from less than a mile away from the target. Today these same types of threats range hundreds of miles, and our aircraft deploy and employ weapons across similar distances.

Realistically simulating a battle environment requires a near four-fold increase in airspace and the use of chaff and flare countermeasures. Limited supersonic flight would also be needed approximately ten days a year.

The proposed airspace increase from one local training area to four local training areas would allow multiple aircraft, or formations of aircraft,

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to utilize individual training areas simultaneously. This would increase the flexibility and training opportunity for our aircrews. In particular, this

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would be very advantageous for Ellsworth Air Force B-1 crews and Minot Air Force Base B-52 crews, as the airspace could support up to 85 percent of their required training events.

Today the size of Powder River airspace is useful for only about 46 percent of B-1 aircrew missions and 31 percent of B-52 aircrew training sorties. However, due to the proximity of Powder River to Ellsworth Air Force Base, aircraft missions that utilize the airspace are able to complete their training and return to base quickly enough to allow that same aircraft to be flown again, by another crew, that same day. If the additional airspace, as proposed, was available, this capability would significantly increase the B-1 training opportunities and the rate at which Ellsworth Air Force Base squadrons could produce combat-ready aircrew.

The Powder River Training Complex expansion would allow supersonic flight during large force exercises, which are proposed to take place approximately ten days per year, and the release of chaff and flares during daily flight activity. Training aircrews would use the electronic scoring site located near Colony, Wyoming that simulates

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surface-to-air missiles and anti-aircraft artillery,

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as well as several heated ground targets. It's important to note that neither the current Powder River airspace nor the proposed airspace expansion include a live bombing range. In other words, we will not be dropping either live or inert bombs onto the ground under the proposed, and we don't do it under the current airspace either.

The size and sectioning of the proposed airspace expansion would also permit more effective scheduling. Much like grazing or crop rotation, military schedulers can activate only the portions of the complex required to support flying activities and only for the block of time needed. Additionally, with four sectors, schedulers would be able to activate more than one area at a time which it could increase the amount of training that can be conducted within Powder River simultaneously.

It's also important to note that neither the current, nor the proposed Powder River airspace contains restricted airspace. Although it's prudent to de-conflict civilian and military training flights, civilian aircraft flying under visual flight rules may legally fly through the Powder River airspace at any time. Aircraft operating

under instrument flight rules would continue to be controlled by one of three FAA air traffic control centers and kept clear of military aircraft. As it is today, information on Powder River activity will continue to be readily available using any one of the Federal Aviation Administration Websites or by checking Notices to Airmen on-line or by telephone

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or by radio through the FAA-controlling agency or flight service station. These procedures have proven effective in the current Powder River airspace for more than 20 years.

To minimize the impact on general and commercial aviation, the proposed airspace design includes transition corridors that would lie between each of the primary airspaces. During normal day-to-day operations these transition corridors would remain open for civil aviation. During infrequent large force exercises, some or all of the corridors may be temporarily activated. The ability to combine the airspace segments would provide flight crews the opportunity to train against a realistic simulation of an adversary employing advanced fighter aircraft using long-range radar and sensors, or simulated state-of-the-art surface-to-air missile capability.

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During the scoping process for this proposed action several concerns were raised. First, there were concerns for the safety and restrictions on use of the airspace by general aviation. To address this concern the air force, in cooperation with the FAA, modified the proposed action and alternatives to minimize impacts to the existing air corridors, victor routes, and airports. As a result, all existing victor routes would remain unaffected, except during large force exercises. Also, the Powder River 1 military operating area, that's the -- well, we don't have a chart up there, but

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it's the one furthest to the west, was redrawn to minimize impacts to an airway that ran through the originally proposed western boundary. In addition, the buffer zones around some of the regional airports in the area were also increased.

Another concern was any limitation on activities such as Life Flight or aerial firefighting. In accordance with FAA regulations, Life Flight and aerial firefighting would retain their priority over military training missions. In the event of a wildfire, a temporary flight restriction would activate over the affected area and no military training operations would occur.

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The current memorandum of understanding between Ellsworth Air Force Base and the Bureau of Land Management on file in Miles City, Montana would continue to regulate the de-confliction of military and firefighting operations in the Powder River Training Complex. In the proposed areas of expansion, the air force would also work to establish similar agreements with the appropriate agencies.

With respect to concerns about noise pollution, the Ellsworth Air Force Base airspace manager and unit schedulers already enact procedures to ensure minimal disruption of ranching, population centers, and other activities due to aircraft noise. The current processes and organizations would oversee the Powder River Training Complex in the same manner.

The potential for additional noise from

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supersonic flight was mitigated by two restrictions. First, supersonic flight will only be authorized during infrequent large force exercises and will not be authorized for day-to-day training. Second, during large force exercises, fighter aircraft would be limited to supersonic flight above 10,000 feet above ground level, and B-1 aircraft would be

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limited to supersonic flight above 20,000 feet mean sea level.

Another concern has been the proposed addition of chaff and flare training. Modern chaff, known as "angel hair" chaff, is thinner than a fine human hair, normally shorter than one inch in length and consists of small amounts of silicon based material that would scatter prior to reaching the ground. While in the air, these very fine filaments are used to create radar interference in order to decoy enemy radar. Once on the ground, chaff rapidly degrades and becomes indiscernible from naturally occurring silica and aluminum soil materials. Modern chaff poses no threat to humans, livestock or any infrastructure such as power transmission lines or sub-stations.

Flares are designed to decoy heat-seeking missiles. They would be used only with appropriate limitations to minimize the fire hazard. They would not be used below 2,000 feet above ground level. Flares burn out by the time they fall about 500 feet. Flares would also not be deployed over areas where the national fire danger rating system

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has issued an extreme fire danger rating.
Altogether, B-1 training chaff and flares have
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been used for years in the military operating areas near Las Vegas, Salt Lake City and Mountain Home, Idaho without distress to the environment.

Finally, some are concerned about the airspace's impact on existing or new commercial enterprises such as wind turbines or mining operations. Any vertical obstructions above 200 feet, such as communications towers or larger wind turbines, require evaluation by the Federal Aviation Administration's Obstruction Evaluation/Airport Airspace Analysis Process. Each would be considered by the FAA on a case-by-case basis. The U.S. Air Force may be consulted, but the air force does not have authority to disapprove construction on private property. If a commercial structure becomes a factor to the airspace due to its height, it would be charted and avoided just as they are today.

Work to expand the Powder River Training Complex began in 2005 and is governed by the National Environmental Policy Act. The process takes many years. It started with a validated military necessity. This necessity is weighed against environmental and public concerns.

In July of 2010, the U.S. Air Force submitted a formal proposal for the expansion to the Federal
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Aviation Administration. The draft Environmental Impact Statement was, of course, published in August of this year, starting the public comment period.
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After the public comments from these hearings are documented and addressed, the final Environmental Impact Statement will be released. This release is estimated to occur in the summer of 2011. The goal is to have a decision on the Powder River Training Complex airspace by Fall of 2011.

In closing, this airspace expansion will greatly improve the training of our U.S. Air Force airmen as they prepare to confront threats facing our nation. Just as enemy threats and capabilities have evolved over time, our training environment must also change so we can realistically prepare to face them.

Okay. Well, thanks for your attention, and now I'll turn it back over to Ms. Linda DeVine to talk more about the NEPA process. And, again, I'll be staying after if you have any individual questions you'd like to ask me. Thanks.

MS. DeVINE: Thank you, Colonel Taliaferro.

Good evening. I'm Linda DeVine. I'm from headquarters air combat command at Langley Air Force Base, Virginia. I'm the Environmental Impact

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Analysis process manager for this project. I am here tonight to discuss the National Environmental Policy Act or "NEPA" and the Environmental Impact Analysis process.

The National Environmental Policy Act is our national charter for the protection of the environment. Basically, it requires federal agencies to analyze the potential environmental

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consequences of a proposed action and reasonable alternatives, including a no-action alternative before any action is taken. The proposed action just presented is the air force's preferred alternative. Alternative A best meets the purpose and need by providing four combinations of military operations areas and air traffic control assigned airspaces.

Alternatives B and C each provide three combinations of airspace but provide fewer areas for training. Under Alternative B, the Powder River 4 MOA Operations Area, or MOA, would not be charted. The Military Operations Area is represented on this slide as PR 4. In Alternative C, the Powder River 1 MOAs would not be charted. Alternative B is superior to Alternative C because it includes the Powder River 1 MOAs. The Powder River 1 MOAs are

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the only airspaces proposed over terrain that would meet B-1 terrain following requirements.

The no-action alternative simply analyzes the environmental impacts of keeping the airspace configuration in its existing state. It provides the benchmark for comparing the effects of other action alternatives.

The National Environmental Policy Act also provides opportunities for public involvement. By being here tonight, you are participants in that process. The goal of the National Environmental Policy Act is to make good decisions, and by involving the public in the process, we try to balance our air force requirements with the

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community and environment. Your input into the process helps us make the most informed decisions possible.

As you can see, there are several key steps to this Environmental Impact Analysis process. We are currently at the public and agency review stage. Copies of the draft EIS were mailed in mid-August to state and federal representatives and individuals who requested copies. Postcards were mailed to all other parties who had expressed an interest in the proposed action.

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During this phase of public involvement, we are providing you the opportunity to review and comment on the draft Environmental Impact Statement. This public hearing is a part of that process. It provides the public an opportunity to learn about the proposed action, the potential environmental impacts, and to provide comments on the draft EIS.

As part of the public comment phase, we have scheduled 19 public hearings in areas we felt we could reach the largest number of interested and concerned citizens. A copy of the hearing schedule is available at the reception table.

At the end of the public comment period, we will combine public and agency input received at this public hearing with the inputs we receive through the mail and use it to prepare a final Environmental Impact Statement.

Once the final Environmental Impact Statement is complete, it will be distributed in the same

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manner as the draft EIS, and after a 30-day waiting period, a record of decision will be signed by the air force documenting which of the four alternatives the air force selects for implementation.

The Federal Aviation Administration has the same requirements under the National Environmental

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Policy Act as other federal government agencies, and for this proposed action, the Federal Aviation Administration is participating in the Environmental Impact Analysis process as a cooperating agency. The FAA has the overall authority for charting new airspace and before any airspace can be charted, they may either accept the air force's Environmental Impact Statement and sign their own record of decision, or complete their own Environmental Impact Statement.

The scoping process, including meetings held in 2008, in which you may have provided input, led us to revise the proposed action and alternatives and helped us focus our analysis. This demonstrates that your comments are important. Once all alternatives were defined, the air force prepared a draft Environmental Impact Statement analyzing the resources having the potential of being affected by the proposed action or alternatives. The draft Environmental Impact Statement includes the purpose and need for the action, a description of the proposed action, and alternatives or the who, what, when, where and why of the action, a description of the existing environment, and an analysis of the potential environmental effects to the airspace,

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human, cultural and natural environment.

Let's briefly look at some of the results from the EIS preferred alternative regarding those environmental resource areas.

One of the greatest concerns identified during the scoping phase dealt with impacts to airspace management, air traffic, and flight safety. After initial analysis, and in direct response to concerns identified, the air force and FAA worked together to revise the proposed action to minimize impacts as described by Colonel Taliaferro. Based on the revised proposal, an estimated 129 daily civilian operations could be impacted through ground holds/diversions or needing to fly VFR see-and-avoid in an active MOA. Pilots choosing not to fly in an active MOA would have to reschedule to fly in that airspace when the MOA is not active. By limiting daily activation of the MOAs during the afternoon hours and on Saturdays, the air force would minimize some of these effects.

Life Flight and other emergency operations would not be impacted as they would be given priority in the airspace just as they are today.

Wake vortices or air disturbances from large aircraft could potentially impact light aircraft

flying through the wake of a low-flying bomber. Because atmospheric conditions and winds common to this region of influence cause wake vortices to decay and dissipate quickly, there's an unlikely

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potential for this to occur, and there are no recorded cases of wake vortex impacts in the existing Powder River airspace.

Large-force exercises are proposed once per quarter for one to three days, a maximum of ten days per year. These exercises would be publicized in advance, and most training would take place below 26,000 feet mean sea level. Most large-force exercise training would not impact jet routes. However, some would have the potential to significantly impact between 43 and 244 high-altitude commercial flights. To reduce impacts, large-force exercise training in air traffic control assigned airspace for the airspace above 18,000 feet would be scheduled by the Federal Aviation Administration.

Aircraft noise was also identified as a concern during scoping due to the proposed low-altitude overflights and supersonic operations. In general, the day-night average sound level, or the ambient noise level that you experience today would be

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similar to that expected under the proposed action, with only minimal changes caused by military overflights. However, any location under the proposed airspace could expect to experience individual aircraft overflights below 2,000 feet between six and nine times per year. These high-speed low-altitude aircraft can produce sound exposure levels greater than a hundred decibels, and the sudden onset can be startling to humans and animals, and could cause domestic animals, such as

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horses and cattle, to spook, especially when penned. To minimize potential safety risks, temporary or long-term avoidance areas similar to those currently in place would be established.

With respect to supersonic flights, which are now proposed only during quarterly large-force exercises, approximately one sonic boom per day could be experienced at any given location on the ground. Most sonic booms would be heard as thunder; although, some could be experienced as a sharp crack-crack. Household items balanced on shelves, edges, such as mantels or bookcases, could fall and break due to vibrations caused by sonic booms. Structural elements of homes and buildings, normally in good condition, would not be expected to fail. 27

No significant impacts are expected to air quality, soil or water resources. B-1, B-52 training would not produce enough emissions to affect air quality or visibility. No ground-disturbing activities are proposed. Residual materials generated from chaff and flare use are inert and would not be in sufficient quantities to affect soil or water resources.

An incidental bird/aircraft strike hazard could occur with endangered species such as the piping plover, whooping crane or interior least tern. These birds are migratory through the area, and the air force implements seasonal avoidance areas to reduce the potential for bird-aircraft strikes. Therefore, the proposed action is not likely to

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adversely affect the population. No effect would be expected to other protected or special status species. Some startle effects could be expected as wild or domestic animals are startled by an infrequent random overflight, but significant impacts would not be expected. The potential for a fire to be caused from the flares is minimal because flare use would burn out within 500 feet of release from an aircraft, and flare use would only be permitted above 2,000 feet above ground level.

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Also, flare use would be discontinued under extreme fire conditions.

The analysis identified many cultural and historic sites beneath the proposed airspace.

The estimated average of six to nine low-level overflights and ten sonic booms per year would not be expected to be seen as a significant impact to national monuments or historic landmarks; although, visitors could be annoyed by the intrusion. Two of the sites within the Little Bighorn Battlefield currently have overflight restrictions below 2,000 feet above ground level, and locations such as Devil's Tower, Bear Butte and Deadwood would not be overflown at altitudes below 18,000 feet mean sea level.

The air force is engaged in National Historic Preservation Act Section 106 consultation with the state historic preservation officers and tribes. And copies of the comments received at these public hearings would be made available to them as part of that process.

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Many of these sites are also traditional cultural properties, and any change in settings created by increased noise, sonic booms or visual intrusions could be considered an adverse impact 29

upon tribal ceremonies and quests.

The air force would establish reasonable temporary or seasonal avoidance areas or could adopt other measures identified in government-to-government consultation with affected tribes to reduce intrusive impacts.

There is a potential for economic impacts from flight delays and potential routings of IFR traffic around an active MOA or air traffic control assigned airspace which is above 18,000 feet. The stratified airspace is designed to be more compatible with IFR traffic and minimize these impacts.

No land use or property value impacts would be anticipated from flight operations, and no ground-disturbing actions are included in the proposed action.

Altitude overflight restrictions would be established over tall structures such as tall construction cranes, power plant stacks and wind farms. Coordination would be required between mine operators and the air force to ensure that radio frequencies used for mining are not used by air force aircraft during training.

Intermittent low-altitude flight would not be expected to significantly impact recreational 30

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activities or interfere with hunting. However, should an overflight be experienced, an individual could become annoyed. The air force would not normally train on weekends, and this would somewhat reduce potential impacts on recreationists.

Environmental justice applies when there is a potential for disproportionately high and adverse human health or environmental effects to minorities, low-income populations, or children.

Powder River 1A and B MOAs have the greatest potential for disproportionate impacts. Powder River 1A lies above an area that has a greater proportion of minority and low-income populations and children than any other area beneath the proposed airspace.

Cumulative effects consider the potential environmental impacts resulting from the incremental impacts of the Powder River Training Complex proposed action when added to other past, present and reasonably foreseeable actions, regardless of what agency or person undertakes such actions.

Air operations and cultural resources could be individually and cumulatively impacted by major energy and transportation development. The establishment of the Powder River Training Complex,

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in combination with any other ongoing activities by federal or other agencies or enterprises, would not be expected to have incremental impacts.

This concludes the discussion of the potential impacts associated with the proposed action and alternatives.

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I would like to thank you for your participation in this Environmental Impact Analysis process and turn the floor back over to Colonel Gregory who will provide you with information on the second and most important part of tonight's public comment period.

Colonel Gregory?

THE HEARING OFFICER: All right. Thanks.

All right. Let's go ahead and move into the public comment part of this hearing tonight. I'll call the names of those who signed up. If you have not had a chance to sign up and you'd still like to do so, if you want to raise your hand now, we'll get you a card. Anyone?

(No response.)

THE HEARING OFFICER: If you change your mind, raise your hand, and someone will get you a card.

I'll call your name, and the procedure gives three minutes to each speaker. And we'll have a

timekeeper over here with some cards who will let you know when your time is running down and the clock is about to run out.

The hearing is scheduled to end at 8:00 p.m. Now, before 8:00 p.m. everyone who wishes to do so has had a chance to speak and you'd like another three minutes to expand on your earlier remarks, then we'll do that once we make sure that everyone else who wanted to speak one time has already spoken.

As I mentioned earlier, we'll give you a

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microphone, this microphone right here so everybody can hear, and also it will help our stenographer here to make sure she gets your remarks accurately. Please clearly state your full name and the name of the organization, if there is an organization, that you're representing before you begin your comments. Please don't provide any other personal information like your home address and phone number, for obvious reasons.

As I said, your comments will be recorded by our stenographer verbatim. They'll become part of the transcript, and they'll be part of the permanent record of this meeting that will be published in the final EIS. The names of the individuals making the

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comments, as well as their comments, will be in the final EIS, but personal home addresses and phone numbers and things like that will not be.

You don't have to speak for the full three minutes. If you choose to speak for the full three minutes you'll see a yellow card over here when you only have 30 seconds left, and when your 30 minutes have ended you will see a red card, and at that point I'd ask you to go ahead and wrap up your statement, and then you can just return to your seat. If you think you're going to run out of time, just go ahead and rack and stack your comments to make the most important ones first.

If, for whatever reason, you don't get a chance to voice all your comments or you think of something later that you'd like to comment on or if you don't want to voice your comments up here with the

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microphone, as we mentioned earlier, you can submit comments in writing, and there is no page limit to written comments. The air force gives equal weight to oral and written comments, and they all become a part of the official record and are included in the final EIS.

Before we start this, just a few concluding suggestions: Please limit your comments to the

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draft EIS that is the purpose of this public comment period. Also, there's no need to repeat what another speaker has already said. If you agree with somebody on a particular point or issue, you can certainly say so, but since it's already recorded, you don't need to repeat it.

So I have the cards here. Did anybody else need one, one more time?

Okay, can we get a card here?

(Complied.)

THE HEARING OFFICER: Just go ahead and fill that out, and then he'll bring it up here and we can go ahead and get started.

Ms. Pfingston has asked that when you state your name, if you could spell it as well, that will help her out a lot to make sure that we get it correct in the record.

Let's see, first card on top here, from the USDA, is Mr. Merrill Nelson.

2001

Mr. Nelson?

MR. NELSON: Merrill Nelson, M-e-r-r-i-l-l, Nelson, N-e-l-s-o-n. Our program is USDA Wildlife

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2001 (cont'd)

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Services. We help the ag communities here control predation for their livestock in this region. We fly about 500 hours in this area low level. We leave before the sun is up from the Spearfish Airport. And we have another airplane in Bison. And, like I say, we work these services.

Our program just started in May of 2009, so we couldn't work with the scoping process because we weren't here at that time. So, anyway, we fly 12 months out of the year. The last month in August we flew roughly a hundred hours alone out of the Spearfish area here. So our responsibility is to protect American agriculture, and that's what we try to do.

I've been a district supervisor for the program for about 20 years and as a trapper for 16 years before that, and I don't think I've ever seen any more low-level flight flying in this area, you know, below 500 feet, by ranchers and organizations, so there is a lot of low-level flight. And what my concern is is flying at 500 feet flying from Spearfish to our destination, maybe some mid-air collisions. Because we only put along at about a hundred miles an hour and, you know, your jet aircraft flies very fast, so the concern for my crews in the air is significant.

SA-1

So with that, that's about it.

THE HEARING OFFICER: All right, thanks, Mr. Nelson.

Let's see, I'll get one off the top here. The

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next speaker I have is Mr. Chris Lien. I hope I got that last name right.

MR. LIEN: You did.

THE HEARING OFFICER: Okay, very good.

MR. LIEN: Thank you, Colonel Gregory.

Chris Lien, C-h-r-i-s, L-i-e-n. 2002

And, Colonel Gregory, I just wanted to say thank you for the opportunity for all of us to be here to comment. I stand before you this evening as a member of the Ellsworth Task Force, a local community group, a local business person, a general aviation pilot and a fifth generation property owner. And after having the opportunity to review the Environmental Impact Statement, I rise in support of the range expansion.] GE-1

And that is all I have. Thank you.

THE HEARING OFFICER: All right. Thanks, Mr. Lien.

Next is Mr. James Mirehouse.

Mr. Mirehouse?

MR. MIREHOUSE: James Mirehouse, M-i-r-e-h-o-u-s-e. 2003

I, too, stand in favor of the expansion. I have Montana livestock interests. I'm an aviator, and I am also a member of the task force here locally. But I really want to see the ability to make sure that our aircrews are combat ready. I also spent some time over in North Vietnam, so I think that it's very important that we have a capability to survive. Thank you.] GE-1] PN-1

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THE HEARING OFFICER: Thanks, Mr. Mirehouse, and thanks for your service.

Next I have Ms. Anita Lee.

Ms. Lee?

2004

MS. LEE: Before I start, could I trouble you guys for some of your water? Maybe you don't have any glasses. That's okay.

THE HEARING OFFICER: You can use my glass.

MS. LEE: That's okay. You guys took an hour and twenty minutes. If I'm going to refute that in three minutes, I thought I didn't want my throat to get too dry.

Anyway, my name is Anita Lee, A-n-i-t-a, L-e-e.

And as you folks have had two years to create and put together this environmental statement, we've had two years to study the impact from our side, and we have been studying how this has impacted the local folks, the ranchers, the farmers, the business

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people in other areas that have been taken as training areas.

We do acknowledge that the Constitution does give the military the right to take our land for training. It also requires that we be compensated. And I have studied the different ways that the landowners have been compensated.

SO-1

Now, the first one, what I call the bottom of the scale, was New Mexico. The land was taken from those ranchers, and they were given nothing. They told them that after the war was over they'd give it back. Well, that didn't happen. They took the land from those people. They gave them nothing. To add

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2004 (cont'd)

insult to injury, they gave part of that land to Germany for a German base after giving them nothing.

There's one gentleman that was so incensed. His name is G.B. Oliver. Some of you maybe have met him. He's been to Rapid City at least once. He started an organization called the Paragon Foundation to help people across the country who are faced with this -- and there's a lot of us faced with this -- to help them fight for their land rights.

Okay, the next one on the scale was Nevada. This is where I started because two years ago we

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were told this one would be exactly like Nevada, much, much bigger but just like Nevada. So I studied how those landowners were treated. There again, they took their land. They told them exactly like we've been told, "Oh, it'll have no impact. You'll never know we're there. It won't lower your property values." Yeah, right.

A young lady last week approached me. She wanted to know where this lied. She had bought a place in the country, nice, peaceful place to raise her kids, and one day the planes were flying 300 feet overhead and ruined their barbecue. And she didn't want that to happen again, and she wanted to know if this would ever happen again, and I showed her the map and yes, it would. She goes, "There goes my property values."

And that's what happens, you can't stand to live there; you can't sell it because nobody wants

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2004 (cont'd)

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to buy a farm -- they say this won't impact farming. Yes, it will. We can't use our crop dusters. They've limited the hours to the hours that we can't spray. You spray the same hours, early in the morning, in the evening that they'll be training. Okay, if you have a ground rig, you can't use that without worrying about the wing vortice which will affect spray from a ground rig.

SO-2

40

Okay, you can't farm. What are you going to do? You can't sell it because nobody is going to want it. If the land values fall, you can't sell it. It's a domino effect. The land values keep falling and keep falling, and suddenly your land is worth nothing. You abandon it because you're tired of paying taxes. This is what happened in Nevada. This is exactly what happened in Nevada. And when things got really bad, maybe ten years later, they came in and gave the few remaining farmers and ranchers pennies on the dollar what it was worth.

Okay, a better alternative is what they did in Idaho. Now, in Idaho they went in, and what they've got is exactly what they're proposing here, but they had a lawyer named Fred Kelly Grant who represented them. He got those landowners exactly what their land was worth. And I suspected two years ago that's why they never mentioned Idaho; they didn't want us to look into that and find out that it was, number one, closer than Nevada and, number two, that we could be paid everything our land was worth.

Now, the fourth alternative is what I call the Texas plan. In Texas they pay the landowners by the

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2004 (cont'd)

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year for the land that they use for the damages they cause. Now, I don't mean to underestimate Fred Kelly Grant's ability. He's a wonderful person, but that would be my chosen alternative, because those people can keep the land.

You know, once the government owns the land, there are no property taxpayers. It's devastating to the counties. If that land stays in private hands, then the counties can continue the way they are because they get their property tax. The cities will stay the way they are because those people living out there -- and this is a four-state area. This is your customer base, Folks. When we're gone, all those new stores they're building, where do you think they're going to go? So that would be my choice, but I'm sure it isn't up to us.

SO-3

But I see I've got the --

THE HEARING OFFICER: She's got the stop sign.

MS. LEE: -- the red sign. I didn't take an hour and 20 minutes like they did, but I thank you for your time.

Can I keep this?

THE HEARING OFFICER: It belongs to the Holiday Inn.

Let's see, next we have Mr. William Griffin.

Mr. Griffin?

MR. GRIFFIN: Thank you. You give her the card, and then she can take the names from the card instead of me spelling it. W-i-l-l-i-a-m,

Page 34

2005

G-r-i-f-f-i-n. Thanks very much.

Been a property owner in this area for 15 years, resident for seven years. Professionally I am trained as an environmental engineer and environmental lawyer. I spent much of my 33-year career in industry doing the same thing these folks did, which is examining projects, looking at the environmental impacts, deciding how to mitigate impacts, that sort of thing. And I am an enthusiastic supporter of the proposal that the air force has got here. GE-1

I'll mention one other story. The lady before me was a better storyteller than me, but I'll share one with you. We just spent three months in France, 60 million people in the space the size of Texas, so it's kind of crowded. There are no wide-open spaces there, but they do have an active military with jet aircraft. They frequently flew over the town where we were staying. Made some noise, but people are accustomed to it. The chickens did not stop laying eggs; the cows did not stop making cheese, and people were comfortable living with it and I was, too. BI-1

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So thank you very much.

THE HEARING OFFICER: Good point with the cards, too. All right, thanks, Mr. Griffin.

Next I have Mr. Marvin Kammerer.

Mr. Kammerer?

2006

MR. MARVIN KAMMERER: Good evening. My name is M-a-r-v-i-n, K-a-m-m-e-r-e-r. In German it means caretaker. I assume we probably followed the lords

9-14-10 2006 (cont'd)

up with a scoop shovel to pick up after their horses.

Anyway, you're giving me three minutes to defend what has taken me a lifetime to try to put together, to defend what my grandfather came here for from Germany, to cross here with a wagon train supplying the mines in Rapid City in 1880.

36 people have died in plane crashes on our ranch. I know what the matter is. I have three cousins that had airplanes shot out from them in World War II. One of them had two of them shot out from under him. So I don't need to sit here and let people try to use the old red, white and blue on me.

Our land is sacred. What we are doing to it today is the same thing we did to the American Indian years ago and are still doing to him. We are

44

the next Indian.

If you want the overflight and the use of this land, then have the good grace to pay us like you do everybody else, in easements, property damage. Who would want to come to my ranch if a plane flew over, a whole fleet of them and I wanted to sell out or a neighbor wanted to sell out and he's been looking for this place for years, something like this? Here these planes just come zooming through. You wouldn't want to buy a house and live right next to a railroad track. That would be rather stupid if you wanted peace and quiet, and we treasure that.

SO-1

In 1980 the Corps of Engineers hauled my butt into court because I wouldn't sign an easement

Page 36

2006 (cont'd)

9-14-10

adjoining your base, 41 acres, not much, but it was the principle involved. So we took them to court, and we were a month and a half in federal court. I had a lawyer who it was his first case, but he was a man who would work for my interest.

We had a man by the name of John Fletcher. He worked for the navy, the army and the air force at times. He was an expert on wildlife and the noise effects on wildlife. That was one of our key witnesses, and we proved to them that the value of a place also includes the quiet and serenity of the

45

prairie.

Your planes -- we used to always keep several geese, ducks around. Every year the hens would come up with maybe a dozen eggs in a nest, hatch out probably ten, but once you brought in these big planes and with that decibel ringing that they get, we were lucky if we got two out of a hatch. Checking these clusters of eggs, you would find that the eggs had, in fact, been fertile, but the embryo died. I don't have any proof of that but I know. I live there.

So those of you who value the Sage Grouse, those of you who value wildlife better start paying attention, those who value the quiet serenity of the prairie, and that is a value added point to any ranch, deserve to be paid for it when you invade their space.

You can blow your money everywhere else. If it's so safe, as you say on the screen, then fly over Rapid City at 500 feet three times a week at

Page 37

SO-4

BI-2

BI-3

SO-1

PN-2

9-14-10

2006 (cont'd)

midnight, full bore. Give them the sound of freedom that we put up with. You are not saving any fuel because you people fly anyway, to Idaho or Nevada, it doesn't make any difference.

PN-2

And I'm kind of wondering, Colonel, you said

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you had to get that plane back in time for another crew to get in it. Don't you have enough planes for the crews?

This whole thing raises as many questions as it answers. And we are the ones who pay your wage, and I am not convinced this is necessary for national security. I've heard that too damn much, and it's getting a little sour. My brother didn't go to Nam, my cousin didn't go to Nam and I didn't lose a nephew to Agent Orange to continue this any longer.

PN-3

Our boys are doing a good job over there, and girls, but they are not being used well. Just because we can doesn't mean we should.

God bless America.

THE HEARING OFFICER: Thank you, sir. All right, thank you, Mr. Kammerer.

Next I have Dr. David Schwietert. I hope I got that right, or close.

DR. SCHWIETERT: Close, close enough.

David Schwietert, S-c-h-w-i-e-t-e-r-t.

2007

Thank you, Colonel.

One of my concerns as a general aviation pilot is the routing between Rapid City and Billings. Of course right now we cut through the edge of the Powder River if we don't want to talk to anybody.

SA-2

AM-3

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9-14-10

2007 (cont'd)

And, of course, part of the problem is that when you're on low altitude in a G airplane, you can't get ahold of Denver Center because you don't have enough altitude. And then they want you to go up to where they can get you in radar contact and then put you right in the weather.

So my concern from an environmental standpoint is that I would like to see some coordination between the FAA and the air force and other facilities so that we would have an IFR corridor, I'll call it a GPS route, between Rapid City and Billings. It doesn't have to be open ended. It could be just a few thousand feet of altitude.

My biggest concern is a non-de-iced airplane is that if we do go to the west and we do fly that route, if we go Victor Airways, we're going to go over to Buffalo and then Sheridan up, and then you have to deal with the weather that comes off the Big Horns. And as most of us know who fly that particular route, you can get icing and other kinds of turbulent weather at any time of the year, especially in the wintertime. So having a more direct route over to Billings would be a safety-of-flight issue.

So, again, if we could have a route that would

AM-1

SA-3

be a GPS route say from 5- to 9,000 feet or whatever it is at low altitude so that we could get through in marginal conditions, we're going to have a lot better safety factor. Especially what we really desperately need is better communications at a lower

SO-7

9-14-10

altitude over in that area because that is a no-man's land. And if you try to get ahold of flight service at a low altitude or, you know, Flight Watch or Denver Center, you can't talk to anybody because they can't hear you. And I don't remember exactly how many you had said, 12 airports along that area, but, you know, it is, again, a safety-of-flight issue. I'd like to see that addressed in the EIS and in the proposal And I think that we can all live together a little bit better, but it hasn't been addressed yet.

So I thank you very much.

THE HEARING OFFICER: All right, thank you.

Next speaker I have is Mr. Robert Heidgerken.

My apologies if I mispronounced that.

MR. HEIDGERKEN: You did very well. It's Robert, R-o-b-e-r-t, H-e-i-d-g-e-r-k-e-n.

I'm a third-generation rancher. I live on a ranch just west of Ellsworth. I will be impacted by this by more noise as more flights are in the

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holding pattern to land at Ellsworth.

I also have many neighbors and friends that live in the Powder River training area that will be impacted even more. And I am concerned about the flares and the noise. I grew up in the early '70s, and I have heard sonic booms, and it is not crack, crack. It is more like two loud rifle reports, one after the other, just boom, boom, and they are very unnerving. It's very hard not to duck when you hear these because you don't know where

Page 40

2007 (cont'd)

SA-4

2008

NO-1

NO-2

2008 (cont'd)

9-14-10

they're coming from or what they are. Sometimes you don't even hear the planes afterwards.

Also, by living near Ellsworth, some of the loudest noises I've ever heard is the sound of a loaded B-1 leaving Ellsworth with its afterburners on and you're looking right up at the pipes. It's not the average noise levels that the air force reports. It is much louder. And if you have to hear these all the time, it does become very unnerving.

I guess my final comment is: Who is the enemy here? What have we done to deserve treatment like this? Is this the new enemy?

I guess that's all I have to say.

THE HEARING OFFICER: Thanks. All right, thank you.

NO-2

NO-3

GE-3

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Next is Mr. Allen Olson.

Allen Olson?

2009

MR. OLSON: Thank you. I have to bring my script sheet. Allen Olson, A-l-l-e-n, O-l-s-o-n. I'm a citizen of the sovereign state of South Dakota.

First of all I want to correct Anita a little bit. That land in Nevada was irrigated. Right now pipes are flowing with water coming out of it. The air force forced them out.

And I'd like to thank Mr. Griffin for bringing up that planes can fly over the cities, but I notice that our friends from the Ellsworth Task Force have never, and did not tonight, volunteer Rapid City to be overflown.

GE-4

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9-14-10

2009 (cont'd)

Now, what happened to me about a month, month and a half ago is never addressed in here, same with Mr. Kammerer, if we are not in this but if you've ever had a B-1 do a power 360 on top of you at 1,200 feet, you will know what noise is. And these little flyovers at the rodeo are kind of a joke. I think they would at least fly what they normally fly over me and throw their afterburners on. Because a B-1 does not emit decibels. That's a conversion. The air force is misleading everybody, and they always average it, which is another misleading.

NO-4

But to get on with what I was going to say: This comes from the Rapid City Journal. It's from Colonel Jeff.

I didn't want to destroy your name.

COLONEL TALIAFERRO: No problem.

MR. OLSON: But he says that the amount of traffic isn't going to increase. Well, I disagree with that. But what my original point is: I wish you would address the impact to the people out of the space on the way to the flight plan or to the airport to land.

AM-2

Now, I noticed that they conveniently left out the Warren Grove fire that was caused by a flare. Now, this is from an AID report from the U.S. Air Force. "There's clear and convincing evidence that the cause of the fire at Warren Grove Gunnery Range on May 15 was a wingman pilot error." Flyer -- or flyer impacted the range that ignited fire. 17,000 acres impacted. Something like 2,000 people,

SA-5

Page 42

2009 (cont'd)

9-14-10

burned their houses. That same airport had an F-16 off base strike an elementary school. I notice that was never brought up here.

SA-5

I noticed also that Linda DeVine failed to say

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a boom of 5 pounds per square foot or greater would be heard. It's not very often, but if you're out on a horse and a boom hits you, it doesn't matter if it's once every 10,000 years or once every 20,000 years, you're on the ground and you're hurt. So all these averages I think are very disingenuous by the air force.

NO-4

I got other stuff in here, but you have a nice day.

THE HEARING OFFICER: And, again, on your other stuff, remember, written comments, no limit.

MR. OLSON: Do I still have a minute left?

THE HEARING OFFICER: Let me ask one question. There was one other fellow who had filled out a card. How many more cards do I have?

UNIDENTIFIED SPEAKER: Three more, sir.

THE HEARING OFFICER: Let me get these three, and then if we're still -- you've got one more little thing?

MR. OLSON: Right.

THE HEARING OFFICER: Go ahead.

MR. OLSON: On the life cycle of a flare, they've changed what they said. Originally they said the air force and the local fire department would react rapidly. Now in the next one -- because

SA-6

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they know they can't react rapidly because they

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9-14-10

2009 (cont'd)

couldn't react to a $13-1/2 million fire that they created in '07 right on the base that spread out and destroys hundreds of acres of land. Of course, the Rapid City Journal, nobody covered it. It says now local agency will respond and just notify the air force. How sad.

SA-6

THE HEARING OFFICER: Thank you. All right, thank you.

I've got some more speakers here who signed up.

Mr. Ray Jilek?

2010

MR. JILEK: It's J-i-l-e-k.

I am the airport manager of the Black Hills Airport at Spearfish, South Dakota, which is underlying the entrance to this proposed expanded MOA. I'm also the owner of Eagle Aviation. We're the fix-base operator there, and we do a multitude of different aviation-related activities, from pilot training, aerial survey work, aerial spraying, charter. You name it.

One of the things that was mentioned earlier is the potential economic impact this proposal has. I don't know how relevant the word "potential" is. When you take an area that -- my backyard now, you draw essentially 180-degree arch and say, "This area

SO-5

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is potentially off limits," granted, there is some provisions made for access through that area. As a pilot and an instructor, VFR would certainly be, as you would get the weather briefing, not recommended. If I'm out there in a hundred-mile-an-hour airplane and I'm looking for a five-hundred-and-some knot

SA-7

Page 44

2010 (cont'd)

9-14-10

airplane, chances of seeing are slim; avoiding are probably nil.

We do conduct a considerable amount of wildlife surveys throughout that area every year, and it's a little disheartening to think that we're going to increase the level of risk we already have. You take -- to put this in a context I can understand, we're looking at taking an area of airspace that's roughly the size of the State of Connecticut and increasing it to an area approximately the size of the state, square-mile wise, of the State of Indiana. And now you're telling me that my best flying hours, which are typically early mornings, are going to be off limits. And at times -- essentially the way I put it, to try and make sense of this in my own mind, is you're taking the State of Indiana and you're saying, Okay, you can drive on just the gravel roads to get around here.

Safety is going to be considerably less. Hope

55

you can avoid the milk truck coming around the corner and so on and so forth. And yet at certain times you can walk because you probably don't want to fly through there at all.

When we have these large-force exercises and so forth, I think economically it will be crippling to our business, as well as my customers who, coming from that area now, it was mentioned that the IFR traffic through the existing MOA, as well as the proposed MOA, is coordinated with the air force traffic, and that's not necessarily true. What we run into today is if there's one aircraft in that

Page 45

SA-7

SA-8

SO-6

9-14-10

2010 (cont'd)

MOA, as an IFR pilot we're not allowed access. We cannot go through that area. SO-6

There's no proposal for increased radio coverage or radar coverage, so in effect if we have one aircraft training in that MOA, the IFR traffic is eliminated. And, you know, to take an area of the size of the Black Hills Region as people want to be here, our airport is, according to your numbers in the EIS, is the fifth most active airport in the study area. AM-3

If you'll notice looking through those documents, there is no mention, there is no location, there isn't even a pinpoint to locate where Black Hills Airport is. We have activity that's going to be greatly impacted with the elimination of IFR traffic through and to our airport. AM-4

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I guess that's all I have to say.

THE HEARING OFFICER: All right, thank you.

Next I have Mr. Matthew Kammerer.

2011

MR. MATTHEW KAMMERER: Matthew, M-a-t-t-h-e-w, Kammerer, K-a-m-m-e-r-e-r.

And I live as close to the base and ranch as anybody there could be. You don't get to be a cow man, you don't get to be a rancher in my mind unless you're there 365 days a year. You don't stand up here and tell me you own cows somewhere and you're a cow man. When you can pull a calf in, chill down, take care of baby lambs, put up hay, put it out in the wintertime, then you're a rancher or cow man.

Page 46

2011 (cont'd)

9-14-10

You're not a landowner operator just because you own land.

My family has owned land since 1882 where I still live. There is a desire to be there that you don't get by just buying land because you have money in your pocket, not by my standards anyways. And when you guys come to us and you tell us you want to be good neighbors, I've seen this time and time

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again being at these meetings, when you walk out that door, you forget what the meaning of both them words are, and I ask you to go look them up in the dictionary.

When you guys come in and you start flying the way you do over my house and everybody else's house, bring your pocketbook because I'm sick and tired of being called a good neighbor and not getting the same thing back.

THE HEARING OFFICER: Thanks.

All right. Next I have Mr. Jeff Carsrud.

I hope I got that right.

2012

MR. CARSRUD: Jeff Carsrud, J-e-f-f, C-a-r-s-r-u-d.

I am a member of a four-generation ranch family that would be affected by this proposal, also a member of the Ellsworth Task Force, also Rapid City area economic development and an honorary commander and proud to serve at Ellsworth Air Force Base, and I stand in support of this proposal and for the defense of our country.

THE HEARING OFFICER: All right, thank you.

More cards? Bring them on down.

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GE-5

SO-1

GE-1

9-14-10

Mr. Larry Reinhold.
You're all set.

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MR. REINHOLD: I appreciate it.
Larry Reinhold, R-e-i-n-h-o-l-d.

2013

You know, before I left tonight my son Danny came up to me and he said, "Boy, if they have any pictures of cool airplanes, bring them home." And I stand before you tonight also wishing to tell you that we have made many friends in the air force over the years, good friends. We're also one of those hundred-year families that have been on the Meade County prairie, and my grandparents homesteaded where we live right now.

We're currently working on a project on the ranch that could change it quite a lot. I'm not going to bore you with the details, but one of the things that we have kept in mind is we wish to preserve the integrity of that land, of that site, of that ranch and of that family. Stewardship is probably the best way to say it. I like stewardship. It's taking care of what God has given to us, what he's entrusted to us.

LU-1

We raise cattle and horses and a little wheat and that. We also run a camp, and for the last 31 years we've operated Rainbow Bible Ranch, straight north of the base 20 miles. And I'm proud to say that we've had a lot of kids come from Ellsworth.

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It's been good, been a good relationship.
But I'm going to raise some concerns here

Page 48

2013 (cont'd)

9-14-10

tonight. Each day we saddle between 20 and 30 head of horses to take kids for a ride. Even after camp is over, every day my kids are on horseback. We're calving right now. In fact, we're branding Saturday. We raise horses; we train horses. My girls rode today. They moved geldings.

One night I took a bunch of kids out. It's not a trail ride. We really try to teach these kids how to ride. One August night I had 38 kids out with me. Agriculture is kind of known as a dangerous situation, but we've been led to bring in kids, too, and throw them on horseback.

You know, I do have concerns, yes, for the stewardship of the land; yes, I have concerns for the safety of my family, the integrity of the land, the ranch. I have concerns for the safety of the kids that come to camp. And with those 400 young people that come each year and their families, we desire to preserve an opportunity for these kids and their families to experience that big wide-open quietness.

In closing, all I have to say is some ad campaign says "Aim high". That would be my

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suggestion. Consideration, compensation, keep that in mind. This is involving a lot of people.

We've had cattle on the Powder River area up near Ekalaka during the drought. I've seen the planes fly. I know how low they fly. Pretty impressive, pretty impressive air show when they fly through. It's kind of like having the Thunderbirds, but I'm not sure if I'm up to the Thunderbirds 365

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LV-1

SA-9

LV-2

SO-1

9-14-10

days a year.

Thank you very much. I appreciate it.

THE HEARING OFFICER: Thanks.

MR. REINHOLD: I appreciate it, sir.

THE HEARING OFFICER: Sure.

Any other cards? Any other speakers? Anything? I still have some time. Anybody want to expand?

Mr. Kammerer, I think you ran out of time. If you want to come back up, we'll put another three minutes back on the clock, as they say in the NFL.

MR. MARVIN KAMMERER: I won't bore you with just three minutes. Anyway, I have in my hand here two resolutions opposing the Powder River MOA, one from Dakota Rural Action, which is a very capable and honored organization in this state, respected highly in the legislature; another one from the South Dakota Stock Growers who last week came up with a resolution strongly opposing the deployment of this Powder River MOA. So these people represent a large area, and they deserve to be heard; they deserve to be considered. And if you're going to impact them, for God's sake, start paying your dues.

2006 (part II)

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I mean, the Rapid City Task Force helped spend $17 million on a bridge that goes to nowhere east of the airbase. 5 million come out of the state so they could supposedly keep this base open. If the base hasn't any need for national security, let's get rid of it.

We can't keep pretending. Eisenhower warned us

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2006 (part II cont'd)

9-14-10

about this. General MacArthur warned us about this and take a look at what happened to the Romans.

My kids, when I'm pushing up daisies, are going to deserve a hell of a lot better than I see down the road to them. And they're all producing, every one of them. They're teachers; they're nurses. They raise kids on these ranches. Some of them are going to your service. Best damn kids in the world come off these ranches. Don't try to eliminate any more of them. They deserve and they're the best that there is in this state.

LU-3

THE HEARING OFFICER: Thank you. Sir, those

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resolutions, they can be written comments.

MR. MARVIN KAMMERER: They will.

THE HEARING OFFICER: Okay.

I was just telling Mr. Kammerer, those resolutions, they can be considered written comments, so he's going to submit those, and anyone else can do so as well.

2004 (part II)

Is Ms. Lee still here? Ms. Lee?

I was going to give her more time.

I thought you wanted a little more. If you do, we'll put three minutes back on for you, too.

MS. LEE: Well, I don't know that I need three minutes, but I will thank you for not doing what you did two years ago.

The commander has pretty much told us that the need for this was saving fuel; they had to go all the way to Nevada, and they were causing these people to burn too much fuel. Well, I'm glad you got off of that because as we got to the end of the

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2004 (part II cont'd)

9-14-10

Environmental Impact Statement it said the biggest impact, it wasn't for ranchers that were going to be displaced; it wasn't the air pollution that was going to be increased many times over. It was the major increase in fuel consumption, kind of the opposite of what we were told, but it's a major

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increase in fuel consumption because the planes that fly over us will have to go around. And I don't just mean the little guys. And I don't mean to belittle you. You did a good job, and that was a good point. There's a lot of little airports that will really be in trouble.

But the Environmental Impact Statement went quite a little into the major airports that would be impacted. We only have about 500 of the big airplanes that go over us a day. I'm talking about Northwest, United, the big airplanes, the high level. But in a bad weather situation, which they said on the average occurs about a hundred days a year, we are their bad weather route. If there's a storm south of us, which they said on the average is a hundred days a year, they fly over us, so this is when we impact the big boys. They listed Seattle, Washington D.C., New York. I can't remember them all but pretty much all the big airports. They said when they couldn't go around -- or go over here to go around their usual route, it would, on average, impact by giving a two-hour delay.

Well, you know how this domino thing is, if you mess up these big airports by two hours, you're

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SO-7

SO-8

SO-7

2004 (part II cont'd)

9-14-10
going to impact the international flights. And if
64

anybody has been paying attention to the news, they know that our big air carriers are hurting financially. It isn't the air force that needs money to buy fuel; it's our domestic carriers. So they're going to save a little fuel maybe by making our major airlines spend a lot more on fuel. Now, I don't see how that's going to help the economy anywhere. But I do appreciate the fact that at least they didn't tell us that was their need.

SO-7

So we've all learned a lot in the last two years, and I'm sure we'll learn a lot more. And I thank you for the time.

THE HEARING OFFICER: Thanks.

Anyone else wish to add to their remarks?

Would you state your name one more time for her, just your last name.

MR. OLSON: Olson.

2009 (part II)

THE HEARING OFFICER: There we go.

MR. OLSON: And I'd like to invite you folks -- you'll have to probably drive to Belle Fourche or Alzada -- to stop at the ghost town of Whitewood and see, I suppose, a thousand people. And I hope this isn't indicative of your whole Environmental Impact Statement. It's right past Sturgis. A thousand five hundred, doesn't matter, but it's not a ghost
65

CU-1

town by any means. But -- and that's on Page 3, 120 are ghost towns.

But I'd like to read Douglas MacArthur. In 1957 he said, "We have to remember that the
Page 53

GE-6

9-14-10

2009 (part II cont'd)

Department of Defense consumes more money than all 50 states." And this is why -- and this was said in '57 and is still indicative now. I heard it the other night. It's the sound of freedom. He goes, "Our government has kept us in a perpetual state of fear, kept us in a continuous stampede of patriotic fever with a cry of grave national emergencies. Always there has been some terrible evil at home or some monstrous foreign power that is going to gobble you up" and we did not blindly "if we did not blindly rally behind it." Now, that was over 50 years ago, and it's still indicative today.

GE-6

Thank you.

THE HEARING OFFICER: Thanks.

Anyone else wish to add to their remarks?

Well, again, I want to thank you for coming out tonight. If you've not had an opportunity to do so, please take a look at the display boards that are still out there. And if you want to do the written comments, please provide those as well.

I appreciate your time and your interest in the

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Powder River Training Complex EIS proposal, and tonight is certainly not the end of your opportunity to participate in this process. Written comment sheets are available at the registration table. You can turn these in tonight; you can mail them; you can fax them at your convenience. If you do mail your comments, send them to the address that's printed on the brochure and the comment sheets.

Public comments are welcome in writing at any

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time during the Environmental Impact Analysis Process. However, to receive timely consideration for the final EIS, all comments must be submitted by November the 15th, 2010.

If you'd like your own copy of the final EIS, please let us know at the registration table or send a letter or a postcard, and then we'll send copies of the final EIS to you.

I want to thank you for your participation. I'm going to go ahead and adjourn the formal part of the hearing.

And, again, the posters are still up outside, and I believe our representatives will be out there and available if you'd like to chat.

So thank you again for coming out tonight.

(The hearing concluded at 7:45 p.m., September 14, 2010.)

STATE OF SOUTH DAKOTA)
) ss.
COUNTY OF PENNINGTON)

I, CINDY K. PFINGSTON, hereby certify that the foregoing pages numbered from 1 to 66, inclusive, constitute a full, true and accurate record of the proceedings had in the above matter, all done to the best of my skill and ability.

DATED this 30th day of September, 2010.

_____

CINDY K. PFINGSTON
Registered Professional Reporter

9-14-10

My commission expires:
February 4, 2016

9-15-10

the record.

So with that, the card on the top, let's see, Mr. Guy Edwards?

Come on up, Mr. Edwards.

2014

MR. EDWARDS: Can I speak from here?

THE HEARING OFFICER: You can.

Can everybody hear him if he speaks from there?

MR. EDWARDS: I have a concern because I'm a

pilot of a small plane, and it resides in Spearfish, a small airport. And I'm concerned about the size of this new military operation area being so close to the airport, which is a busy, active, small GA airport, surprisingly a busy little airport, and the impact it's going to have on that airport in the future because it's going to change the pattern of people's flight.

AM-5

I know when I'm making a decision on going somewhere and I see a military operation area, you know, it will change my vectoring to a location because I'll vector to a corner of an MOA, for example, if I go to Sioux City or something and I've got an MOA in the area south of Mitchell. So you'll make those decisions.

And with this size of an MOA -- obviously you've heard this before, but this is a giant MOA. So if somebody is making a decision to come from Seattle or Portland or someplace to come across the country or Minneapolis going the other way or North Dakota coming down, that giant footprint is going to change their decision-making when they decide to buy

SO-9

2014 (cont'd)

fuel or spend the night or buy a cabin in the Black Hills or come here and visit versus somewhere else if they happen to be pilot oriented using flight or

SO-9

chartering flights or whatever.

So I see this as -- you know, I'm a big fan of the air force. I've been on some trips with the air force as a guest of the air force. I've been impressed for 40 years with that association, but this footprint is gigantic when its size is spaced the way it is. I mean, you're talking 300 miles across, I suspect, or 250 to 300 miles across. So when you're going north/south, that says no plane up to 60,000 feet can go through that area and, of course, no little planes. And even general aviation or commercial aviation flies much over 36,000 to 41,000 feet, so it's going to affect not only my little Mooney but nearly every plane in America making decisions, whether you're a corporate, decision-maker for corporate flights or even if you're Northwest or Delta Airlines making decisions, this is going to impact them.

AM-6

But I'm, of course, being selfish, and I'm mostly concerned about the Spearfish Airport and the Belle Fourche Airport. So if you can change this up into North Dakota, I'd be very happy. Canada would be better.

SO-10

THE HEARING OFFICER: Okay. Thank you, Mr. Edwards.

Next, Ms. Lee.

MS. LEE: I'm afraid I might need the mike. I

9-15-10

don't have as good a voice as Guy.

THE HEARING OFFICER: Let me give you this one so we don't risk getting her equipment off that table.

MS. LEE: I'm Anita Lee. You've got my name from last night. I was at the meeting last night, and I did go through -- and I won't repeat what I said last night, but I did go through the four basic ways that landowners are reimbursed for these training areas. And the base commander, after the meeting, was gracious enough to come and visit with me, and he explained that they have no intention of reimbursing us because they feel that they are not taking anything from us, and that tells me which direction we need to go.

2015

SO-1

Well, I came tonight with better ammunition. And I won't read to you all of this, but I will share anything I have in my hand to anyone interested after the meeting. But I brought just a legal dictionary, and under eminent domain it explains -- we all know what eminent domain is, so I won't go into that, but "Another property right that is litigated and routinely protected is the right to

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reasonable and ordinary use of our airspace over our homes." That means that it's often litigated, and the landowner always wins. That's encouraging.

It also says that taking of the property, by reducing its value is a taking, and under those examples of things that take the value is noise.

And then they gave us a new term, inverse

GE-7

SO-1

GE-7

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2015 (cont'd)

condemnation. Some of you maybe haven't heard of that. Some of you maybe have. And that is enacted when the taker makes no attempt at eminent domain. Then the landowner, business owner -- Mr. Edwards gave us a good example of a business that will be impacted.

GE-7

Another excellent one, I think, would be campgrounds. These planes go over your campground, and the next thing early in the morning these people want their money back for the rest of the week because they're not going to go through that again another night. There's a lot of businesses that are going to be impacted by this.

SO-9

Okay, the courts have held -- and I brought with me in this little pile of stuff 25 to 30 examples of court cases that have been proven by inverse condemnation proceedings. That means the property owner has to go to court to sue the taker

what they have won. And we are entitled to compensation, and don't let them tell you we're not because we are.

SO-1

And I see I have the flag. And I won't run over tonight, but I would reserve the right to come back if there is time for a second speech. And I will share my information with anyone who is interested in it.

Thank you.

THE HEARING OFFICER: There will probably be time.

Next I have Mr. William Hauck. I hope I got that right.

9-15-10

Mr. Hauck?

MR. HAUCK: First I'd like to say --

THE HEARING OFFICER: Mr. Hauck, would you mind spelling your name for our --

MR. HAUCK: H-a-u-c-k, William. 2016

THE HEARING OFFICER: Thanks. Would you like to use the mike, or you want to --

MR. HAUCK: No, I'm fine.

THE HEARING OFFICER: You're good? Okay.

MR. HAUCK: Thanks to the military for keeping us safe with their practices. They need to do that.

I'm a North Dakota native. I made a flight to

Miles City the other day in my Subsonic Piper 140. Do you think it's possible that the environment could impact the air force? I counted nine high-flying raptors, eagles and hawks on my way up to Miles City. Do you remember Sully and the Hudson? Flying that low at 500 feet off the deck at that speed, there's always that possibility, and I'd like to encourage you to take that into consideration. SA-10

Thank you.

THE HEARING OFFICER: Thank you, Mr. Hauck.

Mr. Clark Blake? Mr. Blake?

MR. BLAKE: I'm a rancher that's under the current MOA, and we've had a lot of, I guess, harassing things on our ranch with low-flying aircraft, and I expect that it's going to get nothing but worse with this. I've been there long enough that I experienced the supersonic booms from 2017 NO-5

2017 (cont'd)

9-15-10

back in the '70s when they were doing that very routinely and also the low-flying fighter jets which are going to be part of this also.

I raise cattle and sheep, and it's imperative that I'm able to fly to check that. I'm a pilot and fly a small plane, and this is going to have a significant impact on my operation. It's already

NO-5

SO-11

40

something that I have to be very aware of when I'm flying looking out for the bombers, but when we get those, especially fighter jets in here, I realize you're saying that they're not going to come below 500 feet. You may not, but I -- in the past my experiences have been that you do routinely as low as a hundred feet. Prior to when they erected that B-1 in the '90s, they rarely got that high over my place.

So I'm opposed to this. I appreciate the work the air force does in defending our country, but I don't know that we should have to bear the impact of this to keep our country safe.

GE-2

THE HEARING OFFICER: Thank you.

Any other speaker cards out there?

Mr. Jim Johnson?

2018

MR. JOHNSON: I want to ask a question in regard to your supersonic elevations and how many decibels. You said that they exceed a hundred decibels. Now, is elevation a big factor in the amount of decibels that actually hit the ground?

NO-6

MS. DeVINE: Yes, sir, a sonic boom will hit the ground by pounds per square inch, and the altitude and the actual aircraft itself, the size of

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9-15-10 2018 (cont'd)

the aircraft will affect the pressure on the ground

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or the vibration of the ground, so will the atmospheric conditions.

MR. JOHNSON: Is there any ultrasonic magnetic waves involved in the sonic boom?] NO-7

MS. DeVINE: Magnetic wave, no.

MR. JOHNSON: You're sure about that?

MS. DeVINE: It's air pressure.

MR. JOHNSON: Now, you've got your fighters at 10,000 foot above sea level.

MS. DeVINE: Above ground level, sir.

MR. JOHNSON: Ground level?

MS. DeVINE: Yes, sir.

MR. JOHNSON: But you don't know what the decibels would be at 10,000 foot on the ground for a direct flight with a small aircraft, your fighters? How many decibels would it be?] NO-8

MS. DeVINE: Off the top of my head, sir -- noise varies based on the configuration of the aircraft at the time, and the altitude --

MR. JOHNSON: Well, you're talking about the fighters, and then you're talking about the B-1s.

MS. DeVINE: Yes.

MR. JOHNSON: So you probably know what they would be. I suggest you find out before you go any further.

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MS. DeVINE: There is a table in the draft EIS, sir, that if you'll see me afterwards we can look for that.

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2018 (cont'd)

THE HEARING OFFICER: All right. Thanks, Mr. Johnson.

That was J-o-h-n-s-o-n.

Next I have Mr. Paul Soulek. I hope I said that right.

MR. SOULEK: Soulek.

THE HEARING OFFICER: Soulek? Sorry.

MR. SOULEK: S-o-u-l-e-k.

2019

I was called this morning to come here and speak for the South Dakota Aviation Association. For you that don't know what that is, it's an organization for aerial advocators.

And I guess the concern is the low-level part. Now with the amount of towers that are popping up all over where -- we have a saying called "At five, stay alive." So we are flying higher to get to the fields. And I see that the area that you guys are moving out into are into more crop ground.

In the summertime we have a large amount of aerial application going on, so the concern is the low-level high speed getting tangled up with the airplanes.

SA-7

43

So that's, I guess, what I wanted to point out.

THE HEARING OFFICER: Thanks for bringing that up.

UNIDENTIFIED SPEAKER: Where are you from?

MR. SOULEK: Spearfish.

THE HEARING OFFICER: Next I have Mr. Ray Jilek.

MR. JILEK: Jilek.

THE HEARING OFFICER: I'm sorry?

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2020

MR. JILEK: Jilek, J-i-l-e-k. I'm the airport manager at the Black Hills Airport in Spearfish, and I spoke last night briefly, and I won't go over that.

One of the things in trying to digest this Sears and Roebuck Catalog as I see as your environmental assessment, I haven't run across any notes so far, but I'm curious, I've stumbled across a document here earlier when the scoping meetings came out was an exception 7960-C. That appears to allow and give the air force exemption to fly lights off at night in this MOA existing today.

AM-7

And my concern is we've all been led the direction to believe that the IFR not being an alternate to get through this airspace, well, we can just go VFR and see and avoid. And now logically as

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the traffic numbers increase, that expediential (sic) increases the danger to me as a pilot and anyone else that's in that airspace assuming they can see and avoid.

SA-11

Now you guys shut your lights off out there, we've got a whole other story. If I'm flying through there at night, do you want me to take your families for a ride? Another analogy might be when we leave here tonight, maybe you can keep your headlights off and drive back to Ellsworth Air Force Base and the rest of the drivers will see and avoid you.

So we're limiting our options. And this is one thing that has been granted to the air force. I

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2020 (cont'd)

don't know and I haven't run across the plans if that's part of this to be used, but it significantly changes the game plan if, in fact, we're limited and we can't fly through this airspace. And now it would be absolutely foolish for me to fly out there VFR when you guys don't have your lights on.

So my concern is to the communities that are involved and us as citizens, this is a significant economic factor that is only identified in this document as a potential economic impact to us as citizens, communities and people who live here.

SO-6

45

When you take this airspace and essentially close the door, everything north of my airport, and say no VFR -- or no IFR traffic is allowed through that area and VFR traffic might be playing Russian roulette to get through there, that's no different than shutting off Highway 85 North to this community and saying, We're going to allow you to use it from noon to 6:00 p.m. only. The economic impact to all of us I don't feel has been established, quantified or addressed in this document.

SA-7

SO-6

Thank you.

THE HEARING OFFICER: At the beginning of your comment I thought I heard kind of a clarification question.

I don't know if any of our representatives, perhaps FAA, this exemption that he mentioned --

MR. JILEK: I've got a copy of the exemption with me.

THE HEARING OFFICER: See Mr. McGrath.

Oh, there we go. I think he asked if that was

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2020 (cont'd)

going to apply.

MR. MCGRATH: That may be in effect (inaudible) --

MR. JILEK: It is in effect currently through January of 2013. There's a copy of it (inaudible).

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MR. STONE: George Stone.

We have a memorandum agreement that controls (inaudible). It's currently not being used; however it is still in effect with both Salt Lake Center and Denver Center. I don't have the details on that.

MR. JILEK: This appears to be valid through January 31st of 2012, after which it can be extended or renegotiated, I'm sure.

THE HEARING OFFICER: All right. Well, thanks for bringing that up, and I think we can get some more clarification on that.

Mr. Gene Johnson?

2021

MR. JOHNSON: Yeah. J-o-h-n-s-o-n.

THE HEARING OFFICER: All right, thanks.

MR. JOHNSON: I'm a rancher north of here. I hope you don't come my way. I appreciate the military. I'm a patriotic American, but this is going to cause a lot of damage to our livestock.

SO-11

And as Blake was saying, I've got a small plane I use and fly on a daily basis, low level. And I've experienced some B-52s going through.

As you're flying around, you're looking at the ground, you're looking at livestock, or if you're aerial hunting, you're constantly looking at the ground, especially them B-1s, you'll never see them.

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2021(cont'd)

They'll be by you before you ever see them. The wind verticals, you've already gone by. I've hit them, and they about flip you over. I'm not sure they haven't downed a few planes and been through a wreck and didn't know it, what might have went down.

SA-7

I question the effect it'll have on wildlife, where the sage grouse is primarily on what I think of -- they're possibly going to be put on the endangered species list, and they're a very touchy little bird. And I question whether that's been addressed on the effect it'll have on some of these birds and wildlife. I know what they'll do to livestock. They'll tend to bunch the sheep up.

BI-3

Land values, it'll affect your land value. I mean, nobody is going to want to buy a ranch if you're on a direct flight to these B-1s. I mean, they are loud, really, really loud. They'll shake your house. You don't have to break the sound barrier to shake your house. I know you guys gotta fly somewhere, but we're going to pay a price, and it's going to cost us, especially I would say in values of our real estate. And if I was buying a ranch and there was a, under a flight zone going over the top of my house, I wouldn't think about buying that. And hopefully I won't have to sell

SO-1

NO-5

SO-1

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mine. But it'll lower the values of the real estate without a doubt. I think there should be some compensation if this is forced on us like this.

Because don't mislead yourself, it is going to affect us. And we're country people. We like

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2021(cont'd)

our -- one reason we live out in the country is because we like peace and quiet, and you're talking major noise, and it affects livestock, it really does.

Thank you.

THE HEARING OFFICER: Thank you, sir.

UNIDENTIFIED SPEAKER: What's your address?

MR. JOHNSON: Belle Fourche.

THE HEARING OFFICER: Any other cards? Well, we still have some time and -- yes.

2022

MR. EDWARDS: Guy Edwards.

You don't fly with transponders on, do you?

MAJOR WINTERS: Yes, sir.

MR. EDWARDS: Oh, you do? So if I have a little instrument in my plane, it'll pick you guys up?

MAJOR WINTERS: We don't have TCAS. We have a transponder that communicates with --

MR. EDWARDS: Are you transmitting a code that is normally picked up as anybody else would be

AM-8

picked up if you were submitted?

MAJOR WINTERS: No, sir. We don't transmit and receive with other aircraft, if that's what you're asking. Like with a TCAS type system, we do not have that.

MR. EDWARDS: So you're relying solely on radar as you're moving along seeing a plane in front of you? Obviously you would be able to see other targets like a small Cessna or a Mooney or something like that that's flying in this MOA VFR and you're

2022 (cont'd)

9-15-10

flying in a B-1 or a fighter plane, you can see those on your scope, can't you?

MAJOR WINTERS: When we're daytime VFR flying low altitude we're see and avoid. Pilots are using a visual scan to see and avoid other aircraft.

MR. EDWARDS: At what, 3-, 400 miles an hour?

MAJOR WINTERS: At 540 knot speed.

MR. EDWARDS: Six hundred plus miles an hour?

MAJOR WINTERS: I couldn't tell you what the conversion is right now. We use knots.

MR. EDWARDS: Let's say 600 miles an hour then. So you're low, flying VFR in a sense, and you're doing see and avoid at 600 miles an hour. I'm glad I'm just flying a little slow plane because I don't know how in the world a person could do that. I'm sure you've got to be younger and highly skilled and highly trained because that would be off the charts as far as a skill. So you've got to really say kudos to those pilots that can do that.

50

What scares me is that I'm flying along, not that I intend to live forever, but I'd hate to be taken out by another plane and see that they have no ability to see me other than if they happen to see me. Now, they're also flying at such a speed that they have to really concentrate, so they may not even pick you up.

SA-7

I know when I'm -- I can get -- air traffic control says, You've got traffic two miles away at one o'clock. Now, let's say five miles. Not unusual for air traffic control, you're going through -- you're on radar. You're on either IFR or

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2022 (cont'd)

flight following, so you're on radar with air traffic control in communication with them, and they tell you five miles, one o'clock, traffic. And you can't imagine how often you look out there -- and you know where it's at, five miles. You know it's 2,000 foot above you, and you look and you look and you look, and you can't even see the plane. And you would think, Boy, dummy, why can't you find that plane? And you start scanning, you know, from noon to two, a thousand foot above you trying to find that plane, and it's hard to find that plane.

51

Now all of a sudden you've got a guy in a 600-mile-an-hour airplane 500 foot off the ground doing that, it would be a near impossibility -- even if you did see it, I don't know how in that speed you could avoid, almost certainly avoid that quickly because he's looking at instruments and looking at the ground and having to concentrate very hard at just managing the flight of the airplane.

SA-7

So those are obviously concerns that anybody in a Super Club -- a Super Cub or a small plane would have to be really worried about.

THE HEARING OFFICER: All right. Thanks for raising that.

I think we have someone else filling out a card here.

And, ma'am, you're obviously going to be next. Is it Maass?

MS. MAASS: Maass, that' correct.

THE HEARING OFFICER: M-a-a-s-s, Susan Maass.

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2023

MS. MAASS: I'm located out near Union Center, and I'd like to speak on behalf of Buffalo ranchers in this three-state area.

What I'm learning by being here tonight is the amount of noise. The low flying is definitely going to affect buffalo herds, and South Dakota is the largest population of buffalo in the United States. I believe North Dakota is second in amount. And once they spook it's a little bit different situation than when other animals spook. And I don't have the exact numbers on that, but I could look it up.

NO-5

BI-4

THE HEARING OFFICER: Thank you, ma'am.

Anyone else who has not had a chance to speak yet who would like to?

Let's see, Ms. Lee, you wanted -- as they say in football, "Put three minutes back on the clock."

MS. LEE: Can everyone hear me?

Last week the South Dakota Stock Growers had their annual convention in Rapid City. They passed unanimously a resolution opposing this. And one of their demands, which I thought was excellent, they want any claims to be handled locally. The Environmental Impact Statement says repeatedly that if you have a damage claim, you're to dial this number, which is the Public Relations Office at Ellsworth. And just for kicks I had to dial the number. It's been three weeks, and so far they haven't returned my call. If they have that big of a backlog already, I hate to think what it's going

SO-12

GE-8

9-15-10

2023 (cont'd)

to be when this thing gets fired up. But I think the main reason this is an excellent idea is it takes a lot of expertise to handle these claims.

GE-8

Okay, so your horse spooks, your horse goes through the fence, what's a horse? Is it an old plug that nobody rides and was about to put down anyway and so all they owe you is the vet bill, or is it your daughter's championship barrel horse that she won the national championship on and in which case the vet bill is not anywhere close to compensation.

SO-13

Or say your husband was spraying and one of these wind vortices moved the chemical off to the wrong field and suddenly he put RoundUp on his field, okay, what's the value of a field? Is it Alfalfa that is a beautiful sand and you were saving for seed, or is it a wheat field that's already been hailed and -- you know, it takes a lot of expertise. You're going to have to have several people on this committee.

SO-2

How about your real estate? Okay, you go to sell it and nobody will buy it; it went down to zero. You should have at least one real estate agent on this board.

SO-1

54

There's a lot of reasons why handling these claims locally makes sense. I could not find precedence for it anywhere, but if we're going to be the biggest training area in the country, maybe we should set the precedence. It's got to start somewhere, and I think it's an excellent idea. And

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2023 (cont'd)

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I do have their entire resolution with me if anybody wants to read it, but I won't bore you with it now.

Thank you.

THE HEARING OFFICER: Thank you.

Sir?

MR. HOWARD: May I ask a question?

THE HEARING OFFICER: Again, you can make a comment, and if it's something we can clarify, we'll certainly do that.

2024

MR. HOWARD: Two questions. One is: Is there another MOA in the area or region or the country that matches the distance that we're talking about? PN-2

Second question: Is there a contingency, if we vote this down, the air force agrees with us? Two questions. NP-1

THE HEARING OFFICER: Well, I don't know about the other MOA.

If any of you folks could clarify that.

I don't.

55

MAJOR WINTERS: Sir, that's discussed in the draft Environmental Impact Statement. There are other military operating areas in the country. However, we're proposing to expand the current airspace that we use locally to affect realistic combat training for us, and that will enable us to do more training, if that answers your question.

And your second question, I'd be happy to speak to you afterwards after everyone has had time to speak and talk to you about that as well.

THE HEARING OFFICER: Did anyone else want to reengage?

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2020 (part II)

MR. JILEK: Jilek, J-i-l-e-k.

Just kind of working my way through this whole concept and the gears turning and so forth, I'm wondering if, in fact, it's realistic to assume that this is really the intent of the Military Operations Area, or have we moved beyond that to a restricted airspace concept? AM-9

When we start talking about aircraft that are traditionally limited by the FAA to 250 knots below 10,000 feet altitude and now we're mixing up with aircraft at 500, plus whatever knots, at low altitudes, we're talking about potentially the question I raised earlier was the nights lights-out SA-11

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operations at night. We're talking about chaff; we're talking about flares; we're talking supersonic flight; we're talking about a lack of radar coverage SA-27 where you can't see me out there, center can't see me, nor can I talk to anyone. Is this realistically AM-3 an environment that should be considered an MOA, or should it not be training that is conducted in a restricted area where the airspace is already locked down; it's your playground; you go out there and play with all your big toys, train up as best as you can. AM-11

And I think everyone in here would agree we need a well-trained military, and we all support you in that direction. But economically I don't think that it's proper that we, as the locals, pick up the tab. SO-14

THE HEARING OFFICER: So the concern would be

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2020 (part II cont'd)

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restricted airspace versus a MOA?

MR. JILEK: These training activities I've come to believe are more appropriate in a restricted area, yes.

AM-11

THE HEARING OFFICER: Thank you.

Anyone else?

MR. JOHNSON: Johnson.

THE HEARING OFFICER: Thanks.

57

2018 (part II)

MR. JOHNSON: When we're flying these airplanes, you know, can fly around 200 foot probably or lower, but my life is in your hands. I'm not -- you're going to go by me, and I don't think you see me.

SA-1

I mean, I've had them fly over my place there a few years back, one right after another, B-52s, and I just thought I'd see if they would see me, so I headed right for them, same level. They don't move. I moved out of the way because you weren't going to move. There are a lot of people out there flying airplanes, and you're a lot bigger than we are. You can knock us out of the sky.

I've got kids. I got a family, and I don't want to die in an airplane with a head-on collision or knocked out of the sky. Because it's a fact, those wind verticals are dangerous.

SA-7

THE HEARING OFFICER: Thanks for sharing that.

Anyone else who would like to make a comment who has already spoken? We've still got some time if you want another three.

(No response.)

THE HEARING OFFICER: All right.

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Well, again, I appreciate your time and interest in this EIS proposal. And as I said at the beginning, tonight is certainly not the end of the opportunity to participate in this. Those written comment sheets, again, they're available on the registration table. You can turn these in tonight. You can mail them, or you can fax them. If you mail the comments, please send them to the address that's printed on the brochure and on the comment sheets.

Public comments are welcome at any time during the process, but to receive timely consideration, again, as I said earlier, all comments must be submitted by November the 15th, 2010.

If you'd like your own copy of the final EIS, please let us know at the registration table or send a letter or a postcard asking for your own copy and we'll send copies of the final EIS to you.

Thanks for your participation. The formal part of the hearing is adjourned, but this place will remain up, and the representatives will be available if you'd like to chat some more about the displays and the projects.

Thank you very much.

* * * * *

(The proceedings concluded at 7:25 p.m., September 15, 2010.)

STATE OF SOUTH DAKOTA)
) ss.

9-15-10

COUNTY OF PENNINGTON)

I, CINDY K. PFINGSTON, hereby certify that the foregoing pages numbered from 1 to 58, inclusive, constitute a full, true and accurate record of the proceedings had in the above matter, all done to the best of my skill and ability.

DATED this 30th day of September, 2010.

_____

CINDY K. PFINGSTON
Registered Professional Reporter

My commission expires:
February 4, 2016

MR. NELSON: I get to be first, huh?

HEARING OFFICER GREGORY: If you'd like to. Otherwise I can call Ms. Linda Gilbert.

MR. NELSON: Call Linda.

HEARING OFFICER GREGORY: The floor has been yielded to Ms. Linda Gilbert. Ma'am, you can come down here.

MS. GILBERT: Here I thought --

HEARING OFFICER GREGORY: Beauty before --

MS. GILBERT: Yeah, yeah.

HEARING OFFICER GREGORY: Tell her your name.

MS. GILBERT: Linda Gilbert, resident of Harding County. And my comment is, we have a natural gas field on our ranch, and I'm concerned about the effect of the flares because there's no shut-offs on individual wells. If a flare were to hit, it would cause the whole gas field to be compromised. So I wanted to make that sure.

And also, we have private pilots on our place, and I'm concerned about the radar, whether it's possible with the radar between Dupree and Miles City -- right, Larry? Between Dupree and Miles City is where the radar is ineffective. So we don't know necessarily if the fighters will be aware of civilian aircraft in the air.

2025

SA-12

AM-3

2025 (cont'd)

So that was a comment I wanted to bring up. Thanks.

HEARING OFFICER GREGORY: Thanks, Ms. Gilbert.

MS. GILBERT: Thank you.

HEARING OFFICER GREGORY: Thank are you for those comments. They will certainly be considered.

MS. GILBERT: Okay.

HEARING OFFICER GREGORY: All right.

MR. NELSON: So I get to be next.

HEARING OFFICER GREGORY: You're next.

MR. NELSON: I don't think I need a comment -- or a microphone either. All I have is the subjective summary and I was looking that over this afternoon. I didn't have a whole lot of time to look at it. But some specific comments that I would like to make is, in your Summary of Environmental Consequences in Powder River 2, you make the statement that two public and one private airfields are all located.

I have a list here in Harding County alone of 18 people that own airplanes. Now, most of us, and that includes myself and there are a couple other people that are sitting here, most of us have never registered our airports -- our airstrips because we're not required to. We have to assume that if

AM-4

these airplanes appear, that they're operating here in this airspace.

2025 (cont'd)

And so when airplanes are registered with the FAA, you have to give locations where they're at even though there is no airport registered. And this started in the 1980s. And I've had to do it and I'm sure everybody else who's had an airplane has had to do it. You folks can find those airplanes if you go to the FAA registry. There are more airplanes than -- on private strips than one just in Harding County alone.

I run -- I live -- maybe I need to back up. My name is Larry Nelson and I ranch here in the Harding County, and I'm in the sheep business and I use my airplane not for recreational flying but a lot to do predator control. If I cannot do predator control because of this 500-foot floor on this thing, I will have to sell my sheep. That is the consequence to me.

SO-15

And written comments I will send later. I will give you the amount of coyotes that we've killed over the last two or three years. We've kept coyote loss at a minimum. But back in the '80s before I had an airplane, I had losses that were approaching 10 percent. And you can't take 10 percent of income

SO-15

2025 (cont'd)

out of any of us in this environment and stay in business. That will be the impact to me and my neighbors that raise sheep, that we will sacrifice to have this Powder River Military Operations Area.

SO-15

I've been close to B-1s. My west ranch is in the current Powder River B, I believe. The closest that I ever came was when I was a student flying to Belle Fourche. I crossed the MTR. It's about halfway between Belle Fourche and the Butte/Harding County line and I was over a geographic feature that's called the Antelope Butte there. And I just happened to glance. I was scanning. I had a good instructor told me to scan. I looked back over my shoulder. I was less than a quarter of a mile away from him. He was bearing right down on us. I don't think he ever knew I was there. I dove for the ground and flew out of a 45-degree angle and I expected to be upside down. And I guess that was the right thing to do because I got out of there.

SA-7

I didn't think to report it because I don't think they ever knew that I was even there. I don't think they ever saw me. I was so scared that by the time I got to Belle Fourche, I didn't think about reporting it either.

And I see my time is about up. If I get more

time, I'd like to make more comments. Thank you.

HEARING OFFICER GREGORY: Well, I think you probably will get more time. But first I'd have to ask, is there anybody else?

MR. ROCK: Nobody.

HEARING OFFICER GREGORY: Okay. Well, as they say in football, put three minutes back on the clock. 2026

MR. NELSON: Well, a couple of things, Larry Nelson again, that have developed, I sent subsequent to when you held the scoping meetings here.

One thing that's happened is that USDA-APHIS Wildlife Services is now conducting predator control up here. That happened after that. And I assume that Merrill Nelson who runs the program in South Dakota has commented on this. SO-15

In addition, Keystone XL Company is planning on putting in a large 36-inch high-pressure pipeline through Harding County which will include two large pumping stations. CM-1

And thirdly, I also have a small gas field on my pastures, and I am really concerned about these flares. In your -- in your Executive -- in your Executive Summary there, if I can find my notes here, it said that one flare may drop every three SA-12

2026 (cont'd)

years. I think that's on Page ES-18 of your Executive Summary.

Those are the one flares that we're worried about. They land in the middle of that gas field on my place and start an incident there, we do not have firefighting capability in Harding County of controlling anything like that. All we need is one. SA-12

Chaff and flares: I don't like any of it, but we can probably live with it if you would limit the chaff and flare thing to the wintertime when the fire danger is a lot less. And they should not be dropped even at 2,000 feet when cattle and sheep are lambing on the prairie. Because it's not conducive to good animal husbandry to have chaff and flares scattered over a bunch of livestock trying to give birth to lambs and calves. SA-13 BI-5

The sage-grouse: Subsequent to your hearings, the sage-grouse has now been listed as warranted but precluded, which means it is on the list for -- the potential listings for an endangered species. BI-3

In the Belle Fourche paper, Marian Atkins who is the BLM Area Manager for South Dakota said that there have been no studies to document the effect of noise on sage-grouse. I don't know whether noise affects them or not. But you folks need to know

2026 (cont'd)

that because if there is and they help endanger -- get them to the endangered status and they get listed, you can quit flying, but we can't leave. We're still here. We're going to be left with an endangered species. And I'm again running out of time.

BI-3

HEARING OFFICER GREGORY: Ms. Gilbert, do you need more time, or do you want me to give another three minutes up here?

MS. GILBERT: He's saying it well.

HEARING OFFICER GREGORY: Okay. Sir, if you need another three, you can have it.

MR. NELSON: Well, I just -- I've lost -- again on the predator control impact, if while you're having one of these LFEs I believe is the term or that type of thing or other activities out there and I've got coyotes out there killing my sheep and I can't fly through for three or four days, who pays for those lambs? That's another direct impact.

SO-15

And there are thirty -- off the top of my head, 34,000 sheep left in Harding County. I think there's thirty plus thousand left in Butte County. The numbers have really gone down. And a lot of its predation.

In 1994, there were 11,000 head of sheep --

2026 (cont'd)

11 million head of sheep left in the United States. I've got the new South Dakota Ag Statistics books, and off the top of my head that number is a thousand -- excuse me -- 11 million head, but that figure now is about 6 million. And lamb prices are at an all-time high. But it doesn't make any difference what they are if you can't control the predators and keep going. And the reason we've got 34,000 sheep in Harding County is because we've had a good predator control program up here, but that will end if we can't do predator control.

SO-15

And I think I've really covered all the points that I wanted to cover, so thank you.

HEARING OFFICER GREGORY: All right. Well, we've got a lot of time left. I'll just ask, has anybody changed their mind about wanting to speak?

If not, as I've said several times, there's an opportunity to make written comments if you want to change your mind and want to comment on this proposal.

I want to thank you for your time and interest in this Powder River Training Complex EIS proposal. As I said, tonight's not the end of your opportunity to comment and participate in this environmental review process. Again, written comment sheets are

available on those tables out there. You can turn these sheets in tonight or mail them or fax them later. The mailing address is printed on the brochure and the comment sheets, and again, you see it up on the slide here.

The Air Force welcomes public comments in writing at any time during the Environmental Impact Analysis Process, but to receive timely consideration for the Final EIS, again please get those comments submitted by November the 15th, 2010. If you'd like your own copy of the Final EIS, please tell one of the representatives at the tables or send a letter or postcard asking for your copy and the Air Force will send copies of the Final EIS to you.

We have some time left, so I'm going to go ahead and recess the hearing at this point and remind you that the Air Force and FAA reps will be available at the boards if you'd like to continue talking with them.

So with that, thanks again for coming out. The hearing's in recess. Thanks.

(Hearing in recess at 6:52 p.m.)

HEARING OFFICER GREGORY: Okay, it's about 7:23 and the hearing's back in session. Mr. David Nieme

has approached me and said he'd like to make a comment, and so that's what we're going to do.

And, Mr. Nieme, the floor is yours. 2027

MR. NIEME: Okay. I'm David Nieme from Harding County or just north of Buffalo here. I'm a sheep herder. And the concern I've got is, reading your information brochure that came out about two, three weeks ago in the mail, was with the dropping of this chaff.

And with that chaff, why, it said it's aluminum and also some mild plastic products in it, and it gave some dimensions of the plastic streamers that will be included.

And the concern I've got is, if this is dropped over a band of sheep and if this plastic and even the aluminum fibers get into our wool crop, why, it's going to have a serious effect on our wool crop that we get shorn off and which is then packaged and shipped off to a woolen mill probably most on the East Coast, like South Carolina. SO-16

But that wool will go through a scouring strainer, get washed and cleaned and then it will go through a combing process and made into clothing. And that cloth will be just absolute snow-white and then that bolt of cloth will go through a dying

2027 (cont'd)

process to make the different colors, like the color of your uniform or whatever colors of clothing that it's going to be. And that plastic will not absorb that dye, and that will still show up in that cloth and make that bolt of cloth essentially worthless.

And with the trace-back ability for lot numbers on the woolen products that we take for sale, that liability will come back to us as producers.

And I guess my concern is, that if my wool crop turns out to be worthless or I've got some liability and I've gotta pay that woolen plant back their money for what they paid for my wool, why, that's going to have a harmful effect on my livelihood. Thank you.

SO-16

HEARING OFFICER GREGORY: All right. Thank you, Mr. Nieme.

MR. NIEME: Yeah, thank you.

HEARING OFFICER GREGORY: And with that, we are back in recess.

(Hearing in recess at 7:25 p.m.)

HEARING OFFICER GREGORY: There being no more speakers, this hearing is adjourned.

(The Powder River Training Complex Public Hearing adjourned at 8:00 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the foregoing Pages 1 through 44 are a true and correct transcript of the proceedings had.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South Dakota, this _____ day of _____, 2010.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

period. Second, if you agree with a previous speaker on something, you can certainly say that, but you don't need to use up your time repeating it since it's already in the record.

And finally, as I mentioned earlier, this isn't a Q and A session. It's an opportunity for you to put your views and your concerns about the proposal that you want the decision-makers to consider on the record. Questions that you pose during your comments will become a part of the record and will be considered.

After we're done with the formal part of this, the Air Force and FAA reps will continue to be available to discuss things with you out by the display boards.

With that, I'll go to the cards and call out our first speaker. Mr. Cody Krause with the USDA. Come on down.

2028

MR. KRAUSE: Okay. My name is Cody Krause. I'm with the USDA Wildlife Services. We currently operate an aerial program throughout the whole state in cooperation with South Dakota Game, Fish & Parks. It's a predator control program dealing with depredation on livestock on the area ranches.

We're currently flying close to 1100 hours a

year, which probably more than half of our hours is in this current proposed area. Much of it will be in Perkins County, Butte County, Harding County is where we spend a lot of our time. 2028 (cont'd)

We have two aircrafts, one out of Bison here and then our other is out of Spearfish, South Dakota. We are kind of concerned on the low-level flights. Most of our work is under 500 feet, but when we are doing our ferry time, we will be at 500 feet or above if we're ferrying safe from Spearfish to Bison or other areas. SA-1

But we're kind of concerned over obviously collisions or to see problems with these large aircrafts, as we are in the smaller Super Cub type plane.

I think that's about all I have to say, but thank you.

HEARING OFFICER GREGORY: All right. Thanks. Let's see. And I hope I get the name right. If I don't, please excuse me. Mr. Dwayne C. -- is it Vig?

MR. VIG: Yes.

HEARING OFFICER GREGORY: All right. It's live and ready to go, sir.

MR. VIG: Well, I certainly appreciate you

folks coming up. I certainly didn't intend to have any statement for tonight, but --

(Microphone malfunctions.)

MR. VIG: You just want 50 percent? Is that what you want?

HEARING OFFICER GREGORY: Put 30 seconds back on. The clock is not operating. There we go.

2029

MR. VIG: As I walked in the door, they asked me if I wanted to make a comment. I certainly wasn't prepared. I happened to run into Mr. -- Major Winters as he came in and visited just a moment. I've been to a couple other of these meetings. I recognize the representatives of Mr. Thune's and Mr. Johnson's office; worked over in Sturgis here a few months ago.

I certainly don't have any way to debate your specific items, and I appreciate Mr. Winters' presentation. I realize probably the biggest problem I have of this whole set-up is what I call an upper management attitude of the Air Force. They have all the answers and we'll just put up with whatever happens.

GE-5

I appreciate Major Winters' patriotism and his -- he said ten years. I realize that's rather inexperienced. I started 49 years ago and I've

flown this country from six inches off the ground to 45,000 feet with the airline. So I have a vague understanding, and my opportunity to serve in the United States Submarine Service in the '50s and '60s made me aware of the mistakes that are made during training.

2029 (cont'd)

We trained in the West Pacific and the East Pacific and the North Pacific and the South Pacific. Mistakes are made and that's why I get around my upper management attitude. And I'm not banging on you, Mr. Winters, or -- at all. It's just you need to learn, mistakes are made. And if it's a hot flare and it lands here last week when it's 90 degrees, we're going to have a major loss.

We have probably -- we're willing to -- how do you want to say it? We know what risk is. Everyone here probably has risk. And the risk of having a fire and losing hay land, winter pastures, or whatever is accepted, but with risk there's return.

SA-5

And this is where the two representatives from Mr. Johnson's and Mr. Thune's office, it's time for those folks who don't want the training area over the top of them maybe in Rapid City or Billings or downtown Omaha to step up and put a buck in on our land taxes, our property taxes.

SD-1

2029 (cont'd)

And like I say, you're setting amongst some of the most patriotic people in the world. And I thank you for your service over and over, but let's all share. And we can live with this, but let's all share and make it right.

HEARING OFFICER GREGORY: All right. Thank you, Mr. Vig.

Next, dealing off the top here, I've got Mr. Ross Reichert. Mr. Reichert. I think we've got the good mike for you.

2030

MR. REICHERT: Okay, thank you.

HEARING OFFICER GREGORY: All yours.

MR. REICHERT: I'm Ross Reichert. I'm concerned about this flyover deal. I'm in the sheep business and we use a lot of aerial hunting to control predators that eat our sheep and stuff, and I'm worried about the possibility of waves and stuff or them not being able to fly to protect our livestock. SO-15

I'm also concerned about the noise and what effect it will have on people and wildlife and animals and our general way of life. NO-5 LU-2

I guess we've -- we've lived in this -- my family's been in the country for 101 years and we -- we kinda live out in the boondocks because we want

2030 (cont'd)

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it quiet and we don't want a lot of noise and stuff, and I don't know if we can keep the flyovers from disrupting the lifestyle that we have today. LU-2

I guess with that, that's about all I have to say. Thank you.

HEARING OFFICER GREGORY: All right. Thank you, sir. Next I have Ms. Anita Lee. Ms. Lee.

MS. LEE: Hi. Do you need me to spell that?

HEARING OFFICER GREGORY: I don't think so.

2031

MS. LEE: Okay. I went to the one in Rapid City last week and I went through four ways that I have found that the landowners were compensated. Now, I won't go through that again tonight because after the meeting, the Commander from the Base was gracious enough to visit with me and he explained that they had no intention of compensating us because they will not be using live ammo. SO-1

He left out the fact that a dud flare is treated by them as unexploded ordnance, but that's beside the point. His point was, they had no intention of compensating the landowners. SO-1

So with that in hand, I did a little more homework and I went to just a basic law library under property rights. One of them is, another GE-7

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2031 (cont'd)

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property right that is often litigated and routinely protected is the right to reasonable and ordinary use of the airspace above your property. GE-7

Now, I won't read the whole book out of the -- page out of the book, but I will share with anybody after the meeting that is interested. But what that says is, the landowner does have the right to his airspace and, when it's taken to court, the landowner almost always wins. GE-7

Another taking of property is noise. The way they put it is, taking of the property by reducing its value is a taking. And it lists a bunch of things to decrease your value and one of them is noise. SO-1

And then there's another term which we don't use, but it's inverse condemnation. Now, what that means is -- everybody knows what eminent domain is. Okay. What this is, if the taker has no intention of using eminent domain, just takes your property, then the landowner has to start court proceedings, but the landowner can take the taker to court, and I've got a stack here of 25 or 30 cases where landowners have done this over training areas and won.

So I guess I want to say, I don't agree with

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2031 (cont'd)

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the Commander. We can and should be compensated. Am I out of time? SO-1

Okay. I -- last week we went to the Stockgrowers' Annual Convention in Rapid City and they unanimously passed a resolution opposing this Training Complex. And one of the points of this resolution, there again I won't read you the whole thing, but I've got it with me if anybody wants to see it after the meeting, is that damages should be handled on a local basis. SO-12

Now, just for fun I called the number in the Environmental Impact Statement four weeks ago. They have not returned my call. So if they're that far behind, that shows they need a little help here. GE-8

And there's several really good reasons why this should be handled on the local level. And I can see I'm about out of time, but if we do have extra time, I would like to have a couple more minutes later.

HEARING OFFICER GREGORY: I think we'll be able to do that, Ms. Lee.

MS. LEE: Do you want me to just finish now?

HEARING OFFICER GREGORY: Let me see if anybody has changed their mind and get these last folks and then you can go again.

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Next I have Mr. Dennis Draxton? Did I get that right? Here you go, sir.

MR. DRAYTON: That was Drayton, D-R-A-Y-T-O-N.

HEARING OFFICER GREGORY: I'm sorry about that. We've got it as an "X." D-R-A-Y-T-O-N. 2032

MR. DRAYTON: Concerning the Powder River Training Complex expansion, it seems a request for an expansion is the norm for all of our government these days. In this particular case, it is an attack on where we live and it goes to the very heart of our only weakness: our low population. But as you can see by the attendance at these hearings, these few people have not yet relegated to the cities because that's the big boys and an even bigger reason to protest this expansion. LU-1

We grow weary of attending these meetings where we express our concerns to some faceless bureaucracy, only to hear later that our concerns were for not and plans will go ahead. NP-2

We that remain here value highly these expanses of relative peace and solitude where we accept the howl of winter storms and the roar of summer gales. LU-1

Now you come to tell us you want to introduce the roar of bomber jet engines and the after-burners of your fighters. To this request, we give a NO-5

2032 (cont'd)

resounding no.

The only shadows we want to see over our lands are those of clouds and the soaring hawks and eagles. We stand by our county resolutions and we will consider any expansion of flights at the very least an intrusion of our autonomy as citizens of these said states and counties. We wish to continue as our forefathers raising our children and grandchildren, calving and lambing in their seasons, and working the land free of any further encroachments. LU-1

For if there was only one of us left in this area and he was against this expansion, that would be cause enough for you to abandon your memorandums. NP-1

We believe that the freedom of our country and the preservation of our Constitution hinges on these principles alone, not on the expansion of the Powder River Training Complex.

Sincerely, Dennis Drayton. I submit this written for the record.

HEARING OFFICER GREGORY: All right. And I have the written comment from Mr. Drayton on that, so...

Next I have Mr. Lensegrav? Lensegrav? Did I get that right?

MR. LES LENSEGRAV: Yeah, pretty good.

HEARING OFFICER GREGORY: All right. All right.

MR. LES LENSEGRAV: Most people miss that.

HEARING OFFICER GREGORY: Oh, one for two. There you go.

2033

MR. LES LENSEGRAV: Thank you for this opportunity to speak here. My name is Les Lensegrav. I'm an ag producer and a pilot in the area proposed here in the Powder River expansion proposal.

I'm very much against this and I think that I represent we the people, and I think that's who is here today, is we the people. And it's time that we stood up for what we -- the rights that were given us. They're -- those rights were given us way back over 200 years ago, and I think that we've remained silent too long, and it's time that we stand up and speak our voices for whatever it is. My opinion, I'm against this.

GE-2

Each -- each person here I think today provides food for right at 100 people. And if that doesn't affect the environment, I don't know what does. We're the best caretakers of the environment that there is. And for proof of it, just step outside

LU-1

2033 (cont'd)

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the door and take a look across the country.

And one other thing, our Perkins County and I believe the Harding County Commissioners signed an agreement a while back against this, and I think that's on record.

Thank you very much for your time.

HEARING OFFICER GREGORY: Let's see. I know I had -- anyone else who hasn't spoken yet change your mind? Okay. Ms. -- oh. Can I get a card here? Just come on up.

2034

MR. PETIK: My name is Jerry Petik, P-E-T-I-K. And I'm sure glad the Highway Patrolman wasn't out this afternoon when I come through.

But anyway, I ranch in Corson County. My brother flies a lot, most every day after storms. And I guess I basically would agree with a lot of things that are said, although we do absolutely with no doubt need a very strong military and efficient. But then when you look at our southern border, I find some discrepancy in public action and public policies dealing with that.

I guess the thing I would like to ask is, is there any procedures or precautions taken -- that can be taken for people -- I'll turn around -- that fly that don't have a radio and would not be

LU-1

GE-9

AM-3

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2034 (cont'd)

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recording or talking to anybody about their flights? AM-3

Two examples I thought of since I came here is, one, is at a minimum, people would be able to find AM-12 out what might be happening in their particular area at a particular date. And the other would be if there would be a receiver that pilots could have so that they would be able to identify planes that AM-3 would be coming in their direction. I think that those two types of things may have -- or solve a lot of heartburn and a lot of agony for mothers and wives of those people that will be flying, so...

But again, I think that I speak for everybody here that we do appreciate what the military does. It's a question of do we need to -- do we need these PN-3 types of things; can they be done in another manner.

And I can -- on the way in I thought of two things, two times when the American farmers paid very heavy for American "Beef Heads" policies and there were embargoes on our crops and it hurt very dearly.

So we understand the need, but we also understand our contribution. Thank you.

HEARING OFFICER GREGORY: All right. Thank you, sir. Holly Waddell?

MS. WADDELL: Okay, thank you. I'm here

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2035

tonight on behalf of Dakota Rural Action. I'm currently the chair of this statewide organization. And I'm going to submit into the public record our resolution that was adopted by our membership in 2008 opposing the expansion of the Training Complex. And I won't read the whole resolution here because it will go into the record.

Just some of the points, probably some points you've already heard tonight; with noise levels being a concern for our livestock and families; some of the danger that might be presented to crop dusters, private air travel, ambulance aircraft. Let's see. Of course, the chaff and the fire danger possibility from duds that might fall on the grassland that we have out here, and some of chemicals that they also contain.

A big concern of our membership is the possible detrimental effects it might have on future development of wind energy. Dakota Rural Action is a strong proponent of wind energy of all sorts, bio-fuels, wind, bio-mass, bio-diesel, all of those that would help enhance the rural economies of our state, and we hate to see anything come in that would possibly have an adverse effect on developing those.

LO-2

SA-7

SA-5

SA-14

SO-17

2035 (cont'd)

So for those reasons again, I'm going to submit this as a formal part of the record. And just want to thank you for the opportunity to come and have a chance to express that.

Dakota Rural Action is a grassroots family agriculture and environmental group that works to organize South Dakotans to preserve our family farms and ranches and the environment and our unique way of life. So some of our members are impacted more than others by this and so they brought this resolution to our membership a couple years ago.

LO-3

HEARING OFFICER GREGORY: Okay.

MS. WADDELL: And it's available for review every year. And so last year it was recommended that we keep it as a standing resolution for our organization. Thank you.

HEARING OFFICER GREGORY: And, ma'am, I know you just came in, but if you want to submit written comments, you can leave them at the registration table.

MS. WADDELL: Okay, thank you.

HEARING OFFICER GREGORY: They'll take care of all that.

MS. WADDELL: Thank you.

HEARING OFFICER GREGORY: Anybody else who

hasn't had a chance to speak yet that wants to?

Okay, going back to those who have already spoken. Ms. Lee, I think you wanted to put another three minutes back on the clock, so I'll go ahead and do that for you as they say in football.

MS. LEE: You're very kind. I hate to be a mike hog. I do appreciate you listening to me twice. 2031 (part II)

But I would like to go on a little bit more about why the Stockgrowers feel that this is important to have these cases handled on the local level.

As these folks have spent two years working on this Environmental Impact Statement, we've had two years to study this. And I've done a lot of research. I have spent quite a little time looking into how claims are handled in other areas, and unfortunately they're usually not handled. In fact, most people just give up.

And personally we know that frustration. In the '70s we had some little missile bases in our -- in our area, and as the trucks drove around from time to time we'd have damage when they'd get in the wrong area and go through a fence now and then. It happened several times. And you'd call and nothing GE-8

2031 (part II)
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GE-8

would happen. You'd call, nothing would happen. After a while you quit calling. That's pretty much what happens. So it is I think very important.

There's quite a few examples that they probably wouldn't have the expertise. So, for example, your horse, okay. Sonic boom or a low flight spooked your horse. The horse went through the fence. What's the horse worth? I mean, is it an old plug that somebody needs to put down anyway, or is it your daughter's prize barrel racing horse? You know, in the first case, the vet bill's probably sufficient. In the second case, it's definitely not.

SO-13

Okay, so your husband's out spraying and the wind vortex moves the chemical from the summer fallow fields to the next field and suddenly you've got Round-Up on your field. Okay, what's a field? Is it your alfalfa that you're saving for seed that's got a beautiful stand, or is it a wheat field that's been hailed on three times? So they need an expert crop adjustor, which the Air Force probably does not employ.

SO-2

You can go on and on about cases where they really don't have the expertise and can't be expected to. So I think that's a very good point,

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that claims be handled on a local level.

And I would -- I would encourage all of you to talk to your Congress people. As far as I know, all three of our Congressmen strongly support this, but I would hope they would support us enough to help us a little. And I thank you all for your time.

HEARING OFFICER GREGORY: Anybody else? Anyone else? Whether you've already spoken or first time? Okay.

My wrap-up sheet here. Well, we have no remaining speakers. As I mentioned earlier, the Air Force and the FAA reps will continue to be available out by the display boards to discuss things with you.

I thank you for your time and interest in this Powder River Training Complex EIS proposal. Tonight's certainly not the end of your opportunity to participate in this process. Again, written comment sheets are available at the registration table. You can turn these sheets in tonight or mail or fax them later. The mailing address is printed on the brochure and the comment sheets.

The Air Force welcomes public comments in writing at any time during the Environmental Impact Analysis Process. To make sure your comments

receive timely consideration for the Final EIS, all comments must be submitted by November the 15th, 2010.

If you'd like your own copy of the Final EIS, please tell one of the representatives at the registration table or send a letter or postcard asking for your own copy. The Air Force will send copies of the Final EIS to you.

There being no more speakers at this time, I'm going to go ahead and recess the hearing. Oh, sir?

MR. DAVE LENSEGRAV: Could I address Colonel Winters, please? 2036

HEARING OFFICER GREGORY: You can make a public comment if you'd like. But as I said, this isn't a Q and A thing, but you can certainly comment. Would you like to do that?

MR. DAVE LENSEGRAV: Yeah.

HEARING OFFICER GREGORY: Okay. Do you want to get a -- you can go ahead and come on up. We'll get that filled out later.

MR. DAVE LENSEGRAV: Dave Lensegrav. Well, I --

(Projector light shines on the speaker.)

HEARING OFFICER GREGORY: That will make you talk.

2036 (cont'd)

MR. DAVE LENSEGRAV: That's a bad one. Is that about what it's like when a B-1's coming at you?

Well, I guess I -- I would just like to ask a couple questions, and I don't know how I put that, you know, into vote.

But, you know, there's been several people that said that the Air Force will not compensate for losses, you know, and I would just like them to comment if this is true. SO-1

I also would like to know that from -- Ms. DeVine said about all this chaff and all this stuff that they've been dropping around Las Vegas for how many years, you know, just if this aluminum, you know, dropped on the environment, you know, how long they've been doing this. SA-27

You know, a lot of times it takes a long time for these things to show up. Because I -- that will be another question that I would like to ask for some people that are probably quite a little more knowledgeable than me.

Back in the '40s when they were doing all of this work on the bombs and stuff in Nevada, you know, and there was some detonations, you know, it was rumored that they waited for the jet stream to be just right so that all this stuff would be

2036 (cont'd)

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brought up into virtually the same area as here because they didn't want it in Los Angeles, they didn't want it in San Francisco, they didn't want it in Seattle, they didn't want it in Denver. Let's put it out there where it isn't going to affect very many people. Well, I'll tell you what. This is one of the hottest areas in the world as far as cancer. You know, we've had a lot of stuff dumped on us. I've had cancer, you know, and I've buried a lot of my friends from cancer. And I'm not an old bugger that should be dying from cancer yet. So that's some of the questions. SA-14

I would like you to address whether the Air Force -- you know, if they do have -- you know, there's going to be screw-ups, you know. Stuff happens. And I know with a flyover, I had my calves spooked a couple years ago, not from any airplane, who knows what, nothing, but they spooked. They got on the highway. We killed 17 of them. We wrecked two semis. What's it going to be like with one of those things roaring over? Thank you. BI-4

HEARING OFFICER GREGORY: All right. Anyone else? Anyone else? All right. Well, if -- okay. State your name for her so she can get it down.

MR. NASH: Dennis Nash, N-A-S-H. My concern AM-9

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is, if this is a stepping stone from an MOA to a restricted airspace. If some day they wake up some day and they'll just say, "Well, let's exercise our UAVs." You can't do that unless you have restricted airspace. And if it's just that stroke of the pen will do it, make restricted airspace out of an MOA, I don't know. Thank you. AM-9

HEARING OFFICER GREGORY: Anyone else? Well, it's only 10 after 7:00 and we're not set to end until 8:00, so what I'm going to do, I'm going to recess the hearing, and the Air Force and FAA reps will still be available to discuss things with you. And Ms. Fink and I will be open down here until 8 o'clock if anybody changes their mind and wants to put something on the record, you can do that. We'll turn the machine back on and get your comment. Or as I mentioned several times, you can do the written comments, too.

So with that, I'll go ahead and recess the hearing at about 10 after 7:00. Thank you.

(Hearing in recess at 7:10 p.m.)

HEARING OFFICER GREGORY: It's about 7:55. We're back on the record. Mr. Drown has asked to make a comment. So Mr. Drown.

MR. DROWN: Yeah, Mr. White, I don't know his

rank, he went ahead and explained to me, I was late coming to your meeting, but the way he explained it to me, Alternative A, or the first choice, seems like it should work for this area in my opinion. I was most concerned about low-level flying and rumors that I had heard that it would preclude any possible future wind power development in our area.

And from what I understand from their answers, him and a couple other folks, there's no -- it has nothing to do with that. Of course, there's other types of agencies that would, and we understand that.

SO-17

But the story that we had heard that got us concerned was that it being the practice area for aircraft would cause it so it would be illegal to put any wind power development.

And I don't see any problem in my professional judgment with your project, and glad this part of the country can help.

GE-1

HEARING OFFICER GREGORY: All right. Thank you very much, Mr. Drown. Would you mind just filling out this card for the folks. Just put your name.

(Brief pause.)

HEARING OFFICER GREGORY: Well, it's 8:00 p.m. And there being no more speakers, this hearing is

adjourned.

(The Powder River Training Complex Public Hearing adjourned at 8:00 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the forgoing Pages 1 through 56 is a true and correct transcription of my stenographic notes.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South Dakota, this _____ day of _____, 2010.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

finally, as mentioned earlier, this isn't a Q and A session. It's an opportunity for you to put your views and your concerns about the proposal that you want the decision-makers to consider, put those on the record.

Questions that you pose during your comments will become part of the record and will be considered, and then after we're done, as I mentioned at the beginning, after we're done with the formal part of this, then the Air Force and FAA reps will still be available by the charts and all that stuff outside to discuss anything that you'd like to discuss with them.

Okay. Well, with all that, I'll go ahead and get our first speaker up here. How about Senator Bowman?

SENATOR BOWMAN: Okay. I've never got up in front of a group of people and had a limitation on how long I can talk.

HEARING OFFICER GREGORY: Well... 2039

SENATOR BOWMAN: But I know that there's been a few concerns dealing with this. I know that until we actually do it, we're not really going to know what the impact is going to be. And if you deal with things after the fact and can't change it, then

GE-10

2039 (cont'd) Page 35

the problems are going to get greater.

If you could have a test-run and then come back and have another meeting when the public then knows exactly what's going on, it might be the best thing that you can do. That's my suggestion from what I've heard.

6E-10

But until we actually have these planes flying at the various speeds that they're going to fly and the elevations that they're going to fly, we don't know.

I can tell you from my experience when I ranched north of Rhame, the first time the stealth bomber flew over. I didn't know there was any bombs like that. I didn't even know what it was. And it came in from behind me. And when it got to the other side of me, that's when I heard it. And I thought the tractor was going to blow up. But if I'd have known before that it was going to come, I'd have been prepared for it.

And that's what my point is right now from what I've heard. I've heard a lot of people have a lot of discussions about this and they have a lot of concerns. But until we actually do it and then have a public meeting, I don't know if we can really address the real concerns until that's done. Thank

you.

HEARING OFFICER GREGORY: All right. Thank you. I think you had plenty of time. But if you want more, I think you'll probably have a chance later.

Let's see here. Next I have Pine Abrahamson. I hope I've got that right. Here you go. 2040

MR. ABRAHAMSON: I guess I just got a couple concerns. Bowman County is thinking about building a new airport, and this airport is part of our energy in our county and our state. It brings people in and out of there with the oil. They're not always predictable when they're going to show up and when they're going to leave. And that's -- it's kinda got a concern for me because oil is part of our state and part of our growth. If they can't come into our county or into our city and leave when they want to, it's kind of a downfall for our community. SO-10

HEARING OFFICER GREGORY: All right. Thanks, sir. Next I have Mr. Darin Langerud. Mr. Langerud. I hope I got that right.

MR. LANGERUD: You did.

HEARING OFFICER GREGORY: Excellent.

MR. LANGERUD: My name's Darin Langerud. I'm

2041

the Director of the North Dakota Atmospheric Resource Board in Bismarck. The ARB is a division of the State Water Commission. We're charged with the regulation of weather modification activities in North Dakota. Each summer, the North Dakota Cloud Modification Project conducts airborne cloud seeding operations to enhance rainfall.

(Off-the-record discussion.)

HEARING OFFICER GREGORY: Don't count this discussion as part of his time.

THE COURT REPORTER: If you could start over, that would be great.

HEARING OFFICER GREGORY: As they say in football, put three minutes back on the clock.

MR. LANGERUD: All right. The North Dakota Atmospheric Resource Board which is a division of the State Water Commission in North Dakota is charged with the regulation of weather modification or cloud seeding activities in the state. Each summer, the North Dakota Cloud Modification Project conducts airborne cloud seeding operations to enhance rainfall and suppress hail from convective clouds from the months of June through August. The 2009 economic evaluation shows that cloud seeding operations in southwest North Dakota contribute

SO-2

2041 (cont'd)

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$3 million annually in additional crop revenues and $9.2 million in gross business volume annually.

The current cloud seeding program includes Bowman and part of Slope County which lie under the PR-3 expansion of the PRTC. Also, Gaps B and C MOA/ATCAAs adjacent to PR-3 are in close proximity. We are committed to working together with the U.S. Air Force so that both PRTC and NDCMP missions can be accomplished.

Regarding flight operations, the EIS recognizes that weather modification and cloud seeding activities could be affected by the proposed PRTC. The general recommendation in the EIS is to notify Ellsworth Air Force Base of the possibility of cloud seeding operations and work with them to deconflict training missions.

Weather modification aircraft operate under Visual Flight Rules. However, Instrument Flight Rules are also occasionally conducted in this area which are typically conducted between flight level 160 and 240. The EIS indicates that civil aviation would not be prohibited under VFR conditions even when the MOA is active, and that civil and military aircraft would operate under VFR see-and-avoid rules. IFR flights, however, would be prohibited

SO-2

GE-11

AM-13

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2041 (cont'd)

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when the MOA is active, a potentially significant impairment to effective cloud seeding operations.

This raises two questions: Will prior notification of Ellsworth Air Force Base regarding active weather modification seeding flights deconflict the affected area under an active MOA to the extent that IFR cloud seeding flights can be conducted, and also, will that prior notification regarding VFR seeding flights deconflict the affected area for military aircraft, or will they operate in the area where seeding is ongoing and will see-and-avoid rules be enforced.

The final issue has to do with radar countermeasures. The Draft EIS outlines also the planned use of chaff as a countermeasure for radar detection. We operate a weather radar at the Bowman Airport for assistance with weather detection and flight operations logistics.

Chaff fibers of 1 inch which are outlined in the EIS are exactly what you would want to jam a 5 centimeter wavelength radar which is what we operate here in Bowman. Thus, it's plausible to suggest that the use of this chaff during training could produce high reflectivity radar echoes, which could be detected by the Bowman radar and not

AM-13

AM-12

SA-15

SA-16

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2041 (cont'd)

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associated with clouds or precipitation.

Further, prior research has indicated that military chaff has very slow terminal fall speeds and can persist in the atmosphere for long periods, deposited many miles downwind. The Draft EIS recognizes that chaff can be "detected by improved FAA radars, so to ensure that no chaff cloud interferes with ATC, chaff would not be deployed within 60 nautical miles of airport approach radars."

Our question would be, due to the importance of radar during cloud seeding operations, will the U.S. Air Force forgo the use of chaff within the same 60 nautical mile range of the Bowman radar as it proposes with FAA approach radars.

The proposed actions in the Draft EIS regarding cloud seeding operations in southwest North Dakota indicate that the Air Force is willing to cooperate with the existing users of the airspace so that all missions can be accomplished. However, we request further clarification on the aforementioned issues to ensure that this important and longstanding program can continue to be effective. Thank you.

HEARING OFFICER GREGORY: All right. Next I have Mr. David Hellard. Mr. Hellard?

SA-16

SA-16

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MR. HELLAND: David Helland, H-E-L-L-A-N-D.

HEARING OFFICER GREGORY: Oh, sorry about that.

MR. HELLAND: My concern is basically as a pilot in the airways and their flying and the concerns of mid-air collisions.

I heard this, that you said they were going to fly below -- or not below 500 feet. Where that's an interesting concept, but reality is, they fly below that. SA-1

And I almost had a mid-air collision with a B-1 bomber when a New England training sabbatical was active but it was with my truck. They literally went around me at approximately 150 feet, went around and up and lit the after-burners, went up through a solid thousand foot overcast. An extremely impressive sight, but very dangerous. In a truck, it wasn't a big deal. But had I been flying a small airplane, it would have been extremely hazardous.

So where the concept is that they're 500 feet, the reality is, they do fly below that. And they were hot-dogging, or using me as a target, and that's -- that's dangerous and we just can't have that. So that would be my concern as a pilot. AM-14 SA-17

Thank you.

HEARING OFFICER GREGORY: All right. Thanks, sir. Next I have Mr. Rodney Schaaf. Mr. Schaaf.

MR. SCHAAF: Thank you, Colonel. Schaaf --

HEARING OFFICER GREGORY: Sorry.

2043

MR. SCHAAF: -- S-C-H-A-A-F.

First of all, I would like to thank Ms. DeVine for coming up from the East Coast. Sometimes, I guess speaking for a majority of the people here, we feel our voices aren't heard out here in the rural areas from the people down there in the D.C. area. So welcome to Bowman.

Again, Pine hit the nail right on the head. We are blessed here in western North Dakota with energy: oil, coal, natural gas, potential for uranium, methane recovery, and we want these corporate jets to come into our new airport.

SO-5

And our concern again is this 500-foot low area that's going to be on PR-3 right over the top of us. We're glad to see in the final draft that just about all the concerns I think everybody had here was mentioned, but we were kind of disappointed that no recommendations were followed. And the main one we had was keeping us as the high area, say above 10,000. You can do what you want above there, but leave us alone below.

DO-4

2043 (cont'd)

And the next one was communications and radar. And as I read through the draft, basically they said they weren't going to do anything about it. I don't know if it's cost or just terrain or the quality of the radar. AM-3

And so in summary, people live out here. We do our jobs and raise the kids, pay taxes, and last but not least, we do support our men and women in uniform. And so we realize the importance of training, but with all these scoping meetings, there's gotta be a compromise between everybody affected.

So we were hoping some of our recommendations were included. Maybe they will be in the final draft. Thank you. NP-2

HEARING OFFICER GREGORY: Thanks, sir.

I've been through all the speaker sign-up cards that I have. Did anybody else who hasn't spoken yet want to say anything? All right. Since we have plenty of time, would anybody who has already spoken want to add to what you've already said? Okay.

Well, since we have no remaining speakers, as I said earlier, the Air Force and FAA reps will certainly be available and continue to be available. We're not due to be out of here until 8 o'clock.

That's about an hour from now. And they will be by these boards and various things to discuss things with you.

I thank you for your time and interest in this Powder River Training Complex proposal. As I mentioned earlier, tonight's not the end of your opportunity to participate in the review process. Written comment sheets are available over at that table. You can turn these in tonight or mail or fax them later. The mailing address is printed on the brochure and on the comment sheets.

The Air Force welcomes public comments in writing at any time during the Impact Analysis Process, but as I said at the beginning of this, to receive timely consideration for the Final EIS, you need to get those in by November the 15th, 2010.

If you'd like your own copy of the Final EIS, please tell one of the representatives out there or send a letter or a postcard asking for a copy and the Air Force will send copies of the Final EIS to you.

Since we're well before 8 o'clock, you'll have more opportunity to discuss things with folks. I'm going to recess the hearing, but if anybody changes their mind about wanting to speak, just come back in

here, let me know, and we'll crank the machine back up and get your comments on the record.

But at this time, I'm going to go ahead and recess the hearing. Again, thanks for coming.

Let me put on the record what a beautiful facility that Bowman has. I'm just sitting here admiring this timber framework. It's outstanding; prettiest I've seen.

All right. We're in recess.

(Hearing recessed at 6:55 p.m.)

HEARING OFFICER GREGORY: It being 8 o'clock, and there being no more speakers, this hearing is adjourned.

(The Powder River Training Complex Public Hearing adjourned at 8:00 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the forgoing Pages 1 through 45 are a true and correct transcription of my stenographic notes.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South Dakota, this _____ day of _____, 2010.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

That is the purpose of the comment period. Second, if you agree with a previous speaker on something, you can certainly say that, but there's no need to repeat what they said since it's already recorded in the record here. And finally, as I mentioned earlier, this isn't a Q and A session. It's an opportunity for you to put on the record your views and concerns about the proposal that you want the decision-makers to consider. Questions that you pose during your comments will become part of the record and will be considered.

After we're done with the formal part of this, the FAA and Air Force reps will continue to be available out by these displays to discuss things with you.

With that, we'll move to the cards. And let's see. I've got Jerry Kling, Kling Ranch. I think we've got a microphone down here.

2044

MR. KLING: My comments were, the last time these planes flew over our ranch, it was nearly a daily deal to take dead livestock out that had hit the corrals, broke their necks, broken legs. I would call Ellsworth Air Force Base. They asked the nature of my call and I would sit on that phone. You could sit there all day and never get anybody to

BI-4

GE-8

2044 (cont'd)

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respond. This was almost daily. And I was just wondering if this was going to be the same kind of deal. GE-8

But they said that no planes were lower than 500 feet. When they shake the stuff off the shelves in the house and nearly break the windows out of the house, they deliberately used our feedlot and our buildings for targets, and it was really upsetting and disturbing. I just hope that that doesn't happen again. It would put me out of business again if they do that again. SO-18 AM-15 SO-6

And I guess that's all I had to say. But I just hope it doesn't happen like before.

HEARING OFFICER GREGORY: All right.

MR. KLING: I do think that we need the Air Force and I'm proud that they do the job they do. GE-9

HEARING OFFICER GREGORY: All right.

MR. KLING: So...

HEARING OFFICER GREGORY: Thanks for putting those concerns on the record.

The next speaker I have is Mr. Shawn -- is it Weishaar? Did I get close to that?

MR. SHAWN WEISHAAR: Yes. It's Weishaar, W-E-I-S-H-A-A-R. Can I start?

HEARING OFFICER GREGORY: You're good.

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MR. SHAWN WEISHAAR: Okay. First, I would like to thank both of you for your service. Like Jerry, I also appreciate what the U.S. Air Force and all our Armed Forces are doing for us on a daily basis. GE-9

Our biggest concerns are, I grew up living under a low-level flight path for a good chunk of my years I grew up. And I've read parts of the EIS statement, and here's my biggest concerns with it.

I don't think they've taken into account the effects of property values with these fly-overs, and the only thing that uses unit comparison is interviews with appraisers from southeast Montana. SO-1

We all know that our area has a higher population density than those areas, and I don't think the appraisal studies were documented in this situation to address more of the rural residential properties in our area. SO-19

And the only effect -- or the only thing we can do as a landowner is declare inverse condemnation which is time-consuming and costly. SO-1

And nothing is mentioned in this EIS about navigation and hazard easements that could be in place because of property adversely affected by low-level flights. SO-22

I think this part of the EIS statement on property values is extremely weak.

Next thing I noticed is, the EIS does not SO-20

identify feedlot and livestock backgrounding operations. The assumption is that we would round up cattle once a year to brand and we round them up once more to send off to lien. We have a tremendous amount of people that background and feed calves anywhere from a month to year-round in this area, and they've not been identified in this Environmental Impact Statement. SO-20

They haven't taken into account the number of crop land acres that will be coming out of CRP in our area in the next few years. We're already seeing some of this happen. We have more continuous crop, more no-till. We have a lot more aerial spraying going on than we had 10 years ago. I think this would be detrimental to our aerial applicators to the point where they may not even want to work in this airspace because of it. LU-4 SO-2

Finally -- or not finally, but I think the EIS is extremely vague on where they're going to put these threat emitter sites. How much more land is the Air Force looking to acquire to put these in? Are they using the promise of no low-level flights over an operator's farmstead to -- as a bargaining chip to get a low-level -- to get a threat emitter site put in? In the past, they've always been in a CM-2

way just -- in a spot away from the flight path and they -- very seldom a flight would go over the top of them.

And nothing is mentioned in this EIS statement about the previous landowners and residents that were affected by past activity. And I can tell by looking in the crowd who you are because you all know what I'm talking about. SO-21

Having grown up under this, I -- it was not uncommon to be woken up in the middle of the night. I have four children. I don't want them to go through that.

I think we can stay away from the farmsteads, feedlots, backgrounding areas. If we can't avoid some of these areas on flights, I don't know how we can fight the enemy in a hostile territory. NO-10

With that, that's all I have to say.

HEARING OFFICER GREGORY: All right. Thanks a lot, sir. And again, if you have written materials that you want to add, those can be added as written comments any time before November 15th.

The next name I know I'm going to get wrong and I apologize to whoever it is in advance. Roger Kinnischtzke?

MR. KINNISCHTZKE: Well, you can pronounce it

Kin-ect-si or Kin-ish-ke.

HEARING OFFICER GREGORY: Kinnischtzke.

MR. KINNISCHTZKE: There's two versions.

HEARING OFFICER GREGORY: Okay. Well, sorry about that.

2046

MR. KINNISCHTZKE: That's okay.

HEARING OFFICER GREGORY: There you go.

MR. KINNISCHTZKE: You're not the first one.

I'm a farmer/rancher from, well, the Grano area actually. So -- I'm also a pilot. And I'm concerned about the expansion of this. It's going to cover a lot of farmers and ranchers.

And I would like to see it stay the way it is. I think it's been working pretty good. We have our wildlife I think is an issue. We're in a prime hunting area. And, you know, when our Vice President Cheney was here, a rancher couldn't go out and check his cows because he'd have been highly illegal. And so I'm a little concerned about too much government too close by for our food and livestock protection and production.

And I think looking down the road, hopefully our people from Afghanistan can come home pretty soon. And down in the future, in years from now, maybe we don't need quite as much protection as what

PN-2

LU-5

GE-5

PN-3

2046 (cont'd) Page 40

we're trying to come up with here today. And if we do have to have it, I'd like to see it here in the United States; bring some of our people back. PN-3

And I don't know how this is going to affect our proposal, but I would like to see it stay the same. Thank you.

HEARING OFFICER GREGORY: All right. Thanks, sir.

Next I have Georgene Goeres. There you go, ma'am.

2047

MS. GOERES: I have this memorized, but I'm going to read is so I get it all in.

Thank you for making this important meeting a priority tonight and thank you to the Air Force for giving us this opportunity to express our opinion.

This is the epitome of America: public meetings, the right to express an opinion, pro or con, without fear of retaliation; one of the freedoms our military affords us. NP-3

I think most of us here tonight have strong family history of military service. I know our family does from the Civil War to this day and this hour, this minute, and this second right now. We are proud of our military, we respect our military, we honor our military, and we know up close and GE-9

personal firsthand what they do for us. Our military is number one in the world; always has been, always will be.

GE-9

That being said, I know there are millions and millions of square miles already dedicated to our military forces on the ground and in the air for bases, artillery ranges -- excuse me. I'm running out of air.

HEARING OFFICER GREGORY: Just take your time.

MS. GOERES: -- moving grounds, bombing ranges, and elusive maneuver ranges. I know that at least six foreign countries train with our pilots in Nevada: Germany, United Kingdom, Canada, and several others. I know that the German Air Force has trained in the United States since the '40s and '50s up to this day, mostly in White Sands, New Mexico.

PN-2

I believe we have the ground and airspace already in place all across these United States to keep us number one in the world.

PN-2

I believe this proposed expansion is an expansion of convenience for Ellsworth and Minot Air Force Bases. I do not believe it is a necessary expansion for national security.

PN-3

I live 19 miles south of Elgin and we were there when the bombers and fighter planes were here

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years ago, and I do not want to return to that for many, many reasons, most of which will be addressed by all of you.

Don't let anyone guilt you into thinking you are un-American or anti-military if you do not go along with this proposed expansion. One issue has nothing to do with the rest.

In conclusion, the Stockmen's -- North Dakota Stockmen's Association is holding their convention today through Saturday at the Holiday Inn in Minot. There will be a discussion and vote on this topic tomorrow at 1:00 p.m. their time. You have to be a member to vote, but you don't have to be a member to contribute to the discussions. If you're going to be in Minot, please make that session a priority.

Thank you for your time. And God bless our military and God bless America.

HEARING OFFICER GREGORY: Thank you, ma'am. Next I have Mr. Dan Stewart.

MR. STEWART: Thank you. That was very well said, by the way. 2048

I'm the Chairman of the Grant County Commission. And so one of my other fellow Commissioners is here tonight. We've discussed this a little bit. I also ranch 35 miles southwest of

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here -- southeast of here and remember like some of the others here those big planes flying through back in the '80s, '70s and '80s.

My biggest concern is, what happens if we do have a wreck on the ranch and we kill some livestock? How do you get that reimbursed? We've just got done dealing with FEMA over the last several years and I know what an extremely, extremely slow process that is to deal with the federal government when it's time to get money from them to you. SO-13

And I'm fearful that we have producers out here who once a year pull their once-a-year paycheck off their cows and put them in their feedlots and have a wreck and lose 10 or 12 or 15 or 20 head of livestock that might mean the difference between making it or breaking it for their entire family and have nobody on the other end of the phone when it's time to try and get some relief from that. That's my biggest, biggest concern. SO-13 SO-12

I want our military to continue to be the best that it is. I've had an opportunity to fly a few different places this last year and we flew to Reno, Nevada, not too long ago. There's a lot of desolate area down there. I didn't see a cow for two hours GE-9 PN-2

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of flight time. There's gotta be someplace to fly down there, boys. PN-2

And you're talking about western North Dakota where we raise the best cattle in the world and we're proud of that. And these guys want you to know that; that this isn't something we do on the weekends. LU-3

My family's fifth generation and there's lots of long-time generation ranchers here that take a large amount of pride in what they do, just like we have pride in our Air Force. But these are our livelihoods, and we want to be able to protect that as much as we possibly can. Thank you. LU-1

HEARING OFFICER GREGORY: All right. Thanks, sir.

Next I have Mr. Dan Maher. Mr. Dan Maher.

2049

MR. MAHER: Thank you. I'm Dan Maher. I don't think this is a question of patriotism at all. One-sixth of the population of the United States lives in rural America, but yet rural America supplies 40 percent of our military people. So, you know, I think we're fairly patriotic and we do commend our military for the things they do do.

But as the speakers before me said, what do you do when your calves break out from something like SO-12

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this, you know. It's your livelihood we're fighting for. What we would really like I think is a name. Who do we call and a phone number and somebody that's there to answer it and take care of our problem; not somebody that puts you on hold, you know.

SO-12

Like the guys before me said, you know, when calves break out, you're probably lucky if they break out or you've got a dozen of them laying along the fence with broken necks. They break out, then you gotta go chase them down probably four miles away. It takes you days to get them back. Then you gotta settle them down, and you gotta fight it for the rest of the winter because they're spooky. If something coughs, they're probably ready to go.

So I guess that's where I come from, you know. It's what -- what these guys are fighting for every day. So thank you.

HEARING OFFICER GREGORY: All right. Thanks, sir.

And next I have Mr. Dennis Drayton.

2050

MR. DRAYTON: Yes. I'm Dennis Drayton. I live at Lemmon, South Dakota, but we call our place Drayton Ranch of the Dakotas. We moved up here not so long ago and ranch and pay taxes on both sides of

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2050 (cont'd)

the border.

After scoping the Air Force's in-depth study of the environmental impacts, they have considered all the aspects and most of the time come to the same conclusions as we have; that the whole plan, if implemented, will damage fences and corrals, disband sheep, make riding horses more risky, startle us, shake our homes, and contribute in general to a more stressful life for all. This is all a given. LU-2

And you haven't heard many of us talk about environmental impacts. It's all about the people that are living out here and being able to tell somebody that -- our wishes and then have somebody that we elected take action on them.

But let us be clear. As I said, there's much more than the environment at stake. As my good friend Shawn Weishaar said after looking at the map the other day, "This is nothing if not a taking," clear and simple. SO-1

Well, ladies and gentlemen, he has hit the nail on the head. We are all here because we are property owners. And, as American citizens, we're endowed with certain inalienable rights of life, liberty, and the pursuit of happiness. And that to secure these rights, governments are instituted

2050 (cont'd)

among men, deriving their just powers from the consent of the government.

All of our lands are historically important, having been trod on by the earliest man and animals to the present time. None are more important than what we personally own, regardless of the lists that have been made. Now the government has parlayed with the various Tribes and found that the representatives all voiced their opposition to their inclusion in an expanded training complex.

The Air Force has seemingly agreed that on certain circumstances they would try to avoid Tribal life and activities, at the same time being mindful of the impoverished children thereon. EJ-1

In contrast, we other citizens of these areas come in even greater numbers to voice our opposition while those we elect to congress abandon us and essentially offer up our lands as sacrifice in the interest of keeping the Air Bases open. It's as simple as that. NP-2

So don't spend too much time conferring with these representatives because they are not here to offer sympathy, nor do they owe us any allegiance in this issue. We must focus our efforts in making our congressmen and women accountable to our wishes.

2050 (cont'd)

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HEARING OFFICER GREGORY: All right. Thanks, sir. And if you have written more material here, you can put that in as a written comment.

Anyone else like to speak for the first time? Anyone? Because that's the last speaker card that I have. Anybody? Is there anybody who's already spoken that would like more time to add to what you already said? Anyone?

Come on back. Put another three minutes back on the clock.

MR. DRAYTON: It won't take that long.

HEARING OFFICER GREGORY: That's all right. Take what you need.

MR. DRAYTON: Now, did you notice tonight that these representatives of the Air Force and the other entities have brought no goods to trade with us, no offers of compensation nor recompension. Remember, all the trading was done before they arrived here by the cooperative agencies and those whom we trusted to act in our best interests. All the federal agencies arrayed against us play nice with each other while we have to play hard ball.

SO-1

NP-4

If we cannot prevail in this issue, if our voices and desires are not heeded, a black curtain will have been dropped over the faces at Mount

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Rushmore. Will we, just as the Lakota, the Crow, the Cheyenne before us, be left to cry a trail of tears? We will see. We will see.

HEARING OFFICER GREGORY: All right. Thanks, sir. Anyone else?

Would you just state your name one more time.

MR. MAHER: Dan Maher. Everything that we heard tonight is all low impact, you know, minimum impact. But right here it says flare development: discontinued when fire danger rating beneath airspace is extreme. Well, when do fires start? They're not waiting for it to get extreme, I'll tell you that.

2049 (part II)

SA-5

HEARING OFFICER GREGORY: All right. Thanks. Anyone else? Come on back.

MR. SHAWN WEISHAAR: Shawn Weishaar. Just a few more things to add.

I'm really concerned about how we will be perceived economically if this goes into effect. I think we've really had a lot of things go for us lately. We've seen new people move into our area. We've seen a lot of people buying 40-acre farmsteads. They like to live out here and they like to hunt out here. And I can't imagine showing a property for sale and having a B-1B do a low-level

2045 (part II)

SO-1

2045 (part II)
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fly over the top. It would kill the sale right away. I can guarantee that. They would find other options. SO-1

I think we made a lot of headway. We've got some things going with wind development. We've got -- we don't see vacant farmsteads any more. Those are all -- those old ones are all falling over and abandoned, but when a farm sells, it's -- you're more apt to see the farmstead separated from the rest of the property, and that's because somebody's willing to live out there 30 miles just to enjoy the peace we have and the quiet and the tranquility. SO-17 LU-2

And I think that's one of our major selling points, and I'm really worried about losing that because we made some strong headways in the last ten years and we're not what we were in the '80s.

HEARING OFFICER GREGORY: All right. Thanks. Anyone else? Anyone?

Well, I tell you what I'm going to do. It's not set to end until 8:00 p.m. So I'm going to recess the hearing at this time and, as I mentioned earlier, the Air Force and FAA reps will be available out by those boards to talk anything over you want.

But for now, let me just remind you that -- if

I can get to the right page here.

As I said earlier, tonight's not the end of your opportunity to participate in this process. Written comment sheets are available at the registration table. You can turn these in tonight or you can mail or fax them later. And I'm blocking the slide there. Sorry about that.

The mailing address is printed on the brochure and the comment sheets. The Air Force welcomes comments in writing at any time during the Environmental Impact Analysis Process, but as I mentioned at the start, to make sure they get timely consideration for the Final EIS, please submit those comments by November the 15th, 2010.

If you'd like your own copy of the Final EIS, please tell one of the representatives at the table or send a letter or postcard asking for your own copy and the Air Force will send copies of the Final EIS to you.

And there being no more speakers at this time, I'm going to recess the hearing. And if you change your mind and want to make a statement or add to something you've already said, all you have to do is come back up here, find me, and we'll turn the machine back on for you.

So with that, we'll be in recess. Thanks again for coming out tonight.

(Hearing in recess at 7:10 p.m.)

HEARING OFFICER GREGORY: All right. The hearing's back in session and Mr. Weishaar would like to make some additional comments.

2051

MR. BEN WEISHAAR: Yes. My name is Ben Weishaar. My last name is spelled W-E-I-S-H-A-A-R. I am a retired Delta Airlines employee. And what I would like to do is, I would like to make aware of a couple points that I think the Air Force should address.

Number one is, the flight plans for this area should be regulated because Delta Airlines at this time is trying to establish a route from Salt Lake City to Bismarck, North Dakota, and the airline that would be flying us would be Sky West Airlines which flies a smaller two-engine airplane. So I would like this brought to their attention so that this will not interfere with Delta's plans.

AM-1

The second point that I would like to address is, they mentioned bird strikes, and the bird that they forgot to mention is the Canada goose. The Canada goose is a much bigger bird than any of these other birds that they were talking about and it

SA-10

2051 (cont'd)

SA-10

flies much higher.

For example, I don't know if it was a Canada goose or not, but I was working down at Phoenix, Arizona, for Delta Airlines in the early '90s and we had a bird strike on the radome at 35,000 feet. And we don't know what type of bird it was, but he put a dent in it about a foot deep. And this radome is made out of fiberglass in the front of the plane. That's all I have.

HEARING OFFICER GREGORY: All right. Thanks, sir.

MR. BEN WEISHAAR: Thank you, sir.

HEARING OFFICER GREGORY: With the conclusion of the comment, we'll go back into recess.

(Hearing in recess at 7:20 p.m.)

HEARING OFFICER GREGORY: Well, it's 8 o'clock. And there being no more speakers, this hearing is adjourned.

(The Powder River Training Complex Public Hearing adjourned at 8:00 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the foregoing Pages 1 through 53 are a true and correct transcript of the proceedings had.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South Dakota, this _____ day of _____, 2010.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

formal part isn't a Q and A session. It's an opportunity for you to put on the record your views and concerns about this proposal that you want the decision-makers to consider. Questions that you pose during your comments will become part of the record and will be considered.

Of course, after we're done with the formal part, the FAA and Air Force representatives will continue to be available to discuss things with you back around all those display boards.

And with all that, I'll move to the comment cards. And let's see. I'll just deal off the top here. I have Matt Davila. Did I get that right?

MR. DAVILA: No.

HEARING OFFICER GREGORY: No? Sorry.

MR. DAVILA: Davila.

HEARING OFFICER GREGORY: Matt Davila. Go ahead and spell that for her.

MR. DAVILA: Davila is D-A-V-I-L-A. I know this is not a Q and A meeting, but I just -- I was talking with the liaison earlier today and I wanted him to explain some of the possible test flights that were going on and -- back in '93 and '95.

You guys showed the borders of the proposed patterns or whatever. And I can't remember what we

2052

2052 (cont'd) Page 35

were talking about. I can't remember how that went. But that was in existence before.

But I moved here from Denver, and living out seven miles outside of Selfridge which is -- there's nothing there, but I saw -- what I saw is the whole state line light up and something came flying towards -- well, now that I saw the map, over Bullhead and over towards Selfridge/Porcupine area and then shoot straight across west.

You guys mentioned also about the FL, the flight levels being 45,000 and 5,000. And I explained to the gentlemen, the two people earlier, that these crafts were lower than that. But if you could -- I guess if you guys can explain that, that would kind of clarify. Because the altitude or whatever, the feet that -- the 5,000 feet that -- the minimum flight levels, I guess.

DO-1

HEARING OFFICER GREGORY: Let me just clarify that. Was that 5,000 or 500?

COLONEL ELDRIDGE: 500.

HEARING OFFICER GREGORY: 500.

COLONEL ELDRIDGE: 500 feet above ground level. You bet. 500 feet.

MR. DAVILA: But on your pamphlet it says 5,000.

HEARING OFFICER GREGORY: It should be 500. That's why I wanted to clarify that. All right. Thank you.

Let's see. Next, I have -- hope I get this right -- Mr. Jesse Taken Alive. Sir.

2053

MR. TAKEN ALIVE: I'll sit right here so she can hear me.

Welcome to Standing Rock, Air Force officials, government officials. My name is Jesse Taken Alive. I'm a member of the Tribal Government here at Standing Rock.

And I need to race through this unfortunately, but I will touch as to why I'm racing through this because we certainly can understand some of the things that you all are saying, but I'm afraid that you won't understand the cultural impacts that I'll be discussing briefly here, and that's -- that's an adhesion process as I understand it.

First of all, consultation with the experience we have here on Standing Rock as a Tribal Government Official since 1991 is an exercise sometimes encrypted as fiduciary responsibility. And I'm sensing that tonight, that this is simply an exercise that will be labeled as a fiduciary responsibility because of the time limitations that

NA-1

2053 (cont'd)

are given to us.

Secondly, there's no guaranty as I see it that our comments will be implemented since tonight's hearing is not formally scheduled on the schedule that you put up on wall. There's nothing on there that says Fort Yates, North Dakota, with the date. NA-1

Certainly Oceti Sakowin membership in our homelands are not minorities designees. Rather, we do have a legal and constitutional relationship with the United States of America. And that isn't shown in any of the documentation that you present to us tonight. NA-3

I would also like to state that the positive impacts of our ceremonies that you simply allude to, you don't understand the full impacts, especially since the decolonization of American Indians peoples and America has been drastically impacted. You will never understand how important these ceremonies are. Rather, it's a set-up right now because the amount of money and effort that's put into this process and this exer -- what I call an exercise. NA-4

The impacts to our members of Oceti Sakowin and those members and friends such as educators, business interests, et cetera, et cetera, you will never be able to understand because, I say this

respectfully, it's your profession and it's your job and these are our homelands. So you'll never ever, ever, ever understand that.

Now, as one member of our Tribal Government, I must oppose this process until language, for one, exists to cease the flights mutually. There's nothing in here that I've heard or that I've skimmed over that we can say we need to cease these flights because we have ceremonies. We have things going on throughout our homelands. NA-5

The other important issue I have to bring up to you is that cultural sites are inadvertently discovered continuously and we must recover and protect these as significant. And those aren't articulated here. Rather, there's a skimming over Native American issues in the documents that you provided for us. CU-2

The reason I say these and have to speak in this fashion is because the experimental projects that have been done on our peoples as early as 1990 with the hepatitis trial vaccine project that was approved by the Federal Government. The trial vaccine project was approved. The vaccine wasn't. And that's essentially what I'm seeing here. The project is being approved and counted as such.

2053 (cont'd) Page 39

Of course, we all hopefully know about the infestation that our people suffered when blankets infested with germs were given to us. And as you articulate that these aren't going to harm anything or anybody, we won't know that until years down the road as we've known that years down the road with these other incidences. CM-3

So I have one question. I want to share as many other issues as I can. We'd like to know how often the Air Force and government or aircraft contracted by the Air Force and government drop fuels, contraband, and/or waste over our homelands of Oceti Sakowin. NA-6

Oceti Sakowin homelands as agreed to by treaty are the entire western half of South Dakota, parts of Wyoming, Montana, and Nebraska. That's our Oceti Sakowin homelands and that's what we like to refer to ourselves as.

So as you look at these documents, as we've been given a brief opportunity to look at them, again, please, for the record, this is simply an exercise. And you will call it fiduciary later on, but it's an exercise, a futility on our part, but we're still going to oppose this as a Tribal Government Official because of many, many reasons. GE-2

It's going to take longer than the prescribed time frames and limitations of this process that you articulated.

I need to say this in protection of our children, grandchildren, and those yet born.

So I hope I didn't use up my three minutes. Or did I? Your cue cards. But these things have to be said as I've been given an honor and responsibility to represent our people here at Standing Rock.

Thank you so much for coming. And again, I hope these are part of the record because we're not formally scheduled on the schedule that you presented to us. I know that can be a trickster in itself. Thank you so much.

HEARING OFFICER GREGORY: Well, I don't know about the formal schedule, but I can tell you that it's part of the record because here's the record. (Indicating) And if it weren't a formal hearing, I wouldn't be here.

MR. TAKEN ALIVE: Treaties are formal records. They're not followed. That's my point.

HEARING OFFICER GREGORY: Well, I can assure you tonight's is a formal hearing.

MR. TAKEN ALIVE: You said if there was going to be no debates. I need to respond to your

2053 (cont'd)

comment.

HEARING OFFICER GREGORY: I just want to clarify, it's a formal hearing.

MR. TAKEN ALIVE: In my view it isn't until it's formally put on the schedule, so...

HEARING OFFICER GREGORY: All right. And also I wanted to tell you, if we have time after everybody's had a chance, we'll get you more time.

MR. TAKEN ALIVE: Sure.

MR. IRONSHIELD: Colonel?

HEARING OFFICER GREGORY: Sir.

MR. IRONSHIELD: I wanted to ask you --

THE COURT REPORTER: Wait a minute.

HEARING OFFICER GREGORY: She can't get it down. If you want to speak, I'll get you one of those cards. Or if you want to chat with him.

MR. IRONSHIELD: Mine's already in there.

HEARING OFFICER GREGORY: Okay. Well, maybe I'm getting ready to call it out here.

Let's see. The next one I have is Ms. Phyllis Young. Phyllis Young. There you go, ma'am.

2054

MS. YOUNG: Thank you. They're all reminding me three minutes. I'm the wrong person to have a microphone and the longest-winded person in Standing Rock.

2054 (cont'd) Page 42

For the record, my name is Phyllis Young. I am the Hunkpapa and Ottawa Band of the Lakota Nation here on Standing Rock.

And I bring for the record the minutes of the Long Soldier Community meeting which was 120 people on September 22nd which opposes the use of the airspace, and also a record of two years ago October of 2008 that opposes the use of airspace. GE-2

One of the experiences early on in 1983 was my son was practicing the religious ritual of the Hanblecheyapi, or the vision quest, on the -- at Sitting Bull Camp when he was "buzzed" by the United States Air Force. And that was only a few years after the Indian Religious Freedom Act was passed by the United States Congress.

So when you have a young person in your family who is very, very sincere and devout about a right of passage and participating in religious practice, I was very offended, very offended. NA-4

For the record, I was raised on VA pension. I know about the first World War. My grandfather was in 1918 the first World War. My -- my uncles, my father were heroes at Normandy, 82nd Airborne. That's my history. That's my life. That's all part of my heritage, having been raised by the military

here. So I have a great respect and admiration and love for that history, and to have been raised in a good way until the United States took away our way of life in 1960, in 1958 by flooding the dams, by creating the dams.

So we were able to make it and live on that subsistence, have our own gardens, our own independence, and make a life for ourselves after the war.

And, you know, the war kind of -- my grandmother always said it makes you witko tko ke. That's kind of like crazy when you have to come back after you've suffered the perils and the experiences like what's happening in Iraq and Afghanistan today and all the social pathologies that are created by it.

So I think I lived my own history and I have always supported. And today I continue to support the military in my own way, in my own devout way. But I believe that there has to be a mutual respect, there has to be a mutual understanding, and there has to be a mutual benefit.

And so I think the United States has to honor our lives, where we live on our lands and the cultural resources that we have here. We're the

NA-7

heart of this nation. We are still pristine. We are still pure in our blood systems. And, granted, we have been tainted along the way in our survival, but I believe that our community has spoken here.

In 19 -- in 2008 there were 57 people in this community that voted against the use of airspace, and again on September 22nd there were 97 people of 120 people in this building the other day that voted against this because of the past experiences. GE-2

Our only experiences have been being "buzzed" in our religious practices by the military. And we were very devastated when the helicopter crashed at Bear Butte, but we said that the Great Mystery takes care of us in strange ways.

So that is the heart and spirit of my testimony, is that the use of this airspace by the military has interfered with the most sacred right of our people in our religious practice. NA-4

So for the record, I have a Resolution that was adopted by this community in 2008. It was reaffirmed the other evening. And I just want to read, not the entire Resolution, but I'll take a couple of paragraphs here.

"WHEREAS, the Standing Rock Sioux Tribe is in the process of developing measures for the

2054 (cont'd) Page 45

protection and use of the human environment and of the resources of such environment for airspace, air quality, water resources, the subsoil, the land, and land uses beyond the limits of natural jurisdiction in order to supplement Tribal resources available for the achievement of the economic and social progress and development of members of the Standing Rock Nation."

"WHEREAS, the Standing Rock Sioux Tribe and its membership desire to live in peace and freedom from the dangers of nuclear war, oppose any propaganda and preparations for war, to participate in the economic development of Tribal resources and to preserve a healthy environment for all living things."

"WHEREAS, the Standing Rock Tribal Council in 1986 and 1987 objected to and opposed the use of airspace over Standing Rock for the purpose of low-level flight training by the United States Air Force due to the interference (buzzing) with the religious practice of hanbleca, or vision quest, at Sitting Bull Camp by traditional Lakota and Dakota men, as guaranteed by the Indian Religious Freedom Act of 1978."

So for the record, I submit this Resolution. I

submit the minutes of this community, which is really the voice of our people, and would like to submit that for the record. Thank you.

HEARING OFFICER GREGORY: You can either give those to me for the record or one of our reps back there at the table.

MS. YOUNG: I will give it to you.

HEARING OFFICER GREGORY: All right. Thank you. And all of the written comments again become a part of the record.

All right. Next I have Mr. George Ironshield.

MR. IRONSHIELD: Sir, can I go last?

HEARING OFFICER GREGORY: Okay. Unless the other fellow wants to. Then I don't know.

Mr. Cedric Goodhouse, Sr. Mr. Goodhouse. Do you think he's in the building? Oh, good. There we go.

MR. GOODHOUSE, SR.: I forgot what I was going to say. Let me see here. 2055

From the time of our creation, it talks of, to shorten it up a little bit, it talks of where Eon Spirit went and created mahpiya to, blue sky. But from that, from that time on, there was no -- it was all still in one. But when that happened, there was the spirit went and created mahpiya to. So there

2055 (cont'd)

became a blue sky.

But that's one of the reasons that is paramount to why we need airspace. It's coming to the time where -- where we -- it's almost in a survival time because of the -- the encroachment on every -- every -- every aspect of our being. Not only -- not only us, but also you, you know.

So it's real important to understand the ceremony of hanbleca, you know, before you can understand what we mean by that.

NA-4

Tahunci Jay who was our Tribal Chairman at one time and we used to talk about these things because there was some real important language that when he talked to treaties, there's a part in our treaty that says, and I think it's Article 2 if I'm -- the Fort Laramie Treaty of 1868 where it says for absolute and undisturbed use and occupation. And it lies -- you're within those boundaries of what you're proposing, you know.

And that's -- that has been diminished. The interpretation has been diminished over time. And, you know, there's no -- you cannot hide the negative statistics that plague our people. And I look at all of it related to how our spiritual life has been -- has been taken away from us because of

NA-8

people just do not understand. And I seen how all the people that have come to this part of the world, it's coming full circle now. Now they're wondering how to prevent more people from coming, you know. But, you know, but -- but, you know, the people that have come here and are here now live in this concept of if you're not understood, you're not accepted. But the reason why we're here the way we are here today is because we've accepted so we can better understand, you know.

And I want you to, if anything, to take that with you. Because you really need to understand us so you can see where beyond, you know, what you're doing as you are affecting human, human beings. And this is what -- you know, why -- why we have these treaties, why these laws have been passed, you know.

In '78 they all said, "Oh, my God," you know, "Let's give these guys their religion back," you know. What do you mean? We're not part of the Constitution? You know.

So you have to really understand that, you know. You can't just go through these motions because this is what you're supposed to do according to NEPA, you know. You can't do that because where we are in the survival mode.

2055 (cont'd) Page 49

Because I see our people, it's like our social fabric is kinda -- kinda becoming unraveled here in these last few generations. So it's real serious when we talk of the need to have our spirituality considered in this, in these things.

NA-4

So I just want to say about that much. So thank you.

HEARING OFFICER GREGORY: All right. Thanks, sir.

Do you still want to go last? Because I've got one more.

MR. IRONSHIELD: Am I the last one?

HEARING OFFICER GREGORY: I've got one more in front of you now. Okay. Mr. Ironshield. There you go.

2056

MR. IRONSHIELD: Colonel, I'm an Air Force reject. I was in Air Traffic Control. I was going to school in Biloxi, Mississippi, Keesler Air Force Base, and I was in weapons. And being a bookworm, I always carried a good book because everybody was standing there smoking their cigars or cigarettes or whatever, shooting the bull, there I'm sitting on my feet reading my books. I always like to read.

But anyway, I don't want to talk about all the bad stuff that happened. But I ran into a Sergeant,

a Staff Sergeant there, and he was one of our weapons instructors, and anyway, he got me discharged because I had unclassified material in my class. So they couldn't give me nothing other than an honorable discharge because I was also a student leader, a squad leader, and at that time they had red ropes for squad leaders and yellow ropes for the next guy up, and the white rope was the only one on three squads. But I was training for that white one when I got my -- got in trouble.

But not to explain my -- where I'm at with it. It's not what I did. They changed the dates, see, on that. In '61 so I'm in the Vietnam Era, but I never went to Vietnam. But maybe it was good. If I did finish my schooling, maybe I would have been dropping bombs on our guys, you know, because they're whites.

So anyway, maybe it was good they kicked me out. But they said I had a schizophrenic because when we're marching in review, I hear these voices in the sky calling my name in Indian. And when I turn and look, I get gigged.

But other than that, when I got discharged I went home. My uncle woke me up and said, "Come on. Let's go march." I said, "Ah, you see that paper

2056 (cont'd) Page 51

hanging on the wall? It says honorable discharge." He said, "You spend one day in the military, you're a soldier," he said. "And our comrades are falling like flies." He said, "We gotta take care of them."

And so from that time on we've been marching, learning how to march, learning how to do funerals. And I'm still doing it up to this day. I'm still burying our deceased comrades.

In fact, it is surprising, last winter they honored us with, from the National Defense, a little flag, a little pin, hat pin they gave us. So I'm still going there. I'm still going back and doing our prehistoric burials. And somehow -- I've been re-burying our ancestors that have been uncovered by this river that the Army built and I've been taking care of our ancestors. And somehow they gave me the gift to be able to find burials.

So I worked with a lot of these wind towers. I've been to cell towers all the way in the Black Hills. I've also fell off a mountain and I got arthritis in both hips. I don't march so good any more, but I got -- also in the small of my back I got arthritis. But I don't take pills, okay?

But now the thing I was wanting to talk about, in Pine Ridge, that bombing range that they had

there, there's a lot of bombs that have not been picked up. When are they going to ever clean those, those bombs? When are they going to pick them up? Because they've been asking us to go down because that's also a burial area for our ancestors. So we need to go down there and take care of our ancestors, yet these bombs are there. And I don't feel like getting blown up in this late date, you know.

NA-7

And so anyway, that's what I was asking my grandson, if he could make a comment and ask if you guys are going to do anything about that.

And I've been to one of these before in Rapid City, and I told them about the chaffing, what that does to the land and the air we breathe and all that kind of stuff that they're going to use real -- like back in World War II I think they used it to put snowflakes on their radar screens. And in Korea, there are all those Air Bases are overrun because the airmen didn't even know how to load their M1 cartridge. We had to qualify on the M1 cartridge. I shot expert, but they won't let me wear a wreath around my M1 cartridge like they do in the Army. So anyway, that's what I shot at Lackland in Basics. So all I fired was a .22 and a 12-gauge

SA-14

2056 (cont'd)

in that time.

But now I work -- I'm 70 years old and I retired five years ago, but the Tribes still haven't found a replacement for me to help with our Tribal Preservation Office. So here I am still out in the field doing that; walk about. And still hurt. I fell down a mountain last year where my grandson was at.

But anyway, I don't want to cause any troubles or hurt or anything, but we need to work together. And also in our spiritual life, I'm also a spiritual healer, a ghost healer. And my ancestry comes from bear from Pine Ridge so I use bear medicine pretty successfully, so... And I don't just heal Indians, okay. Even animals.

So not to cause any harm or anything, but it's good to see you fellows in your blues. I got discharged in July so we had suntans and short sleeves and everything. We looked like hell, you know. Looked like -- I better not say. But you sure look good in those blues.

HEARING OFFICER GREGORY: All right.

MR. IRONSHIELD: Thank you, sir.

HEARING OFFICER GREGORY: Thank you, sir. Thank you.

I hope I get this right. Ms. Petra Reyna? Is that right?

MS. REYNA: Yes. My name is Petra Reyna. 2057

Hau Mitakiyapi! I'm a Tribal member here and also a teacher in the high school and a mother. I came because I saw the announcement when I was walking through the store, and walked in and then found out we had three minutes to say something, which to me was, three minutes. And then as I'm reading because I don't know anything about the EIS or whatever, well, where's the Draft EIS? So I go over there and it's that big ole book. Well, I don't have time to read it tonight and then make my comments and let alone make comments in three minutes in reference to that Draft EIS. I mean, I need a couple weeks to look through that Draft EIS. NP-5

I just returned -- I don't like the way this sounds. But I also sit on the committee that is involved with our language revitalization and we just visited the people in -- the Hawaiian people and we had lunch with them, and one of the issues they talked about was the observatories, the bumps that are on their sacred mountain and the disruptions that they believe are occurring to their people.

2057 (cont'd) Page 55

And we need to start that for our people. We need to start that revitalization and that's what we're trying to do. We're trying to revitalize our language and our culture. And we have enough negativity going on in Indian Country.

And we just want to be at peace, you know. We just want to be in peace so that we can rebuild our nation; so that we can teach our children to be the Lakotas we are because Lakotas means allies. So we're not that stereotypical fighting Indian that we're depicted in the pictures.

NA-7

Just in listening to the presentation, there were some concerns that I had that, you know, for me were red flags. One being silicon would be released into the air. Well, asbestos -- silicon, yes, occurs in nature, and asbestos when it's in the buildings, it's okay to come into the buildings, but once you disrupt that asbestos and those asbestos particles are released into the air and they get into your lungs, your lungs can't get them out. And it's the same way with silicon.

Yes, silicon occurs in nature and is found in nature, but once it's disbursed into the air and gets into your lungs, your body can't get rid of it. Your lungs can't get rid of it. There's -- we have

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enough health issues.

The other thing was migration patterns. Yes, they're addressed, but what other birds. You know, eagles are sacred to us. You know, there's just tons of birds that already are having trouble. Their migration patterns have been destroyed. And we just have so much environmental issues going on already.

You talk about if the buildings are sound enough, they're not going to be affected. Well, in Indian Country we don't have the infrastructure as it is. We don't have quality buildings as it is. So yes, we're going to have houses blown over because they are made of sticks.

And the last thing was -- thinking about, you know, I was thinking about those Hawaiians and their sacred mountain, that's the same thing with the Black Hills. The Black Hills are sacred to us and they're our site of creation. We came here, no matter what anybody else says, our creation stories tell us that we've been here from time immemorial, and those sacred sites are always -- there's always an issue going on.

You know, we have to deal with Sturgis and taking my sons through Sturgis so we can climb up

SA-14

BI-6

SO-18

CU-2

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Bear Butte and, gee, there's pictures of half-naked women all over, you know, and trying to talk to my sons about having discipline, and yet we're in our sacred sites and having to deal with that on the eye level.

And then the backing formation that's being assessed up north, you know, that's underground. Nobody's addressing those issues, but that's going to affect everything underneath, underneath the earth.

When we presented ourselves to the Hawaiians, they asked us to speak in our language and to sing a song because that's what they did for us. And when we sang our song, the song we picked was the "Four Directions." So we still sing to the four winds. We sing to the four directions. And that's what's going to be disturbed up there, up in the air. You know, we sing to the creator and that's going to be disrupted. And we sing to Mother Earth, and she's already under attack everywhere.

So those were some of the -- kind of the red -- the red flags that raised up for me. And I'm sure there's plenty more because I need a couple weeks to read through the Draft EIS. So thank you.

HEARING OFFICER GREGORY: Okay. Thank you,

2057 (cont'd) Page 58

ma'am. And as I mentioned earlier, this certainly isn't the last time to make comments on this. You can take a look at that draft and if you want to submit written comments, you have until November the 15th to put together some written comments and send them to the address that's on that brochure and the comment sheets. So take your time, go through it, and please add to your comments if you'd like to.

Next I have Mr. Jeff McLaughlin.

2058

MR. MCLAUGHLIN: Good evening. My name is Jeff McLaughlin and I'm from McLaughlin. That's a family history name in history. But I wanted to in the three timing -- the three minutes isn't sufficient time for me to explain that -- I guess listen to these fellow Tribal members, that I guess they are opposed to that, and I'm opposed to that also, the no-fly zone. Because we're dealing with the land and water issues. GE-2

And I work with the elderlies of the Hunkpapa Treaty Council. And most of them are gone now and so I guess, like I say, no -- well, I am saying no, but what are the mitigating factors? Because for example down at the Denver Broncos game last year, they had a fly-over, played the National Anthem, but that 500 feet or less and that's -- we don't want

those jets flying around your house, the tail wind or whatever, the sound is -- that's 10 days out of the year, but...

Anyway, there's a lot of reasons, but I wanted to just on this map here, colored map, our treaty boundaries go way into the Powder River country and so now, you know, it's troublesome because there's -- only a handful of us are here and I guess we're being -- what do you say? -- singled out now, but -- because the information that we know, that we learned, is not taught in schools and there should be -- this room should be filled up or we should have it at the Pavilion to talk about this issue. But people are telling me, people that can't afford the gas and get up here and to voice their concern because -- for whatever reason, you know, they have -- maybe they're a veteran with PTSD and that will be -- you know, to see B-52 bombers flying overhead, you know, that's -- that's traumatic right there.

And -- but getting back to military, I guess I'm saying no, but the military is going to say yes anyway. What are the mitigating factors. Because this 1889 (sic) Act, that's illegal. And where is the military act now to put -- to move these

NA-8

non-Indians out because there was not three-quarters consent. NA-8

And Article 2, the Bad Man Clause, there's 17 articles in that 1868 Treaty, and where is the military act to help protect our rights, our land base, cultural identity.

I expect great racism even though my name is McLaughlin from both sides, you know, racism from non-Indians and Indians alike.

But anyway, where is the military act to help us in this, to keep our lands for undisturbed use. NA-7

And so anyhow, I think that is pretty much what I wanted to say. Is that two minutes or something? But thank you.

HEARING OFFICER GREGORY: All right. Thank you, sir. Is there anybody else who hasn't spoken yet who would like to? Anyone? Okay. We still have some time. So as I mentioned at the beginning, if we've heard from everyone who has signed up to speak and have time left, I'll offer more time. Would anyone who's already spoken like more time?

Mr. Taken Alive, would you like another three minutes back on the clock? Give Mr. Taken Alive another three minutes. There you go, sir.

MR. TAKEN ALIVE: Thank you very much for that

additional three minutes. It's reminiscent of times when you go to Congress and they give you five minutes.

So one thing I'll share with you before I make comments about the -- follow-up comments is that in this part of the woods, as they say in your language, we want to continue to be human beings and not human doings. So that's critical to not be human doings just for the sake of money.

There's been mention this evening of treaties. Treaties are still on the books. Just because the United States didn't -- hasn't upheld them doesn't mean they're not on the books. And I think that it's imperative that we continue to articulate those. The United States Supreme Court said that they could be and should be interpreted by said Indians, and so that's what we're doing tonight. NA-8

And the language is so simple. Article 1 of the 1868 Treaty that's been ratified by the United States Congress, the treaty that puts our law of the land. And treaties come from the Constitution of the United States of America which predates of course treaties.

Sometimes when we say treaties, a lot of people think that they're dead documents and shouldn't be

re-visited any more, but in our view they aren't. They're alive and well.

Article 1 begins by saying, of the 1868 Treaty, "From this day forward all war between the parties to this agreement shall forever cease. The government of the United States desires peace, and its honor is hereby pledged to keep it. The Indians desire peace, and they pledge their honor to maintain it.

If bad men among the whites, or among other people subject to the authority of the United States, shall commit any wrong upon the person or property of the Indians, the United States will, upon proof made to the agent, and forwarded to the Commissioner of Indian Affairs at Washington city, proceed at once to cause the offender to be arrested and punished according to the laws of the United States, and also reimburse the injured person for the loss sustained."

And we know as we look back in history there's been a lot of wrongdoings to Native Americans. Just look at our health situation, Indian Health Service, et cetera.

Article 2 as was alluded to earlier describes the Great Sioux Nation, Oceti Sakowin. As I said

earlier, it's the entire western half of South Dakota, going west starting from the east bank of the Missouri River up into North Dakota, Wyoming, Montana, and Nebraska. And once it's described formally in Article 2, it goes on to say, "set apart for the absolute and undisturbed use and occupation of the Indians herein named, and for such other friendly Tribes or individual Indians as from time to time they may be willing, with the consent of the United States, to admit amongst them..."

So this is what absolute and undisturbed use. I think, if anything, that should show up in our record that we're sharing with you tonight.

I know you shake your head, but you don't understand. But I thank you for acknowledging hearing me read this. And that's a huge concern I have with my friends here that come to the reservation. You don't understand this. But I continue to welcome you to our reservation.

So again, for the listeners out at KLND, this is very serious. We're talking about rights over our homelands, over Standing Rock, on the western half of South Dakota, and the potential for continued interruption and disturbance by the United States of America from the Air Force. And again,

NA-8

NA-8

I'm saying this because the treaty says that these lands are for our absolute and undisturbed use.

So thank you so much again for coming. I need to continue to defend our people and our rights, and there are many. So we'll look forward to working with you and we'll look forward to seeing this plan, I believe it's option 4, where we oppose it tonight. Thank you.

HEARING OFFICER GREGORY: Thank you. And, sir, if you want to make again any of that as part of the written record, all you have to do is just leave it here or leave it with one of the representatives in the back.

MR. TAKEN ALIVE: You can probably get a copy of this in the United States Congress.

HEARING OFFICER GREGORY: I know we can, but I saw you had a lot of documents.

MR. TAKEN ALIVE: These are your documents. The treaty-making process is one of the United States of America, and it's the same as -- these are just copies. I'll give you a copy nevertheless, sir. It will be the same as what you got back in D.C. Thanks.

HEARING OFFICER GREGORY: Okay. I just wanted to give you a chance to do that. So I'll take that

as a written addition.

Anybody else? Yes, ma'am. 2054 (part II)

MS. YOUNG: I would like to read this. This is Phyllis Young. For the record, I would just like to read the Resolution.

"WHEREAS, the Standing Rock Nation has a relationship with the United States of America that has a legal status far beyond and above any relationship with any entity, state, or corporation and for this reason, Standing Rock has prior and paramount rights to the airspace above the lands of Standing Rock, including the airspace in infinity; and the primary status of those rights stems from the 1868 Treaty of Fort Laramie, the legal principle which provides protection relative to the sacred asset: airspace."

"WHEREAS, the United States of America has the responsibility of adopting measures prohibiting the pollution and damage to the social progress and general welfare of the members of the Standing Rock Nation and this responsibility cannot be delegated, denigrated or abrogated."

"WHEREAS, the Fifth Amendment of the United States Constitution provides for 'just compensation' to property owners for any losses and this right

includes members of the Standing Rock Sioux Tribe as determined by the treaties and continuing rights derived from the treaties."

"WHEREAS, the Standing Rock Sioux Tribe is fully recognized by the United States of America pursuant to the Treaties of 1851 and April 29, 1868 at Fort Laramie and it is elemental that the rights to the use of airspace reserved by the Standing Rock Sioux Tribe arise not from a grant by the United States to the Tribe but, rather, the Tribe reserved those rights to the use of airspace when the Treaty was signed with the United States."

GE-7

"WHEREAS, damages to the people of the Standing Rock Nation have not been determined, which includes damages to cultural resources, resulting from 'buzzing' or interfering with religious practices as well as overall social cost damages resulting from electromagnetic fields created by flight paths; and impacts on all living beings; and it is the wishes of the people of Standing Rock Nation that these damages be estimated, mitigated and compensated immediately."

"NOW THEREFORE BE IT RESOLVED, that the Standing Rock Sioux Tribe oppose the use of its airspace for any purpose until the United States Air

Force submits a Plan for not polluting the Air (by electromagnetic fields or otherwise) and negotiate a dollar amount, depending on the scale of the project, which would allow the Tribe to make an independent assessment on Tribal Air Quality and Interference on Religious Practices, including 'hanbleca.'"

"BE IT FURTHER RESOLVED, that the Standing Rock Sioux Tribe negotiate a fee for the use of airspace that might pollute the air (by electromagnetic fields or other pollutants) so that the Tribe can evaluate independently an assessment from how much pollution results from the use of the airspace."

"BE IT FURTHER RESOLVED, that the Standing Rock Sioux Tribe demand that the United States of America administer the rights derived from the Fort Laramie Treaty of April 29, 1868, by the establishment of a Commission that will address provisions necessary for rendering effective standards and regulations applicable to the use and withdrawal of airspace; 2) Provide compensation for use, damages, be they social or economic in nature, including restitution and reparations, caused as a result of aggression and of illegal occupation of boundaries claimed by Lakota/Dakota people; 3) Achieve total disarmament

and utilize resources to be used only for the economic and social progress and general welfare of the members of Standing Rock Nation." For example, wind power development. "4) Adoption of measures prohibiting the tests of space weapons, the development, production and buildup of space weapons for the preparation of war, and the pollution and damage to the members, the land, water and air of the Standing Rock Sioux Tribe."

I wanted to read that for the record. I also would like to touch on the cultural interpretations of what the greater society refers to as Mother Nature. Things are happening all around us in this universe and it's incumbent upon we as the keepers of this earth to try to help heal Mother Earth because she is trying to heal herself by the floods.

In our culture, we have our greatest powers that we believe in and the Great Spirit we refer to are the winds, the rain, the clouds. In our language, those are all the greatest beings of the universe. And no one, no human, no living thing, can overcome the natural world.

And so the wind as we speak in this case specifically is the mischievous one of those powers and she always wants to play. And so as a playmate,

NA-7

she is mischievous. So if you interpret that, you will see what powers she has when she plays. And in your world, you refer to it as a tornado or hurricane or something negative. And when that happens to us, when she comes here, we offer her tobacco. We welcome them when they come. When it rains, when it snows, when it hails, it's a purification process.

So we have a totally different interpretation of the atmosphere of the universe and our belief systems are very, very different. Well, where a rainy day for you is a negative, it's a beautiful day for us.

So as the earth is being purified, we ask that you not interfere any more. We feel that our nation has given greatly to the national interest. We have given our land, our water, our resources. Maybe not in the mutual benefit, but we have given in the national interest. And we ask that you respect us and a mutual understanding that we are pleading with you to grant our wishes that there be no more interference in our lifestyle in our own homeland. Thank you.

NA-7

HEARING OFFICER GREGORY: All right. Thank you, ma'am. Anyone else?

Well, I'll tell you, if you change your mind, all you have to do is let me know. But since we've got a little bit of time left and we've still got all the representatives here, at this time I'll go ahead and thank you for coming out tonight and inviting us here and showing your interest in this Powder River proposal.

As I've mentioned several times, I'll mention once again, tonight's not the end of your opportunity to participate in this process. Again, written comment sheets are available at the registration table. You can turn these sheets in tonight or mail or fax them later. The mailing address is printed on the brochure and the comment sheets.

The Air Force welcomes public comments in writing at any time during the Environmental Impact Analysis Process, but again, to receive timely consideration for the Final EIS, please have your comments submitted by November the 15th, 2010.

If you'd like your own copy of the Final EIS, please tell one of the representatives at the registration table or send a letter with a postcard asking for your own copy and the Air Force will send copies of the Final EIS to you.

There being no more speakers at this time and it's still before 8 o'clock, I'll go ahead and recess the hearing. The Air Force reps and FAA reps will be available back by the displays. You can speak with them about anything you'd like to. And if you change your mind about making a public comment, all you have to do is come up here and let me know and I'll turn the tapes back on at any time before 8 o'clock which is about, oh, 20 plus minutes from now.

So at this time I'm going to go ahead and recess the hearing.

(Hearing in recess at 7:40 p.m.)

HEARING OFFICER GREGORY: Well, we're back in session. There being no more speakers and it's 8:00 p.m., this hearing is now adjourned.

(The Powder River Training Complex Public Hearing adjourned at 8:00 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the forgoing Pages 1 through 71 are a true and correct transcription of my stenographic notes.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South Dakota, this _____ day of _____, 2010.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

earlier, this formal part isn't a Q and A session. It's an opportunity for you to put your views and your concerns about the proposal that you want the decision-makers to consider. Questions that you pose during your comments will become part of the record and will be considered. And of course after we're done, as I mentioned earlier, when we're done with the formal part of this, the FAA and the Air Force reps will continue to be available outside by all those boards to continue discussions with you.

And with that, I'll move to the first speaker that I have on these cards up here. I'm going to move this thing out so it's more convenient for you and move the mike out. Careful not to unplug it. There we go.

All right. I'll just deal off the top here. Let's see. Mr. Bob Simmers of the Bismarck Aero Center. Sir. All set.

2059

MR. SIMMERS: Colonel, Major, Ms. DeVine. I'm Bob Simmers, that's S-I-M-M-E-R-S, and I'm the co-owner and operator of the Bismarck Aero Center at Bismarck Airport.

Our FTO services a majority or a lot of the airplanes in the area and our basic service is ground support. One of my concerns with losing any

50-10

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kind of airspace is, about 30 percent of our fuel sales at this airport comes from transient traffic; somewheres in excess of 3 million gallons a year. If we lose 30 percent of that, it's devastating to our business. SO-10

And I might add that, you know, this -- this has been labeled an Environmental Impact Statement, but it doesn't say much about an economic impact. SO-22

And most of this stuff I'm going to talk about is an economic impact to us because we all survive on the money that's generated here.

The aviation community is a small community and it's a tightknit community and, you know, we're -- it's tough to make a profit in this business, and so it's important that we explore all avenues to generate as much revenue as we can. So that's one of the services that we provide.

The next service that we provide is, we've been involved with the transportation of medical teams from the Bismarck area to satellite communities like Hettinger, Bowman, and other areas of the state. But in this specific case of the Powder River MOA, this is a concern to us. The concern stems from the fact that there are probably in excess of 80 medical flights a month that depart the Bismarck Airport and SO-5

go to these satellite communities. That's, you know, in excess of three a day on the average.

They go into these areas. They fly IFR in there. And these teams, a lot of these teams have the potential to make between twelve and $1500 an hour. That's what they're worth. And they go out there. They fly because they can't afford to drive these teams out there and have them behind the windshield for that amount of time so they fly them out.

SO-5

Under this proposal, it limits, you know, not only the access to these communities and the services that they provide to these communities, but a bigger deterrent probably is the fact that they get there, they do their job, and when it's time to come home, all of a sudden the MOA became hot and now they're grounded because the weather has gone down or they choose not to fly in VFR conditions. So it's a, you know, it's a bad deal for them.

AM-12

You address the life-guard flights, and we understand the -- you know, their -- you know, that you're going to give them priority in this situation, so... The dispute I have on the findings on the life-guard flight is the 496-page document, or whatever it is, the section in there that says

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that most of those life-guard flights are below 10,000 feet. Well, today I'm here to tell you that most of the life-guard flights fly above 10,000 feet because they're all taking pressurized capsules and they're making longer trips and they're using higher performance airplanes and they're flying at higher altitudes for whatever reason: patient comfort, weather, you know, any of the environmental issues that they may -- that they may be faced with, why, the pressurized aircraft is the way to go.

SA-18

Another industry that's booming in our area is the oil industry, and we see just a tremendous amount of traffic that comes in from the south and flies into these areas. If they get -- if -- with this development, if this is -- becomes a deterrent to them, why, you know, they're not gonna -- they're going to find other ways of getting their work done. The aviation community is going to lose out.

SO-17

Charter is restricted to flying in controlled airspace, into areas where they have weather. And now -- you know, it used to not be such an issue, but the more advanced we get with everything, the more accessible all these small communities are to charter aircraft. And so, again, putting up -- taking the airspace away from the general public is

SO-5

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going to put them in a bind getting in and out of there and being able to do the job that they've been asked to do. SO-5

One other thing that I'm involved with, I might say -- might mention that I'm a pilot with over 15,000 hours. I've been flying for almost 50 years. I spent a lot of time with aerial application. And again, this was addressed briefly in this document, but the environmental impact of this has not been researched at all. And, you know, it's -- aerial application is -- and the application of pesticides is extremely critical and time sensitive, and any delay whatsoever causes great economic hardship to the agricultural community. SO-2

And while I was researching some of that stuff, one of the things I found -- obviously I didn't get to read the whole document word-for-word, but on one of the documents that I found they were talking about agricultural, it was data for the counties that were involved there, and the figures are so out of place on this sheet of paper and, for whatever reason, somebody -- it's obvious that somebody didn't proof this because, for instance, they say that Montana has 61,000 acres -- 61 million acres underneath this -- underneath the proposed MOA. SO-30

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North Dakota has 626,000 acres under this -- on this sheet of paper that came right out of -- it's actually Page 153 in your -- in the document. But still one of the counties in North Dakota has over a million acres. Well, it doesn't add up. And if this is representative of the rest of the document, you know, there needs to be a lot of work done on it. SO-30

One of the other things that I printed out was a copy of the -- of the low-level -- or of the air traffic that had been -- that had been mapped through the area. And this one has -- talks about map traffic below 4,000 feet. Well, we all know that out in that area there is no radar that's capable of tracking anybody below -- most -- you know, between five and 8,000 feet. So I take issue with the -- with the information that's provided in this thing. SA-1

I'm also a technically advanced aviation -- or advanced aviation instructor for the new avionics that are -- that are placed out here. And Victor Airways, they talk about Victor Airways and making the corridors, but the intent of the FAA, along with NASA, is to create a system in aviation that's point-to-point aviation; where Victor Airways are AM-16

2059 (cont'd) Page 39

AM-16

going to be a thing of the past. We won't be flying Victor Airways. In fact, very seldom do we fly Victor Airways today. So I find that information, you know, totally outdated. With the new aviation stuff, why, it's -- it's -- we're -- you know, everything's point-to-point and it's all done with a computer inside the airplane.

So anyway, those are a few of the comments I have. And thank you for your time, and thanks for coming to at least greet us.

HEARING OFFICER GREGORY: All right. Next I have Mr. Darrel Pittman from -- I think it's NDAC, EAA, NDPA, and CAP. And I'll let you tell us what all that is. Folks may want to know.

AN AUDIENCE MEMBER: Does that count toward his three minutes?

HEARING OFFICER GREGORY: We probably shouldn't count all that as part of his three minutes.

2060

MR. PITTMAN: Thank you, Colonel. All those little letters mean all the groups that I belong to, so...

With that, I'd like to preface just a little bit, I am a veteran and I'm certainly not opposed to the military getting their training done. Been there, done that. But I'm also a retired Air

2060 (cont'd) Page 40

Traffic Controller and I've worked Powder River airspace.

It's -- it's a concern to me, it's always been a concern to me, when airspace is scheduled for usage. It's never done real-time. It has never been done. It's still not being done.

So my question is to the Air Force, what privileges are being provided to make the airspace usage for real-time uses for their needs. If you can call the Flight Service Station now when you're ready to take off and you ask them, "Hey, is Powder River hot?" the answer is probably yes. But you get up in the air and you talk to air traffic controllers and they'll say, "Well, we didn't want to go through there because it's not in use -- it's in use." And they're saying, "Well, no. There's no airplanes in there. It's not in use."

So we need to have some real-time scheduling for this for real-time usage so that the pilots can be aware of what's being used. I think it's extremely important.

I mediated a session between the FAA and the Air Force a number of years ago, I won't say how many, between -- about just this thing, about usage of airspace, and that same topic came up and it

AM-12

AM-12

never did get cured. We still have the same problem today.

You can call Flight Service and it will say it's in use. Yeah, it's scheduled in use, but is it really being used? That's the key.

AM-12

The other thing I have a little concern about is the proximity of the airspace to major terminals. Bismarck -- well, I live here and I fly out of here and it is a concern to me that, you know, there's only 30, 35 miles of space before a flight can get started down to land in Bismarck. As an old air traffic controller -- I thought I'd freshen up, Fred, so... Anyway, you know, 35 mile, you can't get an airline down in 35 miles, in order to safely get him down and get him on the ground so that he can keep his passengers comfortable and everything, so...

AM-5

And I spell my last name Pittman, P-I-T-T-M-A-N.

HEARING OFFICER GREGORY: All right. Thanks, sir.

MR. PITTMAN: Thank you.

HEARING OFFICER GREGORY: Next I have Mr. Bob Miller, North Dakota Aero Comm.

MR. MILLER: Colonel, I'd like to defer for a

2060 (cont'd) Page 42

little bit. You have a representative from the Governor's office here this evening.

HEARING OFFICER GREGORY: I do. Where is she?

MR. MILLER: Do you know what the Governor would like to see here?

HEARING OFFICER GREGORY: I don't think she's going to -- she's not signed up.

MS. TRAVNICEK: I'm not signed up at this time. We're here to kind of get everybody's input.

MR. MILLER: I'm going to pass for now.

HEARING OFFICER GREGORY: All right. Well, let me know if you change your mind.

Mr. Phil Mastrangelo. And they even did it phonetically for me. I'm sorry.

MR. MASTRANGELO: Not a problem. Thank you.

HEARING OFFICER GREGORY: There you go.

2061

MR. MASTRANGELO: I'm Phil Mastrangelo, M-A-S-T-R-A-N-G-E-L-O, and I'm the State Director of the U.S. Department of Agriculture's Wildlife Services Program and my office is located here in Bismarck.

Wildlife Services assists a number of entities with the mitigation of wildlife conflicts, and one of our larger programs in North Dakota is addressing coyote predations to livestock. And we use a

SO-15

multiple of tools to address these problems, including the use of a Hyper Super Club Cub which is an aircraft that we typically fly beginning at sunrise to mid-morning to early afternoon Mondays through Fridays.

SO-15

The concerns that I have with the proposed expansion of the training flights are unexpected encounters between military aircraft and our slow, low-flying Hyper Super Club Cub. These encounters could be direct encounters or indirect encounters with the vortices generated by these fast-flying military aircraft.

SA-7

I certainly recognize the need for military training and support that. However, training should not create unsafe flying conditions for non-military aircraft.

Thank you for allowing me to provide comments.

HEARING OFFICER GREGORY: Sure. Mr. Fred Adams.

MR. ADAMS: Thank you. That is spelled A-D-A-M-S.

2062

I'm Fred Adams, Chief Pilot/Travel Supervisor for Basin Electric Power Cooperative. Basin Electric is a regional wholesale electric generation and transmission cooperative serving more than 120

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2062 (cont'd) Page 44

members, 2.6 million consumers, 9 states, and we cover more than 430,000 square miles based here in Bismarck.

Basin Electric is strongly against any increase in the size of the existing Powder River MOA or ATCAA. Basin Electric recommends the No-Action Alternative. Basin Electric believes the No-Action Alternative is the most responsible choice for the following reasons: GE-2

Adverse Financial Impact: Basin Electric is constructing a $1.4 billion electric generation plant 6 miles northeast of Gillette, Wyoming. Construction will be completed in 2011 and operations are planned for a minimum of 50 years.

The facility requires air transportation of employees and consultants from our headquarters in Bismarck to the Gillette Airport several times each week.

Currently, the Powder River MOA and ATCAA already have a negative impact on our flight operations, and the proposed enlargement to the PRTC will have even a more negative impact.

Over the last three years, Basin Electric has flown 1,791 flights into part of the proposed Powder River Training Complex. Over the last three years,

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we've flown 316 trips annually between Bismarck and Gillette alone, and our direct operating cost this year is $442,242.

If Basin Electric has to avoid the complete PRTC, that annual expense would go up to $596,292. Additional costs to avoid the airspace is $154,050 annually, or about $490 per flight hour.

If I use the average additional expense for the other 281 flights that Basin Electric goes through all or part of the proposed PRTC, it would have an additional negative cost of $136,988, giving a total adverse operating expense of $291,038. This does not include employees' loss of production time or salaries. SO-7

Five safety factors I also think are in play here: The 30 miles from PR-4 to Bismarck is inadequate. You look at most factory descent profiles require between 33 and 43 miles to get down from 17,000 feet into Bismarck. If the high MOA is active, it's hard to comply with those. And if any of the ATCAAs are in affect, the problem gets worse and safe operations are compromised. A 60 nautical mile radius for IFR airports to the edge of the PRTC would then allow normal and safe operations. AM-5

2) There needs to be communication coverage for AM-3

all aircraft in the PRTC at all altitudes to control, deconflict, and cover other non-standard ops.

There needs to be ATC radar coverage for all aircraft inside the PRTC within the low and high MOA for FAA to control and monitor all aircraft. AM-3

4) The FAA center boundaries need to be modified so one center controls the whole operation. Right now, there's three centers and they can't deal with it in real-time with the standard airplanes. There's no way they can do it with high-altitude fast-movers. AM-1

And last, real-time data on the status of the PRTC needs to be available for everyone to see. No change should be allowed within 36 hours except for cancellations.

Basin Electric again is strongly against the proposed PRTC complex and recommends the No-Action Alternative. Thank you for your time. GE-2

HEARING OFFICER GREGORY: And, sir, I noticed you had kind of a bullet paper there. Again, if you'd like to submit that as a written comment to supplement --

MR. ADAMS: Oh, I already sent three pages in and I'll have another one there.

HEARING OFFICER GREGORY: All right. I just want to make sure you got them in.

MR. ADAMS: Which adds in to the '08 comments.

HEARING OFFICER GREGORY: All right. Gary Larson. Mr. Gary Larson.

MR. LARSON: Thank you. L-A-R-S-O-N. 2063

My comments on this is, I do low-level work. I'm with Phil Mastrangelo with USDA Wildlife Services. And all our flying is normally around the 100-foot level and we will climb to two to 300 feet. Cross-country we will be 500 feet and above. We do a lot of our work in the southwest part of the state.

And my concerns are with the vortices with the aircraft that we will encounter. Somewhere along the line, it's going to happen. And my problem is that I'm low and slow. So I'm dirty. I've got my flaps on flying low. And with the vortices, whether I'm going to have an effect with that, time to recover in the time frame needed at that altitude, which probably isn't going to happen off these bigger aircraft. SA-7

Another thing was the flight schedules. Their flights are early morning, late evenings, exactly the same as mine. All I do is early morning flights

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2063 (cont'd) Page 48

and late evening flights. So we're gonna cross paths and that's going to be a concern. SA-7

Our number one goal is safety, both with the military and ourselves, but we gotta try to find a good correlation between each other somehow or another to make things work.

We fly with our windows open, so I have a concern with the debris from the flares and the chaff, whether our intake as individuals, if we have a concern with any of this. Because we're gonna -- like I say, somewhere along the line we're gonna be breathing this stuff. It's just a matter of when. SA-14

You're talking about charting and avoiding objects that are put up at 200 feet or above. Well, we will be a movable 200-foot object constantly, and how are we going to charter and control the avoidance between the two of us? SA-1

Normally what's going to happen is that if other aircraft come into the area where we're working, we will have to leave the area if the aircraft is going to be there for any length of time. Our policy will not let us stay there and do our work. So I'm afraid we're going to -- a lot of our cooperators are going to lose out on our workload for them with the situation that's before SO-5

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us.

SO-5

And the communications for us, to be able to contact anybody at that level, whether it's Flight Service or anybody else, it isn't gonna happen at the levels that we work. It's -- I don't know how it's gonna work. But we are -- we are going to be on the back burner on that.

AM-3

And I think that's about it. Thanks for the opportunity.

HEARING OFFICER GREGORY: All right. Thanks, sir.

Next I have Mr. Ron Rebenitsch. I hope I've got that just about right.

MR. REBENITSCH: Here's my card.

2064

HEARING OFFICER GREGORY: Oh, great. Thanks.

MR. REBENITSCH: My name is Ron Rebenistch. I'm the manager of Alternative Techologies for Basin Electric, and I'm in charge of the wind projects that we develop in -- both the development internally or by the output from.

The area proposed for this federal action contains large areas of world-class wind resource. We're concerned about the potential for this federal action to affect potential development of wind energy projects.

SO-17

2064 (cont'd) Page 50

I was somewhat comforted by the statement that we still will be allowed to build wind projects on private land. However, what we're asking for is a firm declaration in the EIS, in the Final EIS, to include a firm commitment that the federal action will not result in limitations or constraints on the development of wind energy projects.

NP-6

We ask that this commitment come not just from the military but as well from the Federal Aviation Administration which is a cooperating agency for this Environmental Impact Statement.

As I said, I was pleased to hear that the action doesn't affect private property, but it would still have the potential to constrain development of a wind project in instances where other federal agencies that are unrelated to this action here do have a federal nexus to a wind project.

Without a definitive statement now that those agencies don't have to consider this action, it could leave them with unclear direction and that could delay or actually constrain a wind project. Thank you.

HEARING OFFICER GREGORY: Thanks. All right. Mr. Miller, do you want to defer some more?

What I'm going to do is take a recess, and then

if you change your mind, we're going to be up here until 8 o'clock, all you have to do is let us know.

MR. MILLER: Okay.

HEARING OFFICER GREGORY: Okay. So we've heard from everyone who's signed up to speak. We still have some time left.

Is there anyone who's already spoken who would like to add to your remarks? If you do, just let me know. Anyone? Okay. Well, if you change your mind, all you have to do tell me so.

As I mentioned earlier, the Air Force and FAA reps will continue to be available out by those display boards to discuss things with you.

I thank you for your time and interest in coming out tonight to discuss this Powder River Training Complex EIS proposal. And as I mentioned several times, tonight is certainly not the end of your opportunity to participate in the process. Written comment sheets are available at the registration table. You can turn your sheets in tonight or mail or fax them later. The mailing address is on the brochure and comment sheet.

The Air Force welcomes public comments in writing at any time during the Environmental Impact Analysis Process, but again, to foot stomp this for

you, to receive timely consideration for the final EIS your comments must be submitted by November the 15th of 2010.

If you'd like your own copy of the Final EIS, please tell one of the representatives at the registration table or send a letter or postcard asking for your own copy and the Air Force will send copies of the Final EIS to you.

Since it's well before 8:00 p.m., what I'm going to do, as I mentioned to Mr. Miller, I'm going to recess the hearing. You're welcome to continue discussions with the representatives. And if anybody changes their mind and wants to make a comment, Ms. Fink and I will be up here. All you have to do is let us know. I'll reopen the hearing and you can make your comment.

So with that, the hearing's in recess.

(The hearing recessed at 7:10 p.m.)

HEARING OFFICER GREGORY: I'll call the hearing back to order at about 7:15. A gentleman in the audience mentioned that his name had not been called. I stated that I didn't have any more cards, but if he'd like to make a statement, he's certainly welcome. He declined to do so and did not provide his name, and to my knowledge we still don't have a

card for him.

But at any rate, we remain here ready for anyone to make comments who hasn't done so before or to add to comments they've already made as I already announced. And if he changes his mind, I'm sure he'll let us know.

With that, I'll go back into recess.

(Hearing recessed at 7:16 p.m.)

HEARING OFFICER GREGORY: The hearing is back in session. It is 8:00 p.m. We have had no requests for any more speakers, so this hearing is adjourned.

(The Powder River Training Complex Hearing adjourned at 8:00 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the forgoing Pages 1 through 53 are a true and correct transcription of my stenographic notes.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South Dakota, this _____ day of _____, 2010.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

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MR. CAPRA: All I want to say is that we've been happy -- I live out in the middle of this area. We've been practicing over for at least 20 years and we've had -- haven't had any problems with it. In fact, we kind of enjoy watching planes. And I can't see anything, any reason why we shouldn't have this, mainly because they have to practice somewhere and they're there to protect us.

GE-1

PN-1

And, you know, we expect these young people to go over there and serve with their life, and I don't think that it would be asking too much for us to agree with doing what they want to do. I know there's probably some problems, but I think they can be ironed out. Thank you.

GE-1

HEARING OFFICER GREGORY: Thanks, sir. Ms. Schlosser?

MR. SCHLOSSER: No, not yet.

HEARING OFFICER GREGORY: Not ready yet? Okay. Is there a Danny Lannine?

MR. LANNINE: Lan-nin.

HEARING OFFICER GREGORY: Lan-nin? Sorry about that.

2066

MR. LANNINE: Well, we've also lived under the MOA for the last 40 years and we've had considerable problems with the Air Force and it goes back to the

NP-7

2066 (cont'd) Page 36

compliance. They set the rules and the regulations and then don't follow them.

For a good example, when they talk about elevation at 500 feet, or thereabouts, or 1500 feet, it doesn't make any difference. If they want to fly at 200 feet, they fly at 200 feet right through your yard, through your corrals, whatever the case may be.

And there's several flaws in this EIS. For one thing, they don't mention the airplanes that are involved. Almost every ranch in this whole area has airplanes. There's over 214 registered airplanes in Montana alone. There's over 300 in South Dakota. And you talk about only 129 people will be involved with your disturbance? I think your numbers are wrong.

There again, there's no mention of what are the consequences if the pilots don't follow the rules and regulations, of noncompliance. If I fly into Ellsworth, there's an issue. I'll be arrested. If they do whatever they want to do, that's fine. That's for the sake of saving the country.

Well, I'm tired of that whole attitude. I'm not anti-American. Don't get me wrong. But we need rules and regulations just like anybody else. And

NP-7

AM-14

AM-4

AM-14

2066 (cont'd) Page 37

if they're not going to follow them, they don't need to expand this area.

The other issue on the EIS, is there's been no discussion on the unmanned aircraft that's going to be coming in the near future. Somebody in Ellsworth will be flying those planes setting in Rapid City.

AM-17

And the report, there's been no accident reports? There's been no controversy in the last 20 years? That's interesting. There's been several near misses. There's been several people that has been scared to death with -- when one of those planes come over and you're taking off in a small airplane. Then they have been reported to Ellsworth Air Force Base. And on their report there's near zero report of anything going on out here. Everything is hunky dory. I'm sorry. It isn't. We need corrections.

SA-1

The main thing here is, if there's no rules to follow and the Air Force is not going to follow them, they do not need to expand their area.

HEARING OFFICER GREGORY: All right. Thanks, sir. Ms. Schlosser.

2067

MS. SCHLOSSER: Hi. I'm Demarest Schlosser. I came here tonight with my husband Otto and our two kids. This is Lillian and Conrad.

First, I'd like to say I fully support a strong and well-prepared military. I appreciate all the sacrifices that our servicemen and women make for us every day, but they should not place unreasonable burdens on the citizens that they are trying to defend. GE-3

I grew up in Houston, Texas, where it's very noisy and I came out to my husband's family ranch three years ago. I was expecting peace and quiet. The occasional flyover at a reasonable altitude and a reasonable time of day is not a problem. I do have a problem with the extremely low-level flights that are -- that occur at all hours of the day and night. My son is scared of the jets because on several occasions they've flown so low and they were extremely loud. LU-2

I understand that the military needs to practice so that they're prepared to defend us, but I'd ask that they conduct their exercises at reasonable hours of the day and to limit the excessive noise, which is no more than is expected in urban environments. NO-5

I wouldn't subject the homes of our servicemen and women to this kind of noise and I would expect that they do the same for me. Thank you.

HEARING OFFICER GREGORY: All right. Thank you, ma'am. Next I have Mr. John Smith.

MR. SMITH: Do you need help spelling the last name? 2068

HEARING OFFICER GREGORY: I think I actually got the pronunciation right.

MR. SMITH: My comments first all is, I support our troops wholeheartedly. GE-9

The other comment is, the number of people that are seated out here, I counted approximately 40, and I would like the people to know that this seems like a small number to represent our area, but we have very few people living here. I think this is a tremendous turnout for the number of people who live in Powder River County. If you look out, there's about 40 to 50 people here, and that represents a fairly large number of people for our county. NP-3

Next of all, as a pilot I'm very nervous about this deal. I know of one pilot friend of mine that hung his airplane up and just leaves it in the hangar. He's scared to fly with you guys. And I'm just a few miles out of the MOA and I do occasionally fly in the MOA and it can be rather thrilling. If the Air Force could do something in the sense of giving us -- some way of notifying you SA-7 AM-3

2068 (cont'd) Page 40

where we are at, I would truly appreciate that. AM-3
Other than that, this ends my comments.
HEARING OFFICER GREGORY: That's all the speaker cards that I had. Are there any other cards? Anyone fill one out that maybe I didn't get? No? Anybody who hasn't spoken change your mind and want to speak? All right. We've got two more cards here.

2069

MR. HAYES: My name is Francis Hayes. We live out here about 40 miles southeast of here and we've been in this MOA ever since it started, ranchers, pilots, and we've never experienced any problems with the MOA or the aircraft. LU-7 The livestock, we've never had any problems with livestock being spooked or scared or anything. BI-1
And these military people have to be training and have to have a place to train. And I'm not opposed to this at all. I'm in favor of it. GE-1
HEARING OFFICER GREGORY: All right. Mr. McDowell.

2070

MR. MCDOWELL: I'm Don McDowell. The only thing I would say after talking to several pilots and dealing with the Airport Board and things like that, I hear a lot of concerns from our local pilots and I would like the Air Force to understand that

2070 (cont'd) Page 41

you're a closer neighbor at that 500 foot than a lot of these people have ever seen, and I don't think it would be a bad deal if you scheduled an annual meeting to bring your people out and listen to comments annually; instead of us trying to get ahold of you, you came to us. Thank you. GE-5

Did you get the spelling?

HEARING OFFICER GREGORY: Yes, she has the card. Thanks a lot.

Anyone else? Is there anyone who has already spoken who wants more time on the clock? Anybody? Anybody?

Well, we're here until 8 o'clock. That's a ways off. If you change your mind between now and then, all you gotta do is let me know. We'll be sitting right over here. We'll turn the machines back on, I'll reconvene the formal hearing, and you can make a statement if you'd like.

But since at this point I have no remaining speakers, I just want to remind you that the Air Force and the FAA reps will be out there by those display boards to discuss things with you.

I want to thank you for coming out tonight and showing your interest and your concerns about this proposal. And as I've mentioned several times

already, tonight is not the end of your opportunity to participate in this review process. Again, written comment sheets are available at the registration table and you can turn these in tonight or you can mail or fax them later. You see the address and fax number is on that slide and that's also on the brochures and the comment sheets.

Again, the Air Force welcomes comments in writing at any time during this process, but to receive timely consideration for the Final EIS, please get your comments submitted by November the 15th, 2010.

If you'd like your own copy of the Final EIS, please let one of the representatives out there know, or you can send a letter or postcard asking for your copy and the Air Force will send a copy of the Final EIS to you.

And there being no more speakers at this time, I'm going to recess the hearing. But if you change your mind about speaking, Teresa and I will be available right over here.

So at this point we're in recess, and the Air Force and FAA folks will be available out in the hallway to continue discussions with you if you'd like.

(The hearing recessed at 6:50 p.m.)

HEARING OFFICER GREGORY: We're back on the record. The time is 8 o'clock. There have been no further speakers. This hearing is adjourned.

(The Powder River Training Complex Public Hearing adjourned at 8:00 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the forgoing Pages 1 through 43 are a true and correct transcription of my stenographic notes.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South Dakota, this _____ day of _____, 2010.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

finally, as I mentioned earlier, this formal part isn't a Q and A session. It's an opportunity for you to put on the record your views and your concerns about the proposal that you want the decision-makers to consider. Questions that you pose during your comments will become part of the record and will be considered.

After we're done with the formal part of this, the FAA and Air Force reps will continue to be available out by those display boards to continue discussing things with you.

All right. And with that, I'll move to our first speaker. And I'll just deal off the top here. How about Mr. Bill Lane. Mr. Lane. You can use this mike here. 2071

MR. LANE: My name is Bill Lane, L-A-N-E. I'm a cattle rancher southwest of Baker as well as a private pilot and aircraft owner.

This expansion is huge and said to be comparable to the size of South Carolina or one-fifth the size of Afghanistan. And if I'm correct, this will be the largest complex in the United States. The Training Complex will limit not only general aviation traffic but commercial traffic as well due to the limitations of radar contact, AM-3

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2071 (cont'd) Page 36

radio communications, as well as the fact that the FAA will not allow IFR traffic to be routed through a hot MOA. Landowners' and/or business owners' rights will be impinged upon by the startling effect of low-level flights, high noise levels, and decreased land values. AM-3 SO-1

And for a comparison, I ask you to think about property values of houses in major metropolitan areas that lie under the flight path of major airports versus those outside. SO-23

We'll also be impinged upon, there will be increased fire danger and then reduced revenue due to the lack of air traffic and recreational traffic. SA-5 SO-6

And once again, this area will no longer be a quiet, last best place. LU-2

Ranchers run the risk of decreasing conception rates in livestock unofficially by as much as 42 percent, thus reducing income for some producers in this area that could result in hundreds of thousands of dollars. There also will be reduced hunting income due to disturbances during hunts. This area is a huge recreational area for hunting by out-of-state hunters, thus a huge economic draw for our area. BI-2 SO-13 SO-9

Ranchers will also face high repair costs due SO-13

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2071 (cont'd) Page 37

to fences being torn down as a result of spooked or confused livestock, not to mention wild game. SO-13

Other risks include fire danger. And unofficially we have heard this, that wool growers may be unable to market their wool as a result of the contamination from the plastic filaments in the chaff. SA-5 SO-16

And also, we will face reduced land values as well. SO-1

And also, for those of us that have airplanes and fly them on our ranches, we will be facing dangerous flying conditions.

This see-and-avoid technique won't work based on the speeds of the aircraft. See-and-avoid may keep you from hitting my aircraft, but what about your wake turbulence? SA-7 It will flip me upside down.

Who or what gives the government the right to impinge on the rights of the citizens? If I impinge on the rights of my neighbors, I can be sued for those infringements. Can I sue and honestly win against the government if they infringe on my rights? NP-1

Let me use this analogy. This is basically like you moving into my house, using all of my resources, destroying my belongings, and not having to pay any rent or pay to replace anything. Montana has absolutely nothing to gain by having this SO-24

SO-24

training facility in our back yard.

The Air Force is here to protect our interests worldwide, but we are here to protect our interests locally. I therefore recommend the No-Action Alternative. Thank you.

HEARING OFFICER GREGORY: All right. Thanks, sir. Next I have Mr. Roger Meggers. Did I get that right?

MR. ROGER MEGGERS: That's right.

HEARING OFFICER GREGORY: Okay.

2072

MR. ROGER MEGGERS: I've been called worse. I'm Roger Meggers. I'm the Airport Manager here at Baker. Last name is M-E-G-G-E-R-S.

This air expansion is massive to this country. I mean, it's just huge. I mean, it will be the largest Military Operation Area in the United States, and the majority of this expansion is into Montana.

This area is mineral rich with more oil reserves than Saudi Arabia. Large coal fields are just being discovered. There's just a lot of impact that's going to happen here in the next few years economically, and with this hanging over our head, we just won't be able to operate.

SO-17

The proposed corridors are based on the

2072 (cont'd) Page 39

antiquated VOR system or the Victor airways which is actually slated for decommission. This routing will also extend flight times and cost general aviation more money to go around these areas. Chaff that's dispensed with the military aircraft will interfere with weather radar.

Some of these stats I have here are greatly different than what the Air Force has come up with. There are over 120 airports in Montana alone. Seven are public use -- or under this area there are seven public use, one airport, over 40 private airports that lay under this proposed expansion. There are over 600 FAA registered aircraft that fly in this expansion area. And how are they going to operate safely when this is hot?

Initially we thought this was going to be about 10 days a year. We find out now it's going to be in excess of 240 days a year.

This proposal will save the Air Force 8 and a half million dollars per year. The economic impact of Montana airports are as follows: 18,800 jobs; $600 million in payroll, and $1.6 billion in economic activity. That's just in the State of Montana.

Approximately $20 million has been spent on

SO-7

SA-16

AM-4

PN-5

SO-10

2072 (cont'd) Page 40

ADAF funding on these airports that lie -- public airports that lie directly underneath this proposal, with an additional 13 million proposed to be spent within the next two fiscal years. Why have we spent all this money on these airports when they will be severely restricted with this expansion? SO-10

I feel this proposal is well greased and sliding along under the radar without a lot of public input. There's quite a few people here tonight, but a lot of these meetings are not very well attended. A lot of the pilots know nothing about this. You talk to the transients that come through my business and they don't know anything about it. "How are you going to operate through it?" "Can't. We're not going to. We're going to go around it." NP-8

Nothing has been said in this EIS about the Ellsworth Air Force Base becoming a command center for the Predator UAV aircraft. I don't know exactly what's going on there myself, but that's the rumors I've heard. AM-17

I feel the elected officials are being held hostage on this because they do not want any more Air Base closures in this area. We can't afford that for our economies. Contractors and engineers SO-25

2072 (cont'd) Page 41

which I've talked to, they're afraid to say anything for fear they will lose contracts that they currently have with Air Bases.

And anyone that opposes this seems to kind of be painted anti-patriotic which is not true. I very emphatically support our troops and we need a strong military. GE-9

And one last thing and I'll wrap up here, but general aviation can't accept this without some serious changes, but the B-1 is capable of top speed of 830 miles an hour. That's 13.84 miles a minute, 1218 feet per second, which is almost twice as fast as a .45 caliber bullet, and that's four seconds a mile. I hope you guys don't get lost. Be a long ways home. But see-and-avoid just doesn't work at 800 miles an hour, and that doesn't even include closure speeds. SA-7

And as for myself, I've been a pilot since 1969 and logged over 16,000 hours of civil flight time. I'm a commercial pilot flight instructor and I've operated my business at the airport for -- since 1978. And I'm not sure my business will survive this expansion if it goes through as it's written because of the limitations that will be imposed. Thank you for your time. SO-10

HEARING OFFICER GREGORY: Thank you. All right. Thank you, sir. And next I have Darin Meggers.

2073

MR. DARIN MEGGERS: Okay. My name is Darin Meggers, same spelling as the last speaker.

I'm a third-generation pilot and have been involved in aviation for as long as I can remember. I've been actively flying since 2001 and I've accumulated over 3200 hours of flight time to date under multiple ratings and endorsement; been an operator at the local FBO here in Baker, Baker Air Service.

This is a full-service FBO providing fuel sales, aircraft maintenance, repair and modification, aircraft sales and demo, contract and specialized flying, flight instruction, aerial photography, charter, aircraft salvage and recovery, and other aircraft pilot amenities.

Its yearly average at 22,000 gallons of fuel sales; maintenance, 40 aircraft; a thousand hours of commercial flying; eight aircraft sales; and currently operate five aircraft in the business and employ eight people.

There are major concerns that have come up with the huge expansion of the Powder River MOA both in

2073 (cont'd) Page 43

square miles and vertical boundaries of the airspace. Safety is a major concern for all pilots flying and on the surface for the people and livestock and animals. The majority of the pilots will avoid because they don't want to deal with the risk of the MOA.

As an FBO, this will have devastating effects on the economics of Baker residents if this expansion happens in more ways than one.

How can you operate an FBO business underlying this airspace and surrounding Baker for nearly 150 miles in every direction? There's no way you can confidently tell people that this airport and this business is alive and well with this airspace hovering all around. Corporate and commercial flying in the area will just not be happening.

Right now talking with pilots personally and additionally with their companies, they will make alternate plans to avoid complications, risks, and costly delays of the airspace.

Flight instruction isn't looking real attractive either. Try to talk a student into flying among military aircraft at 500 plus mile an hour when they can barely figure out how to fly at first. No IFR training in our area.

SA-7
SA-9
SO-6
SO-6
SO-26

If no airplanes are stopping because of the airspace, that means no fuel sales, aircraft repairs, sales and demo and general maintenance, all a huge part of an FBO business, not to mention all the local businesses downtown that give them a courtesy card to go eat and go to the grocery store or whatever they need to do or stay the night. SO-6

Operation of a full-service FBO underlying this is simply not going to happen. It takes all aspects to make a go of a small-town FBO providing all services. There is no reason to talk expansion and growth of the business when this airspace will take away all the customers.

Even though this is a sparsely populated area, it is one of the busiest areas in the United States and probably one of the most likely areas for expansion. The U.S. unemployment map can prove that. Look around Baker alone with the development of oil and gas industry, utility and wind energy, the medical facility, farming and ranching and outdoor recreation that takes place. Corporate and commercial aviation in the area would be affected directly. SO-5

Just in Baker alone, there are over 12 oil or utility companies that operate their base in Baker,

2073 (cont'd) Page 45

plus all the on-demand flying that is related with the sport and service that they need.

What you're asking for cannot be done. This needs a lot more compromise to let the general aviation community survive as well as the corporate and commercial operators in the area of the proposed expansion. Thanks for your time.

HEARING OFFICER GREGORY: Thank you. Mr. Donald -- I think it's an "L." Lieger?

MR. RIEGER: Rieger.

HEARING OFFICER GREGORY: Krieger. Should have gone with the "K."

2074

MR. RIEGER: Donald Rieger, spelled R-I-E-G-E-R --

HEARING OFFICER GREGORY: "R."

MR. RIEGER: -- presently serving as Fallon County Commissioner.

We as a county have a huge stake in what takes place here. Some of the things have been mentioned.

The air ambulance situation, we've gone over that. Yes, you indicate that there can be a phone call and they will hold off for air ambulance, but we all realize what it takes to make a phone call, especially on a weekend or something, and get a live voice. Most often it's a recording. The recording

SA-19

turns you to another phone number to call or passing down of the line, and you can wait a long time until you get a live body, if you do. SA-19

Another thing is the fire suppression that we have in here. We have the capabilities when they do have a fire to come in here with aircraft. They use our facility here and they possibly even take on some fuel here. But that's something that we are very dear to our hearts about and we do not want to leave any of that out. SA-5

Another thing is, we've got a new airport expansion project in the move and what we would be doing is extending the runway. And it seems to me like if all this is going to take place, why are we doing what we are as far as putting more improvements into our airport when it will be very limited use. SO-10

As has been mentioned before, the oil activity that's here is huge. And there's many, many direct flights come in from Texas and thereabouts, come in in the early morning hours, leave again in the afternoon, and those are very dear to the community also. SO-17

With the TransCanada pipeline that's in the making would come through here, there's 67 miles

2074 (cont'd) Page 47

that come through the county. There would be an on-ramp you might say that would include shipping oil in here from various parts of the Dakotas, Montana, and they would be held in facilities here so that they can put it into this TransCanada pipeline. With that, that will bring many more pipelines to the area, more business, more business will be moving to Baker because of this situation, and that again is very essential to the county. SO-17

I wish I could stand before you and say I trust everything you say. We happened -- two of the Commissioners of the three happened over to Mocha where there was a meeting over there on land use or with the BLM adhering property there for a wildlife corridor. There was 3,000 people in attendance over at that meeting and various people gave testimony there. And there again, they were lied to, and the indications came out of there, too, that we wish we could trust you, but we can't. And this is about the situation here. We hear the stories, but can we really trust you? GE-5

Montana has a state law that there's a cooperating agency status, and I hope if this gets into the final stages or something, that you would participate with the local officials and take NP-4

2074 (cont'd) Page 48

comment from them and be more involved so we know we can share some ideas, and that's what the cooperating agency status is all about. NP-4

Do you adhere to our land use plans that we have within the county? I think this is moving forward. I don't think there's any consideration of the individual land use plans that we have in our county, and I think they should be taken into consideration. LU-8

So we have various things at stake here, and therefore we would find it hard to support this maneuver and have to go on record as being opposed. Thank you.

HEARING OFFICER GREGORY: All right. Thanks, sir. Next I have Mr. Dennis Twedt.

MR. TWEDT: Yep.

HEARING OFFICER GREGORY: There you go.

2075

MR. TWEDT: My name is Dennis Twedt, T-W-E-D-T. I'm a member on the Airport Board in Baker.

And there has been a lot of things that's been said that's too vague in my book as far as "expected to fail," there's "may be activated," definitions of "approximate." It leaves too much -- too much open there; not -- nothing definite, not holding down a positive yes or a no. Interpretation of the Bible, NP-9

so many different religions, so to speak. That's what scares me.

And I back that up with Donald; that we see that get into this part of the country and -- and once they get their foot in the door, it's a lot of different things: like say 10 days a year and we find out through the grapevine that it could be up to 200 some days a year. That scares me. PN-5

We talk to other pilots that come in and out of Baker in the past and tell them about this proposal and they said that they would probably be more than likely avoid it and they wouldn't come here just because no one wants to fly in an area like that.

And personal experience in the past, in the middle '80s working in the oil field they had two different places that they had military routes. After a fashion of time we learned of where these routes were and they flew right over those routes, just about count on it, and at a certain time about every week. And that was good because then we knew to avoid those areas at that kind of special time. But still, that was well below 500 feet. And who is to police that? AM-14

And it scared a hell of a lot of people a lot of times out in the oil field. I mean, it's -- it

caused a lot of hardship. By the time they seen it, it was gone. And then you start looking for the second one to come and then it was, you know, not so scary.

That's what I'm scared of now, a whole big route. It isn't going to be just one little route. So you ain't going to know where they're at, where they're coming, and it's going to shrivel a lot of people and animals. That's all I've got to say. SA-7

HEARING OFFICER GREGORY: Okay. Thanks a lot. All right. Thanks, sir. Next I have Mr. Willie Duffield.

MR. DUFFIELD: Thank you, sir. My name is Willie Duffield, D-U-F-F-I-E-L-D. 2076

I want to thank you gentlemen for serving this country. I think the United States Air Force is the best Air Force in the world, and I think you've got that way and you've trained that way in the current Military Operation Areas that we have now. I think they're adequate. GE-9 PN-2

I guess I want to go on record as opposing this expansion on that ground; that we have adequate training areas. I think the Air Force is going to have to do what the rest of us in the country is doing. We're trying to do more with less. And I GE-2 PN-2

think -- I think that would be a good thing for the Air Force to try to do on this.

I know we're supposed to limit our comments to the environmental issues of this thing. My concerns are more safety than environmental.

You're squeezing general aviation into a smaller area into these bi-way -- or these fly-aways in between these. I don't know which is more dangerous: putting 25, 30 general aviation in a little bitty airway or flying in an MOA with these jets. So I guess I would like you to reconsider that a little bit; making those wider if this is going to go. SA-3

Also, I would like to see them just stay up in the air 15,000, twenty feet, and leave us alone down below. They can practice from there to the moon. I will yield the rest of my time. DO-4

HEARING OFFICER GREGORY: Okay. All right. Thank you. Mr. Chuck Lee. 2077

MR. LEE: My name is Chuck Lee, L-E-E. I'm the Disaster Emergency Services Coordinator and the 9-1-1 Coordinator here in Fallon County.

I'm real new to this tonight. I'm just trying to get a handle on this, but I kinda made some notes. So these are the things I noticed that kinda

2077 (cont'd) Page 52

hit me right off the bat.

I know in the NEPA, they talk about environmental justice. And that's kind of a weird concept. It's the concept that you take a low income area and you dump on it so you turn it into a toxic dump. You know, we've seen that through the years. And I'm not implying that, but what I'm saying is that because of our rural nature and we don't have a lot of population so we have no pull with the politicians, that it just seems that this area has been chosen because it's a quite expansive land but it's also very few people.

EJ-2

And I guess the question -- and I don't -- once again, I'm new to this so I don't understand why don't we go to Rapid City? Why don't we go to Pierre? I notice it tends to come where there's not a lot of political clout. And we all know that dealing with the state government here in Montana.

PN-2

Roger made mention of the Doppler radar. The one thing is that effective January 1, 2011, through December 31st, we will have Doppler radar for the first time in Fallon County. This has been, Roger, probably 15 years you've probably tried through the Department of Commerce and/or the National Weather Service and they always cry there is no money.

SA-16

There must not be any money. We found a way to do this locally, and so effective January 1st through December 31st we will have Doppler radar coverage.

My concern is, now we have Doppler radar and now we have chaff that's going to block that. This radar coverage will be critical for calving seasons or -- and counties, Dickinson, North Dakota, for example, even though they have Doppler radar coverage now, they've ponied up money because they want to see what's coming at them. The storm comes out of the southwest through Broadus and blows to the northeast. They want to know what's coming at them.

SA-16

So I'm concerned that we're going to get radar and now we're not going to get radar. So that's kind of an interesting thing.

From the 9-1-1 side, Fallon County is fortunate enough to have a pretty extensive 9-1-1 system. We do cover four counties, 8,000 square miles. Two of the counties will be affected.

I'm just concerned about, you know, several things there. You mentioned the miners and the frequency issues. My concern, of course, is running all kinds of different frequencies, I wonder what effect this will have on us. I'm concerned about

AM-3

2077 (cont'd) Page 54

dispatch overload. I'm concerned about first responders.

It was mentioned earlier one accident in 1997. That would have been Carter County, I believe. What taxing effect would that have on our first responders in this community if a B-1 -- is it a B-1; is that correct? -- okay, if a B-1 goes down. We're going to be -- we're going to be scrambling, you know, to deal with something of that level.

So I'm concerned about the communication. I'm also just wondering about the noise. You can say that it's supersonic and the charts might show that it has no effect, but quite simply, it has an effect on what I'll call our way of life. I've only been here 15 years. I'm from another faraway land called California. I was born in Bowman, so it's okay.

So I just understand, it's going to have quite an effect on this way of life out here. It's nice and quiet. People are salt of the earth. It's the place to live. And so now we're going to get, you know, blown over with a bunch of -- a lot of air traffic and a lot of noise. And you can't quantify the effect that is, but what we know as our way of life will be drastically affected from this.

And I just have one further concern that Roger

AM-3

SA-20

LU-2

talked about, is this idea that Roger -- one of the primary things I think his business does is they fly the pipelines to visually inspect for leaks and/or damage, and I'm just wondering what kind of effect is that going to have that if something happens that we have an oil pipeline that's leaking and we're not able to detect it, Roger could see it visually from the air and all of a sudden he's grounded, and does a half a day go by, a day go by, and what kind of effect does that have on the environment. So that's all I really have. SA-21

HEARING OFFICER GREGORY: Okay. All right. Thank you very much. Next I have Mr. J. Robert Rusley. I hope I got that right.

MR. RUSLEY: Yes.

HEARING OFFICER GREGORY: All right. There you go.

MR. RUSLEY: Robert Rusley, J. Robert Rusley, R-U-S-L-E-Y, rancher southeast of Baker.

I've put up with this here low-level flying for some period of time, from early back in the '70s. And it is a real hazard to livestock. I have had cattle run through the fences and horses cut up. SO-13 It's a terrible deal. And I didn't get paid for it. SO-1

Another episode now, the devaluing of my

property. You can't tell me if you're trying to sell your ranch and you've got a fly-away running right over, that your value of property isn't going to go down. Maybe it's worth five, $600 an acre at the present time. By golly, if this fly-away goes through, you'll be lucky if it's worth 200.

SO-1

Also, this chaff material, and Roger mentioned this, as far as lambs and stuff and the wool, I think that is an issue. I think they should look into this. I mean, any plastic twine and anything, that wool is condemned. Why would this be any different? It's a silicon base.

SO-16

Also, many of the other local ranchers around here, I don't -- I don't fly, but it's going to be quite an impact on them as far as flying to check livestock. A lot of them use their planes to check livestock, water tanks, wells and, you know, and just in regards to their business.

SO-11

That's all I have. But it's a large concern of mine.

HEARING OFFICER GREGORY: All right.

MR. RUSLEY: Thank you.

HEARING OFFICER GREGORY: All right. Thank you, sir. Next, Mr. Sikorski.

MR. SIKORSKI: My name is Wade Sikorski. We

have a ranch 20 miles south of Baker.

I was -- it was back in the '70s, I remember when we had some B-52s and occasionally a B-1 bomber flying over us, and I think that there's going to be quite a bit different impact from low-level B-1 flights than there will be from the B-52 flights because there -- they happen much more quickly and they're much more louder as I remember it.

And I think it's kinda like you don't -- when a B-1 comes over you, you don't grasp what is even happening. It's just kind of an explosion and then you don't see it, or a lot of times I never saw it. I just sort of heard this explosion and then it was gone. Now, B-52s were slow and you could kind of see them coming sometimes. Most of the time you kinda get used to them.

SA-9

And I'm thinking that the startle impact on livestock will be quite a bit different from low-level B-1 flights than they will be from the low-level B-52 flights, which we aren't going to have, I gather, because it just happens so quickly.

And animals in my experience, once they've been startled, they kinda get to where they start anticipating it and it happens again, they get quite unmanageable.

BI-4

2079 (cont'd) Page 58

We have -- we live right beside the highway and we have a stockade that -- between the barn and the highway. And I remember a time when we put some cattle in by the barn and the cattle couldn't see what was coming on the highway. They would hear the noise, but they couldn't see it or understand it. And they were steers and they became totally unmanageable. I mean, they broke through stockades that I couldn't imagine a cow going through, and they started going through fences, and we figured out it was just when they were on the other side of the stockade, they could see the traffic coming at them, they could handle it. They didn't go wild. But when they were behind the stockade and couldn't see the traffic, they just went totally berserk.

I think that that would suggest that there's going to be a difference between B-1 overflights and B-52 overflights. B-1s are going to startle animals quite a bit more and become quite a bit more of a problem than back when we just had B-52 flights. BI-4

My second major concern is that, I read an article in the New York Times about two weeks ago that said that the Air Force was opposing the development of wind power at various sites around the country. It curtailed -- it curtailed the SO-17

2079 (cont'd) Page 59

development in some areas and it never really stopped them, but it was -- it raised objections to it. And this is an area, North Dakota, South Dakota, Montana, that has a huge potential for wind power development. And I really would hope that the Air Force did not limit the development of air -- wind power in this area. Thank you.

SO-17

HEARING OFFICER GREGORY: All right. Thank you, sir. That's all the cards. Oh, we've got another one here? Okay.

MR. TRONSTAD: I have one here.

HEARING OFFICER GREGORY: Excellent. Thanks.

2080

MR. TRONSTAD: John Tronstad, T-R-O-N-S-T-A-D. We have a family ranch south of Baker. And in my younger days we were, probably around 1960, we were pretty much in the middle of a B-52 fly-away. And I'll always remember as a 10-year-old when the B-52s would come over at night and bring you out of bed. It's something that stuck in my mind, you know. It's -- it is a noise issue.

SO-18

I also fly and I've been -- been a pilot for years. I've had many aircraft over the years, flown through a lot of these areas. And to say that we probably don't have many mid-airs, I've been -- I would not want to count the times that I've probably

SA-1

2080 (cont'd) Page 60

been able to read the numbers on the side of aircraft that went by that they probably didn't even see. There's probably ones that went by that I didn't see. SA-1

So I think it's a real concern. You know, it's like the saying goes, if you put two -- two beebees in a boxcar and they roll around long enough, pretty soon they're going to run into one other. And I think it's a safety hazard.

We have the peace and quiet, you know. I'm kind of a -- it's a little bit like Bill talked and many. I would be echoing that, too, that we -- we have some man that comes from Hamilton. He's brought his first son here to hunt, and he commented, they spent a whole day in this one area out stocking deer, he said, "There's no noise, there's no cars, there's no vehicles, there's no people, there's no airplanes." So I got to where when I fly during hunting season, I'm pretty careful where I go. I don't want to get shot down. You know, they're pretty -- they look at you. I've had some hunters get pretty upset about it. Anyway, he's going to bring a son this year that is his first hunt, too, because of just the quiet and peace. LU-2

2080 (cont'd) Page 61

And the land values, I can see that land values would definitely sag. We have a lot of people that come through this country buy land just because of the quiet. We're kind of the strip of the last best place. I think it's a real issue. SO-1

I don't know if the government -- or the Air Force would be willing to compensate people for that when those sales go down in price or not. It's a concern.

I guess I would go down as being opposed to it. I know we have a wonderful military. I'm not opposed to them training, but I would think there should be some options other than where we're at. GE-2

I also had an interesting thing, I'll give this to Ms. DeVine, about is living under a flight path bad for the heart. And there's some studies done that say if you're in the flight paths, that the risk of heart attacks is greater. SA-22

And then also, part of what Ms. DeVine said on a lot of those things, the maybes and the ifs of things that could possibly happen, when I listened to that last part of that presentation, I wonder why I would be in favor of it. That's all. Thank you.

HEARING OFFICER GREGORY: Thanks a lot. Any more cards? Here we go. I'll let you introduce

2081

yourself.

MR. TUNBY: I'm Randy Tunby, T-U-N-B-Y. I'm a rancher north and west of Baker here. But I'm also here not only talking for myself but as a representative of the Montana Wool Growers Association.

As several people have mentioned in here, the chaff is an issue that we are concerned about. I definitely think that needs to be reviewed and studied a little bit more. Any metallic fibers or poly will contaminate wool, and the chaff seems to have that makeup. And looking at the sample of that, I -- I am concerned about that and we are concerned as an industry. SO-16

Just as an example, a warehouse in Belle Fourche, South Dakota, information from a Larry Prager, the manager of that, in the last two years they have sold a large amount of wool there, but their wool in the last several years, a big percentage, in fact 80 percent of that wool goes to military use. So it's kind of ironic. The dress uniforms that you gentlemen are wearing, a lot of that is produced from wool in this area. And I would sure hate to see a contamination issue not allow that to happen. So anyway, that is one

2081 (cont'd)

concern.

The other concern we have as a -- as I have as a personal individual and as the Wool Growers Association is the predator control and wildlife services along with private pilots. Wildlife services is a USDA Avis agency. They fly and help control predators. Predators are the number one issue facing those in sheep production and it's quickly becoming a major issue for the people in cattle production, too. And if we are curtailed in being able to fly and take care of these predators during critical times, they're flying in hot zones or different things like that, they're -- I know visiting with some people, they are worried about the vortices from the wake and things like that, we sure don't want that to be an issue.

We would like to see at least good communication and things. I'm sure the FAA and the Air Force will work with that. I know that the wildlife services contacts where they have existing fly zones, they contact ahead of time to see, you know, what is going to be occurring that day. But that is just another chain of command.

As was mentioned earlier, you know, possibly you're running out of time during -- to get an

SO-15

SA-7

AM-1

AM-12

2081 (cont'd) Page 64

animal that is causing problems. You've had weather problems or delays or something and you couldn't get in the air, and then a day when you're able to fly, all of a sudden you're in the middle of a training zone and they can't get up. It costs us a lot of money on the ground when the predators take control. SO-15

So anyway, thank you.

HEARING OFFICER GREGORY: All right. Thanks a lot, sir.

And we'll take a quick break while she changes the paper in that machine.

(Brief pause.)

HEARING OFFICER GREGORY: Anyone else that has a card that wanted to speak? Anyone?

MS. RANUM: I don't have a card, but I would like to speak.

HEARING OFFICER GREGORY: Okay. We can get you a card. We have plenty of them. Come on down. We'll just do it up here.

2082

MS. RANUM: Thank you. I'm Deb Ranum. I'm a County Commissioner for Fallon County, and I am opposed to the flight pattern that you are proposing and I ask the military to consider the No-Action Alternative. GE-2

When the lady was speaking, she mentioned that

2082 (cont'd) Page 65

the decision-makers of the EIS, the visitors to the area may find the noise annoying, and I'm sure they will. And it's also going to affect the value of our property. SO-9 SO-1

But doesn't silica also contain cancer-causing agents? And I'd like the military to consider looking into that further. Thank you. SA-14

HEARING OFFICER GREGORY: Anyone else? Is there anybody who already spoke that would like to expand on what you said? Okay. I was thinking you had a little bit more on that sheet. I didn't want to put you on the spot.

MR. ROGER MEGGERS: She shut me down earlier, so...

HEARING OFFICER GREGORY: Yeah, well, as they say in football, put another three minutes on the clock.

2072 (part II)

MR. ROGER MEGGERS: I won't take that long. A couple little things that just come to mind sitting here listening to some of this information. A lot of this information has come up, you know, even tonight. We've been handed it in the handouts.

Once this is in place, say it goes through, are there any procedures in place to suspend it or modify it if there's problems? None of that's GE-10

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addressed in any of this EIS.

Say there's a problem in part of the area that's causing a lot of problems or something like that. Can it be, you know, part of it suspended?

A lot of people don't check NOTEMS. I know the FAA probably doesn't want to hear that, Mike up there. But, you know, my business, we have contracts to do, I mean a lot of places to fly and pipelines to check and we got a lot of area to cover. In the wintertime the days are short. A lot of times we'll leave in the dark -- or just shortly after sunrise and get back right at dark, fighting weather, whatever. The days are long. We can't delay it. I mean, we have to be the next place the next day.

These pipelines are required that they're flown by the Department of Transportation. Pipelines, interstate pipelines have the same regulations under DOT as over-the-road trucks. We have to be drug tested to fly the pipelines and observe them. We don't have to be drug tested to fly. It's on account of the pipelines. So it's a different set of regulations.

How about the comments on this -- that are given to the Air Force? Does the FAA see them or is

GE-10

AM-12

SA-21

NP-5

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2072 (part II)
(cont'd) 10/13/2010

it separate or -- I mean, we don't see that either. I mean, are these comments transparent? I mean, does the Air Force look at them or the FAA look at the Air Force comments? Where do we send the comments to the FAA?

NP-5

A lot of the mid-airs that are close, a lot of times most people don't report them. I mean, no harm, no foul. We've had some I wouldn't say mid-air -- potential mid-airs, but we've had some close encounters. We fly currently extensively in that Military Operations Area around Belle Creek, which by the way is slated for major expansion with Co2 tertiary recovery. And the oil field down there, it's recently been bought out by another company, Denver Resources. And things are going to change in that Belle Creek area shortly.

SA-1

And so, consequently, I mean I guess I recommend either No-Action or this thing modified where it's the floor of the airspace is pushed upwards, you know, less impact to the general aviation. Not that we don't want to share our airspaces, but the lower levels. Hopefully something can be worked out that way.

GE-2

HEARING OFFICER GREGORY: Okay.

MR. ROGER MEGGERS: Them are some of my

2072 (part II)
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Powder River - Baker

concerns. I guess the biggest one was is just to see if there was anything in place for anything to -- any of the procedures to suspend or modify this complex. AM-12

HEARING OFFICER GREGORY: Okay.

MR. ROGER MEGGERS: Thank you.

HEARING OFFICER GREGORY: Anyone else like to expand on your remarks? Well, we've still got some time, about a half an hour before we're set to adjourn.

So what I'm going to do, I'll go ahead and recess the hearing at this point. And the FAA and Air Force reps will be available to continue discussing things with you. And if you change your mind about making a comment or adding to your comments, Teresa and I will still be down here, and what I'll do, I'll reopen the hearing and then you can go ahead and make your comment.

But just in case no one comes back to me, let me go ahead and close this out.

AUDIENCE MEMBER: Can I ask a quick question on procedure?

HEARING OFFICER GREGORY: Sure.

AUDIENCE MEMBER: Did I understand you correctly to say that written comments have the same

weight as public comments?

HEARING OFFICER GREGORY: Yes, they do. And there's no page limit on written comments.

AUDIENCE MEMBER: Okay.

HEARING OFFICER GREGORY: And the main thing is, you just need to get those in by November the 15th.

AUDIENCE MEMBER: And there's forms here for that?

HEARING OFFICER GREGORY: There are forms here for that right there at that table in the back.

2073 (part II)

MR. DARIN MEGGERS: I'd like to talk again on the tape, if I could.

HEARING OFFICER GREGORY: Okay. You, too?

AUDIENCE MEMBER: No. I was just going to say, if we have time, would it be possible to do a short Q and A with both the FAA and --

HEARING OFFICER GREGORY: Well, they're going to be available out by those display boards and you can discuss whatever you'd like to discuss with them.

AUDIENCE MEMBER: Okay.

HEARING OFFICER GREGORY: The FAA guy will be out there and the Air Force reps, too.

AUDIENCE MEMBER: I see.

2073 (part II) (cont'd)

HEARING OFFICER GREGORY: I'm just going to recess in here for the formal part. But, yeah, they'll still be available out there to discuss things with you. So come on back.

You're the other Mr. Meggers, right?

MR. DARIN MEGGERS: I am.

HEARING OFFICER GREGORY: Okay.

MR. DARIN MEGGERS: Bad habit. All right. I would just like to talk about flying in the MOAs. One time I come out of Nevada and landed in Gillette, Wyoming, come out IFR and landed in Gillette and got gas, and of course we had to transition through the Powder River MOA. And with the radio communication, radar coverage in this area, it's difficult to fly IFR doing -- from below 10,000 feet just because you're -- you don't have radar contact. You can't talk to nobody. So I elected not to file IFR coming out of Gillette.

AM-3

So I come out of Gillette and hiking along at 310 and all of a sudden here comes a B-1 and here comes another B-1. So this see-and-avoid thing is a hard thing to do. I didn't -- I didn't see them, you know. If I would have filed IFR, they wouldn't have let me go through it. And it's a direct route between Gillette and Baker. I would have had

SO-7

2073 (part II)
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another hour and a half of my flight time and there's more expense and everything else. SO-7

So we all know flying IFR, that it's not allowed. You know, you can look at all the existing MOAs, all the GPS weigh points around the perimeters, you know, they're there for a reason. They file around.

You know, I've talked to the VFR pilots that come through Baker. They don't want any part of it. SO-10 They're out there to enjoy the freedom that they have. They don't want to be hitting the GPS to get away from all the airspace alerts and they want to enjoy their flight. They don't want to worry about getting run over. SA-7

You know, the other thing is the hospital, the medical complex here. They're going to suffer from this in more ways than one, too. You know, getting that Life Flight in here, I don't -- I just don't see how that's going to work. SA-19

On demand, you know, with these people, time is of the essence. And we've already talked about that, trying to get a hold of people to go now. You know, there's a bunch of people that fly into Baker to visit our medical complex. We have an AME on staff here. He's the best in the area and people

2073 (part II)
(cont'd) 10/13/2010

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come from everywhere to get their flight physical from him. And we're very lucky to have these services in Baker.

I guess with that, thanks.

HEARING OFFICER GREGORY: Okay. Thanks a lot.

MR. LANE: Can I make one quick comment?

HEARING OFFICER GREGORY: Sure. Come on back up.

2071 (part II)

MR. LANE: Bill Lane. This will be short. I just -- my wife works at the clinic here. And I do know, going on top of what Darin just said, that there are a lot of doctors that fly in here from Billings, I know North Dakota, South Dakota, that they come in here to provide a service to the Baker area. However, this wouldn't be considered an emergency flight into the area, so -- but they are always flying IFR into this area. So that would limit the amount of specialized care that we could get here in the Baker area.

SO-5

And that was just something I wanted to add. Like I say, it's not an emergency, but it is providing a service to this area. Thank you.

HEARING OFFICER GREGORY: All right. Thanks. Thanks a lot. Anyone else at this point? Anyone?

As I said, what I'm going to do is recess the

hearing. Since we've still got some time until 8 o'clock in case anybody changes their mind about making an oral comment here tonight, but in case no one comes back, let me just go ahead and make some concluding reminders here.

As I've mentioned a couple of times, tonight's not the end of your opportunity to participate in this process. Those written comment sheets are back on that table in this room right at the back. You can turn them in tonight or you can mail or fax them later. The address and fax number are on that slide and they're also on the brochures and the comment sheets.

You can submit your comments at any time during the process, but to receive timely consideration for this Final EIS, let me foot stomp this one more time, all comments must be submitted by November the 15th, 2010.

If you'd like your own copy of the Final EIS, please tell one of the representatives outside at the registration table or you can send a letter or postcard asking for your own copy and the Air Force will send copies of the Final EIS to you.

The Air Force and FAA reps will be available out by those boards to continue discussions with

you. And I'm going to go ahead and recess at this time. And if you change your mind about making a comment, just come on back down front here. Teresa and I will be here and we'll reconvene the hearing and get your comment on the record. All right. So we'll be in recess.

(The hearing recessed at 7:35 p.m.)

HEARING OFFICER GREGORY: The hearing's called back to order. One of our speakers wants to add to his previous remarks. Sir.

2074 (part II)

MR. RIEGER: Don Rieger, R-I-E-G-E-R, again as Fallon County Commissioner.

And a couple of questions or statements I would like to add to the information that's been already given.

Again, when we consider air ambulance coming into the area as was indicated earlier, you know, this services -- our medical facility services quite a large area, and many times people are -- patients are brought in here and of course air ambulanced out of here.

When an air ambulance is called upon, I suspect they would call in and get a clearance. And if there was a training exercise going on, my question is, is when the air ambulance gets clearance to come

SA-19

2074 (part II)
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into this locality, they will not leave or they -- the medics from that air flight go over to the medical hospital and they stabilize a patient before they will leave with them. Sometimes that might be 15 minutes. The next time it might be a couple hours to maybe more. Until the patient gets stabilized, they will remain here and then fly out.

SA-19

My question is, is if they get clearance, will they totally abort the training exercise or will they just delay it as long as that air ambulance is here.

The next thing is, the sage-grouse is a huge issue with the environmentalists. We deal with that quite rampantly in this area with the oil and gas development or the development of natural resources. The interruption of their leks or their breeding cycles and so forth, if the sage-grouse can literally stop road construction or firing up heavy equipment or something while they're actually in the mating season, how would this affect if there was sonic booms and training exercise that would disrupt that. That's a concern.

BI-3

Third question I've got is with this TransCanada pipeline that's coming through here. This is all going to be imported steel. It will be

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outside the United States. And they have made a formal request to the federal government requesting that they can get an allowance to increase the pressure more than the recommended pipe velocity or whatever it is. Anyhow, they are requesting to increase the pressure or use thinner pipe in the remote areas, and in the urban centers they would use the heavier pipe just because of safety fractions.

But my concern is, is these sonic booms and that, certainly that will make the ground tremble and that, would that have an impact on those pipelines. If it does, I mean we're talking a 36-inch pipeline that's capable of running -- or flowing probably a million barrels of material a day.

SA-23

When I talked earlier about this on-ramp with the adding oil out of this Bakken plate, they would give allowance that they would be able to transport 100,000 barrels a day that they would put in this pipeline here.

So there again, I mean, you know, if there would be a rupture of a line, that would be a huge environmental issue.

SA-23

But those were some additional thoughts I

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2074 (part II)
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thought of while I was remained seated back there. So thank you.

HEARING OFFICER GREGORY: Thank you very much.

(The hearing in recess at 7:50 p.m.)

HEARING OFFICER GREGORY: It's 8 o'clock. We had a couple of additional speakers that are already in the record and there is no one else who wishes to speak. So with that, this hearing is adjourned.

(The Powder River Training Complex Public Hearing adjourned at 8:00 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the forgoing Pages 1 through 77 is a true and correct transcription of my stenographic notes.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South Dakota, this _____ day of _____, 2010.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

here. First, please limit your comments to the Draft EIS. That's the purpose of the public comment period. Second, if you agree with a previous speaker on something, you can certainly say that, but you don't need to repeat it since it's already in the record. Finally, as I mentioned earlier, this formal part is not a Q and A session. It's an opportunity for you to put on the record your views, your concerns about the proposal that you want the decision-makers to consider. Questions that you pose during your comments will become part of the record and will be considered.

After we're done with the formal part of this, the FAA and Air Force reps will continue to be available by these various posters and boards and things to discuss things with you.

And with that, Mr. Drayton.

2083

MR. DRAYTON: I see only one being held up. Are you gonna give me six minutes to start with?

MS. MOYER-DURHAM: I will give you as much time as you need, sir.

MR. DRAYTON: I've got a visual aid with me tonight that I think's a little more important than propaganda that we've seen here tonight.

You know, this really surprises me. I'll bet

you holler a lot more at the visiting referees and coaches than you're going to holler or say anything tonight. I've been to -- this is my third meeting in the third state. I started out in South Dakota, went to North Dakota, and now over here in Montana. I was hoping to hear a lot of comments here tonight. Maybe you've already sent them all in via the print method, and I guess I hope that's what you did.

If you're not traveling with some of this luggage that I've got, you're not traveling with much. I've got the Draft EIS and on top of that the appendices that go with the Draft. And when you get up and talk like this, the other two meetings were fairly easy, but I've had time to go through these things now for a couple of weeks and it made it damn hard tonight to decide what to ask and what to tell people.

The Air Force went ahead in 2007 as they stated and got the cooperating agencies involved, the FAA. Remember the FAA, this is the one that you need to -- that's got the authoritative signature on this deal and they're going to have the most influence on this because they're asking for an increased airspace in the whole complex, and so they're very important in this.

NP-4

2083 (cont'd) Page 36

And when you make your comments, you want to make sure that -- make sure your local airports get in on this, too, if they haven't already. Have them send in a formal comment to Ms. DeVine in Virginia at Langley and let them know their feelings. NP-10

I have talked with one man at Lemmon who is -- I don't know if he's crop dusting or not, but he had his head bumped against a cockpit window one day by a plane going over the top of him. He said he didn't want to do that again. He manages the airport now.

But, you know, when they put this together, it went from a high school class to kind of a graduate course when you start looking at all the 1.0s and 3.3s and 6.6s. That's -- it's gone to a pretty tough class. And we need to -- but you need to keep looking at this if you're gonna have any effect on this and then keep your comments coming. NP-10

It takes a lot of time to do this. I've got pages full of notes and trying to decide what would have the most effect on this whole process. But as the government has all these agencies, even our elected congressional delegation is against us on this, at least the ones in South Dakota. They in fact recommended this expansion. And they won't

2083 (cont'd) Page 37

admit, of course, that -- their offering up of our barren lands out here in low population. They offered that up in order not to have some of these Bases closed when the pressure was on.

I find it hard to believe that an Air Force now that flies intercontinental missions around the world gives us one of the reasons for expansion is that they want to stay close to home and save on fuel. That's one of their -- that's one of their reasons. They may not put it number one, but it's one of them. PN-2

So I'm not ready to sacrifice more freedom in order to have somebody tell me, "Oh, well, we're doing this for your safety and this war on terror." PN-3

At some point we have to say enough encroachment and decide that if we can't get our elected officials to represent us, then -- then, you know, we've gone way over the cliff. I hope we haven't gone that far yet. NP-2

But we all have the right to the pursuit of happiness and tranquility. The Air Force and the Environmental Protection Agency can't tell me that the time I spend up in the hills and buttes with my kids and family and grand kids is any less important than the concessions they're going to make to the LU-1 LU-3

2083 (cont'd) Page 38

Tribes as far as avoiding their cultural and religious and what have you exercises.

And I have nothing against the Tribes. But if you go through this appendix, you'll see the letters that started out in February of '08 by the Commander at Ellsworth, and I don't think he's there any more, but he sent letters to at least the first -- the four main Tribes that would be involved with this expansion and the increase in the flights, and didn't get a very good response from Tribal representatives.

CU-3

NP-10

So there was another letter that was sent. This one come from Air Combat Command at Langley to the Tribal representatives, no longer just the Tribal President, but the Tribal representative, probably a lawyer.

Time went by. The next letter shows a letter from Langley, Air Combat Command, to Bureau of Indian Affairs, you know. "Let's -- come on. Let's get these Tribes moving. We need -- by law, we need them here to come to a scoping meeting." This was in '08 yet. "We need them to come to the scoping meeting so we can do our community outreach," you know. "And, by the way, we're going to have chaff and flares now along with these low-level flights."

2083 (cont'd) Page 39

You don't have to draw a picture to think about what the Tribes thought -- would think of those letters, asking them to come in respectfully for -- for some meetings, you know, some powwow with the government. I know what they thought of that and I know what I think of it. NP-10

So I don't have any questions when I get to these things. I just have comments. And my only answer to the whole deal, as it was to my elected officials, was no. No, we don't want this. Enough is enough. And some day these bombers are going to be obsolete anyway. They're already flying these drones around and doing all the damage they can do with those. GE-2

But -- but anyway, you just have to remember that the only reason most of you are here tonight and the reason I am here, besides family, is the property rights. If you don't have some skin in the game, if you're not worried about some hunter leaving the gate open and traipsing across your butte and your hills and your valleys, you don't -- you wouldn't put up those signs. And if you weren't property owners, you wouldn't have come to this meeting tonight. You would be doing something else.

So we gotta remember, it's still a property

2083 (cont'd) Page 40

issue. And the needs of the Air Force are as they may be, but we just have to learn when we can say no.

As one guy said at the Bowman meeting, I didn't attend it, but I heard it quote, he said, "Go ahead and fly your flights 18,000 feet, and anything underneath that, leave us alone. Stick to your 18,000 feet."

And, of course, in the meantime, if you read this Draft Statement, they're going to have more threat emitters. They're looking for sites to put more threat emitters up and -- so they probably won't have any trouble finding those. CM-2

Well, I don't know. How much time do I have?

MS. MOYER-DURHAM: You're already at eight.

MR. DRAYTON: Okay.

HEARING OFFICER GREGORY: Let me see if anybody else has changed their mind. I only have one card up here. Did anybody else fill out a card that I don't have? Anyone? All right. Well, if you change your mind, let us know so --

MR. DRAYTON: I just have a couple sentences to comment on --

HEARING OFFICER GREGORY: Go ahead.

MR. DRAYTON: -- and then you can go home.

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HEARING OFFICER GREGORY: We'll put another three on the clock for you. Go ahead.

MR. DRAYTON: At the bottom of the letter that -- the Northern Cheyenne Tribe, after the time had expired for them to send comments to Ms. DeVine, she sent a letter to the Air Force -- and possibly Ms. DeVine's office, I forget, it's in there, and she said, "The Tribe's been looking over your proposals and your scoping meetings. I believe we have the week of August 11th open," which was past the Air Force time. But anyway, "If you're interested, we'd be willing to talk to you at that time."

And at the bottom, I'm going to give you a contrast, at the bottom of the Northern Cheyenne letter it says, "Little Wolf and Morning Star: Out of defeat and exile they led us back to Montana and won our Cheyenne homeland that we will keep forever." And so I contrast that with the bottom of all these Air Force letters that simply says "Global Power For America."

HEARING OFFICER GREGORY: Sir, did you want to make that photograph a written exhibit with a copy? You can if you'd like.

MR. DRAYTON: Well, sure.

HEARING OFFICER GREGORY: Okay. I'll get your frame back.

All right. Anyone else? Anyone else? Well, we've obviously got quite a bit of time left before 8 o'clock.

So what I'm going to do is, I'll just wrap it up at this point with some concluding remarks and then I'm going to recess the hearing. And Teresa and I will be here. If anybody changes their mind and wants to make a comment for the record, just come up here. All you have to do is let me know. What I'll do is reopen the hearing so we have the machine on and you can make your comment if you'd like to do that. And I'll be up here until 8:00 if anybody changes their mind.

But at this point, in case I don't talk to you again, I want to thank you for coming out tonight and showing your interest in this proposal.

As I've mentioned several times, tonight's not the end of your opportunity to participate in this process. Those written comment sheets are over there. I think they're on that table to my left, to your right. You can turn these in at that table tonight or you can mail or fax them later. The mailing address is printed on the brochure and on

the comment sheets.

As I mentioned, the Air Force takes comments in writing at any time during the Environmental Impact Analysis Process, but to receive timely consideration for the Final EIS, all comments must be submitted by November the 15th, 2010.

If you'd like your own copy of the Final EIS, please tell one of the representatives at the registration table or send a letter or postcard asking for your own copy and the Air Force will send copies of the Final EIS to you.

So at this point, unless and until I have someone else that wants to speak, I'm going to recess the hearing. And as I mentioned earlier, the Air Force and FAA reps will still be available during this time by these various posters and things to discuss anything you'd like to discuss with them. So we'll recess now.

(The hearing recessed at 6:53 p.m.)

HEARING OFFICER GREGORY: The hearing is called to order. It is 8 o'clock. During the recess we had no further speakers, so this hearing is adjourned.

(The Powder River Training Complex Hearing adjourned at 8:00 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the forgoing Pages 1 through 43 are a true and correct transcription of my stenographic notes.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South Dakota, this _____ day of _____, 2010.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

available out by those display boards to continue discussing things with you.

And with that, I'll move to the cards and call our first speaker. Mr. Frank Stoltz. Mr. Stoltz. And, sir, if you'd like, you can use this mike and this podium. It might help you if you've got materials there. 2084

MR. STOLTZ: Hello. I'm Frank Stoltz. I'm a World War II veteran, Air Force, and participated in the D-Day invasion and also hit Berlin and then we got shot down.

What I'm trying to say is, you know, during the war and all those things, what I fought for and I -- all these things are starting to happen, that I don't think that it's quite right what's happening, and I don't think this is what I fought for. Because virtually I think they're taking part of our freedom away from us on restricted flights and so on.

And I still fly, not as much as I used to, but I'm retired. Like they say, you have a 500-foot space. Well, fine and dandy, but some radio towers any more, they're that high. So if I just want to go out and tootle around a little bit and it's right in our back door, well, flying at 500 feet SA-24

2084 (cont'd) Page 36

doesn't -- doesn't do it, doesn't cut the mustard because there's too many towers around any more. It's a bigger hazard than what this MOA is. SA-24

I'm gonna -- I'm gonna comment a little bit on -- as far as the safety of all these things. It's been some years ago now. A little private airplane went down during the -- over at the Missouri breaks and I was called for a search, search and rescue, and so I was flying a grid. It was assigned to me by the Montana Aeronautics Commission. I was flying this grid. It was getting towards evening and I was at low altitude along the Missouri River breaks and I happened to look forward and, wham, there's a B-1B just shot right in front of my nose heading south towards -- towards Rapid City. SA-1

Like the heat flares you're talking about, well, let's say -- let's start with chaff. Well, we used chaff during the war, World War II. Of course, it was different than it now is, I guess. And you can still go over to Germany and still find it, still find some chaff. SA-27

As far as flares, if I would be flying around in the country and they're shooting off flares in the altitude, are these flares coming down as metal? SA-26

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Am I gonna hit that? Are they gonna wreck my engine and am I gonna crash land, or what? SA-26

As far as flying the corridors, of course the way I fly, I might be over here looking at this, I might be over looking at that, and so there's my restriction about flying the corridor.

That's all I got to say, I guess.

HEARING OFFICER GREGORY: Thanks for your comments and thanks for your World War II service.

The next card I have is Mr. John Baldwin. Mr. Baldwin.

MR. BALDWIN: Yes, I'm John Baldwin, 2085 B-A-L-D-W-I-N.

Beginning in 1949, I began a spraying operation in this area and I concluded the spraying operation two years ago, the commercial operation.

But during that time what we referred to was the oil burner routes that were running over this area. And on two different occasions I had very near misses with military airplanes. SA-7

One was a B-52 bomber approximately 30 miles or 35 miles approximately northeast of here over the Fallon area, Fallon, Montana. The other occasion was south of Plevna, Montana, which is about 70 miles east of here. On that occasion it was with

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2085 (cont'd) Page 38

a little fighter air-type aircraft. I don't know exactly what it was. It happened quickly and I know it had a twin tail configuration on that airplane.

But there was no consequence other than I did get a call from Helena FAA about the incident at Plevna. They -- they op -- or whoever it was talking to me at that time said it was the Air Force that reported a near miss with a B-1, which I don't think was correct.

But at any rate, these military flights down near the ground are definitely a hazard to sprayers. Crop dusters are in the area in the early morning, mainly when the air is calm, and that's when the vortex from these big airplanes are certainly most severe.

SA-7

The occasion I had with the near miss with the B-52 was, like I said, northeast of here near Fallon, Montana. I had sprayed that morning and had emptied my load and started home and noticed that I was low on fuel, so I turned back towards our landing area, climbed up a little bit in case the fan quit before I got there, and I had a little time to look for a landing spot. And I was more concerned with the fuel gauges than I was looking around for B-52s, but one flew in front of me. I'm

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certain it was less than three wing spans of the B-52. I was slightly higher than it was so I didn't get into the vortex of it, which was lucky, because I think if I had have done that, I probably would not be here talking today. But I know it is probably unlikely that there be any mid-airs, but it certainly could occur. SA-1

At that time my concern was not getting any information when the planes were going to be in the area where we were working. All I could get was whether the route was active or not. That was the long route beginning in California and I don't know exactly where it came, but it came up through into the Dakotas and back across our area, made a U-turn over the Powder River which is about seven miles west of our ranch, and then it turned -- they turned back towards Rapid City and flew within about a -- well, most the time within one or two miles of our ranch house. AM-12

Noise was a concern, although I'm not complaining about the noise. The sonic boom would be a problem, although we didn't have much of that. There wasn't much high-speed operation there. NO-5

The thing I haven't heard anything about would be any compensation for damage to fences, livestock, SO-13

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personnel that would be concerned over the noise. I don't know if there would be such a thing as having a tax credit possibly for ranchers or whoever may be operating in the area. It's a suggestion that I would like to have considered. I think that's about all I have for comment today. SO-13

HEARING OFFICER GREGORY: All right. Thank you, sir.

Next I have Mr. Tom Lane. Mr. Lane.

2086

MR. LANE: My name is Tom Lane. We have a ranch about halfway between Ismay and Ekalaka. It's not the --

(Brief interruption.)

MR. LANE: Like I said -- can you hear me now? Like I say, we've got a ranch that's out there about halfway between Ismay and Ekalaka. It's not the Garden of Eden, but it grows enough grass and hay to support our livestock and some wildlife and bird life, so it's not as desolate an area as some describe it.

We had testimony here a couple years ago from a rancher that come up here from Nevada that testified on the same thing here. He was talking about his conception rate in one of those MOAs down there went down 40 percent. And, you know, we can't stand SO-13

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2086 (cont'd) Page 41

that. We're having enough tough time the way it is. And how will it affect the wildlife and the bird life here? Nobody knows.

Like I say, we're having a tough enough time making this ranch work without harassment from low-flying aircraft. We don't enjoy the benefits of the big banks industries and their salaries and we don't have a government job that ensures us of some income. We're out here really naked making it on our own.

You have fought a war with Iraq. Now you're fighting a war over in Afghanistan and Pakistan. And I'm not sure we're going to win any of them. We can't go into a country like we used to and bomb the hell out of them and bomb them into submission. We don't fight that way now. And we haven't won a guerilla warfare that I know of and probably won't as experience has told us in the last three big confrontations. We don't know how to fight that way.

We were told in Eisenhower's Administration to be aware of the military complex. It's using up a terrible lot of our money.

We were told this morning that our government right now has already spent $1 trillion 300 billion

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more this year that it's taken in. We have record unemployment. We have people on food stamps, on welfare, and we have unfunded education to do the right job for our kids, and our infrastructure is falling apart. We are in trying times. We're going to have to get along with what we have as ranchers as well as the people that live in this area. SO-14

And so we ask ourselves, why can't the military do the same thing. You already have thousands and thousands of acres of Military Operation Areas. Make do with what you have and please leave us out.

Let's try making peace around the world instead of war that's killing thousands of people, including our own young men, and creating so much destruction. May God be with us. PN-2

HEARING OFFICER GREGORY: That's all the white cards that I have. Did anybody fill one out whose name I did not call? Anybody change your mind about wanting to say anything or would like a white card? One in the back there, Brad.

I tell you what, sir. You can just come on up and we'll deal with the card up here. All it does is just have your name on it anyway. Go ahead and state your name for her and we'll do the card later.

MR. RAPER: My name is Bob Raper, R-A-P-E-R. I

run a hot air balloon operation here in Miles City. Your document may not have accounted for aircraft such as mine, nor I believe has it accounted for unregistered aircraft such as paragliders, ultralights, and other small aircraft that are generally used in this area. AM-19

I -- it isn't that I have any objection to the presence of the MOA. What probably would concern me greater would be how much warning we would get on the activation of the MOA. For the 10 days or so that's being proposed, it's probably not much of an impact unless I planned something in a remote location. AM-12

I'm the only operation in eastern Montana. And the MOA, I can be -- I can have my operation anywhere in the area that you have proposed. As such, the warning would probably be of a greater concern to me than anything else.

Outside of that, I certainly support your efforts. Thank you. GE-1

HEARING OFFICER GREGORY: Anyone else? We'll get your card later, too.

CAPTAIN REYNOLDS: Good afternoon. I'm Captain Sidney B. Reynolds, retired U.S. Army.

I have had experience with the Air Force, four

years in the Air Force, and then 24 years in the Army.

One thing I would like to say, I recognize the problems that these people are having. I recognize the problems that the civilian population has with putting up with the military. My comment is, that this country, this military, is defending us. It's doing a job for us. And so we do need to put up with a little bit of inconvenience. A lot, maybe not, but a little bit. GE-9

And in the Army sense of it, I ran into things. Like we had to deploy with tanks. We trained with tanks. And we had environmentalists and people come in and jump all over us because we left tank tracks out in a gravel pit. We had things like this that just really didn't make any sense and made our jobs about ten times harder.

And so I would like to say with this, I'm kind of new to this proposal, but at the same time the military people need to have their right, they need to have their place to go, and they darn sure need to have a place to train their people. You don't win a modern war or even a modern peace without spending quite a considerable amount of time doing your training. GE-9

You have to take your young people and you have to train them up and you have to take -- the skill level now is so high in the Air Force and in the military, that they just need the training space. GE-9

So I would say, what I ask of you, is that you understand, realize, and realize that we do have to pay a price for what we get. And it may not always be real nice, but it still needs to be done. Thank you.

HEARING OFFICER GREGORY: Anyone else? Is there anyone who already spoke that would like to add to what you said earlier? Well, as I mentioned, this isn't set to end until about 3:30, so I think that's about an hour from now.

What I'm going to do at this point is give you some concluding remarks and then I'm going to recess the hearing, but Teresa and I will still be over there. If you change your mind and want to make a public comment, then I'll open the hearing back up, we'll turn on the court reporting machine, and we'll get your comment taken down for the record.

Thanks for coming out this afternoon and showing your interest in this Powder River Training Complex EIS proposal. As I've mentioned several times, this afternoon is not the end of your

opportunity to participate in this process. Again, written comment sheets are available at the registration table. You can turn these in this afternoon or you can mail or fax them later. The mailing address is printed on the brochure and on the comment sheet.

The Air Force welcomes public comments in writing at any time during the Environmental Impact Analysis Process, but let me foot stomp this. To receive timely consideration of your comment, please have that in by November the 15th, 2010.

If you'd like your own copy of the Final EIS, please tell one of the representatives at the registration table or send a letter or postcard asking for your own copy and the Air Force will send a copy of the Final EIS to you.

At this time I'm going to go ahead and recess the hearing. And again, if you change your mind about making a comment here this afternoon, I'll be sitting up there at the table along with Teresa and we'll get your comment down on the record. So again, thanks for coming.

(The hearing in recess at 2:32 p.m.)

HEARING OFFICER GREGORY: The hearing is called to order. The time is 3:30. During the recess we

had no one who wished to make a public comment here, so I'm going to adjourn the hearing.

(The Powder River Training Complex Public Hearing adjourned at 3:30 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the forgoing Pages 1 through 47 are a true and correct transcription of my stenographic notes.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South Dakota, this _____ day of _____, 2010.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

included in the Final EIS.

Just a few reminders before we get started here. First, please limit your comments to the Draft EIS. That's the subject of this public comment period. Second, if you agree with a previous speaker on something, you can certainly say that, but you don't need to use up your time repeating it since it's already in the record. And finally, as I mentioned earlier, this formal part is not a Q and A session. It's an opportunity for you to put on the record your views and your concerns about the proposal that you want the decision-makers to consider. Questions that you pose during your comments will become a part of the record and will be considered.

After we're done with the formal part of this, the FAA and Air Force reps will continue to be available out by all those display boards that you see in the hallway to discuss things with you.

Did you have another speaker card? Okay. All right. Thanks.

And with that, I'll call the first speaker. I have, just dealing off the top here, Patrick Lifto. Mr. Lifto.

2089

MR. LIFTO: My name is Patrick Lifto with the

2089 (cont'd) Page 35

Montana Pilots Association. That's L-I-F-T-O.

I guess one of the questions -- I've just got basically questions. The corridor, I'm wondering on these corridors, if they're going to be open 24 hours a day at any altitude for VFR and IFR and if you have to get permission to go through them. AM-20

And another question I've got is, can the Air Force, when they're flying, can they electronically see another aircraft in the area. AM-8

I guess that's all I had.

HEARING OFFICER GREGORY: Okay. And again, after this formal comment part, some of the FAA and Air Force reps may be able to help clarify some of those things for you, but those are included in the record for them to consider.

Next I have Mr. Lee Richardson. Mr. Richardson.

2090

MR. RICHARDSON: My name is Lee Richardson, R-I-C-H-A-R-D-S-O-N. I'm here for the Miles City Hangar of the Montana Pilots Association, and we would like to go on record as being in opposition of the expansion of the Powder River Training area. So I guess we would then be in support of the No-Alternative Action. GE-2

We have a number of reasons. I'm not going to

put those into the oral part because I did submit a written proposal that has that in there so there's no use repeating everything with that.

I also represent the Miles City Airport. I'm the Chairman of the Miles City Airport Commission, and the Miles City Airport Commission is also in opposition to the expansion of the training area simply for the fact that we think it will reduce revenue that is generated at the airport due to the lower level of pilots that would be flying through the area. Thank you. SO-10

HEARING OFFICER GREGORY: Sir, did you say that you had already submitted that in writing? If you have anything else tonight, you can leave it here as well.

All right. Next I have Mr. Bill Lane. I thought I recognized you. Here you go. You're ready to go.

2091

MR. LANE: I'm Bill Lane, L-A-N-E. I'm a cattle rancher southwest of Baker as well as a private pilot and aircraft owner. I made comments the other night in Baker.

But one of the issues that, in visiting tonight with several of the representatives, was that where we live, we are in a black hole for radar AM-1

2091 (cont'd) Page 37

communications as well as radio communications. We have no way of being able to contact Air Traffic Control to see if a new or a different part of the MOA has been activated. AM-1

They say they have two hours to activate it. However, if I've been up in the air for an hour and at the time I went up I actually checked the NOTEMS and it indicated that it had not been open, I could be up in the air and all of a sudden this other area could become hot, and that creates a safety concern. AM-12

But I think it's important for everybody to know, too, I'll now put on my rancher hat and indicate that we -- they say that there's no effect on our property values. We know that's not the case. Any time -- I'll use the analogy of owning property underneath the flight path of aircraft landing at a major airport. Guarantee those property values are lower than those outside of that flight zone. SO-1

But we run the risk of having our cattle break through fences. We have examples of conception rates falling upwards of 42 percent on our cattle. For a lot of ranchers, that could result in hundreds of thousands of dollars lost. SO-13

But like I say, the main thing is our safety, SA-7

and I think that there's a lot of safety issues that need to be cleared up before we can go any further. SA-7

And the main thing is, should this go through, we need to have better communications with Air Traffic Control before any of this can happen and happen safely. AM-1

But I think it's important that we also realize what -- the effects of our livestock, our livelihood. You know, I used the analogy before where the Air Force is out there to protect our interests worldwide, while we have to be here to protect our interests locally. SO-1

Let me go on record as stating that I am for the No-Action Alternative. Thank you. GE-2

HEARING OFFICER GREGORY: Mr. Krutzfeldt.

2092

MR. KRUTZFELDT: Lewis Krutzfeldt, K-R-U-T-Z-F-E-L-D-T. I want to go on the record as being opposed to any of the actions. I would -- I guess I would be for the No-Action. GE-2

I'd like to say that we live in the current MOA area, and the flight noise level right now is enough. We are a dumping ground for noise pollution, and they want to increase that to more noise pollution and add flares and chaff to it, and basically we would become a dumping ground for the NO-5 PN-2

2092 (cont'd) Page 39

Air Force, where they already have somewhere they can train and it just is an inconvenience for them to get there to do it. PN-2

I have no problem with the area increasing so other people can enjoy that noise level that we get to enjoy, but we don't need any more as far as sonic booms or plastic garbage or fire hazards. I just -- SA-5 I'm opposed to it totally. Thank you. NO-5

HEARING OFFICER GREGORY: All right. Thanks for your comments. Is that another card? Okay. Mr. Larson.

2093

MR. JACK LARSON: There are -- a number of people who live in the area where this is going to impact are former students. So, Lewis, I appreciate you being here speaking on behalf of this thing.

I'm for the No-Action Alternative for several reasons. It seems like we've become a target. Good Lord, we were told I don't know how many times there would be no action on the Missouri River breaks. There's action. It's a monument. We've now been told there's going to be no action in northeastern Montana. I'm going to wake up some morning and hear that on the news, that there's going to a national monument up there. I know it. And it seems like now we'll be ducking every time we turn around as GE-2 CU-2

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something comes flying over the tops of our heads down there.

I was requested to come in here and speak for just a moment concerning this by some people outside of Powderville who -- I've been out on the ranch when I've had to duck because I thought we were getting bombed. It seems like some horses spook pretty good when you've got something like that coming over the top of you. BI-4

I just think that this is an action we tough people of southeastern Montana just don't need to put up with. That's all there is to it. GE-2

I appreciate the military, the things that they do. The action that we have now, Lewis, I think you guys have learned to put up with that part of it, but I certainly don't think it needs to be increased.

HEARING OFFICER GREGORY: All right. Thank you, sir. Anyone else? Is there anybody who's already spoken who would like to add to what you've already said? Anyone? Come on up. 2091 (part II)

MR. LANE: Once again, I'm Bill Lane, L-A-N-E. One thing, this might not help them, but just to let you guys know, this isn't scientific fact, but they are concerned with the fact that the chaff from SO-16

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the -- or the filaments from the chaff could contaminate the wool of anybody who's raising sheep which would basically make it invaluable.

SO-16

And I think it's important for everybody to realize that there's a lot of effects that we're not aware of and I think they need to be researched in detail before this goes any further. Thank you.

GE-11

HEARING OFFICER GREGORY: Anyone else?

MR. KRUTZFELDT: Lewis Krutzfeldt, K-R-U-T-Z-F-E-L-D-T.

2092 (part II)

I would like to add to my comments that they have not addressed the conception rates or the economic loss that could be felt from the ranchers living in the area because of the increased noise levels and the sonic booms. And the economic -- or the environmental impact of the chaff and flares I don't think has been adequately addressed for our area. And I feel that there's a lot left unanswered that needs to be addressed before they continue with this. Thank you.

BI-2

SO-1

SA-27

GE-2

HEARING OFFICER GREGORY: Thank you. Anybody else? Well, we're still not -- it's just shy of 7:00 p.m. and this hearing is scheduled to go to 8:00. So if you change your mind, we'll still be up here.

But at this point I have no remaining speakers. The Air Force and FAA reps will continue to be available out there by those display boards to continue discussing things with you.

I want to thank you for coming out tonight to this Powder River Training Complex EIS proposal. And as I've said a couple times, tonight's certainly not the end of your opportunity to participate in this process. Those written comment sheets are available at the registration table, and you can turn those in tonight at that table or you can mail or fax them later. The mailing address is printed on both the brochure and the written comment sheets.

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If you'd like your own copy of the Final EIS, please tell one of the representatives at the table back there or send a letter or postcard asking for your own copy and the Air Force will send copies of the Final EIS to you.

We've got a little over an hour to go until I'm

going to adjourn the hearing at 8:00 p.m. At this point I'm going to recess it, but Teresa and I will remain up here, and if you change your mind about making a statement or you would like to add something to what you've already said, all you have to do is come let me know, I'll open up the hearing again and turn the machine on, and you can make a public comment for the record.

Since there's no more speakers at this time, I'm going to recess the hearing. Thanks again.

(The hearing recessed at 6:54 p.m.)

HEARING OFFICER GREGORY: The hearing is called to order. During the recess we had no additional speakers. The time is 8 o'clock. The hearing is a adjourned.

(The Powder River Training Complex Public Hearing adjourned at 8:00 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the forgoing Pages 1 through 43 are a true and correct transcription of my stenographic notes.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South Dakota, this _____ day of _____, 2010.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

comment period. Second, if you agree with a previous speaker, you can certainly say that, but you don't need to use up your time repeating it since it's already in the record. And finally, as I mentioned earlier, this formal part isn't a Q and A session. It's an opportunity for you to put on the record your views and your concerns that you want the decision-makers to consider. Questions that you pose during your comments will become part of the record and will be considered.

And then after we're done with the formal part of this, the FAA and Air Force reps will continue to be available by all those display boards and various things to continue discussing things with you.

And with that, I'll grab our cards here. I'll just deal off the top of the deck. Mr. Wade Bergslin. Mr. Bergslin. 2094

MR. BERGSLIN: Hi. I'm Wade Bergslin, a pilot with True Oil Company in Casper.

First off, let's say that I'm a proponent of the military and a former member of a combat flight training unit within the Air Force, so I do see a need for changes, both the offensive and defensive training needs based on your summary of your factors, but I have to go on record saying that this GE-9

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proposed land/air grab is excessive in size and scope and requires additional review before implementation. AM-6

The needs of the Air Force and the benefits that it forecasts to facilitate all these components involved via an increase in the area to the proposed PRTC, they're understandable, but yet contrary to the effects to operators like my company and others within the energy industry, they're negative. GE-11

The efforts that go into this statement only assume the operations of those who are within the proposed area and for those who reside along the border of the Training Complex. The only non-residing public users defined by the EIS are the Part 121 air carriers who in some areas are providing service under the essential Air Service Act, which kinda gets skewed around, and those carriers who will overflight. So I must disagree with your fact-findings and estimates of operators transitioning through and sharing this space. AM-19

In our case, we're located in Casper which is a distinct hub for various facets of the oil and gas industry, and now with increased activity within the Bakken fields of North Dakota and other areas located within eastern Montana and North Dakota, SO-7

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there's a visible increase in corporate air traffic actually from Houston on up, which is not really the periphery of this area. SO-7

On a geographical scale, in relation to the proposed area we're about 100 miles south and as the azimuth reflects for our headings, we would be impacted by an approximation of 75 degrees of heading for over 350 miles. And we operate into areas within and on opposite sides of the proposed airspace. So three-mile rings around areas within the proposed area make for chop-and-drop for high-performance airplanes, and really that's not very safe. SA-7

The energy industry is pretty huge within these states and has needs of its own just as you do. And corporate airplanes are important to facilitate the companies. Bottom line, the streamlining our operations through the effective use of our aircraft means reduced time and man-hours for those within our companies who depend upon our services. SO-7

Just as you can state your case and justify your savings and proposed benefits, we as an integral part of the commerce of this area and nation also find savings within this airspace. Failure in being able to share this airspace is a

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loss of time, manpower, and fuel, and that can't be denied.

We employ over 1,000 families, or the paycheck to over 1,000 families throughout the region, so I think that's a pretty significant economical impact.

Personally, I have no doubt that the PRTC will come together, but being harmonious to the civilian sector with whom you will share this airspace is paramount, and the agencies involved are being entrusted with the requirement for good stewardship, which is very, very important.

The Air Force as the proponent and the FAA as the cooperating agency are going to need to be working on the same page. There are three centers involved: Salt Lake City, Denver, Minneapolis, and the two command structures: Minot and Ellsworth.

From my previous experience with over 11,000 hours of flight time, I have no qualms in saying that the effective use of ATCAAs and MOAs is and will be an issue.

For example, coordination is usually pretty poor. The hot times will be extended. Communications between the Air Force and FAA will be breached, and eventually an increase in usage will be a factor as units from around the country will

SO-7

SO-6

NP-4

AM-27

2094 (cont'd) Page 38

want to come play in the new playground. This will have an impact on us and others.

I feel that as the public, we are being told to move out of the way, and any adversity to the movement would be negligible in nature and the proposal shall move along as forecasted. Well, that shouldn't be the case. We need to be at the table, too.

And I very respectively request that before we make this a done deal, let's at least consider the needs and hopefully provide some provisions for those whom fly within and adjacent to the airspace.

It's time. Thank you.

HEARING OFFICER GREGORY: All right. Thanks for your comments and thanks for your service as well.

MR. BERGSLIN: Yes.

HEARING OFFICER GREGORY: Let's see. Next I have Mr. John Campbell. Mr. Campbell.

2095

MR. CAMPBELL: Thank you very much. I appreciate the Air Force sharing this with us. I really do. I'm right at home up here.

My name is John Campbell. I'm a chief pilot for True Oil Company. And, you know, this -- I'm a Republican. I'm a veteran. I understand, you know.

AM-27

GE-11

2095 (cont'd) Page 39

You know, when I work -- I work for an oil company. We're very, very important as security, too. That's what World Wars are fought over is oil And we're all very patriotic, but man, this is breaking our backs. This is not good. And so I've got a list of stuff here just to keep on the subject.

When we take a load of people someplace like up to Minot or Bismarck or something, we usually spend a whole lot of money on the other end to finish wells or go to schools. We just sent a couple pipeline guys to some environmental schools in Bismarck.

Just in the last three weeks we've transited this airspace two round trips to Bismarck, two round trips to Watford City, North Dakota, Williston, Minot, and Dickinson. And we go up in that country at least two round trips a week, and a lot of times we stop here in Gillette and pick people up.

To go around your airspace, the 200-mile trip which is one hour in a 340, 45 minutes in a King Air, will now become a 400-mile trip because the shortest way from Gillette to Dickinson is via Bismarck. That's not on the way.

A hundred miles, the weight of fuel to burn --

SO-7

2095 (cont'd) Page 40

to go a hundred miles is one passenger. That's 200 pounds. And I know you're a 340 pilot. You know what I'm talking about.

This is going to cost us a lot of money. And if we have to -- if we have people in the office scheduled to Work Over Rig and then we have to reschedule because the Air Force has the airspace tied up, that's going to tie up tens of thousands of dollars for us. A driller rig costs $100,000 a day and we're an integral part of that. I'm already getting off of subject. SO-7

All right. I would be interested in knowing how we get in and out of Baker, Montana, IFR, when the weather is IFR and the ATCAAs and the MOAs are active. We can't do it. Roger can't sell us gas. We can't deal with our pipeline company and he can't make a living. SA-3 SO-5

The published operating schedules are basically the same working hours we have. We're very familiar with the route around Belle Fourche, South Dakota, and Miles City, Montana, as it is. How do we get to Baker? I already said that. AM-21

There was one thing that was said in somebody's presentation here. IFR traffic is not allowed in an active MOA or an ATCAA. The FAA will not separate

2095 (cont'd) Page 41

us. So whoever told us tonight that they will, that's not correct. We cannot enter a MOA on an IFR flight plan. That's the problem. AM-21

Now, there's a lot of users that would be real interested in this process who don't know anything about it. Senator Enzi's office was disappointed in Wade because she is disappointed that nobody called them to tell them about this. We're not getting the word, you know. In fact, Wade and I found out about this by accident. Something's wrong with this picture. NP-8

Next item is that, if we know about this kind of airspace, we can avoid it right after takeoff and mitigate to a certain extent the existing MOA where it doesn't cost us a lot of money. The problem is, we talked to Mr. Rizzo, is that the Air Force and the Flight Service Station, between the two of them, we're not getting the information. ATCAAs do not work for us. Wade touched on that. We don't know. We can't be carrying extra fuel in case it's hot. AM-12

All right. We talked about -- the other destinations in North Dakota cost us an extra hundred miles. Dickinson costs us an extra 200 miles. That's a lot of money. SO-7

I don't believe the corridors will be open as AM-20

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much as they say. I think the Air Force and the FAA have a lot of work to do on that. AM-20

On -- Ms. DeVine, I think you were talking about some of these areas being not charted on these alternate deals you're talking about up here. Whatever you do, please chart everything. That's a problem with ATCAAs, is they are not charted. So whatever you decide to do, please chart everything so that we can plan around them. AM-22

All right. I'll bet $100 I've passed my three minutes.

HEARING OFFICER GREGORY: Well, we'll go ahead and run a slow clock.

MR. CAMPBELL: All right. Well, I appreciate it again, Air Force and FAA. I'm really glad you invited us to be a part of this. Thank you very much.

HEARING OFFICER GREGORY: Thanks. All right. Thank you. And thank you go for your service as well.

Let's see. Mr. Von Flatern. 2096

MR. VON FLATERN: Hi. My name is Michael Von Flatern. Today I'm up here on my own behalf, not as an elected official.

I have a small charter business and it operates

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2096 (cont'd) Page 43

quite a bit between here and North Dakota and eastern Montana. And the two gentlemen before me, of course, took a lot of my thunder out. They understood the additional cost. But let me give you a couple of quick numbers on what this may cost us.

It's about an hour to -- from here to Dickinson. It costs the customer about $800 to go one way. With this proposal, if I understand it, if it should be active, and I'm not saying it's going to be active all the time like they told us, but should it be active, it's about $1220. So that $800 went to $1220 and the flight went to an hour and a half. There's a lot of safety issues involved with being in the air for an extra half hour. SO-7 SA-25

Anybody coming distance, hopefully you can top the Military Operations Area. If you can't top it, you better have a lot of extra fuel on board because you're going to have to plan for an extra half hour to -- to almost another hour.

If you go to Sidney, right now we can go to Sidney in, oh, about an hour. It will take two hours. It will go from $912 to $1600 one way for that customer. Almost all our customers are round trips. You can just double that price. SO-7

So those are the additional costs. That's a

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2096 (cont'd) Page 44

local economic impact. SO-7

One of the problems that I'll have with this is that I'll get a phone call to quote a trip and it may be two weeks, four weeks, eight weeks out when they ask for the quote. It will be, you know, just before Christmas we want to run to Dickinson. I know it's not posted that they will be active December 22nd, so what do I bid? We bid hard nautical mile trips. We tell you exactly it's going to cost you $1600 round trip to Dickinson.

And then if we get this -- if this becomes active -- let me rephrase that. If the MOA is active that day and this new area is encompassed, it will be -- well, we'll be flying for nothing. In fact, we'll probably be paying our passengers a little bit of money. We'll actually lose money in the deal. That's your local economic impact. SO-7

Time loss of course I've mentioned. Commercial airlines, our commuters, our commuters now are doing a -- oh, I think it's a Miles City connection with Gillette. I've heard them on the radio out of Dickinson coming Gillette. They go Miles City, Cut Bank. All these -- if they get those gap areas you saw on your map, they'll be available to them, but... And they're still getting out of their way.

2096 (cont'd) Page 45

Now, are they going to cut Gillette out of that picture and go to Billings and then go over and service Miles City? We don't know. We don't know what they'll have to do to make up for the additional miles they'll have to fly.

Safety issues, additional time in the air, bad weather, forced to fly in the limited air. Have you ever been face-to-face with a level 3 or something and you say, "Well, I'll just deviate 50 to the north or 10 degrees off course for the next 20 miles." Well, if you're bouncing into the MOA and it's active which, you know, local thunderstorm, they shouldn't be active if they're IMC, we understand that, but a local thunderstorm will drive you there, you can't do that. You will have to turn further south as you're trying to get to North Dakota. That can be a real problem. SA-7

Talked about fuel requirements for those that are flying long distance to make sure they have enough. Coordination with ATC. We have a lot of customers in Colstrip. We have a lot of customers that have property and operations in Gillette that come out of Bismarck, one of them in a jet. SO-7 AM-1 SO-7

Their descent rate should really -- if they have to stay above 26,000, which means they're at AM-5

2096 (cont'd) Page 46

28,000 35 miles from Gillette, they get cleared to land in Gillette because they can't let them down before that moment, their descent rate is better than 2500 feet a minute, ah, not a big deal in a jet. Doesn't bother the jet. May bother the passengers a little bit. So there's something to consider.

It's only 35 nautical miles out from Gillette until you hit this MOA. I can't climb to 26,000 feet. On a really cold day, give me all day long, I'll get there, but in reality, jets don't get cleared above 10,000 feet here until they get contact on radar with Denver. They've got about 15 miles left, 20 miles left at this point. They've gotta get from 10,000 to 26,000 feet. That particular edge of the MOA is too close to Gillette. It needs to be further out.

AM-5

You've taken eastern Montana, minimally two of the new proposed areas would be in effect on eastern -- going eastern Montana out of Gillette. Three of the proposed areas will be in effect going to North Dakota, depends on where you're going there.

So Gillette has a lot of issues with -- or a lot of -- a close relationship with all the new oil

2096 (cont'd) Page 47

development and particularly the coal mining.

So those are direct routes. We need to fly. We're doing it every day. Casper is doing it a lot, either landing here or overflying us on their way up, and it's not something we need to block, slow down business, cost the passenger, cost the business money. So thanks for your time. SO-6

HEARING OFFICER GREGORY: All right. Thanks a lot, sir.

Next I have Ms. Cherril Kiper. Ms. Kiper.

2097

MS. KIPER: Hi. My name is Cherril Kiper. I am for the Air Force 100 percent. There is nothing like the Air Force. I back them all the way. GE-9

I am a 20-year Air Force wife. My husband worked on the B-52s for 20 years. And what has been said in your presentation about the B-1 and B-52 bombers is all true. They do need the extra airspace for their training, especially the B-52s because those things are awesome. They're huge. PN-1

I can't think of anything to say against but what these people have had to say. I have been pretty much involved as a wife with the Air Force. We've been -- we haven't been to that many Bases because it's not -- when we were in, there weren't that many Bases that would take the B-52s because

2097 (cont'd) Page 48

they are so big and so heavy. But you must know that -- we were in during the Vietnam War. And even now, if it wasn't for the Air Force and their bombers and their jets protecting our country, you may not be here now.

This expansion they want to do is very, very important. And I think maybe, what, 10 days at one time should not put that many people out of their field. You'd think -- I'd think you'd want them to maybe step back and let the planes come in and do their training. They need this extra airspace, especially for the kind of training they're going to be doing now. They need it very badly. PN-1

I can't say enough for the Air Force. I have been a Red Cross manager or director for the whole Base. I taught preschool when we were in Guam. The preschool was ran through the chapel in Guam. I have worked at the Animal Shelter as a treasurer. I've organized an NCO Wives' Club for our squadron.

There is security with the Air Force I have never had since we've been out. My first husband has died. I've remarried another great guy. He was a Marine for ten years. But I cannot talk enough about the Air Force. I will always back the Air Force in every way I can. Thank you.

HEARING OFFICER GREGORY: All right. Thank you, ma'am.

Next I have Mr. Jeff Carsrud. Mr. Carsrud.

MR. CARSRUD: Hi. My name is Jeff Carsrud. And I was actually born and raised here in Gillette, and actually was employed by a gentleman in the room here. And since then, about 15 years ago I decided to move to Rapid City and open a small business and it's been very successful. We've had a great economy to work within.

I'll spell my last name, too, for you. C-A-R-S-R-U-D.

2098

HEARING OFFICER GREGORY: Thanks.

MR. CARSRUD: And I come as a representative of the Ellsworth Task Force as a -- I get nervous -- as an Executive Officer and also as a Honorary Commander for the OSS which is the Operations Squadron there at Ellsworth Air Force Base. So -- and that's all, you know, that all -- those services are all things that I do for the community, no pay involved. Just I realize the importance of the Air Force Base and what it does for our region.

And it does stretch further than just Rapid City. It stretches further than Gillette. It stretches further than Sioux Falls. You never know

2098 (cont'd) Page 50

the impacts.

The approximate impact of Ellsworth Air Force Base is $278 million per year. Ellsworth Air Force Base is the largest employer in the Rapid City area. Ellsworth Air Force Base is the largest employer in the State of South Dakota. So it's very important to us. SO-24

This -- in 2005 they put Ellsworth Air Force Base on the BRAC, which is the closure list, and there was about 13 Bases that they were going to close, and we were really close to being on that final list, and I'm not so sure we weren't.

But we positioned ourselves and made some changes. We moved the runway. We moved the exit by the runway. We did some things, and a lot of those things that we did were able to save the Base.

Well, at that point we realized, you know what? We've gotta make ourselves more self-sufficient so that when this BRAC things comes up again, that we're not sweating again.

So this is one of those things that was created. We realized that the impact of being able to take our training -- because we already have -- you guys are here seeing this for the first time, and we've actually been operating a training

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facility for I don't know how many years. It's been a long time. And -- and one of the questions that I first had because -- because going through this process you start hearing about, from the Pilots Association and those guys concerned about it, so I went and talked to a few pilots in my -- two pilot friends of mine and then one gentleman who does have a charter service, and I asked him, I says, "How come you guys are able to provide these services and -- with -- with -- with the existing training facility and how do you -- how are you able to make the flights to Montana and all the places you need to go?" And each one of them said, "It is not a problem. It takes planning. It is going to take a little bit more planning," but they just make some adjustments and plan around it. That's just what you -- that's one of those things you have to do. GE-11

This will take an area and make it three to four times larger. And if you can see in the overlay, going back to my patriotic side, if you see the overlay of the map they had up there, they showed Afghanistan and they showed the quadrants and where they were placed. Also, if you see, there's no coincidence that the features, the mountain features and the ground features are very, very PN-3

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similar to Afghanistan and here. There's a reason why they wanted to place this here and it is not just Ellsworth Air Force Base. It's the -- it's the Air Force. They feel that this is a very important thing to do. PN-3

So I stand in support of this Training Complex. And -- and for the defense of our country, there is a few things that we need to make adjustments for sometimes and this is one of those things. Thanks. GE-1

HEARING OFFICER GREGORY: All right. Thank you.

Next I have Ms. Linda Wegher. Ms. Wegher. 2099

MS. WEGHER: Hi. I'm here just as a citizen. I know nothing about flying. I do know a little bit about environment and health issues, and I'm concerned about the chaff that they're planning on using.

Yes, it's made of silica, but my understanding is that when they release the chaff from the planes, it becomes glass. So basically what happens, is you have tiny glass particles floating in the air and they're gonna drift towards the ground and they're a size that can become embedded in human's lungs, in their eyes, in an animal's lungs. SA-14

I'm not sure that there have been adequate

studies done that really substantiate that there is not a danger associated with this chaff. SA-14

I'm also concerned about the flares. There was an article in the Rapid City paper on October 3rd that talked about a huge fire from a mishap with a flare. We have a very arid atmosphere here. If it can happen in New Jersey, my guess is those flares burn faster because the concentrations of oxygen there may be a little bit more than they are here. So I'm also concerned that we may have fire dangers. SA-5

The startle effect from the noise, I grew up on a farm. I can guarantee you, animals can get spooked when there's loud noises. I've listened to lots of planes from a distance I'd rather be a little further from and they're extremely loud. They sound like sharp cracks of thunder constant as they're going past. That would disturb animals. It would disturb wildlife. And I personally hate to see any of our national treasure that we have in this area impacted by what's being proposed here. BI-4 LV-1

Having said that, I don't have a solution for the Air Force for their training needs. But thank you.

HEARING OFFICER GREGORY: All right. Thank you.

2100

Next I have Mr. Tom Lubnau. Mr. Lubnau.

MR. LUBNAU: Thank you. And I guess I'm speaking in my official capacity as a State Representative for the State of Wyoming in sharing concerns that my constituents have shared with me and asked me to share with you.

They all support the military. They support your mission. They support your operations. And the State of Wyoming does, too, and has put their money where their mouth is in expanding Camp Guernsey which is probably the only expanding Military Base in the United States right now, even building a new airport to accommodate military traffic there in Guernsey. GE-9

But here are the questions that they ask and the concerns that they would like to share. The first one is, how many Military Operations in the United States are enough. They show me the ones in Utah, Idaho, and Nevada, California, and Washington and ask why those won't work and why we need to expand here. PN-2

Let me take off my legislator hat and put on my firefighter hat. The fire danger here is a little different because our fuel type is different than just about anywhere in the nation. We're driven by SA-6

one-hour fuels, where the fuels can dry out in an hour and carry a fire. And so the National Fire Danger Rating System may be based on 10- or 100- or a 1,000-hour fuels doesn't apply. SA-6

Our fire season runs from March to June and from about July 1st until the first snow. The biggest fire in recent memory in this county was the day we burned up 60,000 acres in 2000 on Halloween because of a small spark from a transformer on a power line out by Joel's farm.

Did that get near you? Halloween fire?

AN AUDIENCE MEMBER: About 50 percent of it.

MR. LUBNAU: Okay. So when you talk about fire danger and restriction for fires, you're looking, if you're honest about it, from March to June and July until the first snow, which is generally mid to late October. SA-6

The next thing is, and it's a cultural thing here, we've heard lots of people from the federal government come here and make us lots and lots of promises, and not necessarily the military, but lots of other agencies. And what we find generally is that the promises made today are ignored tomorrow. GE-5

And I read the Environmental Impact Statement and I'm not a scientist by trade, but we have a huge

problem with the sage-grouse. And I don't think that your Environmental Impact Statement addressed the concerns that we have with listing the sage-grouse. We have periods of time where people are out of work. And sage-grouse are by nature necessarily stupid, and we don't know all of the effects on behavior that the sage-grouse has, but if you caused that sage-grouse to be listed, you will be putting tens of thousands of people in this state out of work.

BI-3

SO-27

One request that I would have is that, if you do publish on the website, that you do so in plain language and well in advance of any operations so that we can plan and plan around it.

AM-12

And, you know, I grew up in this area. Wil did. Joel did. There's a lot of us here. Steve did. And in the '60s we had supersonic flyovers, and our parents and our grandparents fought it then and got it stopped. And you can say that there's no structural damage, and I guess it doesn't knock nails apart and doesn't knock 2 by 4s apart, but, you know, from my own experience, I've seen cracked dry wall and cracked paint, and nobody from the Air Force was willing to fix the cracks in my parents' home growing up.

SO-18

2100 (cont'd) Page 57

And then finally, the last bit of concern that my constituents shared with me is that it's easy to make promises, and that after you make the promises, you'll all be long gone in a couple years and we'll all still be here. And I don't want to have to say that you weren't candid with me, but I anticipate it because the rules change, the times change, the areas get expanded, the times get expanded, things get easier and easier to close as less and less powerful people have less and less input about things. GE-5

And so those are the concerns that my constituents wanted me to share, and I appreciate you giving me more than three minutes to share them.

HEARING OFFICER GREGORY: Well, we run a tight clock. It might be a little slow at times.

That's all the cards that I have. Have I missed anybody who filled out a card that wanted to say something? Anyone? Okay. Is there anybody who already spoke who would like to add to what they've already said? If you do, we'll put some more time on. Come on up.

2095 (part II)

MR. CAMPBELL: John Campbell. Off the record. I want everybody to know that Wade owes me a beer.

My suspicions are confirmed. The gentleman

2095 (part II cont'd)

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back here did kinda show everybody's cards. This is an economic issue for Ellsworth Air Force Base and all those jobs. And -- and I thank you for not making me the first to say that I'm very, very skeptical of these promises. SO-24

I've dealt with the FAA in '88-1. I've dealt with closing Flight Service Stations and promising me, quote, a better service. I've dealt with closing FSDOs and GADOs, and those promises weren't kept.

And I gotta tell you, it looks to me, gentlemen, that what we're trying to do is we're trying to build a -- trying to think of a good word -- we're trying to build a facility to attract other commands to this area for training, much like Davis-Monthan is a training command for air attack and that sort of thing. Nellis Air Force Base. PN-2

And, you know, you guys are showing your cards tonight. What you're trying to do is create a place for other commands to come so you can sell more fuel, keep those jobs, and you're doing it at the expense of the people who are going to be here forever and ever and ever.

And I know you people are talking to us in good faith, but you guys are going to be gone and we're

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still going to be here and we're still going to be flying clear around the world to get to Dickinson, North Dakota.

Talking about sonic booms, I grew up around horses north of Cheyenne. You know, I do pipeline patrol in helicopters and in airplanes, and when I see a man on a horse, I yank-and-bank because I don't want to be responsible for a horse throwing somebody and throwing his back out. SA-9

When I see people on backhoes and stuff while I'm flying low and fast, I get the hell away from them. That's not safe. I challenge a B-1 pilot to do that. I don't think he can do that. SA-1

So I guess I've probably worn out my welcome. I think I'll sit down. Thanks again.

HEARING OFFICER GREGORY: All right. Thanks. All right. Thanks, sir. Anyone else? Come on back up. Just state your last name again. 2099 (part II)

MS. WEGHER: It's Wegher. I failed to mention one thing that I know is going to at some point at least annoy all of us, and that is, any impacts on commercial flights.

We all know how fun it is to fly commercial these days anyway because the airlines can care less about us. So we're sitting out here at the Campbell

2099 (part II cont'd) 10/18/2010

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County Airport waiting for our flight and there's something that happens because of what's going on with this and there's disturbances to the communications I understand. The airlines aren't going to care that we have a problem. We're going to miss our flights. We're going to -- we're going to have all sorts of problems. And is the Air Force going to have some way of helping us with that? SO-10

I mean, I've heard of people that have missed conferences that they were supposed to speak at or to attend because they had flight problems and this is just routine stuff. And this is just going to add one more element of frustration.

HEARING OFFICER GREGORY: All right. Thank you. Anyone else? Well, it's only about -- oh. Yes, ma'am.

AN AUDIENCE MEMBER: I didn't speak. Can I just ask a question?

HEARING OFFICER GREGORY: Well, this is just for public comments. You can ask -- what I'm going to do is recess the hearing, and if anybody changes their mind about wanting to make a public comment, that's fine.

During the recess part, the FAA and Air Force reps will be all around these display boards and

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everything and you can talk about whatever with them. And then if you'd like to make a public comment for the record after that, Teresa and I are going to stay up here, and anyone who changes their mind or if you haven't spoken yet and you want to speak, come on up. And we'll be here until 8 o'clock.

But at this point, since I don't have any speakers who want to make a public comment, I'm going to recess the hearing. You can continue to discuss things with the Air Force and FAA reps over by those boards.

In case I don't talk to you again, I want to thank you for coming out tonight and showing your interest in this proposal. As I've mentioned several times, it's certainly not the end of your opportunity to participate in this process. Those written comment sheets are available at the registration table. You can turn those in tonight or you can mail or fax them later. The address and the fax number are on the sheets.

The Air Force welcomes comments in writing at any time during this analysis process, but let me foot stomp this, to receive timely consideration for the Final EIS, please get those comments in by

November 15, 2010.

If you'd like your own copy of the Final EIS, please tell one of the Air Force reps at the registration table or you can send a letter or postcard asking for your own copy and the Air Force will send a copy of the Final EIS to you.

So at this point I'm going to recess the hearing. Teresa and I will stay up here. If anybody changes their mind and wants to make a public comment, all you have to do is come up here, let me know, I'll reopen the hearing, we'll turn on the machine, and we'll get your comment on the record.

So thanks again. And the hearing is in recess at 7:20.

(The hearing in recess at 7:20 p.m.)

HEARING OFFICER GREGORY: The hearing is called to order. The time is 8:00 p.m. During our recess no one asked to make a public comment. There being no more speakers, this hearing is adjourned.

(The Powder River Training Complex Hearing adjourned at 8:00 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the forgoing Pages 1 through 62 are a true and correct transcription of my stenographic notes.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South Dakota, this _____ day of _____, 2010.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

So with that, Mr. Val Snyder. Sir, would you like to come up here or do you want to speak down there? It's up to you. You might want to use this.

MR. SNYDER: I don't care.

HEARING OFFICER GREGORY: Why don't you use this thing. 2101

MR. SNYDER: My name is Val Snyder. Last name S-N-Y-D-E-R. Some of my comments aren't really gonna fit because I made this up beforehand before I understood the limits.

First, I contest the stated need for this expanded Training Complex. There are already four and a half million acres in this region devoted to modern war-fighting training. The proposal would add 22 and a half million acres, close to a 50 percent increase, and I was wondering what are we as a nation training for. PN-2

The memorandum sheet perhaps tells the story at the bottom with the motto "Global Power For America."

Considering the current debt level of this nation, one question we need to answer is, how much global control can we afford before our foreign creditors foreclose on us? SO-14

By our own hands, two countries lie in ruin

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2101 (cont'd) Page 37

with government so corrupt and ineffective that they are now breeding grounds for future generations of terrorists.

Page 432 shows our area, PR-1B, as being under a supersonic ellipse. The readings given on 433 are in psf, decibel C, C-weighted decibels, which I don't really understand, and how they relate to each other or as to actual heard noise.

I have found conversions to decibels from pf -- or I could find no conversion from decibels to psf in the document, and I wonder why the statement uses so many different units to describe impacts, and why acres in one instance, square miles in another, square nautical miles in yet another. I feel that there's a deliberate effort to misinform by constantly switching units of measure to describe the same physical event.

The stated impact of the B-1s I believe is 4 psf, which I did find the version to pascals which can then be referenced to decibels, puts us as about 140 decibels. And most audiologists agree that no human ear should be subject to anything over 135 decibels or even 135 decibels.

And after a sonic boom test over Oklahoma City which ran from February of '64 until halted by

NO-9

NP-9

NO-9

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restraining order May 13th and finally abandoned the end of July, prominent hearing specialist with the National Academy of Science Zhivko Angeluscheff stated, "I was" -- can I have some light, please?

HEARING OFFICER GREGORY: See if you can turn that light up over there.

MR. SNYDER: Thank you. Zhivko Angeluscheff stated, "I was witness to the fact that the men were executing their brethren during six long months...with their thunder, the sonic boom, they were punishing all living creatures on earth."

During the experiment, 4,901 claims of property damage were lodged against the government. 94 percent were rejected. So you've got some idea of your resolution.

The methods used to evaluate the noise level increases are weighted against the huge area involved. This practice does not diminish the actual noise inflicted upon an individual close to the source, but assumes that the individual is spread very thinly across the whole area.

It seems the first effort is to spread the short duration noise event over a 24-hour time frame, or the onset rate adjusted monthly day-night average sound level.

2101 (cont'd) Page 39

These are listed on Page 435 in decibels rather than psf's, so it's hard to understand what's going on with that between the two.

It is my belief that even if everyone could live with the additional training space, there is no guaranty that the activity levels will remain as shown. The stated justification of this complex is realistic conditions, and I quote, a long commute would not permit aircrews to train for all the complex missions required for modern war fighting. Well, what areas are we training to bomb that do not require a commute? PN-2

HEARING OFFICER GREGORY: How are we doing on time? Let me just ask, has anybody else decided they want to make a statement?

AUDIENCE MEMBER: Yes, please.

HEARING OFFICER GREGORY: Anyone else? Okay, I tell you what. Since you're already up here, go ahead. Put more time on for him and then we'll get to this gentleman after he's finished. So go ahead, sir.

MR. SNYDER: Even if the entire area is granted to do as they please, 15 percent of training, at least, will have to take place on the Utah and Nevada ranges. Exercises in this area involve PN-2

2101 (cont'd) Page 40

mid-air refueling with the tankers coming from Washington State and California. What impacts will this have on our property resale value? Will it complicate further wind resource development?

Page 515 shows that during an average LFE day, between 43 and 244 civilian flights would have to be diverted.

Chaff disbursal, the stated grams per acre assumes that the chaff would be evenly distributed over 35,200 square miles. Is this really the case, or is it more likely that the deployment will be concentrated within routine training routes?

A Navy study found that after discharging hundreds of thousands of pounds of chaff into Chesapeake Bay over 25 years, there was less than a two-fold increase in background organic monomeric aluminum and a decrease in inorganic monomeric aluminum concentrates. So the question is, where did it go?

This chaff that's finer than a human hair is encoded in an animal fat to help reduce clumping. Most of us with animals recognize when it's cold, birds and animals are interested in eating fat. The effects of aluminum poisoning are Alzheimer's symptoms, osteoporosis, and severe neurological

SO-1
SO-17
SO-6
AM-23
AM-10
SA-14

2101 (cont'd) Page 41

disorders. There are no assurances that this element will not find its way into the water and animals, only that it exists in the earth's crust. Well, so does arsonic. SA-14

That's about it for me. One last thing is that, being under a training range subjects the citizenry to an assault on their pursuit of happiness and the enjoyment of their property, and in my point takes -- it constitutes a taking. If you wish to buy the area, please buy it. The people who live in these isolated areas are here because they can't tolerate the noise levels of highways, airports, and cities, and that's why we put up with it. Thank you. SO-1

HEARING OFFICER GREGORY: All right. Thank you. Sir, come on up. We'll take care of your card later.

2102

MR. UNHOCH: My name is Bill Unhoch. That's U-N-H-O-C-H. And the point that I have on this is, both South Dakota and North Dakota have fought hard to have Ellsworth and Minot in their states. They lobbied for it. They get all the economic advantages of having these Bases in their states. But yet when they want to increase their training range, they go west into Montana and Wyoming and SO-24

very little into the Dakotas; no training area east of the River, Missouri River.

Why then, if they have all the advantages of -- the economic advantages of having a Base there, why not supply them with the training area that they need?

And then as far as this not affecting property value, think if you're selling your place, the real estate agent brings somebody in, a B-52 flies over. The big thing is, they emphasize a 10-day large force exercise, but it's also a 240-day flight training period. Granted, it's B-52s and B-1s, but personally I wouldn't want a B-52 flying 2,000 feet or 1,000 feet over my house. And this is apparently what their capabilities are.

And this is just -- to me, if the Dakotas want them, let them keep them. Let them supply them with the training areas they need and everything else.

That's -- that's about all I've got to say on it. Thank you for your time. Thank you.

HEARING OFFICER GREGORY: All right. thank you.

MR. UNHOCH: Thank you.

HEARING OFFICER GREGORY: Anyone else? Do either of you gentlemen like to add to what you've already said?

SO-24

PN-2

SO-1

PN-5

PN-2

AUDIENCE MEMBER: I'm good.

HEARING OFFICER GREGORY: Well, I tell you, as I mentioned, Teresa and I are going to stay up here until about 8 o'clock. That's when the hearing is scheduled to end. And if you do change your mind, all you have to do is come let us know and we'll turn on the machine and get your comment.

Let me go ahead and give you some concluding remarks at this point. The Air Force and FAA reps will continue to remain available by these display boards to discuss things with you while we're in recess.

Thanks for coming out tonight to this hearing and for voicing your concerns about this project. As I've mentioned a couple of times already, tonight's not the end of your opportunity to participate in this process. Written comment sheets are available at the registration table over there. You can turn these in tonight or mail or fax them later. The mailing address is printed on the brochure and the comment sheets.

The Air Force welcomes comments in writing at any time during the Environmental Impact Analysis Process, but let me foot stomp this. To receive timely consideration for the Final EIS, please get

those in by November the 15th, 2010.

If you would like your own copy of the Final EIS, please tell one of the representatives at the registration table or send a letter or postcard asking for your own copy and the Air Force will send a copy of the Final EIS to you.

At this point I'm going to recess the hearing. Feel free to hang around and discuss things with the Air Force and FAA reps. And if you change your mind about making a comment on the record, just come up and let me know and we'll reconvene and get that down for you. So thanks a lot for coming out.

(The hearing in recess at 6:55 p.m.)

HEARING OFFICER GREGORY: This hearing is called to order. During the recess we have had no additional speakers, so this hearing is adjourned.

(The Powder River Training Complex Hearing adjourned at 8:00 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the forgoing Pages 1 through 44 are a true and correct transcription of my stenographic notes.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South Dakota, this _____ day of _____, 2010.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

concerns about the proposal that you want the decision-makers to consider. Questions that you pose during your comments will become part of the record and will be considered.

After we're done with the formal part of this, the FAA and Air Force reps will continue to be available to discuss things with you out by the various display boards.

All right. And with that, Mr. Egan. Sir, I don't have a lecturn. I see you've got some materials. You can sit if you'd like. Okay. There you go. 2103

MR. EGAN: I'm Bailey Egan. I'm going to be wearing three hats her tonight representing the Montana Community Airport Association, I'm a landowner, rancher, and a pilot. So I'll be speaking somewhat to all three facets of that, and for three minutes it's going to be hard to cover.

HEARING OFFICER GREGORY: You don't need to worry about that.

MR. EGAN: So it may be a little bit confusing here. But I'm a little disappointed in the draft there. I think it appears to me that it's -- can I ask questions or...

HEARING OFFICER GREGORY: You can pose

2103 (cont'd) Page 35

questions and they will become a part of the Final EIS.

MR. EGAN: Okay. Well, I'll pose the question that possibly it was done by hired -- by somebody that -- it seems to me that it's a little tilted. They come to certain things that are not addressed real fair. And with that, I'll try and go on.

But as a pilot, there's a tremendous problem here that -- I don't know if you've considered maybe with the type of flying that goes on in this -- in this airspace. You show your horizontal pretty well, but there's a tremendous amount of vertical in each one of those that's not really -- it's very difficult to know where you're at, especially in a Super Cub or that type of aircraft. You -- I'm suspicious that it's gonna cause a lot of pilots not to fly just for the fact that they're not gonna know where exactly they're at -- where you're going to be at.

SA-7

And so if you could address that to make it better as far as communications so that they know when the area is hot and kinda what's going on. Because this area is just full of pilots that just -- they're ranchers and they fly that -- that type, low level, you know, checking cattle and that

AM-12

2103 (cont'd) Page 36

kind of thing, and they need to be aware of what you're doing. So if you could make it as easy as possible, if you can, to do that. AM-12

So navigation and communication, add everything you can, if possible, to make this so that we know where you are and what you're doing. AM-3

I don't like the idea -- I tried to find out exactly on the -- I thought those corridors were to get the traffic through. A safety concern there when you start crunching aircraft traffic into one route. I know we have odd and even altitudes that we fly. I just don't like that, you know, everybody flying in the same. You find those in large TCAs and stuff like that and it just -- I suspect that that's a safety issue that you might address. Make them wider and make sure that there's a way that we can identify -- looks like you're using the VORs as a navigation aid. Not sure that out in that area you're gonna be -- you're gonna have to get some altitude to reach those. SA-3

Then as a landowner, there's a lot here that -- I tried to read the -- what your flares are doing. It just amazes me that the State of Montana, all the trouble that they have gone to build these power plants right over here that have to have Class 1 SA-14

2103 (cont'd) Page 37

Air. The Indians insisted upon it, that it has to be good, and then they allow you to come along and dump out these things. And you say they're inert, but there's bohrium, barium, lead, copper, all those things there, and those are poisonous things. SA-14

And so to -- I don't care what the quantity is. You say it's not a big amount, but when you continue to do that, it adds. And you have cattle come along, graze that, and it looked like in one place there that they were talking about lethal levels for cows. You know, what kills a cow? Well, my God, there's a lot of things that happen to a cow a long time before she reaches the death stage. And one of the first things that you -- is her -- the maternity part of the cow. If you start creating unbalances with her minerals and things like that, she gets out of whack, why, the first thing she shuts down is her reproductive abilities. And that's -- that's what I make my living at. SA-14

So I'm gonna be affected possibly by that and I'm concerned about it. And I think that you need to do a whole lot more of background work if you're gonna do this thing. You don't have any idea of what's here as far as those minerals. So there might be areas that are downwind from this point SA-14

2103 (cont'd) Page 38

that could be marginal now and you come along and dump out a little more. I think you need to work on that background. SA-14

Stick up your sign if I'm getting short on time here.

HEARING OFFICER GREGORY: Let me just ask here, has anybody else decided they want to speak yet? Okay, sir, you've got more time. Go ahead.

MR. EGAN: Okay. Well, I won't linger on here. But I'm disappointed that the -- and that's why I wanted to ask the question. I'm a little disappointed that the reservation is not here because they're terribly sensitive to those things. NA-2

And it sounds like you're not going to maybe fly over the -- or are you gonna burn out flares over the reservation and over those places? NA-6

I don't think that's a justice to the rest of us. If they're entitled to it, so am I. And I'm gonna be watching. It looks to me like there is a cartridge that's left, aluminum or something like that. I just can't imagine with the pristine air and stuff that we have here in Montana, that we allow other facets of our government to bring in and dump this. CU-3 NA-6 LU-1

They would be horrified if I went down to

2103 (cont'd) Page 39

Devils Tower and shook out something like that. So I'll end it at that, but I hope you address some of these concerns. Thank you.

HEARING OFFICER GREGORY: All right. Thank you. Thanks for your comments.

Do we have another speaker?

MR. ROCK: I have one more, sir.

HEARING OFFICER GREGORY: Okay. Come on up, sir. Okay, mr. McNaney. Use this table if you need it.

2104

MR. MCNANEY: My name's Dave McNaney. I am a rancher and a pilot also. I'm basically just representing myself.

And I just kinda wanted to agree with Mr. Egan on several comments. The ones that I really -- the area that I'm concerned about is the rougher area, the green area on your map which includes the Colstrip area, as far as the rougher terrain and the low altitude and military flights coming in contact with my civil airplane. Being they fly 500 feet above ground and I come up out of a coolie, there is no -- no time for avoidance on either one of our parts.

SA-7

And I was -- I was wondering, I -- I don't have much to say. I kind of leave with two questions

that one of these gentlemen here tonight might be able to answer. What do the vortices of a B-1 do to an F-19 at 50 to 100 feet difference in elevation? SA-7

And another thing, could some of this be changed? You know, they got -- they got it now that they're gonna fly at 500 feet low altitude. Could they change that and fly at a thousand feet minimum? PN-4

HEARING OFFICER GREGORY: All right. Well, thanks for posing that. And again, that will become part of the record and will be considered.

Anyone else? Would either of you gentlemen like any more time?

Well, I tell what you I'm going to do. We're here until 8:00 if you change your mind. At this point we've heard from everyone who signed up and I have no remaining speakers.

The Air Force and FAA reps will continue to be available out by the boards to discuss things with you during the recess here.

In case I don't speak to you again, let me just go ahead and give you some concluding remarks. I want to thank you for coming out tonight and showing your interest in this proposal.

As I've said several times, tonight's not the end of your opportunity to participate in this

review process. Again, those written comment sheets are available at the registration table. You can turn them in tonight or you can mail or fax them later. The mailing address is printed on the brochure and on the comment sheet.

The Air Force welcomes public comments in writing at any time during the Environmental Impact Analysis Process, but let me foot stomp this. To receive timely consideration for this Final EIS, all comments must be submitted by November the 15th, 2010.

If you'd like your own copy of the Final EIS, please tell one of the representatives at the registration table or send a letter or postcard asking for your own copy and the Air Force will send a copy of the Final EIS to you.

What I'm going to do at this point is just recess the hearing. And if anyone here changes their mind about wanting to make a comment on the record here tonight, all you have to do is come up here, let me know, we'll turn the machine back on, I'll call the hearing to order, and you can make your comment.

But there being no more speakers at this time, I'm going to recess the hearing. Thanks again.

(The hearing in recess at 6:48 p.m.)

HEARING OFFICER GREGORY: The hearing is back in session. During the recess we had no other speakers. The time being 8 o'clock, this hearing is adjourned.

(The Powder River Training Complex Hearing adjourned at 8:00 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the forgoing Pages 1 through 42 are a true and correct transcription of my stenographic notes.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South Dakota, this _____ day of _____, 2010.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

Yes, sir. One more card. Okay, thanks.

With that, I'll call our first speaker. Let's see. From the National Park Service I have Ms. Kate Hammond. Ms. Hammond. 2105

MS. HAMMOND: My name is Kate Hammond, H-A-M-M-O-N-D. I'm here representing the National Park Service at the Little Bighorn Battlefield.

We are concerned about the proposed project which will potentially adversely impact the soundscapes, visitor experience, cultural resources, and sacred sites of Little Bighorn Battlefield. LV-2 CV-2

The mandate of the National Park Service is to preserve and protect the scenery and natural cultural resources of parklands such as Little Bighorn Battlefield.

I note that a portion of Little Bighorn Battlefield is actively administered and maintained as Custer National Cemetery and is the final resting place of about 5,000 U.S. veterans and dependents. The entire Battlefield is on the National Register of Historic Places.

The National Park Service has worked extremely hard to preserve the landscape, vegetation, setting and feeling of the Battlefield to as closely as possible to devote the landscaping and conditions of

1876.

Under the proposed action, you notes about the voluntary restriction of aircraft avoidance area above 2,000 feet. I think that needs to be noted in the EIS. I think the footnotes don't note that that's voluntary. AM-24

So let's see. The EIS notes that three aspects of the increased noise from this proposal could cause environmental impacts, including increases in the ambient noise levels, low-level startle effects, and sonic booms, and we have concerns about the effects of all three types of noise on the soundscapes, visitor experience, and cultural resources. And we disagree with the assertion that infrequent overflights over 2,000 feet would not be expected to be perceived as a significant intrusion to the National Monument. LU-2 CU-2 LU-2

The Battlefield is of enormous significance to American history and to the approximately 280,000 to 420,000 visitors who visit the site annually. It's the second most visited tourist site within the State of Montana and is of great economic importance to southeast Montana. SO-9

Many visitors, Tribes, and stakeholders have commented over and over that the ability to hear the LU-2

2105 (cont'd) Page 37

natural sounds, listen to the wind blowing, and hear the sounds of the Meadowlark is a fundamental part of the Little Bighorn Battlefield experience. Increases in the ambient noise levels, low-level startle effects, and sonic booms would also impact the family members and loved ones who come to pay their respects to the over 5,000 veterans and dependents. LU-2

HEARING OFFICER GREGORY: We have to stop for the train.

MS. HAMMOND: Yes. Sorry.

HEARING OFFICER GREGORY: She can't...

(Brief pause for the train.)

HEARING OFFICER GREGORY: All right.

MS. HAMMOND: Good to go? Okay. So increased noise would also significantly disrupt the solemn and reflective atmosphere for the 10 to 15 funerals that are still conducted annually at the National Cemetery. LU-2

Increases in ambient noise levels, low-level startle effects, and sonic booms all would impact the visitor experience and would impact visitors' ability to enjoy the contemplative and sacred atmosphere. CU-2

All three types of noise would likely impact LU-2

2105 (cont'd) Page 38

National Park Service operational and educational activities such as outdoor ranger programs, guided walks, and ranger talks that take place 10 times a day from May through October and that over 60,000 visitors per year enjoy. LU-2

We also issue approximately 25 Special Use Permits per year for activities such as Tribal religious or cultural ceremonies, commemorative events by military and non-military groups, and commercial filming. Increases in ambient noise levels would significantly disrupt these activities.

As described in the EIS, Native Americans from the four directly impacted reservations explain that low-level overflights and intrusive noise would be detrimental to their cultural practices. These types of cultural practices occur not only on reservations but also at sites such as Little Bighorn Battlefield that are highly significant to Tribal members from 17 reservations throughout the region, and we suggest further consultation with the Lakota, Dakota, Nakota, Cheyenne, Arapaho, Arikara, and Crow Tribes. CU-2

Finally, I'll just note that the EIS notes the possibility of sonic booms causing the failure of glass, plaster, or other structural elements. We NO-2

2105 (cont'd) Page 39

are home to many irreplaceable cultural resources, including historic monuments and structures.

As an example, the two-story stone house constructed in 1894 that is the Superintendent's residence is said to be one of the first permanent homes in eastern Montana. Thanks to preservation work and good care, it retains its historical and architectural integrity and is in good condition. However, it would be unacceptable if sonic booms caused the failure of its historic glass windows and/or doors, or plaster, or disturbed its stone foundation or exterior walls. NO-2

The EIS also talks about the potential of sonic booms to cause items balanced on shelf edges, such as mantels or bookcases, to be vibrated off and fall and break. We have a priceless museum collection stored on site, including 119,000 objects, many of which are fragile and sensitive and many of which are on display at the Visitor's Center.

In conclusion, we're concerned with the proposed action and its potentials to affect visitor experience, natural soundscapes, cultural resources, and sacred sites. LU-2 Our first preference would be the No-Action Alternative, although we realize this may not be feasible given your purposes and mission. CU-2 We

2105 (cont'd) Page 40

note that Alternative B would have had no low-level overflights over Little Bighorn Battlefield, and we would strongly support reconsideration of this alternative, or the modification of the preferred alternative to exclude Little Bighorn Battlefield from the low-level flights proposed under the preferred alternative.

DO-2

Thank you for the opportunity to comment.

HEARING OFFICER GREGORY: Thank you. And if your written remarks contain additional material, I would just remind you you can submit those in addition to your oral comments if you'd like to do that.

2106

Next I have Mr. Del Dinstel. Mr. Dinstel.

MR. DINSTEL: My name is Del Dinstel. D-E-L, last name D-I-N-S-T-E-L.

And I'm a pilot and a landowner. And I own property under the current MOA down in Broadus, southeast of Broadus, and so I've lived -- lived under what they're proposing for here now.

I currently live in Colstrip. My airplane is based there and then I fly back to the ranch at -- 35 miles west of Alzada.

I've done a lot of research on this over the Internet and through the Rapid City Journal,

2106 (cont'd) Page 41

globalsecurity.org. I found out that there's $278 million per year goes into Rapid City economy from Ellsworth Air Force Base. That's per year. That's 2005 -- I got this from a 2005 article in the Rapid City Journal. SO-24

Same article also states that the State of South Dakota could lose $324 million, and that was when in 2005 they proposed to close Ellsworth Air Force Base in the Base closings.

So I think this is more than just us looking like Afghanistan for a training area. PN-2 I think this has a lot to do with the finances. SO-24 And I can't see Montana getting any money out of this thing at all.

So my proposal would be no proposal at all, no training area at all in Montana. GE-2 If South Dakota -- and I never mentioned Minot with the B-52s. If they're benefiting to this degree, then this thing should be based in South Dakota and North Dakota entirely. SO-24

I'm all for Air Force blue and I appreciate what you do. I just took my dad out to St. Louis. He's getting -- he's 88 years old. He was in World War II and he was an Honor Guard under General Douglas MacArthur. And they're down to 20 guys now going to their reunions. But I appreciate what they

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done, I appreciate what you do, too, so... But I got my questions about this expansion.

And going with that, I think also that the B-1 bomber was designed in early '70s. It was then killed by Carter, resurrected by Reagan, and 100 of them were built to the tune of $200 billion apiece. There's now, what, roughly 50 some: half of them in Texas, the other half in Rapid City, South Dakota. PN-6

I'm thinking it's a big hammer to kill the al-Qaeda terrorists with. In fact, I wonder how many they actually get with bombs scattered out in Afghanistan. It's probably one of our bigger ones out there.

Also, what about the B-2 bomber? I thought that was to replace the B-1. B-52s of course, I can remember those when I was in high school. They were shot out of the air like pigeons over North Vietnam by Stone Age people using inferior Russian weaponry. So we still have them and we're still paying for them.

And I don't see where al-Qaeda has any radar that needs to be evaded by flares or chaff, and al-Qaeda doesn't have surface-to-air missiles that I am aware of, nor do they have interceptor aircraft. AM-25

And also, I'm kind of curious about the AM-17

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2106 (cont'd) Page 43

operating costs of a B-1 bomber when mostly what I hear going on in Afghanistan is that the drones are doing most of the killing of al-Qaeda. AM-17

As a landowner, I'm curious about what the reduction in property values --

HEARING OFFICER GREGORY: You have to wait for the train.

(Brief pause for the train.)

HEARING OFFICER GREGORY: We're good.

MR. DINSTEL: Okay. We're back going again, I guess.

And so along those lines, I'm curious as to how many confirmed kills of al-Qaeda terrorists by B-1 bombers. I do know that one of my daughter's schoolmates was killed over in Afghanistan by an IED, and I would like to see you kill that guy who set that bomb. I would appreciate that. It's a kid that used to come over at the house and watch movies and we had him lay around in the family room and got rather attached to him, so... PN-3

I would -- I would like to know also, I'm thinking there's going to be -- also, ma'am, if there's any time left, I would like to speak some more, if I could.

HEARING OFFICER GREGORY: As soon as I get

through these other folks.

MR. DINSTEL: I got property down in Carter County. And I was just wondering, some of the land has sold down there recently. Most of it sold for recreational purposes or investment. Not -- it's out of the price range for ranching, paid for for ranching. But if a potential buyer is going to buy land, why would he buy under an MOA knowing that he's going to have sonic booms and low-level flying. He would just as easily take his money and purchase land outside the MOA. SO-1

So I think it will be -- have an impact on land values and probably home values also. I own a home in Colstrip. So I'm thinking about that.

As a pilot, I have concerns about -- I go down and check livestock and fences and barn with my airplane. I have a Cessna 170. And I have had to bank-and-roll out at wing's level and been looking at the rear end of a B-1 bomber, knowing that he just come by. That does get your attention. SA-7

And I've had very poor luck as far as getting a briefing as to when it's hot and when it's not, what kind of traffic to anticipate down there. I'm a VFR pilot so it's more or less a crap shoot as to know where they're at and when they're going to be in one AM-12

2106 (cont'd) Page 45

place. So as far as trying to avoid them, it's -- it's not -- my experience is, you're not able to do that.

And also, is only South Dakota and North Dakota bombers gonna be training in this Training Complex? So... Is this gonna be something where you bring in aircraft from all over the United States?

And also, my understanding is there's large MOAs, Military Operation Areas, in both Utah and Nevada where these planes could fly and do not have to fly over eastern Montana. Thank you.

HEARING OFFICER GREGORY: All right. Thank you for your comments. And next I have Mr. Kelly Kehler. Mr. Kehler.

2107

MR. KEHLER: Kelly Kehler, K-E-H-L-E-R. I just got some concerns. And I agree with Mr. Dinstel. The economic impact is gonna be great for this area of southeast Montana, whereas all the revenue is left in South Dakota and North Dakota and want to use about a -- a large percentage of Montana state land to control the airspace. And as a pilot, I got concerns there.

I'd like to know how fast this B-1 flies when it comes through, but, you know, it's kinda like letting certain cars on the Interstate go 10, 20

AM-12

PN-2

SO-24

SA-7

times faster than anybody else. I don't think that's probably quite right here, but...

He stated there are 17 charted noise areas, and I think there's a lot more than that. You mentioned calving, Tribal, and birds. I can guarantee you there's way more than that 17 people that have cattle in southeast Montana.

And you mentioned TFRs for fires. Well, Crow Tribe has a contract here and it's -- there's lots of grass fires. This year luckily there wasn't. But these aren't ran out of Boise and issued TFRs until they get to a certain type stage. These are small grass fires that happen at the spur of the moment and time is of the essence. It -- to have the guy have to wait and find out if he's gonna -- and it's a job when they're fighting a fire, he's looking down at the ground. It's not see-and-avoid. All this stuff that we're talking about happens in 500-, 2,000-foot range; not alone with the flights coming and going in the area.

There's a lot of migratory birds and geese and stuff and they travel south for the winter. Your area takes in several I can see here. North Ton River, the Bighorn River, several main waterways, and the geese love to travel from up north to south

SA-7

NO-10

SA-5

SA-1

SA-10

2107 (cont'd) Page 47

for several months in the winter. They travel at times in your altitude. That's a concern. You change their pattern. SA-10

All of this comes back to some economics here, too. It's just like Mr. Dinstel said. What is -- a guy can come in here and fish or tourism, and a lot of these guys that come in fly their own aircraft. They're gonna -- they don't want the hassles. They're on a tight schedule. They don't want to be here and not know if they can leave on the day they want to leave. It's a concern. SO-9

There's still lots of areas that have poor cell coverage, so it's not just grab your cell phone and call 1-800-WX-BRIEF and find out what's going on. A lot of guys are doing their recon on their livestock, this and that. You're looking down at the ground. You're not trying to look at -- you're by yourself, you're focused on the terrain and what your -- what your job is out there. AM-3 SA-7

As well as nothing was mentioned of the -- this is a big ag community. There wasn't no mention of the crop dusters in the area. And typically they're spraying pretty much all growing season. And as a crop duster, you're a single person focused on a job and you're flying low level. Then you rise up on SA-7

2107 (cont'd) Page 48

your ends and you're back and forth. You can't be looking out the window to see who's gonna be coming up over the next ridge. That's a concern. SA-7

That could go back to the economics of this. And if they gotta, "Oh, I can't spray your crop until the weekend," I mean that just doesn't work. That's an issue. And... SO-2

But I do have to say, I appreciate your protection, so I'll give you -- I do appreciate that and you guys coming out here. NP-3

That pretty well wraps it up for now. If I have anything else, I'll put it in as a written comment.

HEARING OFFICER GREGORY: Okay.

MR. KEHLER: Thank you.

HEARING OFFICER GREGORY: Thank you. Mike Parnell.

2108

MR. PARNELL: Thank you. It's Mike Parnell, P-A-R-N-E-L-L.

I appreciate the opportunity that you've provided for this. My impression is you've probably done dozens of these and I sympathize with your lack of enthusiasm for our comments, but I appreciate the opportunity. NP-3

I'm a member of the Bighorn River Alliance

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which is a non-profit group of outfitters, anglers, and guides to protect the Bighorn River. I'm also a private and commercial pilot. I own land that will be affected by this proposal. I also own and am involved with a strip that's not one of the 12 airports that you mentioned and it was completed in April of last year but would be affected by this Powder River training area. And I have -- that land is used for agriculture but also grazing of livestock and recreational purposes.

I oppose any expansion to the existing Powder River Training Complex of PR-1B MOA. It would have a tragic effect on livestock and human quality of life. GE-2 LU-2

We've had a couple of examples of that just during this meeting when we had to suspend conversation and operations for well less than 100 decibels that Ms. DeVine described.

It will significantly degrades the fishing and recreational use of the Bighorn River and the surrounding terrain which is the primary economic engine that brings money out of state into our state, and especially for Hardin and Fort Smith. There are other blue-ribbon trout streams that are available that would not have these adverse impacts. SO-9

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It was mentioned earlier on, this is a conservation effort so we don't have to burn as much fuel for our military aircraft to get to different training exercises or locations, but as a pilot, if I'm heading east, I have to divert 50 miles north, 50 miles south, or 225 miles east to stay clear of this proposed area which is excessive. And I think if you combine all the private and commercial aircraft activities, that it's not a savings in fuel, even though I know the military aircraft burn considerably higher rates than what I fly. SO-7

You know, you presented that the proposed practice is bad. You gave all -- several reasons of why it's bad and that's why you're proposing that it's only going to be bad for a limited or restricted periods of time, but the practice is still bad. CM-3

I also disagree with the statement that it would not have or is unlikely to have an impact on the quality of life or property values. And I think the train was a fairly good example of that. LU-2 SO-1

You know, as far as the quality of life, if there are three days per quarter and four quarters and 20 aircraft involved in these large force exercises, that's 240 days of supersonic events, and LU-2

2108 (cont'd) Page 51

that's if only one aircraft were to make one sonic boom effect on one individual. So this is probably more than one per day average. And I think that's significant. Even though you say it's limited to approximately 10 days, with that many aircraft it's significant. LO-2

Thank you for the time.

HEARING OFFICER GREGORY: You're welcome. Thank you. Mr. Mike Ferguson. Mike Ferguson.

2109

MR. FERGUSON: My name is Mike Ferguson, F-E-R-G-U-S-O-N. And did you want the address?

HEARING OFFICER GREGORY: No.

MR. FERGUSON: I'm the Northwest Regional Rep for Aircraft Owners and Pilots Association and I'm sure a lot of people in this room are members. We're the largest aviation organization in the world, having over 415,000 pilots in the United States as members.

Incidentally, I'm a Montanan; lived in Montana except for my years in the U.S. Air Force. And so I'm not speaking of hypothetically, you know, from AOPA Headquarters in Maryland. I am, however, speaking on their behalf.

The AOPA feels that your proposed Draft Environmental Impact Statement will have a

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2109 (cont'd) Page 52

devastating impact on general aviation. The proposal does not match the demonstrated need. The Air Force will chart 44.5 hours of use each week but expect to use only 15 hours. This provides the Air Force enormous flexibility at the expense of general aviation flexibility. PN-2

The Air Force is proposing the option of activating the SUA at any time with a NOTAM. General aviation pilots plan flights based on charted data, often because it's the only data available when the flight is being planned. AM-12

Altitudes below 2,000 feet only used 10 percent of the charted time. AOPA would like to see additional stratification by creating a sector from 500 feet to 3,000 feet that is only activated when needed. This alone would substantially improve the proposal by permitting transient operations and ingress and egress at underlying airports. AM-26

The economic impact of general aviation industry according to a 2009 AOPA member poll, 64 percent of the pilots avoid SUAs regardless of activation status. Given the scale and charted hours of use, the PRTC proposal effectively closes 39 airports, grounds 285 aircraft, and bars countless transient operations in an airspace area SO-7

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2109 (cont'd) Page 53

the size of South Carolina. Economic impact will be felt by airports, FBOs, flight schools, individual aircraft owners, small businesses, ranchers, and transient pilots that use general aviation. SO-7

Safety concerns for non-participating traffic, see-and-avoid is predicated on airspace below 250 knots. The Air Force plans to fly as fast as 540 knots. See-and-avoid, therefore, becomes unuseful. Lack of communications and radar coverage becomes more important because the Air Force is suggesting that general aviation pilots contact ATC to determine the activation status of the SUA. SA-7 AM-3

Chaff and flares present hazards to flight as airborne FOB. Thank you for the opportunity to come and testify. SA-26

HEARING OFFICER GREGORY: Thank you. That was good timing.

(Brief pause for the train.)

HEARING OFFICER GREGORY: Is there any other speaker card that I don't have? Because that's all the ones I've got up here. Did anyone fill one out back there?

MS. DINSTEL: I would like to fill one out. Would you like me to come up?

HEARING OFFICER GREGORY: You can come on up

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and we'll do the card. We'll pick that up later. Please state your name and spell the last name.

MS. DINSTEL: My name is Sharon Dinstel, D-I-N-S-T-E-L. 2110

I come to you as a speech and language pathologist. And you're probably wondering why.

Tonight I'm glad I came because I was educated on an issue that I was not aware of. You call it sound exposure. I may call it noise pollution. I'm concerned about this over populated areas. NO-5

You note -- you mention that it would be greater than 100 dB. I would like you to be more specific. I find that to be very vague. NO-4

We know that exposure could cause permanent damage. We also know that it is not healthy to be exposed to things at this level. We can be exposed often without warning.

I grew up on McDonald Douglas air pattern, their test flight, and we had sonic booms all the time in St. Louis, and so I did grow up with that.

I am married to Del Dinstel and we have -- we're in your fly zone down at Bridge, Montana, so I've experienced that. And I do ask that you give us specific answers on what dB's. You know, again I feel that's vague. NO-4

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2110 (cont'd) Page 55

I work for the Northern Cheyenne and the Crow Tribes, and I would like some answers to go back to them with. Thank you.

HEARING OFFICER GREGORY: Okay, thank you. Anyone else? Is there any speaker who already spoke that would like more time? Mr. Dinstel, would you like more time?

MR. DINSTEL: Yeah.

HEARING OFFICER GREGORY: Because we've got time. More time on the clock for Mr. Dinstel.

2106 (part II)

MR. DINSTEL: Yeah, I don't know if I mentioned it or not, but I favor no action, no expansion based on what I already know of living under the existing Powder River MOA. GE-2

But I would like to read this article, and it's about making Ellsworth more secure and it's by the Rapid City Journal. It was in the Opinion page July 30, 2010.

It says, "Securing the future of Ellsworth Air Force Base became an important mission in 2005, when it was slated for closure.

The base survived thanks to political lobbying and community effort, an effort that has been maintained since then, and took another important step forward this week.

2106 (part II cont'd) 10/22/2010

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The South Dakota Ellsworth Development Authority, created by the Legislature to keep the base viable, just purchased 230 acres of Box Elder land that will become a new mobile home park for people living in areas around the base.

Relocating those residents will help Ellsworth off of future base closure list" -- "help to keep Ellsworth off of future base closure lists.

Encroaching development is one of the major factors the Department of Defense considers in targeting military bases for closure.

Hundreds of people are living in mobile home parks close to the base, an area considered at high risk for military aircraft crashes.

Noise from the base also tends to generate complaints from people living nearby, a situation the Department of Defense prefers to avoid.

Moving residents out of the areas deemed unsafe isn't cheap. The Ellsworth Development Authority used a South Dakota Housing Development Authority grant to buy the Box Elder land at public auction by placing the high bid of $574,500, or $2500 per acre. It was an innovative use of tax dollars to make the Ellsworth Air Force Base" -- or "a move for the public good.

2106 (part II cont'd) 10/22/2010

Powder River - Hardin

Ellsworth Air Force Base employs 5,000 people and generates $10 million in sales taxes for the local community," per year. "Closing it would adversely impact the state to the tune of $324 million."

I want to read that again. Closing Ellsworth "would adversely impact the state to the tune of $324 million.

The Department of Defense doesn't concern itself with those issues when targeting military installations for closure.

It looks at the viability of the base and its value for the military, just as it should. But the adverse economic impact on Rapid City and South Dakota if Ellsworth were to close would be deep and long-lasting.

That's why state and local leaders stepped up to save Ellsworth. That's why they continue their efforts to make sure it can meet the federal government's needs.

The land purchase is quite a coup for the authority, which was assigned to work with local governments, developers and property owners to minimize incompatible development around the base, and relocate existing incompatible development. Job

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well done."

I think that -- I think that this expansion of the Powder River MOA to a large degree is also about keeping Ellsworth viable. And to a large degree, it was pushed by Senator John Thune, Senator from South Dakota. And one of the things is, out here in Montana we -- we don't get the luxury of voting that guy in office because we don't get to vote in South Dakota, but...

SO-24

So again, I would like to say that 324 million reasons why South Dakota wants this expansion out here and not in South Dakota. Thank you.

HEARING OFFICER GREGORY: Thank you. Anyone else?

MR. KEHLER: Just one short tidbit.

HEARING OFFICER GREGORY: State your name for her one more time so she has it.

2107 (part II)

MR. KEHLER: Kelly Kehler. I want to make it clear for the record, I'm a land and livestock owner, commercial pilot, and opposed to any expansion to the Powder River MOA. Thank you.

GE-2

HEARING OFFICER GREGORY: Okay. Anyone else? Well, as I said, it's 7:20. Teresa and I will stay up here until 8:00 if anybody changes their mind. All you have to do is come up and tell me, I'll

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reconvene the hearing, we'll turn the machine on, and we'll get your comment on the record. Before I recess, let me give you some concluding remarks here.

The Air Force and FAA reps will continue to be available out by these various charts to discuss things with you.

I want to thank you for coming out tonight and thank you for your comments concerning this Powder River Training Complex EIS proposal. As I mentioned a couple of times already, today's not the end of your opportunity to participate in this process. Written comment sheets are available at the registration table. You can turn these in tonight or you can mail or fax them later. The mailing address is printed on both the brochure and on the comment sheets. Here comes another train.

The Air Force welcomes public comments in writing at any time during the Environmental Impact Analysis Process.

THE COURT REPORTER: Can you talk over that?

HEARING OFFICER GREGORY: Do you want to try? Tell me if you can't hear. Can everybody hear? Okay, let's wrap it up.

To receive timely consideration, let me foot

stomp this one more time. Your comments must be submitted by November the 15th, 2010.

If you'd like your own copy of the Final EIS, please tell one of the representatives at the registration table or send a letter or postcard asking for your copy and the Air Force will send a copy of the Final EIS to you.

It's about 7:22. I'm going to go ahead and recess the hearing at this point. And again, if you change your mind about wanting to add to your comments or want to make a comment for the first time, please come on up here, let me know, and I'll reconvene the hearing. Thank you very much.

(The hearing in recess at 7:22 p.m.)

HEARING OFFICER GREGORY: The hearing is called to order. The time is 8 o'clock. We have had no additional speakers. This hearing is adjourned.

(The Powder River Training Complex Hearing adjourned at 8:00 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the forgoing Pages 1 through 60 are a true and correct transcription of my stenographic notes.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South Dakota, this _____ day of _____, 2010.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

MR. DONALD SPOTTED TAIL: It is a privilege to have the Air Force here this morning to make their presentation. At this time I will call on the son of the Secretary of the Great Crow Nation to say the Opening Prayer.

MR. ANDREW RUSSELL: Thank you. I'm gonna say a prayer this morning before the meeting starts. Just bear with me a little bit here.

(Opening Prayer by Mr. Andrew Russell)

MR. DONALD SPOTTED TAIL: (Speaking in native Crow) So at this time it's my great privilege to introduce the Secretary of the Great Crow Nation, Mr. Scott Russell all the way from Crow Agency, Montana, by way of Porcupine, South Dakota.

(Applause) 2142

MR. SCOTT RUSSELL: Thank you. And good morning, everybody. (Speaking in native Crow)

I'd like to recognize the staffers from our United States Senators and our Representatives. J.T. Korkow, if you would stand up, from Dennis Rehberg's office, Washington, D.C.

(Applause)

MR. SCOTT RUSSELL: Senator Max Baucus' office, Jim Corson. Great to see you again.

(Applause)

2142 (cont'd)

MR. SCOTT RUSSELL: From Senator Jon Tester's office, Rachel Court, formerly of Hardin, Montana.

(Applause)

MR. SCOTT RUSSELL: Why we are here today goes way, way back. 1851, Fort Laramie Treaty where the Crow Nation had 38 billion acres. And within that 38 million acres -- (Speaking in native Crow) And within that 38 million acres, we should still have a say in what's going on. We're talking about airspace training.

We are at war as a nation. And in times of war, you've heard this before, in times of war, Native Americans and a lot of Crows enlist. We hold the highest percentage rate per capita of any enlistment of any minority group in times of war. We're warriors. (Speaking in native Crow)

It's very similar in geography, the geological landscape. Afghanistan, Iraq is very similar to your land here. And in times of war, we enlist. We send warriors out because we come from a militaristic background. We come from a militaristic society. And what we do as a nation to contribute to the United States of America, I think we've given a lot. Do we stop? I don't think so.

If you look at from World War I on forward,

2142 (cont'd)

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Page 4

every time there's a war, each and every one of us have family members that were a part of that. It brings a lot of pride. It brings honor to our people.

Why the Air Force is here today is to ask you, are we gonna let them fly over our land. They'll tell us just about everything, how it's gonna affect the sound, just about everything you can think of. (Speaking in native Crow) Training ground. (Speaking in native Crow)

We are warriors. The United States has called upon us to help them out. (Speaking in native Crow) Even the United States Air Force. Everything that we're doing right now is geared towards helping this country. We're trying to come up with Dakota linguistic projects that would reduce this country's dependence on foreign oil. And if we're able to produce diesel fuel right here on the Crow Indian Reservation, the United States Air Force can buy our diesel fuel because the technology that we have now has proven, it's proven to be more effective, more economical, and they land planes and they can fly higher atmosphere. (Speaking in native Crow)

If you think about the bigger picture and look back what we as a nation can contribute to the

GE-9

CU-4

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2142 (cont'd)

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United States of America, it's all good. (Speaking in native Crow)

It's for your benefit. There's a lot of questions. (Speaking in native Crow) Rumors. (Speaking in native Crow) Development. (Speaking in native Crow)

You got a new playground that's being developed right there at Henrietta Park. Casino. (Speaking in native Crow) College. (Speaking in native Crow) Gymnasium. (Speaking in native Crow) Big library. (Speaking in native Crow)

It's for our children. It's for our community. (Speaking in native Crow)

We are heading to a new season. (Speaking in native Crow) Each new season. (Speaking in native Crow) Pray to the Creator that this next season brings something good for our people, not just for ourselves. (Speaking in native Crow)

(Applause)

MR. DONALD SPOTTED TAIL: (Speaking in native Crow) Makes a good politician. While we're introducing staff -- (Speaking in native Crow) Stand up, Channis Whiteman. Let's all welcome Channis here. Let's all give him a round of applause. It's good to see you, Channis.

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2142 (cont'd)

(Applause)

MR. DONALD SPOTTED TAIL: At this time it's my privilege to introduce Mr. Gregory from the U.S. Air Force. So I will give it to him.

HEARING OFFICER GREGORY: All right. Thank you very much. And thank you for inviting us here today to provide you information on this proposed expansion of the Powder River Training Complex. This is a public hearing for the Powder River Training Complex Environmental Impact Statement which you'll hear referred to as EIS.

Looks like we need to wait for our projector to warm up.

(Brief pause)

All right. As the next slide is going to show, I'm Colonel Ron Gregory. I'm a judge on the Air Force Court of Criminal Appeals back in Washington and I sometimes assist with hearings like this. I'm not assigned to Ellsworth Air Force Base. I don't work for anybody there. I don't work for anybody at Air Combat Command. And I'm not involved in any way with the development of this Draft EIS, and I don't act as a legal adviser to any of the Air Force representatives that are working on this proposal. My role in the hearing is simply to be an impartial

we'll get your oral comment.
But before I recess the hearing, let me just ask, is there anybody who wanted to make an oral comment on the record here right now? If you do, we'll get you one of these cards. And if not, I'm going to recess the hearing. If you change your mind, just come on up and let me know.
Anyone need a card? Anyone? Well, before I recess, let me give you some closing reminders about this.
Have we got one back there? No? Okay.
THE COURT REPORTER: This lady wants to speak.
HEARING OFFICER GREGORY: Okay. There you go, Brad. Right there. 2111
MS. SHANNON ROCK ABOVE: (Speaking in native Crow)
HEARING OFFICER GREGORY: Ma'am, she doesn't --
MS. SHANNON ROCK ABOVE: Oh, I --
HEARING OFFICER GREGORY: (Turning to the Court Reporter) Okay. She's going to translate it for you.
MS. SHANNON ROCK ABOVE: (Speaking in native Crow) Fighter bombs. (Speaking in native Crow) Sonic bomb. (Speaking in native Crow)
And then I used to live in Billings where the

airplanes went across my apartment. (Speaking in native Crow)

So when you're thinking about the environmental compact -- or environmental situation, you have to think about the air and what it does to you. (Speaking in native Crow)

Sometimes it goes every half hour. You hear it. It keeps you up at night and it's noisy. And when you're thinking about the environmental impact, you have to think about that noise. Can you live with that noise 24 hours a day?

LU-1

NO-5

And one time I was at Langley Air Force Base and the F-16s went -- (Speaking in native Crow) It took a whole -- they left at 6:00 in the morning and all the F-16s were off the airfield by 12 o'clock, one after another loud. So if you want to think about that.

HEARING OFFICER GREGORY: Okay. She's going to do the card.

All right. Thank you. Is there anyone else who wanted a card to say something at this point? Anyone? Anyone?

Well, as I mentioned, I'm going to recess. If you change your mind, just come on up here. Let me give you some concluding reminders before we go into

recess in case I don't get a chance to talk to you again.

As I mentioned, the Air Force and FAA representatives will continue to be available back by all those posters and charts and things to discuss things with you.

I want to thank you again for having us out here this morning to brief this for you and to receive your comments. This is certainly not the end of your opportunity to comment. As I mentioned, those comment sheets are available at the registration table. You can turn them in today. You can mail or fax them later.

And the Air Force welcomes public comments at any time during this process, but to receive timely consideration, please get those in by November the 15th, 2010.

If you'd like your own copy of the Final EIS, please tell one of the representatives at the table or send a letter or postcard asking for your own copy and the Air Force will send you a copy of the Final EIS.

At this point I'm going to recess the hearing. And if you change your mind about wanting to put a comment on the record here today, just come on up to

the table and I'll turn the machine back on and reconvene the hearing. Thank you.

(The hearing in recess at 11:15 a.m.)

HEARING OFFICER GREGORY: The hearing is called to order. During our recess we have had no additional speakers and the crowd has departed the auditorium, so I'm going to adjourn the hearing.

(The Powder River Training Complex Hearing adjourned at 12:00 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the forgoing Pages 1 through 40 are a true and correct transcription of my stenographic notes.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South Dakota, this _____ day of _____, 2010.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

equal weight to written and oral comments. Both become part of the official record and are included in the Final EIS.

Just a few reminders before we get started on this part. First, please limit your comments to the Draft EIS. That is the purpose of this public comment period. Second, if you agree with a previous speaker, you can certainly say that, but you don't need to use up your time restating it since it's already in the record. Finally, as I mentioned earlier, this formal part isn't a Q and A session. It's an opportunity for you to put on the record your views and your concerns about the proposal that you want the decision-makers to consider. Questions that you pose during your comments will become part of the record and will be considered.

After we're done with the formal part of this, the Air Force and FAA reps will continue to be available back by all those boards and charts and things to continue discussing things with you.

And with that -- have you got another one? Okay, thanks. Let's see. I'll just start dealing off the top here. Ms. Kay Carlson. Ms. Carlson.

2112

MS. CARLSON: My name is Kay Carlson,

2112 (cont'd) Page 35

C-A-R-L-S-O-N. And my comment is basically as a wife of a Vietnam vet with PTSD, I'm concerned about the noise issue for everyone. We have had a lot of large fireworks this year in our neighborhood, and after just that kind of noise my husband is not functional for several days. And my main concern is all the war veterans who have come back who have PTSD, who have traumatic brain injury, and who have to deal with the noise issue. NO-11

HEARING OFFICER GREGORY: All right. Thank you, ma'am. Next I have Mr. Dinstel.

2113

MR. DINSTEL: My name is Del Dinstel, spelled D-I-N-S-T-E-L. I'm from Colstrip and I'm a pilot and a property owner. I own ranch land in -- under the existing MOA just east of Belle Creek, Montana. It's under the existing Powder River MOA. So I've experienced living under an MOA since the 1980s. I also own a house and a hangar and an airplane that I keep based in Colstrip, and I fly back and forth to my property in Carter County.

I've had an incident where I've been checking cows, counting bulls, and banked out of a turn, went wing's level, looked out of the corner of my eye and seen the rear end of a B-1 bomber. Now, that will get your heart right up in your throat, knowing that SA-7

he just came by you doing 550 miles an hour. It's hard to keep one eye on -- on your livestock and one eye on the horizon. Very difficult. It's a safety issue. My family flies with me quite a bit of the time. SA-7

But in digging around looking for why, you know, it's easy enough to say that they need this training area, but there is large training areas in Utah and Nevada that are already existing. Why do they need to expand this? PN-2

In a search for the reason why, I came across something that was written on July 30, 2010, in the Rapid City Journal. Ellsworth Air Force Base employs 5,000 people in the Rapid City area and it generates in excess of $10 million in sales tax for the Rapid City economy per year. Closing it would adversely impact the state to the tune of $324 million per year. SO-24

So my -- I oppose the expansion of this. I don't oppose Military Operations Area per se, but if it's gonna benefit South Dakota that much, and I've never even looked and added on what Minot gets in North Dakota, I think this expansion should be in North Dakota and South Dakota, not in Montana and Wyoming. PN-2

2113 (cont'd) Page 37

They have an area to train. They can do it already. And I do not think that it needs to be in Montana. PN-2

Living under it, it's not -- it doesn't address -- also, it does not address what hunting and outdoor tourism, guiding and whatnot, what that's gonna do. LU-5 SO-9 If you're under this area, our clients, you know, aren't gonna recommend to the next client that they come out here while they're having large force exercises.

Also, the property values: property just next to mine sold for $550 an acre to a man that wanted to invest in the property. I don't think you're gonna -- the current property owners are gonna be able to snag that kind of a buyer. If he's got that kind of money, he can put it -- buy land that's not under an MOA. Thank you. SO-1

HEARING OFFICER GREGORY: All right. Thank you. Mr. Bob Bergerson. Mr. Bergerson.

2114

MR. BERGERSON: Thank you, Colonel. My name is Bob Bergerson. It's B-E-R-G-E-R-S-O-N. As an ex-Vietnam Navy person, also ex-Air Controller/several other Navy schoolings I've got, I have a hard time trying to accept the Air Force's reason for putting extremely expensive aircraft and PN-4

2114 (cont'd) Page 38

old aircraft down at such a low level. PN-6

I've experienced several mid-air air collisions as an Air Controller, and with today's technology and our new stand-up weapons, I don't see any sense PN-3 in why we have to torture big, beautiful aircraft like that. I just -- I don't see it. We have the technology to -- to keep the aircraft out of harm's way using crews missiles, UAVs and stuff like that.

And a lot of the other questions have already been answered for me. Thank you. That's all I've got. Thank you.

HEARING OFFICER GREGORY: All right. Thank you. John Glen.

MR. GLEN: Colonel, I would like to defer my statements until just a little bit later, if that's all right.

HEARING OFFICER GREGORY: I'll put you on the bottom of the deck.

MR. GLEN: Thank you very much.

HEARING OFFICER GREGORY: Mr. John Patterson.

2115

MR. PATTERSON: Thank you, Colonel. My name is John Patterson. I'm a rancher at Custer, Montana. P-A-T-T-E-R-S-O-N.

I've been in the military 33 years, the Army side, retired Lieutenant Colonel. That's nice.

2115 (cont'd) Page 39

The Air Force wants to fly over. One area I'm concerned about is the sonic booms. If I'm out there in June or July with a young horse colt on the ranch riding, there's enough things out there on the sagebrush down on the ground to make him take off and leave me in a big run. If I know the sonic booms are gonna take place a few days before they take place, I'll make sure I or my ranch hands are not riding that young colt. So I would just ask the Air Force to let us know in advance when you're gonna be doing these maneuvers and when the potentials are for sonic booms. That way I won't be on the young colt, nor my ranch hands.

AM-12

I know you're gonna have sonic booms. They're hard to track. They're like thunder. They should be two claps. Last time I heard a sonic boom in Montana is when the Space Shuttle returned back to Florida. They told us about it in the news media and they said it would be one or two booms. We heard it, we all knew about it, not a big deal. We just said thank God the Space Shuttle's back in America.

If I know you're gonna be doing training work -- my ranch covers part of a training area. I've seen the silica and so on, things like that.

2115 (cont'd) Page 40

Just let us know in advance. I know you plan to go out and tell the news media, but sometimes they may not put it down, so take out -- take out some newspaper ads. Sometimes the TV stations may not pick up the news media saying they're gonna be using this training area. If you're not gonna use it 10 days at one time and you may use it for three days for 90 days and there may be a nine-day break and there may be three more days, so you may use this area four times a year, may use flyover for three days, days and night, just let us know in advance so we don't have any young teen-agers out there, young kids, like fourth, fifth graders riding a horse like in June, parents come out for a summer vacation and visit my ranch, put the young kid on a horse, first time they've been on a horse on a ranch in Montana, not a good time to have something spooky and jittery.

SA-9

That's the only request I got. Just let us know in advance. I'll make sure my people know about it and I'll say, "Okay, we're not riding today. Potential sonic booms are there. Let's not do it." Yeah, I don't ride my horse during thunderstorms. That's not a good thing.

AM-12

So just let us know in advance. I can schedule

2115 (cont'd) Page 41

around it. You have your schedule, I have mine. Okay?

AM-12

HEARING OFFICER GREGORY: Mr. Kammerer.

MR. KAMMERER: My name is Marvin Kammerer. I'm from Meade County, South Dakota. Over the ridge we join Ellsworth Air Force Base.

2116

It's spelled K-A-M-M-E-R-E-R. In German it means caretaker. We probably followed the Lord's horses up with a shovel.

The day's coming I won't come back up here with a hat on this time of the year. That wind was rather strong coming up here.

We're talking about a book here, and I'm gonna get three minutes to express my opinion. 500 pages here. What kind of business is this? And a lot of us old boys, he was just referring, well, let them know that they're gonna come through with these planes.

They didn't even advertise it in my local county paper. I checked with the Belle Fourche paper. They didn't even advertise in that paper. The only way they found out there is they picked it up out of the Rapid City Journal.

NP-8

Come on, fellas. We deserve better than that. Grand-dad didn't walk in here in 1882 with an

2116 (cont'd) Page 42

ox-train from Ft. Pierre to get this kind of treatment.

36 people have died in plane crashes on our ranch. I know about the noise. I got a little gimmick here that I found out in the neighbor's pasture some years ago just like it. Mounted on a stake, wire run into it with a little box. It's a decibel reader. Very intriguing. I even went and got another one. My neighbor's got it now. It tells you a lot of things.

If you had read Reuters' explanation of a Swiss study on noise and how it affects people and it brings on -- multiplies the danger of heart attacks. It's not mentioned in here. NO-11

You people who like to watch the sage-grouse, he might go on the endangered species, especially if he's bothered by these overflights. BI-3

We used to raise ducks, geese, and turkeys, just enough to keep around for a little fast-food for the unexpected visitors or whatever. When they brought in the B-52s and the B-1s and the B-36s, we ceased to get hatches. Out of a dozen eggs, you might get two that hatch. Checking the eggs, you would find out the embryos had started. BI-2

I think the vibration, the decibel pounding

when the bird wasn't on the nest, and they nest outside, killed it. Now, if that's not good for the birds, it damn sure isn't good for me or my kids. Treat us with respect, for Christ sakes. BI-2

This chaff -- I've got a letter from the Colonel. And by the way, the Colonel ate rhubarb pie that I made in my house; set there one day and we talked about this stuff. Taliaferro.

You people cannot bring any more of this invasion on our privacy. We raise food. We raise beef and pigs and grain. LO-1

And everybody who runs a private airport, there are hundreds of private planes out there, they aren't even listed. They don't even know this -- what you're trying to do is going on for most of it. AM-4

Here we are, my three minutes is up. And this book, 500 pages, try to read it. It raises as many questions as it answers.

I drove 300 some miles to be here to this meeting today, but I'm going to see a brother who's in a hospital here. He's another vet. I have three cousins get shot down in World War II. They survived. One of them had three planes go down.

Pay attention to us. Don't look for new avenues to expand your -- your -- your meaning.

2116 (cont'd) Page 44

This isn't about national security. This is about feeding the tiger; Rapid City's Chamber of Commerce proud and everything that goes with it, state government. That isn't your responsibility. Thank you. PN-3

HEARING OFFICER GREGORY: All right. Thank you. Ms. Debbie Alke. I hope I got that right.

MS. ALKE: Good evening. I think everybody can probably -- well, I'll speak into the mike. 2117

My name is Debbie Alke. That's A-L-K-E. And I'm the Administrator for the Aeronautics Division from the Department of Transportation out of Helena, Montana.

And on behalf of the Department, I would like to thank you for your service to this great country. We're appreciative and support the great job that you do keeping all of us safe. GE-9

But we do have many questions, a few I'll mention tonight, about this proposed expansion and most that will be articulated in our written comments that we will be submitting by the deadline.

You know, Montana is currently home to the Hays Military Operations Area in north central Montana. We also house the current Powder River -- the majority of the current Powder River Military

2117 (cont'd) Page 45

Operations Area in southeast Montana.

We're supportive of this airspace and we're happy to share that with you, but we currently feel that Ellsworth's home state of South Dakota and Minot's home state of North Dakota should be able to accommodate the training needs of the Air Force Bases and that you should look to those states for that accommodation. There's no positive impact or benefit to the State of Montana by this proposed expansion.

PN-2

SO-24

The EIS states that the Tiger, Devils Lake, and Lake Andes MOAs located in North Dakota and South Dakota are not adequate. They don't have the dimensions, the altitude structure, or the electronic capabilities to meet today or tomorrow's training mission. It's clear that the existing Powder River MOA does not provide that either. And if these are necessary, we ask that you look to expanding those three MOAs in the Dakotas, or if Powder River is your only option, look to expanding to the northeast and the southeast.

PN-2

The revised proposal also eliminated the impacts to the Billings, Bismarck, and Dickinson airports because of concern over navigable routes and limited radar and radiofrequency coverage. The

AM-5

2117 (cont'd) Page 46

same should be done for Montana's other six public use airports of Ashland, Baker, Broadus, Colstrip, Ekalaka, and Hardin, and for the other 40 plus private airstrips that would be located under this proposed expansion.

AM-5

The EIS also states that the number of airports and airfields create what is perceived as an impact by airport operators and users. This is not perception. This is very real.

Southeast Montana aviation businesses in recent years have seen a considerable amount of increase in oil exploration work which has increased the general aviation traffic to this region. IFR aircraft will not be allowed into this area when the MOA is active.

SO-10

These aircraft typically use services. They land. They buy fuel, restaurants, hotels. And these businesses, these Fixed Base Operators, flight schools, they rely on transient traffic for the majority of their fuel sales and their business income. The EIS is incorrect stating that this is a perception.

VFR traffic as stated are allowed into the area. You're to be seen and be seen, but the safety to this traffic is a very high risk. They're

SA-7

2117 (cont'd) Page 47

sharing this airspace with large, low-flying, high-speed, high-performance bombers and fighters which is not a good thing. SA-7

Montana's home to 80 essential air service airports. Seven of these are located in eastern Montana. These are essential air service designees because of their necessity to enter the air transportation system. They have very limited public transportation. The carrier that serves these airports comes from the southeast, Cheyenne and Denver primarily, and when the LFEs are happening they will have to divert to the gaps to get to these airports, and at other times they will have to remain at an altitude before letting down to enter these airports which will add to their pilot duty time, increased fuel, and scheduling. SO-6

Our industry remains fragile since 9/11 and our goals should be to encourage the use of our nation's airports and accommodate all of the aviation users. We recommend that you look to expansion in North and South Dakota, and we thank you again for your service. PN-2

HEARING OFFICER GREGORY: All right. Thank you. Scott Newpower. Mr. Newpower.

2118

MR. NEWPOWER: My name is Scott Newpower,

2118 (cont'd) Page 48

N-E-W-P-O-W-E-R. I'm the Eastern Director for the Montana Pilots Association. And we had a meeting -- a regularly scheduled board meeting 10 days ago and that was on our agenda, and we will be submitting written comments in opposition to the expansion.

One of the things we've heard from the air taxies, not only in eastern Montana but western Montana, is IFR overflights. The FAA, it's either hot or cold. If it's hot, nobody's going in there. And that's just dealing with the airports in the proposed expansion area.

Overflight aircraft, pretty much anybody going east to west can't go through the area if it's -- if it's hot. So that's a concern that they've expressed to us.

AM-21

And as Debbie mentioned, we have the Hays MOA and it happens right now. If it's hot, you're not going through there if you're IFR. You have to go around. And with this airspace being four times bigger than what it currently is, that's gonna be a problem. That's what we're concerned about. Thank you.

AM-6

HEARING OFFICER GREGORY: All right. Thank you. Mr. Wade Cebulski.

MR. CEBULSKI: You got that correct, too,

Colonel.

HEARING OFFICER GREGORY: Excellent. I try to help.

2119

MR. CEBULSKI: Okay, thank you. My name is Wade Cebulski. That's spelled C-E-B-U-L-S-K-I. I'm from Seeley Lake, Montana, so I made a pretty good trip, too. And I'd like to comment on you making such a long distance travel from South Dakota.

One thing that surprises me is how emotional it is here. I didn't anticipate that. So that is quite eye opening.

So anyway, I'd like to introduce myself. I'm the President of the Montana Pilots Association which is about 700 members strong. And like Scott said, being our Eastern Director, we had a board meeting in which this was on our agenda. But previous to that meeting, I'm also the President of the AOM which is 13 private -- or pilot organizations from the State of Montana. And I'd like to just kind of read you a list. And I happen to be President of that, too.

And, of course, I'm from the Montana Pilots Association, Montana 99's is represented, Montana Flying Farmers, the Experimental Aircraft Association -- and I will state, that's Montana, not

national -- the Montana Community Airport Association, Montana Aviation Trade Association, Association of Montana Aerial Applicators, Montana Airport Managers, Montana Antique Airplane Association, Montana Seed Trade Association, the Civil Air Patrol, the AOPA, and Montana Aeronautics Division. That's all parties.

Of all of these organizations, there was nine present at the board meetings that we had here within the last two weeks.

And I don't think I have to set here and say that, because there's been a lot of good testimony so I'll just be repeating myself, but we are gonna make a written comment, and it was unanimous of all the people present that they were not in favor of this. And I think that covers a huge portion of the -- of the general aviation pilots and commercial operators in the State of Montana. GE-2

And like Scott says, the biggest thing that I hear is a lot of IFR guards are worried because the first thing that happens -- like at Hays MOA, these craters and stuff go up here, what happens is, even though it's -- the Air Force says it's okay, the FAA could run you through there, but what happens is, when it's hot they can't go IFR, so what happens is, AM-21

2119 (cont'd) Page 51

they have to cancel their IFR clearance and go through as a BFR pilot. So that limits up to 18,000 feet or less.

AM-21

And then secondly, it's see-and-avoid. Well, I'm pretty much a BFR pilot. And, you know, if someplace is active and these guys are cruising all over with the multitudes of aircraft, especially we're talking some rather big amount of aircraft here now with these LFEs, you know, it's probably just not real brainy to go into an area when you're talking that kind of speeds and stuff.

SA-7

And so anyway, I guess what I'd like to say is, there seems to be a lot of emotion here and I don't hear much in favor, and I'd like to say that it was by our vote that we just as soon that it stayed the way it is with the current situation that we have, and we hope North Dakota and South Dakota benefits well from this because that's where we hope it stays. Thank you.

GE-2

HEARING OFFICER GREGORY: All right. Thank you. Mr. Doug Braun. Mr. Braun.

2120

MR. BRAUN: My name is Doug Braun, B-R-A-U-N. And I'm gonna really -- I'm gonna probably piss a lot of you people off.

I'm a Navy Vietnam veteran and I am really

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proud of my country. I hear all this whining. I'm a rancher. I have a ranch over by Red Lodge. And I hear all this whining and whining and whining. It about makes me puke.

We have a real serious problem in this country, and it's not the Air Force flying around making a little noise, it's Muslims. This paper come from Spokane, Washington, two weeks ago. This guy, this car bomber, it says here, he says -- he got life imprisonment.

It says, "Brace yourselves because the war with Muslims has just began," Sheza Head or whatever said. He said, "If I'm given a thousand lives, I will sacrifice all of them for the sake of Allah." And then again he says, "Brace yourselves because the war with Muslims has just begun." In other comments, he brushed a question from a judge about the oath of loyalty he took. He says, "I did swear, but I didn't mean it."

I go all over the United States. I collect antique cars. I stay on Air Force Bases; proud to wear the Air Force shirt. The Air Force is -- they treat their guys nice. When I was in the Navy, they didn't treat us that good. You get a nice room for 39 bucks all over the United States and it's safe.

When I travel, I stay a lot at -- you probably don't know the Stealth Base, Knob Noster, Missouri, where the stealth bombers are kept. I've been there quite a few times. And Wright Patterson in Ohio and as well as North Dakota, Travis. I've been all over. And I'll tell you, we -- this country was founded on Christianity, not on Musliminity. The damn Muslims.

I'm so -- I'm really -- I'm really ticked about all this stuff. They invade our country and, you know, we got a -- we got a supposedly Commander in Chief who I despise that has Muslim ties.

And you folks had better wake up because here in Montana it's nice. It's nice to come here, sit in this hotel, you know, have this meeting, nobody messes with us. But I'll tell you, we got a problem worldwide, nationwide, and it's -- it's just gonna get worse. PN-3

So I probably ticked a lot of you people off, but that's just the way it is. I'm damn proud of my country. And I guess I won't have to worry about it, you know. I'm at the end of my life.

But I'm a hundred percent in favor of the Air Force doing their training or whatever they gotta do. If we gotta put up with a little noise, my cows, didn't bother them any because they flew right GE-1

over my ranch. GE-1

So I don't know. I just don't know what to tell you. I'm pretty -- I'm pretty wigged out of shape about this whole situation.

You know, our future generation, they're gonna have real serious problems. So I'm just a hundred percent in favor of the Air Force and whatever they want to do. GE-9

My kid went to the Academy. My friend Florence, her son just made Lieutenant Colonel, you know, and I'm proud of them. I'm proud of all the vets and what we've done.

So that's all I got to say. And if I've offended any of you, I guess I'm sorry. It's too bad. This is America and we really gotta watch out what's happening. Thanks.

HEARING OFFICER GREGORY: Ms. Liz McFarland. Ms. McFarland. 2121

MS. MCFARLAND: Thank you very much for the explanation this evening. I thought that was very good. And I appreciate the Air Force being here and explaining their proposal and the Air Force contractors and whatnot.

I guess by way of introduction, I'm Liz McFarland. My husband and I are landowners in

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Powder River County. We both ranch and that's partially how we make our livelihood.

I did comment on the proposed action, let me see, whenever that was, several years ago in the summer. I attended one of the hearings. However, I did not receive a Draft for whatever reason. But that's okay because I've got this now so that's taken care of.

But because of that, I have not had time to read the Draft, so I'm going to kind of list my concerns having not read that Draft, which are:

I am concerned about the general aviation. I am concerned about firefighting responses and conflicts there. I'm questioning the agreement with the BLM, the MOU. I'm concerned about emergency responses. I'm certainly worried about the noise and the effect of noise on our livestock operation. I'm concerned about the chaff and the flares. I'm worried about our property values, the quiet rural attributes that we currently have in our neck of the woods that make it so wonderful, at least in my opinion. I'm concerned about the visual effects of large aircraft flying about and overhead. I'm concerned about safety. SA-5 BI-2 SA-26 SO-1 LV-9 SA-1

I will be submitting written comments. And I

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would also very much like to incorporate the comments of the second speaker, the speaker from South Dakota, and Ms. Alke into my comments.

I'm not -- I certainly -- you know, in looking at the fat Draft, wherever -- whoever held that up, since I haven't had time to read that yet, I do think this is a very, very complicated topic with lots of acronyms and lots of stuff to understand. I -- I -- I just don't -- I'm not astute with the military airspace and this height and that height. That is very confusing to me. And so I think this is just a very hard thing to understand and to understand how those effects will influence the things that I've brought up. DO-1

Anyway, I will be submitting written comments. And I would like to say, in general, I am opposed to this. GE-2 I am perplexed to understand why this isn't -- I guess I really don't believe you've made the case to have a change in venue. So I'm still stuck on the proposed action, that I really don't understand what is it. I'm not -- I just haven't been convinced that you've made the case to change that venue and the necessity of that from the multitude of places where you're currently training. PN-3

And having said that, I'd also say that I'm --

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I'm also not convinced or I don't get why isn't -- you know, why it is you're moving over to Montana as opposed to the communities that would serve -- or collect the economic benefit from the proposal. PN-2

Anyway, with that, I will be submitting written comments, which I will also be forwarding and commenting to all of my congressional representation. And I do hope this goes away unlike the speaker before me.

HEARING OFFICER GREGORY: All right. Mr. Richard Bush. Mr. Bush. 2122

MR. BUSH: Bush. That's B-U-S-H. And I appreciate all the kind comments about the Air Force, having been a former Air Force Interceptor Pilot a couple of careers ago.

A few comments just in regard to that. I was very grateful to have the opportunity to have low-altitude flight training and I also was instrumental -- instrumental may be too big a word. Myself and one other guy when I was a Captain, we worked to establish a low-altitude flying area at the Air Base that we were at, and we did everything from go out and sit in the -- in the mink ranch while the mink were mating to see if somebody would -- if it was going to disturb the mink mating

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when airplanes flew over to speaking at venues like this.

You know, a couple of comments based on that experience. First of all, I sort of decry the "not in my back yard" attitude. I recognize that Ellsworth Air Force Base is in South Dakota. I flew all over the country and trained in all kinds of airspaces that weren't part of the Air Base that I was established at, from Panama City, Florida, to Nellis Air Force Base to wherever. PN-2

And actually I flew -- at the time I flew F-106s which used to be established at Malmstrom. It hasn't been mentioned here, but I would assume that, you know, if need be, and I know the Malmstrom mission is changing, but those aircraft could probably use this or might be engaged in that airspace.

So, you know, I think, you know, we're a little bit short-sided and parochial in our -- some of our look at this -- at this establishment.

So in general, you know, I think it's a good thing. I think -- I haven't read the study, but I would expect, given the time line and what I went through more than 25 years ago doing the same thing and with all the regulation we have now, that GE-1

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they've probably done a pretty thorough job on that.

A couple of things I would be concerned about: the IFR restrictions. I mean, I'm all for economic development, and I would see that the biggest risk is the restriction on IFR flight through this place, through these places. Because, you know, generally, you know, those kinds of -- the airlines and carriers and those people don't generally fly VFR. So if they're restricted, that's gonna impact development, whether it be taking bull semen somewhere or flying in a head for an oil derrick. Those are the kinds of things that, you know, we oughta be concerned about. SO-7

I would ask for more information on the large force exercises. How many airplanes are we talking? I mean, I've been part of large force exercises where we've had -- well, if you went to -- if you've seen, you know, the Nellis Air Force red flag exercises, I participated in many of those. You know, you got hundreds of airplanes flying around. I don't think we're talking about something like that, but are we talking 10, 20 airplanes, those kinds of things. AM-27

So in summary, you know, in general, I think we ought to be looking at this as a -- as a national

2122 (cont'd) Page 60

resource, not so parochially. Therefore, I support it. I don't give a damn whether it's in, you know, Montana, South Dakota, North Dakota, Wyoming, wherever. And just with a couple of issues on the impact on economic development. Thank you. GE-1

HEARING OFFICER GREGORY: All right. Thank you. Mr. Glen, I'm at the last card and that's yours.

MR. GLEN: Thank you, Colonel, Major. I'm decidedly a minority in this group. First of all, I'm a 50-hour pilot so I don't have the expertise that you folks have.

2123

My name is Glen, G-L-E-N. First name is John. I'm not a Marine and I'm not a senator. But I'm gonna tell you, I'm here to say that I strongly support this MOA. And there's a couple reasons why I say that. GE-1

I don't own any ranch. I don't have any cows. I do have sage-grouse once in a while.

First of all, I read in the Gazette today -- and I was aware of this, this hearing, two months ago. And I don't know how I got that information, but it was out there. NP-8

But I read in the Gazette today that there will be six to nine low-level flights a year; that sonic

booms may be heard in a given area once every six years.

One of the ranchers has indicated, not here but in the Gazette, that his business was putting on weight on cattle. Well, the business of the United States Air Force pilots is training and preparing for our national defense. These are some of the reasons why I support this MOA.

Spending our tax dollars, time, and equipment to fly from Ellsworth Air Force Base to Nellis Air Force Base in Nevada is ludicrous. I realize that we have a lot of land in southeastern Montana and I own some of that. There's only one in a part of this new program, these new areas, that are in Montana.

GE-1

I think that by training our pilots for our national defense is a far cry from putting weight on cattle. Do we forget what happened in the second World War and how the population in general supported our Armed Forces? I think we do.

Pilots, the Air Force pilots are putting their lives on the line as they go into harm's way. And I think that they deserve every bit of training that they can get.

AUDIENCE MEMBER: Absolutely.

GE-1

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MR. GLEN: I think that we can sacrifice -- if they can sacrifice their lives for us, we can sacrifice a few comforts, a few things that might cause noise. And I think the majority of our people think that way, just those that are not here think that way.

GE-9

The opponents to this MOA should truly be ashamed of themselves. I strongly support it.

HEARING OFFICER GREGORY: Is there anyone who filled out a card to speak that I don't have? Because as I said, that's my last card. Anyone? Anyone at all?

I've got about, oh, over half an hour before the hearing is scheduled to adjourn. As I mentioned, I'm going to recess the hearing in a few minutes. If you change your mind, all you have to do is come up and tell me, I'll turn the machine back on, and we'll get your statement.

But is there anyone at this point who already spoke who would like to add to their remarks? Like they say in football, I can put another three minutes back on the clock for you.

Mr. Kammerer, okay. Come on down. Mr. Dinstel, you'll be after Mr. Kammerer. Three more for Mr. Kammerer.

MR. KAMMERER: A couple of years ago people who are looking to develop wind energy -- we live in a very windy area. North of the Base are people that do quite a bit of farming/ranching and they were approached and even went so far as to sign papers where they had a down payment so that these companies could tie up areas for potential wind farms. This proposal chilled any more of that activity. SO-17

And let's keep in mind that these wind farms, we developed the technology because it will be -- it's coming. That kind of technology can bring in -- they're talking about jobs at Ellsworth? This thing can bring in more jobs than that ever thought of and it will be clean energy. SO-17

This proposal killed that concept. And any time someone wants to come in and put in a wind farm -- and they got these big high ones. They're not talking about these little fellas setting right along somebody's house. Those people, they're not going to have to come -- want to come out here and fight with the Air Force.

There's 30 to 40 different airports in this whole given area and there's hundreds of people who aren't even reg -- have their planes registered, SO-15

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they got ultralights, whatever, going out in the morning to check the pasture to see if the coyotes got in the sheep. If the Air Force says they can't fly, B-1s are coming through, who's gonna pay for them sheep that the coyotes are eating? I don't buy it. SO-15

Colonel Hackworth used to write editorials, one of the experts on defense, most decorated man alive at that time, I know him or knew him, he's dead now, stated and warned again and again what Eisenhower was trying to warn us about and what McCarthy was trying to warn us about about the competition between the Air Force, the Navy, and the Army for the resources that are available and not even available.

I think we have to have a real debate on the military budget. We are approaching, fast approaching a trillion dollar budget when you include everything. And these -- these young men and women who are serving in this -- in our forces deserve better than what we've been giving them in the last few years. SO-14

Let's not go looking for wars to fight. Let's use our heads. And let's not abuse these young men and women and some of them not so young. Let's see GE-6

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that they're well taken care of when they come back, but let's not willingly use them and misuse them. They deserve better than that, and so do we.

HEARING OFFICER GREGORY: All right. Thank you. Thank you, sir. Mr. Dinstel, come on back. Another three for Mr. Dinstel.

2113 (part II)

MR. DINSTEL: Yeah, I'm Del Dinstel. And I get damn tired of getting beat up for not being patriotic enough. If this -- if this benefits South Dakota for this many million, 324 million per year, where the hell is their patriotism?

My grandfather was -- served in World War II and my old man was sitting on Okinawa when Truman dropped the bomb on them. He went over and disarmed them. Later on he served in General Douglas MacArthur's Honor Guard, stood outside the door of Douglas MacArthur. I just took him -- he's 88 years old. I took him down to St. Louis, Missouri, so he could go to his reunion, his Army buddy reunion. And he falls asleep in the airports and he doesn't always wake up in time to get his connecting flight and that's why I took him down there. They're down to 20 of those guys that served in there. They're dying pretty fast.

I also had a neighbor kid in Colstrip that --

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Trevor Johnson was his name, was in the same grade as my daughter, and he's -- he used to go to high school games after -- he had to drive back out in the country in the evening, late in the evening, so his parents would have him stay over at our house. Hell of a nice kid; slept on our floor in the family room. He was blown up by an IED over there in Afghanistan.

I respect what the Air Force does, but they don't have as many casualties as the Marines does. Trevor was a Marine. If you want to, you can -- you can certainly drop a bomb on that son of a bitch that made that IED for Trevor, so...

But -- so I'm getting damn tired of getting beat up for not being patriotic enough. And al-Qaida as far as I know is the enemy. They don't have radar. We don't have to throw out any chaff for al-Qaida. They don't have surface-to-air missiles. They don't have interceptor aircraft. So I would like to see that the money that is spent on the B-1s go to guys like Trevor so that they -- they don't come back in a box. Thank you.

PN-3

HEARING OFFICER GREGORY: All right. Thanks. Anyone else who has already spoken want another three minutes?

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Well, like I said, I'm going to recess the hearing. If you change your mind, want to make a comment, Teresa and I will be sitting up here at the table. All you have to do is come up, let me know you'd like to make a comment, I'll reconvene the hearing, turn the machine on, and you can make your comment.

In case I don't talk to you again, let me give you some concluding remarks here. The FAA and the Air Force reps, they're back in the back, they'll be standing by those boards and various displays to continue discussing this with you.

I want to thank each of you for coming out tonight for this Powder River Training Complex EIS proposal and participating in this hearing. As I've mentioned several times, tonight is not the end of your opportunity to participate. Those written comment sheets that are available at the registration table where you came in, you can turn these in tonight at that table, take them with you, fill them out or type a comment, as I said there's no page limit on written comments, and either mail or fax them later. And again, the mailing address is on both the brochure and on the written comment sheet.

The Air Force welcomes public comments at any time during this Environmental Impact Analysis Process, but let me foot stomp this. To be considered and become part of the Final EIS, please get your comments in by November the 15th, 2010.

If you'd like your own copy of the Final EIS, tell one of the representatives at the table out there or send a letter or postcard asking for your own copy and the Air Force will send a copy of the Final -- let me wrap this up and I'll get right back with you -- the Final EIS to you. Did you --

MR. KAMMERER: Are you sure it's not the 13th? That's what they told us at Rapid.

HEARING OFFICER GREGORY: Well, I saw in the newspaper today they had the 13th, but after that was published at Rapid, it looked like the 15th was the date, so you've got until the 15th.

Let me ask the Air Force legal adviser. What is the final date? Is it the 15th?

MR. MILLER: 15th of November.

HEARING OFFICER GREGORY: 15 November.

MR. KAMMERER: They told on Jim Thompson's talk show and he -- Colonel Taliaferro, and he said it was the end of the month. So I'm getting very confused.

HEARING OFFICER GREGORY: Well, what's formal and what's right here and what I'm putting out, and I'm hearing it from the legal adviser, November the 15th, 2010. And if somebody wants to tell me different, speak now or forever hold your peace. November the 15th it is. All right.

AUDIENCE MEMBER: I know this is not a question and answer, but what's the FAA deadline? Because they're also taking comments.

HEARING OFFICER GREGORY: Boy, I have -- Pete, is there a deadline for comments on you guys?

MR. LEHMANN: There is. I don't know what it is offhand. It's for the aeronautical. It just actually got served.

HEARING OFFICER GREGORY: Can you check on that and get back to this gentleman about that?

MR. LEHMANN: Yes, I will.

HEARING OFFICER GREGORY: Give him your card.

All right. Well, I'm going to recess right now. And again, if you change your mind about wanting to make an oral comment here tonight, all you have to do is come up here and tell me. Teresa and I will be here until 8 o'clock. Just let me know. So for now we're in recess. Thanks again.

(The hearing in recess at 7:34 p.m.)

HEARING OFFICER GREGORY: This hearing is called to order. Mr. Kammerer wants to add to his remarks. Sir, go ahead. 2116 (part III)

MR. KAMMERER: I have a letter in my possession from Colonel Taliaferro talking about chaff, and he stated in there that chaff would not be eaten -- was not liked by livestock unless they laced it with molasses. Well, you're not going to be dropping that out of airplanes laced with molasses. SA-14

So it falls down on my grass. It's not palatable material. What's that going to do to my grass? Isn't that like peeing in my drinking water? I mean, it's all -- everything has an effect.

And that just, you know, that -- and these -- and these flares are scary. That's why they don't have much trouble. But I've gotten this from the Center for Defense Information out of D.C. Admiral Carrow used to be Commander of the Navy. We had him there for a conference. He's dead now unfortunately. But he said this isn't all necessary. SA-5

I've got in my possession -- and he was the one that helped start this Center for Defense Information, him and Admiral Rickover and some others. And, you know, I trust these people.

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That's the only outfit in D.C. I do trust. Retired Military Brass.

But I think that, you know, as he said -- and I've got this tape where it shows in Mountain Home prairie fires are going. And it states right in this book here, you know, we've had them first meetings, well, there are some flares that do go to the ground. Maybe they don't start a fire right then. They might later, or they may go ahead and start a fire.

And when you're out in these huge open areas like Ellsworth, forget them. They don't know how to fight prairie fires anyway. We proved that here about three years ago when they was playing around with munitions up there on their -- on their firing range, or whatever, and a fire started and sniffed out wind. It burned three miles so damn fast. The best Fire Department in South Dakota setting right up there, it was us local guys with our little pickups and pumpers that put that damn thing out.

So the flares are -- we've had two different fires come out of the Air Base where there used to be a horse pasture. They bought this other perimeter around there. And old lady Ellsworth, the General's wife, that was after he died, but got the

SA-5

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stables started out there. And they used to ride and we've had two different fires come out of there.

Prairie fires are not -- are not fun. And they come within a quarter mile of my house, my yards. So, you know, we have reason to be very skeptical about, you know, burn -- if you burn off thousands of acres, who's going to compensate you in time to buy feed to get your livestock through another season? It's a dangerous exercise. SO-12

But anyway, that's -- that's what I wanted to add to it. And I will submit a written comment.

But a lot of these old boys out here, I would say 90 percent of the people out here don't even know this is going on in this whole given area, all these areas. I would submit that. They don't have a clue yet. They're just starting to hear about it. And they aren't prone to sit down and write out things. I mean, a lot of them are old guys like me. Christ, I'm 74 years old, you know. I don't want to be messing around with that kind of stuff. I want to be out there doing something. I don't want to be setting there writing something out. I have better use of my time. NP-8

But I'm going to protect that land. It's a resource to me and my family. And all of this is a LO-1

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resource to all of us because it feeds us and provides nature for those who don't like to hunt. Those who like to hunt, it provides all of these things. It's a gift. Let's not take it lightly. LU-1

(The hearing in recess at 7:37 p.m.)

HEARING OFFICER GREGORY: The hearing is called to order. Ms. McFarland wants to add to her comment. Please.

2121 (part II)

MS. MCFARLAND: So my other concern is that this is an open-ended proposal and that there's no discussion about when it might come to a conclusion. So once it's designated as the training space, I don't know how we would ever confer to change it or make it go away, and that's a concern for me as well. Thank you. GE-10

(The hearing in recess at 7:40 p.m.)

HEARING OFFICER GREGORY: The hearing is called to order. The time is 8 o'clock. During the recess we had a couple of additional comments which are identified in the record and the hearing was convened for each person to make their comment.

And there being no more speakers, the hearing is adjourned.

(The Powder River Training Complex Public Hearing adjourned at 8:00 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the foregoing Pages 1 through 73 are a true and correct transcript of the proceedings had.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South Dakota, this _____ day of _____, 2010.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

And with that, I'll ask if anyone would like to make a statement on the record here today. Just raise your hand if you do.

CHAIRMAN KECKLER: Sir?

HEARING OFFICER GREGORY: Yes.

CHAIRMAN KECKLER: I spoke with one of the ladies there. The 15 gentlemen that are sitting here -- or ladies and gentlemen are Council representatives. As a result, I will provide you with the sign-up sheet from the Council and that will work for the 15 seated in this area and them comments will be made as part of the Tribal Council. So the ones that are not part of the group sitting here, then you can fill out them forms. But the others will be part of the Council and the correspondence will come back to here.

HEARING OFFICER GREGORY: Sounds good. The cards are mainly just to identify who's doing the talking. It's for the record.

CHAIRMAN KECKLER: Okay. What I've got, is I've got Steve Vance first and then I've got Bryce, so if you don't mind.

HEARING OFFICER GREGORY: Wherever they want to speak from. Sure.

MR. STEVE VANCE: (Speaking in Native Lakota)

Greetings to everybody. My name is Steve Vance. I'm with the Tribal Cultural Preservation Office. I carry the title of what they say THPO, Tribal

2143 (cont'd)

Historic Preservation Officer.

I would just like to remind Council and public and Ellsworth, Langley, you know, the Air Force, that right now we're making comment on the effects to Cheyenne River. That is our boundaries. But what I've come to find in working with Cultural Preservation is that we've been invited outside of our jurisdiction for comment, and this is why I want to remind everybody that traditional ancestoral territories of the Lakota goes from the Big Horn Mountains to the Mississippi River, from parts of Canada to Oklahoma. So we have ancestors who are buried in Wyoming, Colorado, Montana, Minnesota, Nebraska.

So through our program, we're invited outside of our jurisdiction to make comments of adverse effects, and this is what comments from Standing Rock have made of -- I was gonna like maybe like give a little scenario or example I was thinking, but I would probably get hauled out of here by Sergeant At Arms.

While all this was going on and the video and

stuff, I kinda picture that maybe if I sat back here with a little remote control helicopter and let it buzz around in the corner here while everybody is trying to paying attention. The reason I'm saying that is because that's a visual effect. Even though you're trying to pay attention up here, you see

LU-9

2143 (cont'd)

something off to the side that draws your attention.

These are some of the comments made by Tribes of the effects. I mean, we're talking about environmental, but sometimes, you know, Lakota people, you have to remember on a traditional site, is this nature is why we're here, the sun, the sky. We've made these comments when it comes to the wind turbines or to the cell towers. If a -- if a man or a woman is hanbleca'ing and they're sitting there and they're looking off into the distance and here's this big wind turbine turning in front of them before the sun rises, it has an effect to that person. Those are the cultural, what they say the traditional cultural properties of where a person will take that time.

LU-9

NA-5
NA-7

But I just want the public and Council also to remember, you know, this is -- you know, it's above us. It's not where we're standing, but yet it has the same effect because you gotta remember where our

ancestors are, where they are. Our children, our grandchildren will be wanting to know that information.

So I just want to remind everybody that through our program, you know, we are addressing these issues. Our program is not the final say-so in the EIS. It is you 15 and executive here who must represent the voice of the people. This is why we brought them here. And I wanted to make that

comment, you know, that it is you who make that decision for Cheyenne River. (Speaking in Native Lakota)

2124

CHAIRMAN KECKLER: Bryce.

MR. IN THE WOODS: (Speaking in Native Lakota) Greetings to you, the U.S. Air Force. I'm Bryce In The Woods. And I just greeted you in saying that the air and the land and we call it Mni Wiconi, the water of life, and we hold these things to be sacred.

In that treaty area on that map, this is where all the fly zones are, in the 1851 treaty. And you see our 1889 Act as a Cheyenne River Sioux Tribe which to me is not the truth. And we want to speak the truth today.

And I said that our men and women here are

standing in the front lines over there in two wars, standing there soldiers defending this country, our country, and I asked the elders to speak. That's what I said in Lakota.

To me, I just got elected again as a committee chair, chairman, and it's been kind of difficult because I know the truth. I study our history and the truth is always on our side, not the United States, and you're asking to expand into already 1851 treaty territory. You're already doing that.

I have one complaint. A while back, I believe in '98 or '99, I live in a community about 20 miles

AM-15

2124 (cont'd)

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from here, Dupree, there was a B-1 that flew and made a mock drop on us. They made all of us that were in our house come outside because there was a sonic boom. And when I got out, I seen it turn around heading back towards Ellsworth.

So I called the Chairman up, and he is sitting here now, but it was under his administration, I called him. I said, "Do you know what they just did? I don't appreciate it because it got a lot of people shook up," you know. And I wanted to file a complaint against Ellsworth or whoever that pilot was that did that or whoever gave that order for them to do a mock drop on us. I don't like that.

AM-15

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That wasn't funny. And that's one for the record.

And the other thing went back to our water of life which is being desecrated and polluted for over 100 years now. That's a major concern.

PR-1

And then that area that you're expanding on to the Cheyenne River on our northwest and into Standing Rock, that's the grasslands. Those are grasslands where you guys are -- right on that corner there. And to me, it would be detrimental if one of those flares come down and start a fire in those grasslands. I don't know if that's taken into consideration, but that's for the record.

SA-5

And I personally, I oppose Minot and Ellsworth expanding. You guys are already in our treaty territory unwelcomed, you know. And I'm not

GE-2

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2124 (cont'd)

opposing the military. I'm not, you know. I'm a U.S. Army veteran and I served honorably. But when you look at the treaty side of this, which has always been ignored and always been violated, you know, that airspace belongs to a people. And just that one comment I made, you know, that mock drop, it was very disrespectful.

NA-8

And I would like to reserve some comments, but I oppose any expansion. You guys are already in the treaty. You are already violating airspace.

And at one time the relationship between the U.S. military and the Lakota people was a good relationship until they discovered gold in the Black Hills and then that relationship turned under U.S. government President Ulysses Grant. And some of the presidents -- some of the generals that were in this area, one of them particularly related when questioned, "What about the women and children?" and he said, "Exterminate them all." Children are like make nice. They all have to be exterminated according to this general.

And that -- when I read those things, it's all part of history. But those things are still a reality for our people here, you know, coming to a friendship relationship with the United States and with the military, and then during a period of outright general extermination on this what we call these sacred grounds and the water of life. There's

2124 (cont'd)

a lot of -- a lot of bodies out there because of these killings that happened during that time and they're scattered all over, what they call the Great Sioux Reservation. And that's what Mr. Vance mentioned from the tip of the Big Horn Mountains to the east bank of the Missouri River.

And those acts that changed it, 1887, '89 that

brought us to the 102nd parallel where you're coming in now, we already had the 104th and the 103rd and now we're at the 102nd and you guys are coming into that zone. And, you know, I say a prayer for our -- our men and women that are in the Armed Forces and are over there in Iraq and Afghanistan and all over wherever they're stationed. We lost two, two here to those wars.

So with all due respect, coming from a historical perspective, is that I hope you hear us when we say we don't need that expansion. You guys have always done that. You guys have always -- you know, another story would be coming back from Fort Peck and we was landing over here in the airport and a B-1 flew below us and I told the pilot, "Did you see that?" He said, "What? What? Where?" I said, "Well, it already went by, a B-1," when I was coming into this airstrip out here a couple years back. So -- and you can see the afterburners at night, you know, when they go. If you aren't familiar with that, it will make you stop and see the afterburners

2124 (cont'd)

on the B-1s at night.

So, you know, that expansion, I kind of oppose even the drones, you know. That's the economy for Senator Thune and the congressional people here want

SO-25

to keep Ellsworth alive. Because Ellsworth almost went under a couple times. But you guys got in that fighter wing and now I think you're bringing in the drones. Where are they gonna fly?

AM-17

And one thing about the Air Force when they're overseas in combat zones, there's always collateral damage. There's always old people and women and children that get killed indiscriminately. And that's the truth. You know, let the truth be told.

So any more expansion into our territory, I stand opposed to it. I think you guys already, you know, are doing what you will, but for the record, I stand opposed to your expansion. (Speaking in Native Lakota)

2125

CHAIRMAN KECKLER: DeAnna.

MS. DEANNA LEBEAU: Thank you, Mr. Chairman. Good morning. My name is DeAnna LeBeau. I'm one of the newly elected Council representatives that Mr. Vance was referring to. I'm from District 6 on our reservation.

I would like to say good morning to the officials that are here today. Good morning, Colonel Gregory, Colonel Eldridge, Ms. DeVine. Thank you very much for being here.

2125 (cont'd)

I have some questions I would like to ask you.

I'd like to get a clarification. You said that you're here today because of the requirements under NEPA; is that correct?

MS. DEVINE: Yes, ma'am.

HEARING OFFICER GREGORY: Yes.

MS. DEANNA LEBEAU: Okay. So I understand that you have to take public comments, those are all part of NEPA requirements, but I guess please just clarify this for me, can we say no? NP-1

HEARING OFFICER GREGORY: You can make any public comment you would like, but this is not -- the decision-maker is ultimately FAA, correct?

MS. DEVINE: Yes. The Secretary of the Air Force level.

HEARING OFFICER GREGORY: SECAF. The FAA controls the airspace.

MS. DEANNA LEBEAU: Okay. But I mean --

HEARING OFFICER GREGORY: But certainly you can make a comment as the other gentleman did that he is opposed. Certainly.

MS. DEANNA LEBEAU: No, I understand that. That's what I was saying, can we say no.

HEARING OFFICER GREGORY: You can say no for the record and that would be considered.

MS. DEANNA LEBEAU: Can we forbid you from NP-1

2125 (cont'd)

being in our airspace? We cannot; is that correct? NP-1

HEARING OFFICER GREGORY: The FAA again has control of the airspace, right.

MS. DEANNA LEBEAU: Okay. The other thing you were talking about with this chaff, you know, I understand you said that the probability of it starting a fire is low, but if it did start a fire, who puts it out? I mean, other than the fact that our local fire department's gonna respond to any fire emergency, but, you know, would you in fact be responsible for that, too, if it was determined that indeed the chaff did start a fire? SA-5

MS. DEVINE: Actually the flares --

CHAIRMAN KECKLER: Can you come up and speak into the mike when you're asked questions, please?

MS. DEVINE: Do you want to address the questions?

COLONEL ELDRIDGE: I think you understand the legal.

MS. DEVINE: Okay. The chaff would not start fires. The flares would be above the 2,000 feet. And what Ellsworth Air Force Base would do would be to have agreements with local fire departments and -- you know, to do the immediate response, the Forest Service and the same as wild fires are today.

If there is damage caused by a fire, then you would submit a claim through the Ellsworth Air Force Base

2125 (cont'd)

Public Affairs Office and document that.

MS. DEANNA LEBEAU: Okay.

MS. DEVINE: And they would start the process.

MS. DEANNA LEBEAU: Okay, thank you. I was looking at this map, too, and I just have a couple questions. I'm just curious. The one that you handed out to us. I see there's a bunch of little arcs on there and some of them seem to be close to cities, such as Sheridan, Gillette, Dickinson. How come there's these little arcs that are carved out?

MS. DEVINE: Little round circles?

MS. DEANNA LEBEAU: Yeah.

MS. DEVINE: Okay. That is airspace that is for the major airports, and that is their approach and departure corridors. So those arcs around it are 35 miles around some of them and that's dependent on the size of the aircraft into and out of the airports. So that is protecting for flight safety the commercial airports.

MS. DEANNA LEBEAU: Uh-huh, uh-huh, okay. And so the part where you're actually gonna be entering over Cheyenne River is just a little -- it looks like the northwest corner of Ziebach County; is that

correct?

MS. DEVINE: Yes.

MS. DEANNA LEBEAU: And that was part of -- what did you call them? There was Powder River 1, Powder River --

2125 (cont'd)

MS. DEVINE: 4.

MS. DEANNA LEBEAU: So --

MS. DEVINE: It is Powder River 4, correct.

MS. DEANNA LEBEAU: So eventually it would encompass this whole area; is that correct? If the -- if that's what the FAA approves.

MS. DEVINE: Yes. The area that is underneath. There's four individual Military Operation Areas, 1, 2, 3, and 4, beginning from the west. I should have gone this way, I think. (Indicating)

MS. DEANNA LEBEAU: Okay. All right. You know, I think, you know, what they're doing, I guess this is my public comments, Council, you know, is of paramount importance, you know. I understand, you know, what my colleague said over here about our ancestors and, you know, if it wasn't for all them, you know, we wouldn't be here. The amount of territory that we've managed to retain, you know, we need to hold on to as stridently as we can. However, I always feel for my own self, you know,

that we need to think about our future. You know, we need to think about culturally, you know, seven generations ahead of us. I feel this is very important, especially, you know, for our troops over in Afghanistan.

One of my relatives and a close friend of mine actually, too, she lost her son over there. So I think it's real important. Thank you.

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CHAIRMAN KECKLER: Thank you, DeAnna. Council Robin?

2126

MS. ROBIN LEBEAU: Thanks for coming. My name is Robin LeBeau. I am a District 5 Council representative for the record.

I've been following this for -- since they proposed this in Dupree, South Dakota. They came for a hearing there. I stood opposed against it then, and for the record I want to say what I am opposed to. I am not opposed to -- against the military and all the efforts that are being done there to protect our freedom here, but we also have to protect what's here at home for us. And there's -- there's a lot of issues and the one thing that I -- I did get a response back from Ellsworth Air Force Base on the minuteman missiles that were placed from here to the Black Hills, and they still

GE-2

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stated that there is none located on our reservation. That's their word. That's not what I was told by my great-grandfathers. And my great-grandfather talked a lot about the sonic booms. He was a rancher north of Lantry there. He also talked about the Armstrong Gunnery Range. And until this day, they're still picking up 50-caliber shells there.

When my mom was little, they used to find live ammunition there. And I understand there's not gonna be any live ammunition, but I wanted to ask

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2126 (cont'd)

someone, the planning of this route, they told us this little portion here in the northwest corner of our reservation was just to -- for them to turn around; that these planes would be just for them. They wouldn't -- it would be a turn -- you have to have certain room because there's like a highway up there; is that correct? Is this just gonna be for so your planes can turn around?

COLONEL ELDRIDGE: I'm Colonel Bill Eldridge. I'm a pilot. The way the airspace is designed is so that we can do a lot of maneuvers, and a lot of those maneuvers involve a lot of turning airspace. Each of the sections is big enough, those four sections, and number 4 is touching up against your

Nation, would be used for doing a lot of turning maneuvers.

However, it's not to say that there might be aircraft going straight through there. But your Nation is sitting in the very, very corner so it's very hard for us to fly and stay over top that little corner. So it's kind of a difficult thing to answer. There might be aircraft going straight and level. There might be aircraft actually turning over that little point.

MS. ROBIN LEBEAU: Okay. My second question would be, according to this map, can't you move it further northwest so it's not even on that corner of our -- and again, I thank you for referring to us as

DO-7

2126 (cont'd)

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a Nation because that's what we are. We're the Cheyenne River Sioux Tribe Nation.

COLONEL ELDRIDGE: And, ma'am, my suggestion to you would be to make that public suggestion. We'll put that on the record. Say there is a recommendation if you'd consider moving this border, this eastern border, and maybe it won't interfere with your Nation as much. I would just recommend that you put that comment in and the Air Force and the FAA will consider all those comments and come up with a decision.

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MS. ROBIN LEBEAU: Thank you. I just want for the record that I am opposed to the Powder Bluff.

GE-2

CHAIRMAN KECKLER: Thank you, Robin. Maynard?

2127

MR. MAYNARD DUPRIS: Thank you, Mr. Chairman. My name is Maynard Dupris. I represent the District 3 area. I would like to ask the Colonels that are here, or I think there is a Major up there, I was in the military service also during the Vietnam War, my question to you people all is that, are you familiar with our treaties?

COLONEL ELDRIDGE: Sir, we've attended several of these hearings and a lot of them have included other Native American Nations, and during some of those hearings we've had some of the public comments talk about the treaties and address them.

But as far as, you know, other detail other than public comments that were referred to in those

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2127 (cont'd)

hearings, the federal government of course is familiar with the treaties, but I would say us as individuals probably could not speak to them.

MR. MAYNARD DUPRIS: Okay. The reason I ask that is because you're here for public comment from us, and as you all know, throughout the years, like Mr. In The Woods indicated earlier, that the treaties, we started out with a large land base and

it was downsized, another treaty and another act downsized down to our reservation here, and then the Homestead Act downsized it some more, so now we're struggling to keep whatever little Indian lands we have.

If you notice this map up here, all the yellow is deeded land and the tan or orange-looking is tribal allotted lands. So we're losing our lands gradually, gradually, and gradually.

And I really feel that the United States government is gonna do whatever they want to do. They come out here as a courtesy for public hearing, but if they want to take it like they have in the past over the many, many years they have taken our lands and we're down to, like I said, we're down to just a small amount of land that we have left. I am opposed to this also, and I really believe that this is just a formality that you come here to do this. But I think the FAA, they're gonna do whatever they want to.

GE-5

GE-2

2127 (cont'd)

And I hate to say that, but that's the -- that's the history of it all. The United States government has just been taking and taking and taking. And I feel that this is what's gonna happen again, but I am opposed to it. Thank you.

2128

CHAIRMAN KECKLER: Okay, Maynard. Merrie.

MS. MERRIE MILLER-WHITE BULL: Hello and good morning. My name is Merrie Miller-White Bull. I'm a District 4 Tribal Council representative and I represent about 1,400 voters on the Cheyenne River Sioux Tribe.

GE-2

And I'd like to say that I am opposed to this. I've always supported the military. I believe in our military and I know that they defend our country. And if there were ever a situation, they are the first ones on the scene. And a lot of young men and women have risked their lives for our country. But at the same time, I have to look at what's best for the people of the Cheyenne River Sioux Tribe and I took an oath of office. Just as the military takes an oath of office to defend their country, I took an office to defend the Constitution, the Tribal Constitution as well as look out for the best interests of the people of our Tribe.

And in my opinion, I'm usually forward thinking and I believe in economic development, I believe in our future and looking to the future and progress,

2128 (cont'd)

but at this point I keep thinking about our ancestors, the sacrifices that they made. I think

about our young men and women who have made sacrifices for the military. I think about the issues that have happened in the past. And I know we need to continue to look for the future and I know these are important things that the military is looking to do, but I think they need to look elsewhere.

PN-2

There is plenty of space. In my opinion, there is space elsewhere. We are a small Tribe. We are a poor Tribe. We don't have a lot of money. What we have is precious to us, whether it be land, whether it be air, whatever in our area, on our reservation, and we hold it very proudly and we're proud of what we've got. However little and minute it may be, it meets -- you know, it's for our people. And, if anything, I would hope that the United States government, the FAA, and the military will take a look at that.

EJ-2

So thank you, Mr. Chairman. I have to say I go on record as opposing. Thank you.

CHAIRMAN KECKLER: Thank you, Council. This is also for the public. Anybody who wants to comment, please raise your hand and come on up. Ryman.

2129

MR. RYMAN LEBEAU: Thank you, Mr. Chairman. My name is Ryman LeBeau, Council Rep for Cheyenne River

2129 (cont'd)

Sioux Tribe.

I appreciate you are folks coming out. My issue is similar to some of the other reps. I think it's insulting that whoever drew these proposals up didn't respect our airspace. And to -- to think that the Tribe wouldn't have a problem with this, you know, and just -- just draw this up and do it how we want and, you know, give them a hearing or, you know, take their public comment and be on their way, you know, I think that's very insulting to this Tribe, you know, considering what we've been through since the taking of the Black Hills and, you know, releasing our land and all the way to the Lawman Era.

NA-7

As another Council rep pointed out, our land is diminished within these boundaries, so of course we're gonna have an issue with this. And if we didn't speak out against this, we wouldn't be leaders. So in doing so, I do my job as a -- as a Tribal leader here. I -- I really oppose this and I think it's insulting to this Tribe. So I thank you for your time.

GE-2

CHAIRMAN KECKLER: Thank you, Ryman. Ardys.

2130

MS. ARDYS COOK: Thank you, Mr. Chairman. My name is Ardys Cook. I am Council Representative for

2130 (cont'd)

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District 1. In District 1 are the communities of Dupree, Bear Creek, Iron Mining, Isabel, and Thunder Butte. The specific area that is identified on this map is north of Butte. I'm really concerned about the acreage of the -- on the map as to how many acres it's gonna affect. I don't see that on any of the maps where each area is contained to the acreage.

LU-6

I also would like to point this out, that there are -- on this map it specifically points out that the Crow Indian Reservation, the Northern Cheyenne Indian Reservation, the Standing Rock Indian Reservation, and the Cheyenne River Sioux Reservation are all identified. I'm wanting to know how the area was created.

I also believe that if the other Tribes had a hearing as well, I would like to read those or they be given to us because it affects our land. And one of the things is, is that one hearing was set in 2008 in Dupree, South Dakota, and there was very few people that attended because I don't think they realized or the word didn't get out like it should have as to the public hearing.

NP-8

The other thing is, I understand that there has been hearings within the Bison and Lemmon area and

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NP-10

up in that corner, and I was wanting to know what their viewpoints were as well. Because I know that there was farmers and ranchers that held these --

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2130 (cont'd)

asked for these hearings and they view-pointed their concerns. NP-10

I also wholeheartedly respect our men and women in service and for the protection that they give us and they provide for us, that our families and our tiospaye is safe. But I do honestly believe that if this portion that is affecting the Cheyenne River Sioux Tribe can be moved further or taken off your map, I would respect that wholeheartedly because of the fact that we have ranchers and farmers up in that area, both Native and non-native, and that we do have a butte up there that we are very proud of, it's the Thunder Butte butte, and it is also used as -- for ceremonial purposes and we are very proud to have that butte in the northwest corner. DO-7 LU-1

So my question is, is how many acres this is gonna affect up in that northwest area. It's not identified. I think it should be identified. And I think that we should be given the amount of acreage that that corner is gonna be taking up. Can I get an answer to that today? LU-6

MS. DEVINE: Are you talking specifically on

the reservation?

MS. ARDYS COOK: Yes.

MS. DEVINE: Yeah, we would have to recalculate that.

CHAIRMAN KECKLER: Ma'am, can you come up here, please?

2130 (cont'd)

COLONEL ELDRIDGE: Let's just say, ma'am, we can't provide you an answer to that today. Again, we'll accept your comments and then those comments will be addressed and reviewed as part of the whole process. And then at the end of all that, you know, the FAA will make a decision. But we can't really answer it today.

MS. ARDYS COOK: Mr. Chairman?

CHAIRMAN KECKLER: Continue.

MS. ARDYS COOK: Continue?

CHAIRMAN KECKLER: Yes.

MS. ARDYS COOK: Also I would like to know what happened to the information from the hearing that you set up in Dupree, South Dakota. I don't remember seeing that information been -- to be given back to the Cheyenne River Sioux Tribe, the government. And if it did, we never received it as Council representatives.

MS. DEVINE: Yes. The meeting that we held in

Dupree was what we consider a scoping meeting. And what we do, is we talk to individuals and we don't necessarily record as we are here at the public hearing. We take that information and we talk about it, what individuals provided us. We don't do it by name so it's not a written record as this public hearing is. And we use it to focus our analysis on things that are important to the attendees at those meetings as well as comments that are received

2130 (cont'd)

through the mail.

Now, we did receive comments from your Nation, written comments, and they are published in the back of the appendices of the Final Environmental Impact Statement. I believe you have a CD copy. And those comments are taken and we use them to help us analyze what the impacts will be and come up with a potential effect.

MS. ARDYS COOK: Could you answer why they weren't given back to us as a government right after the hearing? I know you took -- you just stated that you used them for the analysis, but why wasn't the analysis report given to Cheyenne River?

MS. DEVINE: We provided a copy of the Draft Environmental Impact Statement to the Cheyenne River Nation and to the Tribal Historic Preservation

Office.

MS. ARDYS COOK: I just have a closing comment. In regards to this project, I have to trust and be in agreeance to my colleagues that have spoken and with all due respect of the residents and our people and our future of the Cheyenne River Sioux Tribe. Thank you, Mr. Chairman.

NA-7

CHAIRMAN KECKLER: Okay. I've got Sharon next.

2131

MS. SHARON LEE: Thank you, Mr. Chairman. (Speaking in Native Lakota) Good morning. (Speaking in Native Lakota) I shake your hand with a good heart.

2131 (cont'd)

I'd like to welcome everyone here today. I'm Sharon Lee. I'm a District 4 Councilwoman. And I agree with the comments that were made by my colleagues today.

I'd also like to state that we're not against the military at all. My oldest brother Ron is an honorably discharged disabled Vietnam veteran. And when -- I believe that a lot of people don't know that when our Senator Tom Daschle was in office, he had a study conducted regarding Native American male veterans, and the results of that study were that 90 percent of Native American males in the United States are veterans, and also that 92 percent of

Native American males in South Dakota are also veterans. And that's the largest ethnic group, the largest percentage in the United States. So I just wanted to make that comment because I know that there's a lot of people out there that aren't aware of those statistics.

I agree with the comments of my colleagues. And I also would like to state that I am opposed to this. I am opposed to this. I don't believe it's in the best interest of the Tribe. And I'm just -- I just wanted to state I am opposed to it for the record. And I know we're not the final decision-maker, but I wanted to put my comments on record that I'm opposed to it. And I know we don't make the final decision, but I guess we just wanted

GE-2

our voices to be heard. So thank you. (Speaking in Native Lakota)

2132

CHAIRMAN KECKLER: Bob.

MR. BOB WALTERS: Thank you, Mr. Chairman. Good morning and welcome to our Great Nation. My name is Bob Walters. I am a District 5 Council representative.

First of all, is this considered a government-to-government consultation today? Is that what this is?

MS. DEVINE: No, sir.

MR. BOB WALTERS: No? Okay. Because if this is a public hearing, you know, we have over 16,000 membership on this reservation and they need to be advertised so the people could be here. There's only 15 of us here, plus our executives, you know, to make comment here, plus a few of our Tribal members. Some of our respected elders are sitting out there and I hope they will be able to -- be able to make a comment. Our previous Chairman Borland is setting in here today. I hope he will make a comment, and especially our elders that are sitting here.

NA-9

I went to the first meeting over in Dupree, South Dakota. I was with the Cultural Preservation Administration. Also, my colleague Mrs. Cook was over there. We made comments over there.

I guess I have great concern about, you know,

2132 (cont'd)

where -- we're all about our land base here. That's what we're about, is our land base. Our reservation is 2.8 million acres. And what we have is agriculture. We have ranchers. We have cattle, horses, buffalo. Some of them have sheep, I guess. That was one of our big concerns when we went over to Dupree and commented about, was the animals.

LU-3

But we even have a bigger concern because we have our culture, and our culture is alive and well on our reservation. Many of our people practice our culture. And we have, you know, our hanbleca, you heard Mr. Vance talk about it, and when we're praying on the hill and to have a plane go by that's going to distract you. I know because we seen it in the past.

NA-4

I believe this diagram could be changed, taken from the northwest part of our reservation, it could be moved. We have our Sundances. We have other ceremonies that happen throughout the year, not only in springtime, not only in the summertime, and this is a grave concern of mine.

DO-7

NA-4

I really appreciate all the comments that my colleagues made and especially to hear about, you know, the aboriginal lands, how big our land base was at one time and how it dwindled down into where we're at today.

I always say we never asked to be boxed in. We were boxed in. The federal government said, "This

2132 (cont'd)

is where you're gonna be, Cheyenne River Lakota Nation. You're gonna be here. Standing Rock Nation, you're gonna be here." We never asked for these things.

I sit on many different committees on the outside and I hear a lot of things from federal agencies, from governments, from the states, and I really have to agree with what Mr. Dupris said. All these public comments being taken, are they even gonna be considered? Because I know when we do work with other federal agencies, they come here and do a government-to-government consultation, a lot of times it's dropped in the garbage can before they even leave the room. They forget about us.

NP-2

And it's hard. It's hard to understand why. Because we are a sovereign Nation. We are a government of our own. The federal government is a government of their own. The state government is a government of their own.

So for the record, I'm not speaking on behalf of our people. I'm speaking for myself because public hearings should be advertised. Our people should be here to make comment. We have a lot of people on our reservation and we have a lot of people off our reservation.

NA-9

I, too, am not against the military. Many of my family members were in the military. My father, my uncles, my cousins, my brothers, many of them

2132 (cont'd)

were in the military. And we have a lot of Lakota,

Dakota, Nakota peoples in the military today, you know, and we've lost some of them in action, you know, from Iraq, Afghanistan. Sad but true.

So for the record, you know, I'm gonna oppose with my colleagues here today and see what happens, see what comes out of this in the end. Because to me, it's gonna happen anyway. That's the way things work. Thank you. GE-2

CHAIRMAN KECKLER: Thank you, Bob. Dixie.

2133

MS. DIXIE LECOMPTE: Good morning. I fully support the military. My son did time in Iraq. He was over serving our country.

But my greatest concern is the water. I represent all this water here. This is what I represent. (Indicating) And it's good to see that you had in your comment here, going through it real fast on this disk that you -- it says the Big Horn, Tongue Powder River, Little Powder River, Missouri, Belle Fourche, Cheyenne River, Moral, Grand, and Cannon Ball Rivers, you talk about the rivers in all that, it comes into the Missouri and the Yellowstone. That's part of what you have here. And my greatest concern is the water. PR-1

And it says in here, this disk that you gave us, the trends typically show a slight increase in

2133 (cont'd)

pH over the past 20 years. So I would like to see the data that was put together for your little disk. And I oppose it and I know my people that live along the water oppose it. So that's my comment.

PR-1

GE-2

CHAIRMAN KECKLER: Thanks, Dixie. Robin, you had your hand up.

2126 (part II)

MS. ROBIN LEBEAU: Yes, I wanted to put something else on record because, like Ryman said about an insult, I feel that this hearing was thrown on us; that according to the memo that we received on December 2nd, they said -- it says to call the Preservation Office for the time on December 9, 2010, during the Tribal Council session for a government-to-government presentation by Ellsworth Air Force Base, you know.

So the whole time I was under the assumption according to this memo that they were coming here to do a presentation. And I feel -- I'm still like, from the very beginning when I heard it was gonna be a hearing with a court reporter, I was upset. I think our Tribal attorney should have been here. I also think it's very important for Mr. Borland as our Trust Officer for the Cheyenne River Sioux Tribe to let us know what the BIA is going to do in looking out for our trust rights, you know, our

NA-9

land.

So I just wanted to make that -- aware of that.

2126 (part II cont'd)

NA-9

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I believe that they came here on -- and I don't like when people misrepresent and they're not misrepresenting the Powder Bluff, but they came here for a presentation is what we were told, not a hearing, not a public hearing. Thank you.

CHAIRMAN KECKLER: Thank you, Robin. Mr. Widow?

THE COURT REPORTER: Could you speak into your microphone, please? I can't hear you.

CHAIRMAN KECKLER: He don't want that mike.

THE COURT REPORTER: I can't take it then.

CHAIRMAN KECKLER: Okay.

(Off-the-record question from Mr. Edward Widow.)

2134

PN-2

COLONEL ELDRIDGE: Sir, I didn't catch your name. Mr. Widow? Mr. Widow. Mr. Widow's question was why was the land chosen where it was as opposed to picking like over top of the Black Hills or the Big Horn Mountains out in Montana.

And the reason that land was chosen was for many, many factors, but one of them is how the existing air routes that go into major population centers are, so that's why it looks very triangular

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and very boxy, if you will. So part of the consideration was existing air routes and existing air traffic, as well as other areas -- that area is flat so it makes for a good training area.

The western part of the area that we're

Page 59

2134 (cont'd)

requesting the expansion does have some mountainous areas and that helps out with our training, too, but we need to make sure both flat areas as well as mountainous areas, and working towards the south towards the Black Hills wouldn't have worked.

MR. EDWARD WIDOW: Another question.

(Off-the-record question from Mr. Edward Widow.)

COLONEL ELDRIDGE: Mr. Widow's question was, as the aircraft fly, are they loaded or are they empty. And, sir, the aircraft would be empty. We would not carry ammunitions at all in this airspace.] AM-30

MR. EDWARD WIDOW: Thank you. I just want to tell the Council that, remember the other day I told you about Pearl Harbor? Do you remember that? You wasn't born then. These guys weren't born. All of you probably wasn't born. And what happened 70 some years ago? All the -- all the personnel people, military, they were laying out in the beaches sunning theirselves and yet -- I can understand that

the Air Force -- why they're practicing flying low. You know that. You know, back in them days, Japanese, they figured it out. That's what they did. They would fly low right under the radars and just about wiped out the United States, Navy ships, military people, Marines. Oh, they killed a lot of people. They sinked a lot of ships. Remember, we don't want to get caught like that.

2134 (cont'd)

Powder River - Eagle Butte.txt

Think about the generation that's coming behind us. You know, today it's China, North Korea; very dangerous people, nations. They got all the nuclear weapons there, nuclear submarines. We don't want to get caught. United States don't want to get caught like that.

So these Air Force people, Army, Navy, they take training every month, every day probably. (Inaudible) It could hit Seattle, the west coast coming for the United States. We never know. We don't know that.

And so, Council, just think about that. And, people, we don't want to get caught like that, all of them islands, beaches. That's all I want to say. Thank you. GE-9

CHAIRMAN KECKLER: Thank you, Ed. Is there any other comments? I got Council that hasn't spoken.

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Buddy? Todd? Frank?

MR. TODD WARD: I have no comment.

CHAIRMAN KECKLER: Buddy? 2135

MR. TED KNIFE, JR.: I went to the meeting in Faith when they had it there and I opposed it there.

CHAIRMAN KECKLER: Okay.

MR. TED KNIFE, JR.: My name is Ted Knife, Jr. I'm probably from the smallest district on the reservation, but, you know, I got a lot of relatives up in Standing Rock.

As one Nation, we say one Nation, we're

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2135 (cont'd)

supposed to include Standing Rock. And I was gonna say, move this whole thing up to the north, but we got relatives up there, too, in Fort Peck, the Assiniboine Tribe. They were with us when we battled down at Little Big Horn. And up in this area where -- up in the corner there, grandpa had land up there. Mr. Lafferty just started a memorial up there for children.

So I oppose this. And I don't have no deal with the military, but I know they gotta do what they have to do. I had a lot of relatives that were in World War II. And I had two grandpas in World War II. One got wounded in Vietnam. I had one relative that never came back from there. The

GE-2

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military has to do what they have to do, so it's kinda hard to say anything, you know. That's all I have to say.

CHAIRMAN KECKLER: Thanks, Buddy. Use the mike.

2136

MR. RAYMOND USES THE KNIFE, JR.: I just have a few short comments. Yeah, I grew up in that area that you guys are talking about. And I remember when I was a kid, I had a lot of these B-52s fly right over the ranch and right over everyday activities that we had, whether we were swimming in one of the dams or riding horses or whatever, and it never really bothered us as far as -- as far as impacting our daily lives. There's a lot of thunder

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2136 (cont'd)

and a lot of sonic booms, but I've never seen any fires created from some of these aircraft or never seen anything fall from the sky or -- but I did have a dream one night when I was a kid.

I dreamt that right above us, one of the nights after I woke up, that there was air-to-air combat right above us in that area. And it comes to remind me of what kind of day in life we're living today as American people here and abroad. We have to think about what our enemies are proposing right now. They want to get rid of us American people. And we

see that every day with 9 -- 9-11 happening and just in the news recently the attempted bombings right here in our own country.

So I think the more we are -- as the public are alert to the possible terrorism that's impeding upon us, it's eminent, you know. Maybe as it escalates, maybe we see some of it here right in our own territory. So the way I feel is that if any enemy aircraft, that it infiltrated our airspace here and anything the likes of an F-14 coming here trying to target some of our areas here, I would rather see some of our aircraft, you know, in this area. And if they're doing that for training exercises, you know, these aircraft really protect a lot of lives here and abroad.

The ground troops that are out there, they depend on us. They depend on a lot of this

GE-9

2136 (cont'd)

protection. So if they can train some of these young pilots to be ace pilots and to protect us here in our own homelands and abroad, I guess I'm for it because I've never seen any -- any problems where I lived growing up.

GE-9

GE-1

True, we have a lot of our own Native Americans in the military and they're out there. Their lives are in danger. Maybe some of them are pilots. I don't know. But those are my comments. Thank you.

2137

CHAIRMAN KECKLER: Thank you, Raymond. Frank.

MR. FRANK THOMPSON: Thank you, Mr. Chairman. I wasn't gonna comment, but I'll -- I'll say that I didn't know that this -- I was not -- I will not state my name for the record because I am part of this Tribal Council, and if this is a court proceeding hearing, then we should have been notified to that effect that -- that it was gonna be a court process hearing because this may come back to haunt us at some point.

NA-9

And I don't think we should be putting our names on record. We're here representing the Tribe as a whole and we should be referred to as Tribal Council or Tribal government. I just want to make that comment for the record. But I won't state my name.

CHAIRMAN KECKLER: Todd.

MR. TODD WARD: I'm the same way with him. We represent the whole Tribe. As a whole, I gotta

2137 (cont'd)

respect my Tribe, what they are going with. I do like what you guys are doing as an Armed Forces. But when I was a kid, about lost my brother over a fly-by; about got drug to death. That's all I gotta say.

2138

CHAIRMAN KECKLER: Thank you, Todd. Marcella?

MS. MARCELLA LEBEAU: (Speaking in Native Lakota) Excuse me. I have laryngitis. What I said was, I shake your hand with a good heart. And my Lakota name is Pretty Rainbow Woman and my other name is Marcella LeBeau.

First, I want to thank the officers for their service. I had one of the greatest honors and privileges of my life to serve in the military. I've lived on this reservation most of my life except for my schooling and for my military service. I served in England, France, and Belgium.

My great-grandfather Mahtotowpa, Chief Joseph Four Bear, signed the Fort Laramie Treaty of 1868. That treaty has been broken and we lost our lands. And it has been pointed out that -- of the land that we have lost.

Today we have 80 percent unemployment on our reservation and we have the IRS in here taxing our people. There's something wrong with that picture. If we had the land that belongs to us, we wouldn't be bothered by the IRS. And we need to protect what we do have left even if it's the airspace.

2138 (cont'd)

And I appreciate all of our Council representatives supporting this. I'm grateful for

that. And I just wanted to comment that I am opposed to this and that's my comment. Thank you, Mr. Chairman. GE-2

CHAIRMAN KECKLER: Thank you. Do we have any other public that wish to comment?

2139

MR. JOE LAFFERTY: Good morning. My name is Joe Lafferty, Mnikoju Tribal member.

I'm opposed to this. But also in relation to our relatives up in Hunkpapa Mnikoju, in any other Indian Nation, we get a lot of these types of impositions placed upon our leadership and placed upon our membership, and whether it goes or not and when it does happen, we're never given the important part of being reported to everything that is happening as it happens. Because if we were to allow the Air Force to fly within our airspace, how would they account for the number of flights? How would they account for the amount of time used in our airspace? GE-2 GE-7 NA-6

And this relates to everything. But because this is the particular subject now, we are never giving -- given personnel within our Tribe, within our Tribal membership that would be I guess a reporting point for the Air Force or whoever it may be to keep us apprised of all of the goings-on and

2139 (cont'd)

all of the happenings so that we can follow through on it.

Because when they brought -- when George Custer brought the miners into the Black Hills and violated our treaty, from that day to now there has never been a proper accounting of the amount of gold that was taken out of our Black Hills and every other issue since then. We have to report everything that we do to the point of blood degree of who we are and we're given a Tribal enrollment number which our leadership has to keep track of every year and every birth and everything that happens here on our land, we have to report that to the federal government, but when the federal government wants to come on our land and do -- have things going on like this fly-over and use of our airspace, how much of that is going to be reported on a daily basis not only to us but to all the citizens here in the Northern Plains area. We really don't have nobody that updates any of us, but they sure want to take advantage and use it.

NA-8

So that would be my comment. I'm opposed to it basically because the federal government never accounts to any of us citizens, either Indian or non-Indian, the amount of use, the daily flights,

GE-2

2139 (cont'd)

et cetera, et cetera. So I just wanted to make that comment and that I am opposed. Thank you.

CHAIRMAN KECKLER: Thank you. Bryce?

MR. IN THE WOODS: Mr. Chairman, I'd like to give the floor to the Bureau Superintendent Mr. Borland to make some comments and then I'd like to make another comment.

CHAIRMAN KECKLER: Okay. Mr. Borland? 2140

MR. BORLAND: Good morning, Mr. Chairman, Madam Secretary, Madam Treasurer, members of the Tribal Council, and the general public.

First off, I'd like to congratulate the new Administration and new Tribal Council. I haven't officially went on record doing that, and I'm definitely looking forward to working with you.

I was just made aware this morning by Mr. Steve Vance that -- that the Air Force was going to be meeting, my understanding was a meeting with the Tribal Council. I was given this document which I think that everyone has a copy of. (Indicating) So for the record, if this is a public hearing, I was not informed as such.

NA-9

I'd also like to apologize to the elders, I see that there are many here that have not had a chance to speak, and for my speaking before they've had

that chance.

I'd like to relate a couple of quick stories. The first is, I, too, not only respect the military,

2140 (cont'd)

but my family has a deep tradition when it comes to the Air Force. In World War II we didn't have an Air Force. We had what was known as the Army Corps, the Army Air Corps. My Uncle Art Bridwell was the first Native American Air Force pilot. He served in the Pacific Theater all the way from the beginning of World War II right after Pearl Harbor. He graduated from -- as a matter of fact, he was a pilot before he went into the military, graduated from South Dakota State University, volunteered and went virtually straight into war, served all of the years of World War II, served as a Major in the U.S. Army Air Corps. He sent fighter -- he was a mission leader. He sent fighter pilots out on mission, went with them. He had actually more medals and awards than probably these gentlemen here today. I was noticing the numbers of ribbons that some of these guys had.

The thing of it was, our family only knew that Uncle Art was in the Army Air Corps. We had no clue until he died. And I always remember giving his obituary. The family chose me. I was inaugurated

as the Tribal Chairman on October 2, 1990. My uncle died the day before that. We buried him a few days later and I gave the obituary.

They asked me to open up his war trunk. He had this big green war trunk that he had kept under lock and key. And we opened it up. It was amazing the

2140 (cont'd)

amount of medals and awards and commendations that he had; articles and stories about his ex-wife. He kept them a big secret, never bragged about it.

He flew actually 21 different types of planes. After the war and up and to the point where we now have the U.S. Air Force, he actually was a trainer. That's what he did. He trained pilots on how to fly virtually every type of aircraft that they had.

Now, the reason I relate that is there's a little story about Uncle Art getting court marshaled. Interesting story when we're talking about flying on the reservation.

My Uncle Art was married to a lady from Florida and they had two beautiful children, and then he joined the military and he was over in the Pacific Theater fighting for the protection and safety of this country. His wife was killed in a car accident and they wouldn't let him come back. You just can't fly from God knows where he was at and come home for

the funeral. As a result, his two children wound up being kept by my Grandpa Bridwell. Grandpa Bridwell as many of you may know him, Oscar Bridwell, he was married to Mary Fatting Sitting Crow, and they -- or excuse me -- Sitting Eagle and they kept these little babies down at La Plant.

So eventually after a year or two they let him come home, and his mission was to fly from Seattle a load of soldiers down to we were told somewheres

2140 (cont'd)

down in Texas and then from there back to wherever he was supposed to go and then back to the Pacific Theater. Well, he did so, except he took one big, giant detour and landed that big old plane full of soldiers on a little dirt road by La Plant. Well, first he stopped in Dupree, okay, looking for his kids and then he stopped in La Plant.

Well, anyway, he got court marshaled. He was a Major. The court marshal knocked him down to a Captain. He went back on the line and got his rank back.

But I heard Mr. Widow talk about Pearl Harbor. It made me think about my uncle. You know, I can remember many, many stories that my uncle told me, but he never told me about any of that. My grandma told me those stories later.

And, you know, I think about we've had this relationship with the United States government, especially the military, going back to the first treaty that the United States ever, ever, ever passed. The new Continental Congress passed a treaty with the Delaware Nation. That was a treaty of war. They needed the Delaware Nation to help fight against the King of England. They needed the military support of the Delaware Nation. And had it not been for the Delaware Nation and many other Native nations, and this is a little history lesson for the gentlemen here and ladies from our military,

2140 (cont'd)

we might all be paying taxes to the King of England yet today.

It's a known fact and well related by not only Senator Daschle but Senator Dan Inouye who himself is a highly decorated soldier of World War II, the Native Americans are the first to volunteer in time of war and in greater numbers, I heard it said here, than any other ethnic group, any other American group.

And I told Senator Inouye, we do that simply because this is our country first and foremost. This is our land. We were here long before anybody else. We have a double reason to fight for this

country like my Uncle Art did, like my Uncle Ray Marshal.

Uncle Ray also joined the Army Air Corps in World War II. He went all the way through Korea, served in Korea, and ended up his career in the United States Air Force with two tours of duty in Vietnam.

You know, we have this long history of fighting for this country. I really would like to encourage our comrades here in the military that the next time that they come on to an Indian Nation, that they take the time to read the treaties. Go back to the Delaware Nation Treaty. There's 725 treaties that you can read.

At the very least, the Sioux Nation deserves to

NA-7

2140 (cont'd)

have the respect given that when you come on to -- and this is one federal agent to another -- on to the reservation, to understand the audience that you're talking to and the laws that we were told are the supreme law of the land, which is the treaty.

When Lewis and Clark came out here in 1805, they respected the Lakota Oyate so much that before they would cross that river, they cut a treaty, go back and look at it, the Treaty of 1805, to cross over into what they recognized as the lands of the

NA-7

Lakota, the Dakota, Nakota. They were military sent on a mission from the President. Almost all treaties after that with the Lakota were signed by generals and military.

So again, I would encourage the United States Air Force out of respect to our people to do the same. Study those treaties; understand the importance and significance to our people.

Finally, from the perspective of the lands that I'm entrusted to watch over as a trustee, my concern would be firefighting naturally. That's a concern that -- you know, fire knows no boundary. I don't care if it's just Meade County or Corson County or Hawkin County or any of the counties, firefighters -- excuse me -- fires out here have been known to reach ten, 20,000 acres in nothing -- nothing flat.

SA-5

Also, I would advise the Council, you own

NA-7

2140 (cont'd)

480 acres of land in the Black Hills on the Wyoming side. That needs to be addressed, needs to be looked at. That is something that -- that we -- we still have a job to do, to take that into trust. And that's a job that I hope and pray that this Chairman and this Council will take on as a task.

So I have a concern as well and I would hope

NA-7

that, you know, if this does proceed ahead, that the Air Force would sit down with both the Tribe and the Bureau of Indian Affairs and begin the negotiation of a memorandum of either agreement or understanding on what is gonna happen, especially when it comes to firefighting, any kind of things, debris left behind.

SA-5

On a lighter note, one last story and then I'll leave. When I was just a little boy about eight years old, true story now, don't hold me to this but it's the truth, my Grandma Carrie and my Aunt Mary Long Break, they went turnip digging down in Armstrong County. Many of you remember where Gene Long Break then used to have a place down there. Well, anyway, they went turnip digging and us kids always had to help.

Well, what's interesting is, we dug up more than just turnips. We dug up a bunch of bullets, too, some great big ones. I always remember that bullet looked to be that big to me. (Indicating) It was a huge bullet. And we had several of them.

2140 (cont'd)

So we threw them in the trunk and got back down to Ash Creek. And my grandpa seen them bullets and he took them away and he put them -- I seen where he put them. He hid them up on a shelf, okay.

Well, one of my cousins come down that summer, and I crawled up there and dug that -- one of them big old bullets out. And he had a vice on his bench, his workbench, so we took that bullet and we put it in the vice and jacked it down as tight as we could get it, kinda aimed it out the door, I can still visually see that tractor sitting there today, and we took a big old hammer, you know, kids, we're just little kids, and we were bound and determined to shoot that bullet off and with a little luck maybe hit that tractor, okay?

So we hammered and hammered and beat on that bullet, bent it up every which way, and it wouldn't go off. Great big old bullet, okay? Well, I guarantee if that bullet had went off, I probably wouldn't be here today. If the bullet didn't kill me, I guarantee you my grandpa would have if I'd have hit his tractor.

So this is some of the stuff that our people still experience today. You know, we're still cleaning up from World War II, that site down there. And I would hope that if this were to happen, that in the future, you know, that -- and I know how these things go. Kinda get your foot in the door

2140 (cont'd)

kinda thing. The Badlands, the Oglala has lost a

huge amount of land for gunnery ranges. You know, I would just hope and pray that, you know, something be taken into account that if one of the bombers went down and there was debris scattered, you know, that these things would be mitigated unlike the days of old.

SA-20

So with that being said, I thank you for the time. I didn't realize that this was like a hearing or a public hearing. And for the most part, most of the comments that I made were my own personal comments and I'd like to leave them as such.

Again, thank you, Mr. Chairman, for this time. Thank you.

CHAIRMAN KECKLER: Bryce?

2124 (part II)

MR. IN THE WOODS: We'll give the Superintendent a new name. Windy Boy.

Again, greetings to the Air Force. And I remember the Yakima Fire Center out in Washington, we were out bullwhacking below a butte. It was called Squaw Tooth Butte. I took offense to it and some of the sergeants there were saying that. "That's Squaw Tooth Butte up there." They told us not to go up there.

But that night when everybody went to sleep, I went up there. And it looked like a butte, but when

2124 (part II cont'd)

you got on top, there was like a ten-foot drop, you know, where it was probably a burial site and they removed all the, you know, all the human remains on that burial site.

That was my first being sitting there on that butte that they called Squaw Tooth Butte. And I was very offended to that.

And, you know, there's rivers coming through, as Council LeCompte mentioned. Mni Wiconi we call it, water of life.

I was sitting hanbleca over here by Owl River. We call this Owl River, but on the map they call it Moreau River. And they call this Wakpa Waste, Good River. They call it Cheyenne River.

I was sitting up by Owl River in the vision pit, and I could come up and there was a lot of planes going by, a lot of commercial planes, and there was a plane that went by that didn't make no sound and it had a different shape and it wasn't a B-2. I don't know what -- I thought it was a UFO because it didn't make no sound. And a little while later there was looked like an AWAC that was right behind it. And when that went out of sight, then there was another military plane that was following that AWAC. It was a different type of plane,

military, Air Force plane.

So I was kinda wondering, what -- what that --

2124 (part II cont'd)

that plane that didn't make any sound that went by while I was on the hanbleca. Hanbleca is -- you can call it a vision quest. And I was down here on a hanbleca by the Good River. Again, I could see all these contrails. And the thing about contrails and what they're doing to the health of the American people here, you know, they won't say it, but there's a lot of respiratory all over this country.

I don't know if the Air Force polices the sky, but there was a plane, an old silver plane that flew low by the Good River and he started letting stuff out. And to me, I wanted to know what is that dumping out of his plane.

So the Air Force, you know, I believe you probably do monitor probably I'd say illegal activity that's affecting us here and close to our waters. I witnessed that. Because you sit out there, you know, for a couple days and nights so you can see what's going by. And it's disturbing. It's disturbing what's happening in our skies. And you think you're in a rural area, but there's a lot of things that are happening that are illegal. They gotta get rid of waste, hazardous waste materials,

NA-13

and they're always looking, you know, to get rid of that waste, whether it be nuclear or chemical or others.

And I know about ordnance, too, because, you know, we protected our ammo depot and one section

2124 (part II cont'd)

was, you know, nuclear weapons. That was kind of a wake-up call to me because there was one area that was covered, No Man's Land, you know, go in there, whole herds of buff -- deer would get wiped out because of the mines and stuff that are there, spotlights. We were protecting that ordnance, and there was nuclear and biological and chemical weapons that the Army had.

So, you know, that's just to give you a familiarity if you hear about our way of life and the way that we go out and -- and we call it hanbleca. It's crying for vision.

And on your Alternative A, the proposed action, and Alternative B and Alternative C and then the No-Action Alternative, a colleague asked are you guys gonna have a public hearing. Because right now to me, this is kind of like consultation now, government-to-government. And if the public here in this community -- because this is our hub, we view it as our hub, if there's gonna be a hearing, public

NA-9

hearing to hear the people.

But the No-Action Alternative, what is the majority of the response that you've had on Alternative A, B, C, and the No-Action Alternative? Can anybody answer that question? Do you have that data yet or...

Is there a majority? Is there -- on the responses on Alternative A and Alternative B and

NP-2

2124 (part II cont'd)

NP-2

Powder River - Eagle Butte.txt

Alternative C and then the No-Action Alternative, what is the feedback you're getting from these hearings that you're holding, the comments that you're taking? Because it sounded like when you were in Dupree, you weren't doing it as extensively as you are doing it now verbatim, but you were just taking comments and then you were sifting through those comments and then lining them up with what alternative would have the majority. And to me, that don't sound -- don't sound too good. Because, you know, you hear the majority here that are opposing it because of historical factors. Can you answer that question?

MS. DEVINE: We have had many commenters offer their preferred alternative. So in other words, just because the Air Force prefers Alternative A, each of the alternatives is analyzed independently

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so that they can be weighed against each other. And throughout the National Environmental Policy Act, we're required to respond to comments that we receive at these public hearings.

Our previous scheduled meetings under the National Environment Policy Act was to get a feel for what the public opinion was and also have them offer other alternatives to the action. Does that answer your question?

MR. IN THE WOODS: No. It sounded like a --

MS. DEVINE: A loop?

Page 80

2124 (part II cont'd)

MR. IN THE WOODS: It sounded like a -- no, it didn't really answer my question. I was just asking that -- I know the Air Force is pushing Alternative A, and I was just seeking if there was, from the public comment, if the public was -- is not opposing the Air Force like we're not but we're opposing, you know, this altogether.

But the No-Action Alternative, is there more public comments saying that just leave it as is? Because I know that there are ranchers and farmers here, you know, there's a story right there and my colleague over here Ms. Ardys, we both represent the area that this is gonna impact, Ziebach County, and that's one of the poorest counties here in this

country. And you hear colleague Merrie say that we're interested in economic development and if there was a bridge. We heard the Superintendent mention the MOA or MOU, a bridge between the Air Force and our Tribal government because of our gunnery range over here, the ordnance where they discriminately use live exercise on the reservations. Some of the officers aren't aware of that. You know, they did it in Pine Ridge and they did it here, too, where they were using live, you know, live exercise like the Yakima Firing Center.

And if there was some type of a -- like a relationship that could be a government-to-government relationship where -- you

NA-11

2124 (part II cont'd)

Powder River - Eagle Butte.txt

know, as part of an MOA, I think that would be a route that I think some of our colleagues would like to look at instead of being pushed to say yes or no, you know.

MS. DEVINE: Yeah, we actually have been in contact with the Historic Preservation Council in Washington, and they have recommended that they participate with us in the Section 106 Consultation.

So NEPA is only a piece of the requirement for the Tribes that are impacted, and we also have involved in that the National Parks Service, the

NA-11

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Forest Service, the U.S. Postal Service because they all have cultural interest beneath the area.

MR. IN THE WOODS: I understand that real well. And that's why we're talking today, is because of those laws, and I'm very familiar. Otherwise there would be no discussion here. You guys would be continuing, you know.

And the discussion I'm trying to drive at is a relationship with the Air Forces, Minot and Ellsworth, to assist us maybe in some projects in the form of -- I don't know. We look at national disasters here and the Air Force helped us out, you know. I know the Air Force has a lot of generators and, you know, to power those batteries and stuff. But any kind of help that would help us out in that form, where we had that relationship where I believe there is some surplus, could that be part of a

CU-4

Page 82

2124 (part II cont'd)

CU-4

Powder River - Eagle Butte.txt

discussion later on down the road. I know it's off of the fly zone, but I'm just trying to say we should bridge some kind of a gap here.

MS. DEVINE: I believe by establishing the relationship with the Ellsworth Air Force Base Tribal Liaison who has been appointed as Mr. George Stone over here, he has been working with Mr. Vance, and I think those are discussions that certainly

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should be brought up during that process.

MR. IN THE WOODS: Yes. Because maybe your Tribal Liaison, which a lot of federal agencies are getting now because of President Obama, the Commander in Chief's directive to have all agencies consult with Tribes and develop policy to consult with Tribes, I'm glad that's happening. And maybe we could talk about those, maybe some other issues in the form of assisting each other on the ground. That would be my comments, Mr. Chairman.

2141

CHAIRMAN KECKLER: Thank you. Is there any other comments from the public? If not, I would like to make a couple comments.

And, Council, I received this letter. It was from Donna Ray dated December 2, 2010, and it was a memo to -- actually it was to Robin and from Donna Ray concerning the appointment request.

Apparently what had been happening, is Mr. Vance and that office had been attempting to -- repeatedly trying to get the Air Force to come and

Page 83

2141 (cont'd)

meet with the Tribal Council since -- sounds like since May of 2010, but due to some issues that have been happening, that didn't happen.

And so this memo actually told that they were coming. And then I went and I dug it up and I found

it actually yesterday afternoon/evening. And it was, according to the memo, it was to be a government-to-government consultation and then there was gonna be a hearing at the Cultural Center.

And, however, when Steve got -- talked to Steve a little bit and -- Steve Vance, and determined that I think it is important for us as part of the public hearing to state our comments. I don't think -- there's nothing wrong with that. Because probably what happened, it would have been at the Cultural Center and nobody would have knew about it and, as a result, there would have been no comments. And so that's why I allowed this to occur.

NA-9

My questions was, was a notice sent out -- this can be for anybody -- was a notice sent out advertising this hearing that was scheduled for today? Because I haven't seen anything in any local papers or notices other than that. And then the response to that was, if the notice was sent out, did it meet the requirements specified by law for the hearing? Can somebody answer that?

MS. DEVINE: Mr. Arlin Whirlwindhorse was scheduling these meetings for us as a Tribal

NP-8

2141 (cont'd)

Liaison --

CHAIRMAN KECKLER: Okay.

MS. DEVINE: -- for us. And I hope he offered Mr. Vance for our assistance. We do not, we the Air Force, do not feel that we have the right to make the general public aware of meetings on the reservation. So I tried to work with the Tribal governments to determine their desires for public notification. So the answer to the question, sir, is no, to my knowledge.

CHAIRMAN KECKLER: Okay. Thank you. Steve?

MR. STEVE VANCE: (Speaking in Native Lakota) In June I received -- I made contact with George Stone. And this is where since that time we've been trying to schedule a meeting. And when they say government-to-government, that is you. You're that government, governing body. We made comments and stuff. They wanted to put up -- or schedule a public hearing, at which time I was turned over to another contact person and they just mentioned his name, Arlin Whirlwindhorse, and we were trying to get some material together for the public to view in which these came out. There's some out here on the desk -- or on the tables out here, some of the information if anybody wants to pick them up.

This was in August. (Indicating) This is the Environmental Impact Statement. This is in that CD

that's in this little packet here. There's a -- in the front cover here, there's a CD here. That has all this information here. And I think that's what some of you were questioning, is where is the EIS on this. Well, it's in that little packet there.

But these here we got, oh, maybe a couple weeks ago. They sent them in a box because the other information that they had they said probably wasn't relevant to get their message across. So Arlin sent a box of these down.

We contacted KLND and we had them broadcast a scheduled meeting, public hearing meeting that would be at the Cultural Center. We had -- in November we tried to set something up. Elections were out. We felt this would be a good time because we have new seating at Council. Because some of you, like I said, have been involved in this for a couple years already. So we figured this would be a good time to get the new seated administration up to what has been happening to the point of this Powder River Training Complex.

So that was however many times KLND announced it. I heard it several times on there. When the -- when the delegation got here, we were gonna meet up to the Cultural Center and have public hearings up

there until Council could allow a slot for Ellsworth to come in and present. So we set up up there, and then I got in contact with George Stone this morning and he said they were on the other side of the building here, on the BIA side. So I called Joe, we shifted everything back to down here, and that's where they had said 10 o'clock.

So again, like going back to government-to-government, you are the government, governing body here of the people. And I mentioned that -- you know, some people can't make public hearings. You know, the only contact they have is whoever relays the information or what they hear on the radio or what they read in the paper. This is an opportunity for people in outlying districts from Bridger to Blackfoot, you know, Glad Valley to Swiftbird to hear their representatives speak on behalf of them.

So I know a lot of people can't make it to, you know, a lot of these hearings, and this is -- I apologize for how short it was, but like I said, it was -- the information that was delivered to us for public input was this packet and we just got this, like I said, a week and a half, two weeks ago. So, you know, it is -- it was a pretty, you know, tight

scheduling here because we figure with new administration here, they're gonna take this back, the CIS, because it is a draft, so they're gonna

take this back, and they will come out with a revised draft.

The original cutoff date was November 13th. That went by. That's why they opened it back up again for Cheyenne River to make their comments up to January 3rd in writing. And here, you know, basically a lot of it has been, you know, spoken out. But after that, we have I believe -- what, 30 days? -- 30 days to comment on the revised draft.

So, you know, it's not cut in stone yet, but yet again, you know, they do need to hear, you know, from the public as to what their concerns of this was.

So I just wanted to explain that. So if you want to see the complete draft, it's in that little booklet there with that CD in it. 2141 (cont'd)

CHAIRMAN KECKLER: Okay. Thanks, Steve. What I'm guessing is probably gonna happen is that, Council, we'll address this with our legal and we will do a formal resolution or action concerning this and that will be -- you guys will receive that via resolution coming in to -- on our action

concerning this.

But at this point, I think this kinda ends the -- this part of the... But, Council, I sure appreciate you guys for coming. If there's any closing comments, you're sure welcome to come up.

HEARING OFFICER GREGORY: I'll just make a

brief closing remark to wrap up the formal part of this.

First, I would just say as a legal adviser, the law prohibits me from acting -- as a Hearing Officer, the law prohibits me from acting as a legal adviser to the Air Force representatives or from getting involved in the proposal, but I will say that each of your comments, questions, concerns become a part of the record and will be considered by the decision-makers.

I also apologize for any confusion regarding the nature of today's hearing, and I'm sure the Air Force representatives at the appropriate level will be looking into that.

Just to reiterate, this is not the end of the opportunity to make comments on this. You can submit written comments at any time during the process, but the deadline I have now is January the 3rd, 2011, but I heard mentioned earlier that may be

extended. I'm sure you will be formally notified if that is.

A few of you mentioned you'd like to see a copy of the Final EIS. If you'd like a copy, please let one of our representatives know and they'll be happy to provide a copy for you by mail.

And with that, I'll conclude this part of the hearing and turn it back over to you, sir.

CHAIRMAN KECKLER: Thank you very much. Thanks

for coming.

At this point we will recess for lunch, and we will come back at 1:30 and begin with the other business. Thank you.

(The Powder River Training Complex Hearing adjourned at 12:30 p.m.)

STATE OF SOUTH DAKOTA)
) SS. CERTIFICATE
COUNTY OF MEADE)

I, Teresa L. Fink, Court Reporter and Notary Public, South Dakota, certify that the forgoing Pages 1 through 99 are a true and correct transcription of my stenographic notes.

I further certify that I am not related to, employed by, or in any way associated with any of the parties to this action, or their counsel, and have no interest in its event.

Witness my hand and seal at Summerset, South

Dakota, this _____ day of _____, 2011.

_____
Teresa L. Fink, RMR
Registered Merit Reporter

My Commission Expires: 4-29-2016

1.7 AGENCY/ORGANIZATION/COMPANY LETTERS

Bracketed scans of agency, company, and other organization letters, as applicable, are provided in this section.

3001

To: Ms. Linda De Vine

From: Bowman North Dakota County Commissioners

Subject: Powder River Training Areas

We the undersigned Bowman County Commissioners and Auditor are very concerned about the proposed final impact draft presented at the public hearing, in Bowman, North Dakota, September 22. Bowman would be directly under Powder River Area 3.

With the Energy sector expanding in our area, we are in the process of building a new airport to accommodate these corporations and associated businesses. SO-10

Energy growth, small businesses, and agricultural commodity production are essential for the survival of our community. The expanded training areas would greatly impact this potential! SO-6

We hope the final recommendations include raising the Area 3 floor to 10,000' MSL, which would greatly REDUCE the impact to our flight operations. DO-4

Alternative C would be our next choice associated with the Powder River proposal.

In conclusion, we hope these recommendations and concerns are considered in the final Powder River Impact study. Thank you for your attention.

County Commissioners:

Bill Bowman
Rick Braaten
Kenneth Steiner
Pete Alkire
Lynn Brockel

Auditor:

Sandra K. Jirkle

3002

FROM : DAKOTA RURAL ACTION FAX NO. : 605 697 6230 Jan. 20 2011 05:29PM P1

DAKOTA RURAL ACTION
GRASSROOTS ORGANIZING FOR THE FUTURE

P.O. Box 549
Brookings, SD 57006
Tel 605.697.5204
Fax 605.697.6230

DRA West
1719 W. Main St., Ste. 303
Rapid City, SD 57702
Tel 605.718.4957

www.dakotarural.org

1/20/11
Linda DeVine, Program Manager
ACC/A7PS
129 Andrews St., Suite 337
Langley AFB, VA 23665-2701
Fax: (757) 764-1975

Dakota Rural Action is submitting these comments on behalf of our over 900 members. We have serious concerns about the proposed expansion of the Powder River Training Complex. Including:

- The reduction of the ceiling to 500 feet; PN-4
- The increased use of chaff and flares and the problems they may cause for cattle and wildfires; SA-5/BI-5
- The impacts of low flying on agricultural applicators, wind energy development and the health of livestock; SO-12
- The impacts of high speed, low flying aircraft on agricultural chemical drift; SO-2
- The process the Air Force will use to determine and deal with damage claims. It's preferred if local government is the mechanism used to deal with these issues. SO-12

Reducing the ceiling will have severe impacts on agriculture, the dominant industry in the region. Low flying planes will spook cattle, put producers working around the livestock at risk and cause concern for those applying agricultural chemicals. The Air Force has given these concerns little attentions claiming they won't fly when there are agricultural activities happening. However, agriculture happens every day of every year and more attention is needed in addressing these concerns. SO-2 SO-13

The increased uses of chaff and flares causes many concerns mostly surrounding the release of foreign materials onto private land and the impacts of these materials on the land and property. Fire from the flares is one of the most important concerns. SA-5

The process the Air Force will use to mitigate and deal with damage claims is also a concern. This process should really upon the local government agencies to determine the proper solution rather than an Air Force Committee. SO-12

Thank you for this opportunity to comment.

Sincerely,

Frank James

Frank James
Dakota Rural Action
Director

3003

Recreational Aviation Foundation
John McKenna, Jr., President

November 23, 2010

Ms. Linda Devine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Subject: Draft Environmental Impact Statement for Powder River Training Complex

Dear Ms. Devine:

The Recreational Aviation Foundation (RAF) is a national organization with over 2000 supporters representing all fifty states. One of our missions is to promote aviation safety for recreational pilots.

The RAF is in support of proper training of our armed forces. However, what is proposed in regard to the expansion of the Powder River MOA is unacceptable. Public safety is compromised, especially with the lack of adequate radar coverage and communication. The RAF recommends that serious consideration be given to using the MOAs nearer the air bases from which the planes will be flying, not increasing the risk to Montana pilots and their passengers with low level bomber flights. The "see and avoid" concept does not work with the rapid closure rates that will occur. The shear size of the proposed MOA expansion could encourage pilots to fly through enroute to their final destination. AM-3 PN-2 SA-7

Another mission of the RAF is to expand recreational opportunities for pilots. This entails the building of airstrips where there are recreational attributes. The RAF is concerned that if and when the organization wishes to build an airstrip under the MOA, there will be opposition from the MOA administrators. SO-10

Being familiar with the proposed expansion area, I know there are numerous ranchers who use their small aircraft to inspect their cattle and check stock water facilities. They are not in a position to account for low level, high speed training aircraft over their land. Once again, this proposal puts others at risk. SA-9

On behalf of the RAF, I urge you to delay the Powder River MOA expansion until all the concerns of Montana's aviation community have been resolved to the satisfaction of all concerned parties.

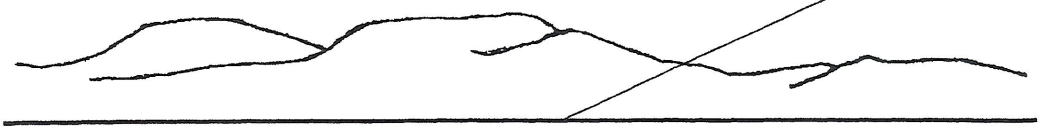
Sincerely,

John McKenna Jr.

John McKenna, Jr, President
Recreational Aviation Foundation

Cc: Senator Max Baucus
Senator Jon Tester
Congressman Denny Rehberg

3004



P.O. Box 429 • Hettinger, North Dakota 58639 • 701-567-2069 or 1-800-258-2069

RE: Proposed Buffalo Powder River MOA

Air Dakota Flite, Inc. in Hettinger, ND (HEI) has been in business for over 40 years. We are a FBO, with crop spraying as the mainstay of our business. For several different reasons, we would consider a MOA in our area to be a hardship to our business.

Our first area of concern is with crop spraying. Currently, our trade area for spraying is a radius of 80-100 miles from Hettinger, more north, east, then west, least to the south. We maintain 500' AGL when flying to and from fields, then lower for actual spraying. When our sprayers are loaded, they are near gross weight. Right now our concerns are wind and visibility. With a proposed MOA, our concerns are significantly increased. In the 1980's, there was a bomber route through our area using B52s and some fighter jets. B52s were relatively easy to spot, but even then, there were times, that our spray pilots had to change course in order to feel safe. It is also our concern that B1s and B2s will be more difficult to see by our pilots. Unseen aircraft, a loaded spray plane and the wake turbulence could add up to a major problem.

SO-2

SA-7

With our general aviation we have a couple concerns. The first involves our local pilots. Many of them are "Sunday fliers" or pilots who are generally out enjoying the country only during nice weather conditions. So, a MOA would seriously curtail their activity. A local businessman flies routinely, and it would be difficult to schedule his flying with a MOA. In Hettinger, we have a fairly active medical center. We have an average of 1-2 flights per week, bringing doctors to our clinic. These flights mainly use instrument approach and come even in adverse weather conditions. Most of this charter traffic comes from Bismarck, ND, but we do have one doctor that routinely flies in from Rapid City, SD. During the past 6 months, we have also seen an increase in air ambulance flights with an average of 2 per month. We feel that a MOA could affect our general aviation and the interest that is now enjoyed.

SO-5

Likewise, any transient flights to our airport will be seriously curtailed with a MOA. Pilots flying through our area are more likely to check the maps and decide to stay clear of our area. Our business will be reduced from lack of pilots using our facilities, fuel sales, etx. Our community also will lose business.

SO-6

Another area of concern involves our current and future pilots. In the past 30+ years, we've had an area north of Hettinger that we use for our flight instruction, a practice area for our students. If this area is listed as a MOA, we feel that it will deter the general public from checking into flight instruction. It would be difficult to concentrate on learning or instructing if you are worried about military traffic in the area.

SO-26

Serving The West River Area

3004

As a part of our business, we fly an aerial survey for wildlife. This is done for ND Game & Fish Department and we fly Adams, Bowman and Hettinger counties for antelope and deer count. This is a low level flight and as a pilot, you are watching the ground for animals, not the skies for military aircraft. SA-8

ADFI pilots also have a low level flight for highline patrol. Again, the pilots concern is looking at high lines, not for other low level traffic. A MOA would make our low level flights more dangerous to our pilots. Therefore, this is a great concern for us.

Another low level flight for us is our oil pipeline patrol. Our pilots fly this patrol at 500' AGL and below and are constantly looking downward for any oil leaks and or obstacles. They follow a marked area (trench line) that twists, turns, up and over hills, rivers, around train tracks that spans about 1200 miles of pipeline in southwest ND. We are dependent on weather for this flying and therefore do not follow any set dates. We fly Monday through Sunday, sun up to sun down. Many times, in past years, as with spraying, our pilots flying this pipeline have had to take actions to avoid military jets. Again, a big concern for us! SA-7

Last, but not least, I am concerned about the possibilities of a wind farm near Hettinger. There has been land leased for the past 4 years north of Hettinger and north of Gascoyne for the expressed purpose of a wind farm. So, the possibility of having renewable energy developed in our area is a distinct probability. The major hold up right now is that more investors are needed before the wind farms can proceed. I feel that having a MOA in our area would basically halt any renewable energy development in this area. SO-17

I recently attended an informational meeting at Bowman, ND. I met with Linda DeVine and feel that it was a good discussion. She told to resubmit our concerns at this time. I would like to see the ceiling for the proposed MOA be higher than 500 ft. It would be nice if there were established routes, so we would know where to be watching. There are a lot of questions that we still feel need to be addressed. We truly fee that this would be a hardship for our business and to our local flight traffic. At this time, with the information we have, we are opposed to a MOA in our service area. GE-2

Sincerely,

Charles Q. Lindquist

P.S. Are there any plans to have an informational meeting in the Hettinger, ND area? Also, I would appreciate some sort of response so that I know my letter has been received. My phone number is [redacted]

[redacted]

Charles Q. Lindquist

3005

November 10, 2010
Sent via Federal Express

Ms. Linda Devine
HQ ACC/A7PS
129 Andrews St. Room 337
Langley AFB, VA 23655-2769

RE: POWDER RIVER MILITARY OPERATIONS AREA

Dear Ms. Devine,

Please accept this correspondence as Allegiant's official comment on the proposed expansion of the Powder River Military Operations Area (PRMOA).

Allegiant Air currently offers non-stop, commercial air service to Bismarck, North Dakota from two destinations located in the Southwest region of the United States. It is our contention, based on a review of the Environmental Impact Statement provided by the United States Air Force, that the proposed expansion of the PRMOA will have a significant impact on our current flight operations.

Specifically, we have identified two general areas of concern with respect to the expansion. First, the expansion of the Powder River Military Operations Area raises serious safety concerns. Second, the expansion raises concerns about the efficiency of Allegiant flight operations to Bismarck.

8360 S. Durango Drive · Las Vegas, Nevada 89113 · 702.851.7300 · 702.851.7301 allegiant.com

3005

At Allegiant, the safety and well-being of both our passengers and crew is paramount. Thus, developments that present a safety risk are taken very seriously. Accordingly, we are concerned about the safety risks inherent in the proposed expansion. No doubt the increased presence of high-speed military aircraft in close proximity to flight paths of civilian aircraft increases the risk of such a mid-air collision. Admittedly, while the risk itself may be small, any increase in such a risk presents a significant concern. Further, the aforementioned risk is magnified by the fact that pilots may be precluded in certain situations from flying under instrument flight rules, thereby further increasing the risk. SA-1

Additionally, civilian aircraft risk encountering increased air turbulence caused by wake vortices from large military aircraft. While the risk of injuries resulting from such turbulence may be low, turbulence is uncomfortable and generally frightening for both passengers and crew members. SA-7

With respect to operational concerns, we believe that the expansion of the PRMOA will have a negative impact on the efficiency of each flight to and from Bismarck. Specifically, the increased size of the PRMOA airspace would require pilots to dramatically alter their flight path, resulting in both time and cost inefficiencies. For example, a pilot landing at BIS would be forced to fly around the area completely, or fly above the area and then descent rapidly once the aircraft was clear of the PRMOA. SO-8

Similarly, a pilot departing BIS to an Allegiant destination would be forced to maneuver around the PRMOA, or rapidly ascent after take-off in an effort to get above PRMOA airspace. Consequently, Allegiant would incur substantial increases in fuel charges driven by a substantial decrease in flight efficiency. SO-7

Further complications will arise when the PRMOA is active. During military operations, Allegiant pilots may be required to operate under visual flight rules (VFR). In inclement weather, or at times when visibility is low, Allegiant would have no choice but to take delays as flying in such conditions under VFR is prohibited. Delays to Allegiant aircraft result in significant costs to the company in terms of both revenue and reputation. SO-8

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Should the expansion of the PRMOA occur as designed, Allegiant would be forced to reevaluate its current flight schedule to BIS, and may ultimately determine that continued service of the market is no longer feasible in light of increased costs and decreased efficiency. Naturally, this would be a significant detriment to both the Bismarck airport and community. SO-10

Allegiant understands the need for adequate military training areas and respects the arduous and dangerous work the men and women serving in our Armed Forces perform on a daily basis. Further, Allegiant is a proud member of the Civil Reserve Air Fleet and enjoys the privilege of providing charter aircraft for the Department of Defense. Nevertheless, Allegiant believes the unprecedented expansion of the PRMOA will have a negative impact on Allegiant Air and the Airline industry serving BIS as a whole. Accordingly, Allegiant respectfully requests that the Air Force reconsider its proposed expansion and adopt the "No Action" alternative until a more suitable alternative is identified. GE-2

Once you have had an opportunity to review the foregoing, please contact me with any questions, comments, or concerns. In that regard, I look forward to working with you.

Sincerely,

E. Keith Hansen, Esq.
Manager- Airport Planning
Allegiant Air

Travel is our deal.

8360 S. Durango Drive Las Vegas, Nevada 89113 702.851.7300 702.851.7301 allegiant.com

3006

NORTH DAKOTA
Atmospheric Resource Board
A DIVISION OF THE NORTH DAKOTA STATE WATER COMMISSION

November 10, 2010

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

Subject: Comments on the Draft Environmental Impact Statement for the Powder River Training Complex

Dear Ms. DeVine:

The North Dakota Atmospheric Resource Board (NDARB), a division of the State Water Commission, is charged with the regulation of weather modification (cloud seeding) activities in the state of North Dakota. Each summer, the North Dakota Cloud Modification Project (NDCMP) conducts airborne cloud seeding operations to enhance rainfall and suppress damaging hail in convective clouds from June through August. Flight operations are conducted 24/7 on an as-needed basis, with total flight hours ranging from 85-145 hours per season. Both project aircraft are based at the Bowman Municipal Airport in Bowman, ND.

The NDCMP currently includes Bowman and part of Slope County (District 1), which lie under the PR-3 expansion of the PRTC. Also, Gaps B and C MOA/ATCAAs adjacent to PR-3 are in close proximity to the operational area of the NDCMP. NDARB is concerned that PRTC operations may impair NDCMP cloud seeding aircraft from carrying out their missions. AM-13

The NDCMP has a significant impact on the local agricultural economy. A 2009 economic evaluation shows that cloud seeding operations in the area affected by the PRTC proposal contribute $3 million annually in additional crop revenues and $9.2 million in gross business volume. SO-28

PRTC Flight Operations

The draft EIS recognizes weather modification and cloud seeding as an affected activity in the proposed PRTC in several sections. The general recommendation for resolution of any conflict between NDCMP and USAF aircraft when the PRTC MOA is active is stated in Chapter 4.9.3.1.2:

> "For non-emergency flights, such as fire reconnaissance, U.S. Fish and Wildlife (USFWS) surveys, Angel flights, and cloud seeding, the pilot could coordinate with

900 EAST BOULEVARD AVENUE, DEPT 410, BISMARCK, NORTH DAKOTA 58505-0850
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3006

> Ellsworth AFB to work to deconflict military operations. Weather modification flights need to respond rapidly to cloud formation and other meteorological conditions. Notification to Ellsworth AFB of the seasonable possibility of cloud seeding operations and notification of when and where cloud seeding was occurring would permit the Air Force to deconflict training missions."

Weather modification aircraft operations are primarily conducted under Visual Flight Rules (VFR) below FL180, however, Instrument Flight Rules (IFR) clearance is occasionally requested for "top-seeding" flights, which are typically conducted between FL160 and FL240. The draft EIS indicates that civil aviation would not be prohibited under VFR conditions even when the MOA is active, and that civil and military aircraft would operate under VFR see-and-avoid rules. IFR flights, however, would be prohibited when the MOA is active, a potentially significant impairment to effective cloud seeding operations.

This raises two questions:

- Will prior notification of Ellsworth AFB regarding active weather modification seeding flights in PRTC PR-3 deconflict the affected area under an active MOA to the extent that IFR cloud seeding flights are allowed?
- Will prior notification of Ellsworth AFB regarding active VFR weather modification seeding flights in PRTC PR-3 deconflict the affected area, or will civil and military aircraft operate under VFR see-and-avoid rules in the cloud seeding target areas during seeding operations?

AM-13

The proposed schedule for PR-3 Low/High MOA and PR-3 Low ATCAA is Monday-Thursday, 0730-1200 and 1800-2330 Local, and Friday, 0730-1200 Local. The expected daily use is three hours (MOA) and four hours (ATCAA) per day, respectively and 240 days per year. This constitutes a significant amount of time where USAF and NDCMP aircraft could be operating simultaneously.

Cloud seeding flights have been historically lower in number during the morning hours. This is primarily due to atmospheric stability that sets up overnight into the morning in a normal diurnal cycle. As the day progresses, surface heating begins to destabilize the atmosphere making the onset of convective clouds and precipitation much more likely. One way to significantly deconflict USAF and cloud seeding flights would be for the USAF to use PR-3 primarily during the morning block of scheduled time, as the likelihood of thunderstorms and cloud seeding flights is much greater during the

AM-13

3006

Ms. Linda DeVine
November 10, 2010
Page 3

afternoon and evening hours. Figure 1 shows recent NDCMP aircraft departure times by hour. The trough in seeding activities occurs from the early to late morning hours. AM-13

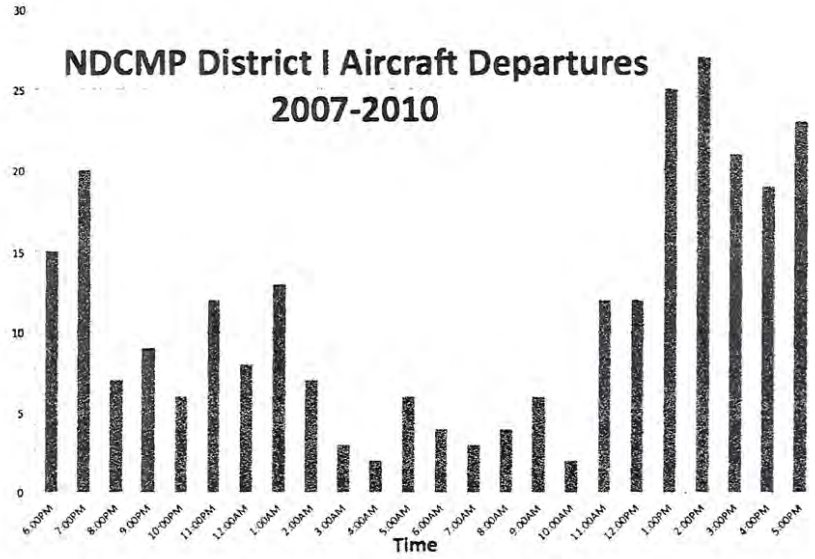


Figure 1. Total aircraft flight departures by hour for the seasons 2007-2010.

Radar Countermeasures

The draft EIS outlines in section 2.4.6.1 the planned use of chaff as a countermeasure to radar detection. The chaff fibers are said to vary in length from 0.3 to 1.0 inch. NDARB operates a C-band (5 cm wavelength) radar at the Bowman Municipal Airport to assist with weather detection and cloud seeding flight operations logistics. Chaff fibers of 1.0 inch (2.54 cm) are ideal for jamming 5 cm wavelength radar. Thus, it is entirely plausible to suggest that use of chaff during PRTC training exercises would produce high reflectivity radar echoes, which could be detected by the Bowman radar and not associated with clouds or precipitation. Further, prior research (Arnott et al., 2004) indicates that military chaff has very slow terminal fall speeds and can persist in the atmosphere for long periods, deposited many miles downwind. The draft EIS recognizes that chaff can be "detected by improved FAA radars, so to ensure that no chaff cloud SA-16

3006

interferes with ATC, chaff would not be deployed within 60 NM of airport approach radars."

- Due to the importance of radar during cloud seeing operations, will the USAF forgo the use of chaff within the same 60 NM range of the Bowman radar as it proposes with FAA radars?

SA-16

The proposed actions by the USAF regarding cloud seeding operations in southwest North Dakota help to mitigate concerns that PRTC activity would severely impair those operations. Further, proposed actions indicate that the USAF is willing to cooperate with existing users of the affected airspace so that all missions can be accomplished. However, NDARB requests further consideration of the aforementioned issues to ensure that this important and long-standing program can continue to be effective.

GE-11

Thank you for the opportunity to comment on the draft PRTC EIS. If I can provide further information, please feel free to contact me at 701.328.2788.

Regards,

Darin Langerud
Director, NDARB

References:

Arnott, W.P., A. Huggins, J. Giles, D. Kingsmill, and J. Walker, 2004: Determination of radar chaff diameter distribution function, fall speed, and concentration in the atmosphere by use of the NEXRAD radar. *Desert Research Institute*, Reno, NV, 30 pp.

3007

BP Wind Energy

BP Wind Energy, NA Inc.

700 Louisiana Street,
33rd Floor
Houston, Texas 77002

713-354-2100

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB
VA 23665-2769

November 11, 2010

Dear Ms. DeVine,

On behalf of BP Wind Energy I am pleased to have the opportunity to submit comments for the record regarding the draft environmental impact statement that analyzes potential impacts of the proposed Powder River Training Complex.

BP is a company that invests in the most diverse energy portfolio in the industry. In the last five years, we have invested approximately $35 billion in the U.S. to increase existing energy sources, extend energy supplies and develop new, low-carbon technologies. With that investment have come needed jobs, a strengthened U.S. industrial base, export opportunities for U.S.-manufactured goods as well as property and other tax payments to communities and royalty payments to farmers, ranchers and other land owners.

Today, BP Wind Energy is one of the leading wind developers in the U.S. with a portfolio that includes the opportunity to develop some 60 projects across 22 states. In South Dakota we operate the Titan 1 Wind Farm in Hand County from which NorthWestern Energy, an investor-owned utility and one of the largest providers of electricity and natural gas in the northwest quadrant of the U.S., purchases the energy generated under a long-term power purchase agreement. The Titan 1 Wind Farm is part of a large wind complex that has the potential to be built out to over 5,000 megawatts which would make it the largest wind farm in the world with a capability to provide clean, renewable power to over 1.5 million average homes in America. In Wyoming and North Dakota we have the potential to develop further wind facilities.

bp

3007

Wind energy is an important national resource. It is domestic, inexhaustible, clean, and affordable. Wind energy is important for our national security, energy security and economic security. But, if we don't quickly develop a better system for engaging with federal agencies on airspace issues that includes the opportunity to work with the Defense Department and the military service branches to develop mitigation measures and reach compromise, wind projects will continue to be imperiled and the nation will fail to meet its energy goals.

GE-11

The wind energy industry understands as paramount the protection of national security and recognizes, of course, that in some instances, depending on location, wind farms can impact military operations. Very often those concerns can be addressed without compromising either national security or renewable energy goals. Decades of experience in developing wind farms in the US and around the world have demonstrated that wind energy development and military training can, and do, coexist. The key is transparency and cooperation.

Over and above the capital investment, BP's wind projects pay out $6 million annually in royalty payments to some 400 landowners. In addition, we have employed nearly 3,000 workers during the construction of our projects, created over 130 full time jobs to monitor and maintain the wind farms and BP Wind Energy pays in excess of $9 million every year in property taxes across 8 states.

Wind energy investments represent a long-term "win-win" opportunity for BP Wind Energy and the States of South Dakota, North Dakota, Wyoming and Montana, their communities and private landowners. The very significant modification of existing Air Force training airspace proposed in connection with the expansion of the Ellsworth Air Force Base would seriously impede future investment in the development of wind power in the region, and would threaten the region's ability to realize its full potential as a key producer of clean, renewable wind energy for the nation.

SO-17

BP Wind Energy stands ready to work together with the Air Force and all other stakeholders to preserve both wind energy development opportunities and the military mission assigned to Ellsworth Air Force Base. Many thanks for your consideration of these comments and we would be delighted to address any further questions or comments that you many have.

GE-11

Sincerely,

Larry Folks
Chief Development Officer
BP Wind Energy

2

3008

Crook County Land Use Planning & Zoning Commission
P.O. Box 37
Sundance, WY 82729

Jeanne Whalen
Chairman

Nels J. Smith
Vice-Chairman

November 4, 2010

Ms. Linda DeVine, Program Manager
ACC/A7PS
129 Andrews Street, Suite 337
Langley AFB, VA 23665-2701

RE: Draft Powder River Training Complex (PRTC), Ellsworth Air Force Base, South Dakota, Environmental Impact Statement (EIS) – August 2010

Dear Ms. DeVine:

Thank you for the opportunity to submit comment on the PRTC Draft EIS.

Crook County again reiterates its support of the United States Air Force (USAF) in its vital efforts to maintain homeland security and defend the nation. We recognize and support the important role that Ellsworth AFB plays and understand the goal to upgrade and expand operations so as to optimize resources and training opportunities.

The proposed action, Alternative A, appears to address several of our initial concerns. We strongly support flares being restricted in release altitude to above 2,000 feet above ground level (AGL), and the flares not being deployed during extreme fire conditions. The release altitude restriction should help to minimize fire risk from flares hitting the ground that are still burning. When an accidental deployment or malfunction does occur, however, there needs to be full disclosure and immediate action taken to protect county resources. SA-5

We also support the procedure regarding emergencies that requires unimpeded access to and from the airspace, and the promise that, in an emergency situation, the military aircraft will avoid the affected area, move into another active airspace, or return to base in accordance with the agreed-to procedures. SA-19

We remain very concerned about potential adverse impacts to historic uses in our county. Crook County's economy is based in natural resource related activities (ranching, mining, logging, recreation). The ability of private property owners to utilize their land and resources remains crucial to the area's economic stability. If the proposed action directly or indirectly prevents, impedes or delays economic development in Crook County, such as wind farms, mineral/energy exploration and/or extraction, communications towers, or historic economic activities, actions SO-22 SO-17

3008

should be taken on the part of the USAF to work directly with Crook County to mitigate those impacts. SO-17

We are also concerned about a disruption in important commercial and private aircraft use during the large force exercises (LFE). Close coordination is imperative for all affected entities, to address safety and other concerns. SO-6

The one-month notice in advance of an LFE should be adhered to, and we expect that, when properly notified, the USAF will continue to respect reasonable temporary or seasonal avoidance areas, such as for special ranch operations. NO-10

We support close coordination between the USAF, Crook County and other affected communities so that impacts can be minimized and the benefits of an expanded training complex can be realized. We urge the USAF to establish a direct communication connection to Crook County so that accurate information and important feedback can be exchanged in a timely manner. Monitoring and evaluation of the proposed action should be ongoing and **must** include input from local communities. GE-11

We look forward to being contacted to establish a direct line of communication with you.

Sincerely,

Jeanne Whalen

Jeanne Whalen
Chairman

3009

BOARD OF COUNTY COMMISSIONERS
PO BOX 315***214 PARK STREET
EKALAKA, MONTANA 59324
PHONE (406) 775-8749 FAX (406)775-8750 EMAIL cccomms@midrivers.com

December 30, 2010

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

Dear Ms. Linda DeVine,

The Carter County Board of Commissioners would like to comment on the expansion of the Powder River Training Complex.

First, the Montana Governor, Senator and Head of the Department of Transportation do not believe there is "any thing in it for Montana", we disagree. Besides the many Montana troops serving in the Persian Gulf area, of which you provide air support for, Eastern Montana has some of the largest energy deposits in the world. Powder River and Rosebud Counties are sitting on one of the largest coal deposits in the world. Fallon, Dawson, and Richland Co are in the oil rich "Bakken" formation. Possibly more oil than the Middle East. As the world energy supplies continue to deplete, these reserves will surely look better and better to foreign countries. Without a viable air force to help protect these reserves of energy it will be all the easier for a terrorist from a foreign country to gain control. Therefore, along with protecting our troops, we feel there is something in it for Montana.

GE-1

Everyone is worried about the congestion of aircraft if the airspace is expanded. Most of Carter County has been used as a MOA every since World War II, without one near miss or mid-air collision. Expanding the airspace would only take some air traffic away from our area and spread it out over almost three times the square miles. The one concern we have is the lack of radar and radio coverage in the area. We understand, private and commercial aircraft would not be able to fly IFR through the area while the

AM-3

1

3009

MOA is in use. Would the Air Force be willing to work with the FAA and place some badly needed radio and radar equipment in the area to help solve some of these problems? AM-3

The Board of Carter County Commissioners is a three man board, we are all landowners and ranchers. Our prospective as landowners and ranchers is that there has been very little, if any, problem from these aircraft. If anyone has a problem, all they have had to do is call Ellsworth Air Force Base and ask to have their ranch put in a no fly zone. There are some ranchers who have asked to have this done during calving, lambing or other sensitive times for livestock; it has only taken one phone call to accomplish this. LU-7

We feel the benefits to the Air Force will out weight the sacrifices to the area affected, and are in favor of expanding the Powder River Training Complex.

James Courtney

Jim Courtney, Chairman

Bill Loehding

Bill Loehding, Member

Steve Rosencranz, Member

2

COMMISSIONERS
Box 846 - Phone 778-7107
Donald Rieger, Chairperson, Ismay /
Deb Ranum, Baker
William L. Randash, Baker

CLERK & RECORDER/SUPT OF SCHOOLS
Brenda J. Wood
Box 846 - Phone 778-7108

COUNTY ATTORNEY
Albert R. (Rich) Batterman
Box 1075- Phone 778-3006

JUSTICE OF THE PEACE
Nicole Brown
Box 846 - Phone 778-7128

3010

CLERK OF COURT
Jeraldine Newell
Box 1521 Phone 778-7114

SHERIFF/CORONER
Tim Barkley
Box 899 - Phone 778-2879

TREASURER/ASSESSOR
Faye M. Koenig
Box 787 - Phone 778-7109

FALLON COUNTY

BAKER, MONTANA 59313

COPY

RESOLUTION 11-05-10
RE: OPPOSITION TO THE PROPOSED POWDER RIVER MOA EXPANSION

WHEREAS, the Fallon County Commission is empowered, by Section 7-5-2101, MCA, to manage the business and concerns of Fallon County, Montana, as the Commission determines to be in the County's best interest;

WHEREAS, the Fallon County Commission has been notified of a proposed expansion to the Powder River MOA that will encompass an area including all of Fallon County;\

WHEREAS, the proposed MOA expansion will adversely impact Fallon County's economic development. It will limit the development of the local air corridor, regularly ground commercial and private aviation, interfere with local industry by increasing flight times and travel expense, and interfere with local agricultural operations and property; SO-7

WHEREAS, the proposed MOA expansion will adversely impact Fallon County's environment by increasing noise pollution and visual pollution, jeopardizing livestock herds and populations of wild game; LU-2 BI-4

WHEREAS, the proposed MOA expansion will adversely impact Fallon County's aviation safety by jeopardizing private pilots unused to dealing with military aircraft and protocols; SA-7

WHEREAS, Fallon County lies within a mineral-rich area, the continued development of which depends upon not unduly restricting local business operations;

WHEREAS, the costs of the local and regional impacts caused by the expansion of the MOA will far exceed than the proposed $8.5 million in savings realized by the U.S. Air Force. SO-17

NOW, THEREFORE IT IS HEREBY RESOLVED, that the Fallon County Commission hereby declares its opposition to the proposed expansion of the Powder River MOA, and urges the rejection of the U.S. Air Force's expansion plan. GE-2

Dated this 5th day of November, 2010.

ATTEST:

Brenda J. Wood

Brenda J. Wood, Clerk and Recorder

FALLON COUNTY COMMISSION

Donald Rieger

Donald Rieger

Deb Ranum

Deb Ranum

William L. Randash

William Randash

3011

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 10-28-2010

PLEASE PRINT

Based on the information available, the Board of Adams County Commissioners oppose the proposed expansion of the Powder River Training Complex. Attached to this comment sheet is a resolution, which was approve by the Commission at their special meeting on October 28th, 2010.

GE-2

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME: Howard Nelson, CHairman
ORGANIZATION: Adams County
ADDRESS: PO Box 589 602 Adams Ave
CITY/STATE/ZIP: Hettinger, ND 58639

Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format)
___ hard copy format
No, please do not include me in the mailing list for distributing the Final EIS. I do not wish to receive an EIS or further information.

PLEASE NOTE: This Draft EIS is provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) NEPA Regulations (40 CFR §§1500-1508), and 32 CFR §989, Environmental Impact Analysis Process (EIAP).

The EIAP provides an opportunity for public input on Air Force decision-making, allows the public to offer inputs on alternative ways for the Air Force to accomplish what it is proposing, and solicits comments on the Air Force's analysis of environmental effects.

When making an oral comment, please clearly state your name and the name of the organization, if any, which you are representing before you begin your comments. Please do not provide any other personal information, such as your home address and phone number when making an oral comment. Your oral comments will be used to develop a transcript and permanent record of this meeting. This transcript will be will be published in the FEIS. If you would like a copy of the Final EIS or other associated documents, you may state that on a written comment card or add your name and address to the mailing list.

Providing personal information is voluntary. If you choose to not provide personal identifying information, your comments will be given the same weight and consideration as any other comments submitted. Private addresses provided will be compiled to develop the mailing list for those requesting copies of the Final EIS. Only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EIS.

Please hand this form in at a public hearing or mail before November 13, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

3011

UNITED STATES AIR FORCE POWDER RIVER TRAINING COMPLEX RESOLUTION

WHEREAS, The United States Air Force and Ellsworth Air Force Base is proposing an expansion to its Powder River Training Complex, and

WHEREAS, there is concern among the citizens of Adams County and the Board of County Commissioners regarding the safety of the citizens if the expansion is approved, and

WHEREAS, the expansion has the potential to endanger the local pilots and aircraft that regularly fly within the airspace in Adams County for ranching and agricultural purposes, and SA-9

WHEREAS, because the citizens of Adams County enjoy the safety and tranquility that comes with the lack of population in our area, and LU-2

NOW, THEREFORE, BE IT RESOLVED, that the Adams County Board of Commissioners strongly oppose the expansion of the Powder River Training Complex within the boundaries of Adams County, and feel it is the County's responsibility to protect the safety, livelihood, and way of life of the citizens of the County. GE-2

Dated this 28th day of October 2010.

Adams County

Howard Nelson

Howard Nelson
Chairman

Attest:

Patricia Carroll

Patricia Carroll
Auditor/Treasurer

ADAMS COUNTY SEAL STATE OF NORTH DAKOTA

11/09/2010 12:33 FAX 14067783538 BAKER AIR SERVICE ☑001

3012

Baker Municipal Airport Commission

P.O. Box 1037 • Baker, MT 59313 • 406-778-7108

Ms. Linda Devine
HQ ACC/A7PS
129 Andrews Street - Suite 337
Langley AFB, VA 23665-2769

11/09/2010

Ms. Devine;

I have expressed my concerns & opposition to this expansion at both the scoping meetings & the EIS public hearings. I have also met with a committee and the Air Force in a private meeting. I feel this effort has fallen on deaf ears & the Air Force is only concerned with pushing this forward. I have asked at every meeting how IFR traffic can transition through and operate safely in this area without radio and radar coverage when it is active. The question has never been answered, because it cannot and will not be done. VFR transient aircraft will simply avoid this special use airspace whether it is active or not. That is the way VFR pilots are trained.

AM-3

AM-21

There are many problems with the EIS. Land values – not significantly impacted. How can you say this when there has been no studies, appraisals, or any thing else done but a simple statement. This goes for non-military aircraft airspace use, damage to property, wildlife, and economic impact as well. There have been no studies on any of these points to determine the true impact of this proposed expansion. The whole EIS is full of maybe, probably, possibly, and all the other vague terminology. The Air Force is not telling the whole story, just like it was originally proposed in the scoping meetings as only used 10 days a year for the LFE's. Now it is stated up to 44.5 hours per week!

SO-1

SO-22

NP-9

PN-5

Sage Grouse impact will be minimal & will acclimate to this environment? Mineral exploration & construction projects are currently halted during mating season. Bird strikes are seen as infrequent. The endangered species Whooping Cranes are known to migrate through this area. I guess if you kill a flock of them, oh well!!

BI-3

SA-10

As for water and soil pH, the EIS says it is neutral to slightly alkaline. I do not know where the Air Force gets their information, but the water and soil pH in this area are high to very high alkaline. Another case of a incorrect environmental information. Look around. What are all whites spots on the ground!!

PR-1

This area is very mineral rich and exploration and production companies travel frequently to this area either by airlines or private aircraft. We are currently expanding KBHK to handle these needs. We have spent approximately $5 Million on this airport with another $2-3 Million to be spent next year alone. What are we going to do with this airport when it cannot be used effectively and safely?

SO-10

11/09/2010 12:33 FAX 14067783538 BAKER AIR SERUICE 002

3012

Baker Municipal Airport Commission

P.O. Box 1037 • Baker, MT 59313 • 406-778-7108

The EIS states 285 based civil aircraft under this proposal. My count is over 600 with 214 in Montana alone, based on the FAA Aircraft Registry. The EIS also states 39 airports underlie this area. There are over 40airports in Montana alone. Again, false information. The EIS is incomplete & has not addressed the environmental concerns adequately. AM-4

VFR "See & Avoid" would be legal under this proposal but it will be flat out dangerous to both civilian and military aircraft to fly at the proposed speeds. Civilian aircraft will avoid this special use airspace like a plague. SA-7

Small airports will not survive this impact. Student instruction will be impossible as well as flat out dangerous. Fuel sales will dwindle. Jobs will be lost & the local economy will suffer. This proposal may save the Air Force $12 Million per year, but it will cost the state on Montana in excess of $100 Million per year in lost jobs & revenue. SO-26 SO-5

The opposition to this is expansion is huge. Letter groups (AOPA, MPA, MAMA, MATA, NBAA) consisting of over 500,000 combined members are opposing this expansion. Will you hear us? NP-1

I am not saying this expansion is bad or not needed. It simply does not belong in Montana or any other area where the impact will be so great. Montana has nothing to benefit from this expansion. PN-2

The No-Action Alternative is the only option that is acceptable to Montana. GE-2

Roger Meggers
BHK Airport Manager.

3013

CHRIS LIEN

November 15, 2010

Linda Devine, Program Manager
ACC/A7PS
129 Andrews St., Suite 337
Langley AFB, VA 23665-2701

Dear Ms. DeVine,

The purpose of this letter is to convey my support as Chairman of the Ellsworth Task Force for Alternative A of Air Combat Command's Powder River Training Complex Environmental Impact Statement, dated August 2010. GE-1

Being a third generation supporter of Ellsworth Air Force Base as a pinnacle of our nation's defense capabilities, I am aware of the necessity of our nation's armed forces to be able to successfully complete combat operations. Towards that objective, I am fully supportive of providing them the airspace in which to fully hone their combat skills so as to be able to both protect themselves and defeat our nation's adversaries in the most effective and efficient manner. GE-9

As the technologies of modern warfare have provided our forces the resources with which to optimize their weapons systems, it is evident that the minimal sacrifices and impositions imposed by such training are within the parameters of acceptable commitments of our citizenry. Accordingly, I am committed to the success of your initiative to provide the airspace required to successfully complete such training missions. My endorsement of Alternative A is further founded on the efforts Air Combat Command has made to accommodate those citizens affected by training flights and the knowledge that Ellsworth's leadership team will continue to fully consider special requests for such considerations. GE-11

Thanking you in advance for this pioneering work in combat aviation training, please do not hesitate to contact me as we proceed with the realization of the best training complex our nation has developed in the past fifty years.

Sincerely,

Chris Lien, Chairman
Ellsworth Task Force

23612 Wilderness Canyon Road, Rapid City, SD 57702 | phone 605.341.6232 | cell 605.545.3336

3014

CITY OF LEMMON

303 First Avenue West
Lemmon, SD 57638

Email: cityoflemmon@sdplains.com
Phone: 605-374-5681
Fax: 605-374-5789

November 9, 2010

Linda DeVine, Program Manager
ACC/A7PS
129 Andrews, St., Suite 337
Langley AFB, VA 23665-2701

Dear Ms. DeVine:

Enclosed is a copy of a resolution which passed before the City of Lemmon Council on October 4, 2010. Our concerns are not only for the residents of the City of Lemmon but our surrounding area as well. We are a rural area that enjoys the peace and quiet of the country. We feel that this will be an unfair burden and expense on our rural area.

Your consideration in not expanding the Powder River Training Complex to encompass the City of Lemmon and its surrounding regional trade area would be greatly appreciated.

Sincerely,

Neal Pinnow
Mayor

Enclosure

3014

City of Lemmon
State of South Dakota
Resolution 2010-5

Whereas, the United States Air Force has announced the expansion of the Powder River Training Complex to encompass the City of Lemmon and its surrounding regional trade area; and

Whereas, the City of Lemmon consists of many patriotic citizens that support our military forces with their personal sacrifice and moral support; and

Whereas, the City of Lemmon has contributed, along with the state and federal government, to the improvement and expansion of the Lemmon Municipal Airport at Ray Kolb Field; and

Whereas, the expansion of the Powder River Training Complex would adversely affect air traffic in and around the Lemmon area; and

Whereas, the interruption of air traffic for any specified period of time will undoubtedly cause negative economic impact; and — SO-8

Whereas, wind development and any other types of tower development may be stymied by the expansion of the Powder River Training Complex; and — SO-17

Whereas, our larger sister cities of Spearfish, Rapid City, Sturgis, Belle Fourche and larger cities lying outside of South Dakota including Dickinson, Bismarck, Miles City and Gillette will not be included in the Powder River Complex Expansion and unfairly targeting lower population areas to carry the brunt of this training area; and — EJ-2

Whereas, the City of Lemmon derives its economic base and existence from agriculture, including the production of livestock and management of thousands of acres of grassland that could be endangered by the increase risk of fire; and — SA-5

Whereas, agricultural producer's property values will likely suffer from the military activity that will take place in many cases five hundred fifty feet above their property, cause noise, inconvenience and a breach of quiet enjoyment of their property; and — SO-1

Whereas, the private property rights of area landowners will be infringed upon by the expansion of the Powder River Complex Expansion; and — GE-7

Whereas, other private property owners are compensated when the government devalues property and are deemed a taking; and — SO-1

Whereas, the Air Force has alternatives for training exercises and the expansion of the Powder River Complex is not necessary; and — PN-2

3015

City of Minot

Office of the Mayor

November 3, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Dear Ms DeVine:

As the Mayor of Minot, I would like to express my full support for the military to expand their airspace to perform readiness training over North and South Dakota. By enlarging the airspace in the region crews will be able to save time and money by training closer to their base. Certainly we want to use any opportunity to assist the men and women of our armed services to keep them ready for existing and future threats. I believe this is a great way to do just that. If I can be of any further assistance please don't hesitate to contact me.

GE-1

GE-9

Thank you,

Curt Zimbelman
City of Minot Mayor

CZ/tks

★The Magic City★

515 2nd Ave. SW • Minot, North Dakota 58701-3739 • (701) 857-4750 • Fax (701) 857-4751
mayor@web.ci.minot.nd.us

3016

Minot Area
Chamber of Commerce

1020 20th Avenue SW
PO Box 940
Minot, North Dakota 58702-0940

Telephone: 701.852.6000
Facsimile: 701.838.2488
e-mail: chamber@minotchamber.org
www site: minotchamber.org

November 4, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Dear Ms DeVine:

The Minot Area Chamber of Commerce is a long time supporter of the US Air Force. We have over the last number of years even proposed an expanded MOA in North Dakota for the exact type of training exercises that are envisioned to occur within the expanded Powder River Training Complex.

Having reviewed the Draft EIS, the Minot Area Chamber of Commerce supports the preferred Alternative identified in the process. We support this alternative for a number of reasons. First, the proximity of the training complex would allow the airmen flying the B-52 to train in a manner in which they would in real world situations. Also, the proximity to the training complex would reduce the costs of training in a time where budgets will continue to be tight and training is an important component to our airmen winning the fight. Additionally, the proximity to the training complex would also mean a higher quality of life for the airmen and their families because of less time away from home for a TDY on a training exercise. GE-1 PN-2

The Chamber did note a number of concerns identified by landowner groups located in and around the complex. We believe that those concerns can be met or mitigated by identifying avoidance zones similar to areas called out for avoidance because of Native American sacred grounds. Conceivably this could include round-up areas, birthing areas, watering holes and the like. We encourage the Air Force to pursue these types of arrangements with the affected landowners. NO-10

Again, the Minot Area Chamber of Commerce supports the preferred alternative identified in the draft EIS for the expanded Powder River Training Complex. GE-1

Respectfully,

Brekka Kramer
Brekka Kramer,
Chair of the Board

L. John MacMartin
L. John MacMartin, CCE
President.

Partners In Progress
The Minot Area Chamber of Commerce and You!

ACCREDITED

3017

Minot Area
Chamber of Commerce

1020 20th Avenue SW
PO Box 940
Minot, North Dakota 58702-0940

Telephone: 701.852.6000
Facsimile: 701.838.2488
e-mail: chamber@minotchamber.org
www site: minotchamber.org

November 1, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Dear Ms DeVine:

I am writing to you in my role as the Chair of the Military Affairs Committee (MAC) of the Minot Area Chamber of Commerce. When I'm not volunteering, I am the General Manager of Verendrye Electric Cooperative.

Having reviewed the Draft EIS, the MAC supports the preferred Alternative identified in the process. The MAC supports this alternative for a number of reasons. First, the proximity of the training complex would allow the airmen flying the B-52 to train in a manner in which they would in real world situations. Also, the proximity to the training complex would reduce the costs of training in a time where budgets will continue to be tight and training is an important component to our airmen winning the fight. Additionally, the proximity to the training complex would also mean a higher quality of life for the airmen and their families because of less time away from home for a TDY on a training exercise. GE-1 PN-2

As a general manager of a rural electric cooperative, I fully understand the concerns identified by some of the landowners located in and around the Powder River Complex. I believe that those concerns can best be mitigated by identifying avoidance zones similar to those called out for Native American sacred grounds. NO-10

Again, the MAC supports the preferred alternative identified in the draft EIS for the expanded Powder River Training Complex. GE-1

Respectfully,

Bruce Carlson, Chair
Military Affairs Committee

Partners In Progress
The Minot Area Chamber of Commerce and You!

ACCREDITED

3018

Verendrye Electric Cooperative

615 Highway 52 W. • Velva, ND 58790-7417 701-338-2855
1225 Highway 2 Bypass E. • Minot, ND 58701-7927 701-852-0406
Fax 701-624-0353 • WATS 1-800-472-2141
E-mail: rec@verendrye.com • Website: www.verendrye.com

November 8, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Dear Ms. DeVine:

Verendrye Electric Cooperative (VEC) has the privilege of serving the electrical needs of the Minot Air Force Base and a majority of the missile sites in the area. Not only is the USAF our number one key account but more important, we consider the men and women of the MAFB our friends and neighbors. In fact, a number of retired servicemen and their families live here in the Velva area. We certainly support the efforts to expand the MAFB's military training airspace and their flying mission.

Having reviewed the Draft EIS, VEC supports the preferred alternative identified in the process. VEC supports this alternative for a number of reasons. First, the proximity of the training complex would allow the airmen flying the B-52 to train in a manner in which they would in real world situations. Also, the proximity to the training complex would reduce the costs of training in a time where budgets will continue to be tight and training is an important component to our airmen winning the fight. Additionally, the proximity to the training complex would also mean a higher quality of life for the airmen and their families because of less time away from home for a TDY on a training exercise.

GE-1

PN-2

Again, Verendrye Electric Cooperative supports the preferred alternative identified in the draft EIS for the expanded Powder River Training Complex which would be a great benefit to the MAFB.

GE-1

Very truly yours,

Randy Hauck

Randy Hauck,
VEC Member Services and Marketing Manager

Your Touchstone Energy® Partner

3019

STATE OF SOUTH DAKOTA
M. MICHAEL ROUNDS, GOVERNOR

October 27, 2010

Linda DeVine
HQ ACC/A7PS (PRTC EIS)
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Dear Linda,

I am writing to express my support of proposed expansion of the Powder River Training Complex. Today's modern warfare dictates a higher level of training than ever before. I believe the expansion of the Powder River Training Complex is essential to the mission of the United States Air Force, the security of our country, and protecting the lives of those we put in harms way. GE-1

Sincerely,

M. Michael Rounds

MMR:ls

cc: Jeffrey B. Taliaferro, Col, USAF

STATE CAPITOL • 500 EAST CAPITOL • PIERRE, SOUTH DAKOTA 57501-5070 • 605.773.3212

3020

ExecutiveAir TaxiCorporation

A Premier Aviation Center

Date: 11-11-2010

RE: Powder River Training Complex

TO: Whom it may concern

Executive Air Taxi Corporation is a full service Fixed Base Operation (FBO) in Bismarck, ND providing a wide range of aviation services to the not only local operators but we service aircraft from throughout the nation that fly into the Bismarck Airport. Our services include Aircraft Charter Services with clients that fly to various destinations including communities that lie within the proposed Powder River Training Complex (PRTC) Airspace.

Our charter service includes providing air transportation of local medical physicians and medical personnel to much of the rural areas within the PRTC. Many of those transports are scheduled well in advance and bring much needed medical services to individuals that rely on having medical care brought to those communities. The active proposed MOA will cause the cancellation of those prescheduled flights. SO-5

Executive Air also provides aircraft refueling to many organizations from around the country who find Bismarck to be an ideal fuel stop due to our geographic location. This has a tremendous economic benefit to the airport, the Bismarck /Mandan communities and the entire surrounding region. Bismarck is the regions hub for air service, air freight, medical transportation and EMS medical services. The proposed MOA will have a negative effect on all of these operations and services and have a dramatic effect on our business as well. SO-10 SO-5

We also provide Emergency Medical Helicopter Services to the rural region. Although it is stated that EMS flights will have priority, those flights are most often non-scheduled and need to respond to an emergency on a moments' notice. The people who live in these remote areas rely on these services for their health and well-being and it is also a tremendous economic benefit to the entire region to have the emergency medical services available. SA-19

The area directly under the proposed MOA is also rich in energy production and with it requires the need for many companies to travel to this area by air. The proposed MOA will cause increased costs and delays by having to divert around the MOA. This will have a negative effect on their ability to efficiently conduct business here and that in turn will not be in the best interest of North Dakota. SO-8

Executive Air supports our military and our service men and women. We also reply on the airspace that is provided to all of us. Given the affect the MOA will have on our business, city, state and region, Executive Air does not support the proposal. Feel free to contact me anytime. Thank you. GE-2

Respectfully,

Paul Vetter

Paul Vetter, COO

PO Box 2273 · Bismarck, ND 58502 · phone 701-258-5024 · toll free 800-932-8924 · fax 701-258-2693 · www.executive-air.com

3021

HARDING COUNTY
KATHY GLINES, AUDITOR
PO Box 26, Buffalo, SD 57720

605-375-3313
605-375-3318 Fax
kathy.glines@state.sd.us

October 8, 2010

HQ ACC/A7PS (PRTC EIS)
Attn: Ms. Linda A. DeVine
129 Andrews Street, Room 337
Langley AFB VA 23665-2769

RE: POWDER RIVER TRAINING COMPLEX PUBLIC COMMENT

Dear Ms. DeVine:

The Board of Harding County Commissioners have directed me to submit a public comment on behalf of Harding County concerning the proposed changes to the Powder River Training Complex. While it is understood by the Board that it is vital to the security of our nation that this training be done, there is also concerns about the safety of our residents and the impact that the training will have on their livelihoods.

We would ask that the following be carefully considered and adapted into the Training Complex standards:

1. All aircraft will fly no lower than 1000' to ensure the safety of our local pilots that use aircraft for their day to day operations. PN-4
2. Local pilots will be notified of the training schedules to eliminate any confusion and possible conflict with local flying patterns. AM-12
3. All public and private airports and runways need to be identified within the proposed Complex training area and taken into consideration when developing the training pattern. Training aircraft must stay at least one mile away from the identified areas and stay at least 1000' above the ground. AM-4 PN-4

We would like to thank you for taking the public comments that have been submitted to you seriously. This is important to the people that the Board of Commissioner's represent and the safety of your pilots, as well as our people, and is vital to the success of this program.

As directed by the Harding County Board of Commissioners on October 5, 2010.

Sincerely,

Kathy Glines

Kathy Glines
Harding County Auditor

3022

THE INTERNATIONAL ASSOCIATION OF NATURAL RESOURCE PILOTS

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

11-9-10

I am the President of the International Association of Natural Resource Pilots and am responding to the proposed Powder River Training complex (PRTC).

Natural resource aviation is made up of aircraft operators using fixed wing and rotor wing doing aerial operations from surveys to enforcement. These operators are made up of state, federal and private organizations.

Our members and non members alike are concerned about safety and efficiency. The expansion of this airspace would cause flight delays and cancelations and with weather restrictions some work would simply not get done. I realize that this would not be a "Restricted Airspace" but operating in a see and avoid environment with closing speeds of 400 to 500 mph is unrealistic and dangerous. SO-8 SA-7

The IANRP opposes any increase in the size of the existing Powder River MOA and ATCAA and recommend the "No Action Alternative" GE-2

Jeff Faught
President IANRP
[redacted]

3023

LAWRENCE COUNTY COMMISSIONERS
90 Sherman Street, Suite 3
Deadwood, South Dakota 57732
Voice: (605)-722-4173
Fax: (605)-578-1065
Email: commissioners@lawrence.sd.us

November 9, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Rm. 337
Langley AFB, VA 23665-2769

Re: Powder River MOA Proposed Expansion

Dear Ms. LeVine:

I am writing on behalf of the Lawrence County Commission concerning the Powder River MOA proposed expansion. This matter is of great concern to the Commission.

In the last several years, over $10 million of federal/state/local taxpayer monies have been spent in furtherance of several projects at the Black Hills Airport/Clyde Ice Field. Improvement projects are ongoing and an additional $7 million (approx.) has been committed for current projects. As detailed in the bullet points below, the proposed expansion of the MOA shall have significant adverse economic impacts on Black Hills Airport. A subset of the adverse economic impacts is significant interference with air traffic in the region. SO-10

Of critical concern is that at the time data was being compiled for the Environmental Impact Study, the primary runway at Black Hill's Airport was closed for lengthening and re-construction. Therefore, it must be concluded that any such data collected during this period is inaccurate and requires re-evaluation. AM-4

- Black Hills airport ranks #5 of 34 public use airports within the study area for annual operations and is **not shown** on prepared maps.
- During the time data was compiled Black Hills airport's primary runway was closed for lengthening and re-construction with a total investment of approx. 10 million dollars.
- The County is currently moving forward with a full-length parallel taxiway project with a price tag of approx. 7 million dollars.

EQUAL HOUSING OPPORTUNITY

EQUAL OPPORTUNITY EMPLOYER

3023

- Owing to recent expansion at Black Hills Airport, the process of developing new LPV approaches to runway 13/31 for category A, B, & C aircraft is underway. IFR capabilities throughout this construction period have been curtailed or significantly reduced.
- Expanding the MOA to an area of 37,800 Sq. Mi. (Larger than the state of Indiana) will have a **dramatic effect** on air travel to and from the Black Hills Region. AM-6
- IFR traffic to or from any area north of the Black Hills will be **significantly impacted**, and such traffic may very well chose an **alternate destination** - even though the Black Hills region is the most popular destination for recreation/tourism within hundreds of miles. SO-9
- VFR "See and Avoid" as proposed in the planning document will result in increased risk to flight safety assuming a pilot is able to conduct flight under VFR conditions considering a closure rate of **800 plus knots**. (B-1 pilot stated 580 kt. Airspeed as normal within the MOA)
- FAR 91.117 requires a civilian pilot to reduce speed to below 250Kts. Anytime one is below 10,000 ft. to provide an opportunity to "See and Avoid" (Max. potential closure rate **of 500 Kts.)** SA-7
- Exemption #7960C authorizes the USAF to operate in the Powder River MOA "**Lights-Out**" at night to practice night vision goggle usage and yet we are told to feel safe flying through the MOA after dark VFR "**See and Avoid"?** AM-7
- As stated in the EIS, Radar coverage is **unavailable below 8000 ft.** which will provide no help for a VFR flight through the MOA. AM-3
- With the proposed MOA extending from 500 ft. AGL up to 60,000 ft. it will be **impossible for IFR** traffic to transition through this area when the MOA is active mon. thru fri. 6:00 AM till Noon and again mon. thru thurs. from 6:00 Pm till 11:30 PM or other times when activated by NOTAM.
- The three corridors along Victor airways would allow IFR traffic through below 18,000' except during Large Force Exercises. These corridors do **little to mitigate** the impacts to the Black Hills and most IFR traffic would generally fly above 18,000' due to weather as well as operating efficiency. AM-21
- Restrictions on IFR traffic through the MOA would not only have **significant economic impact** on businesses at the airport, but also to all commercial airline traffic that traditionally flies over this area as they are incapable of flying above 60,000'. SO-10
- The EIS does nothing to address **the economic impact** of this proposal other than stating a "Potential Economic Impact" to General Aviation. SO-22
- If the MOA were to be expanded as proposed, it can be reasonably expected that there will be a significant reduction in fuel sales at the Black Hills Airport. This will result in a SO-10

3023

loss of flowage fees collected. These flowage fees are used by Lawrence County to help offset the operational costs of this public use airport. SO-10

Accordingly, the Lawrence County Commission requests that the area of the proposed MOA be reconsidered not only to account for the fact that the primary runway at Black Hills Airport was closed during the data collection phase, but also that a more detailed study of the adverse economic impacts on the local and regional community must be completed. It is important that these impacts be identified and properly evaluated. It is expected that once an appropriate re-evaluation is made, it will support a reduction in the area of the proposed MOA area to include relief for Black Hills Airport. AM-4

Thank you in advance for your time and consideration in this matter. Do not hesitate to contact me should you require more information, or in the event questions arise.

Sincerely,

Connie H. Douglas

Connie H. Douglas, CHAIR

cc: Congressional Delegation
Lawrence County Airport Board

3024

NATIONAL BUSINESS AVIATION ASSOCIATION, INC.

1200 EIGHTEENTH STREET NW, SUITE 400
WASHINGTON, DC 20036-2527
Tel: (202) 783-9000 • Fax: (202) 331-8364
E-mail: info@nbaa.org • Web: www.nbaa.org

November 8, 2010

Ms Linda A. Devine
129 Andrews Street, Room 337
Langley AFB, VA 23655-2769

Reference: (1) Powder River Training Complex Draft Environmental Impact Statement (EIS)
(2) FAA Airspace Study 10-AGL-6NR

Founded in 1947 and based in Washington, DC, the National Business Aviation Association (NBAA) is the leading organization for companies that rely on general aviation aircraft to help make their businesses more efficient, productive and successful. The Association represents more than 8,000 companies and provides more than 100 products and services to the business aviation community. On behalf of our membership, we submit the following comments in response to the Powder River Training Complex Draft Environmental Impact Statement (EIS).

NBAA and its members are supportive of the need for the men and women in our armed forces to be able to "train as they fight" and are grateful for the service and sacrifice of the men and women in our armed services. GE-9

Unfortunately, NBAA is unable to support the majority of the Proposed Action Alternative A of the PRTC Draft EIS. USAF has gone to substantial lengths to describe and justify the 4 quarterly Large Force Exercises lasting 1 to 3 days each per calendar year. NBAA is supportive in general of this portion of the proposed action provided mitigations such as increased radio and surveillance coverage are installed in the region to provide safety buffers for civil aircraft operating VFR in the MOAs or operating IFR/VFR near the MOAs. AM-3

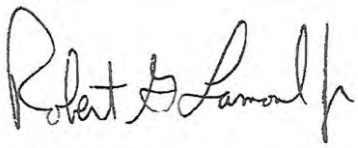
However, USAF has provided no justification, nor does NBAA believe any justification could be sufficient, to allow for the proposed MOA/ATCAA activation outside the quarterly LFEs. To activate MOA/ATCAAs on a Monday through Thursday, 7:30am to 12:00pm and 6:00pm to 11:30pm and then on Fridays from 7:30am to 12:00pm is an immense and unjustified expansion of military airspace covering portions of three States that will have devastating impacts on the economics of several NBAA member companies located throughout the region as well as impacting numerous NBAA members overflying the region in the en route structure. The USAF provided no justification whatsoever for the expansive MOA activations and USAF failed to make a minimum effort to offset even a small portion of this massive increase in airspace by offering to give up the Tiger, Devils' Lake, Hays, and Lake Andes MOAs which even the AF acknowledges "were created and configured for Cold War era missions". PN-3 SO-22 PN-3

As it stands in the coordination process, it seems there still has been no national-level look at the impact to Transcons in the NAS by the FAA if Proposed Action Alternative A were approved as drafted by USAF. Regrettably, we cannot support this initiative at this time without serious work being done to drastically scale back the non-LFE portion of the proposal. SO-22

3024

Additionally, I have enclosed two letters from NBAA members that are typical of our member's deep concerns over this current proposal.

Sincerely,



Robert G Lamond Jr
Director, Air Traffic Services & Infrastructure

Enclosures: Basin Electric Power Cooperative letter dated September 28, 2010 and Bismarck Aero Center letter undated

CC: Robert Henry
Operations Support Group Team Manager
FAA Northwest Mountain Regional Office
1601 Lind Ave., SW
Renton, WA 98057

Mike O'Brien
Midwest Manager, Tactical Operations
619 W. Indian Trail Road
Aurora, IL 60506

Steve Atkinson
Western Manager, Tactical Operations, AJR-W
1601 Lind Ave SW
Renton WA 98057

Mike Rizzo, ATREP
FAA, ATO Central Service Center
Operations Support Group, AJV-C2
2601 Meacham Blvd
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Roger Mcgrath
OSG, ATO Central Service Center, AJV-C23
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Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 10-AGL-6NR
Department of Transportation 2601 Meacham Blvd
Fort Worth, TX 76137

3025

BASIN ELECTRIC POWER COOPERATIVE

1717 EAST INTERSTATE AVENUE
BISMARCK, NORTH DAKOTA 58503-0564
PHONE: 701-223-0441
FAX: 701-557-5336

September 28, 2010

Ms. Linda DeVine, Program Manager
ACC/A7PS
129 Andrews Street, Suite 337
Langley AFB, VA 23665-2701

Dear Ms. DeVine,

Basin Electric Power Cooperative is responding to the proposed Power River Training Complex (PRTC). Basin Electric Power Cooperative (BEPC) is a regional wholesale electric generation and transmission cooperative serving more than 120 member systems. These member systems provide power and services to more than 2.6 million consumers in nine states and covers more than 430,000 sq. miles in these nine states and is based in Bismarck ND.

BEPC is strongly against any increase in the size of the existing Powder River MOA and ATCAA. Basin Electric recommends the "**No-Action Alternative**". BEPC believes the No-Action Alternative is the most responsible choice for the following reasons: GE-2

- Adverse Financial Impact – BEPC is constructing a new 1.4 Billon dollar electrical generating plant 6 miles NE of Gillette, WY. Construction will be completed in 2011 and operations are planned for a minimum of 50 years. This facility is called "Dry Fork Station "and requires air transportation of employees and consultants from our headquarters in Bismarck, ND to the Gillette Airport several times each week. BEPC has three business aircraft that we use to fulfill that and many other missions for BEPC. Currently the Power River MOA and ATCAA already have a negative impact on our flight operations and the proposed enlargement to the PRTC will have an even more negative impact in both direct operating cost with extra miles flown, loss of productive time of the passengers, and also safety with weather conditions (thunderstorms) block the sides of this PRTC giving no alternate routes. The general location causes coordination problems with Denver, Salt Lake, and Minneapolis ARTCC facilities. Two of our aircraft can climb and fly over the top of the existing MOA and ATCAA, but not the proposed tops of 60,000 MSL. SO-7

  Over the last three (3) years, BEPC has flown 1,791 flights into some part of the proposed Powder River Training Complex. BEPC has flown 316 trips annually between Bismarck and Gillette (286 miles one way) which if going direct between these two Cities is 90,376 miles. SO-22

3025

Page 2

At our direct operating cost (DOC) gives a yearly expense of $442,242. If BEPC has to avoid PRTC, this now gives a trip distance of 386 for 316 trips annually or a cost of $596,292. The additional cost to avoid PRTC would be $154,050 annually or $487.50 per flight.

If I used that average additional expense for the other 281 flights that go through the proposed PRTC would have a negative cost of $136,988 per year. Add this to the Bismarck to Gillette flights and I get $291,038 annual direct operating cost increase. This does not include any employee loss of productivity time or salaries.

SO-22

- Fuel – Training aircraft, commercial airline flights, business aircraft, and general aviation will have to use more aviation fuel if the PRTC is approved. With today's fuel prices and economic conditions, conservation of fuel should be the goal.

SO-7

- Alternate Training – BEPC uses Level D full motion flight simulators for initial and recurrent training. Basin has also seen the complex training simulators for the F-14 and B-52 aircraft. Basin believes that with today's advance computer technologies, military flight simulators can be used for training in a safer and more efficient environment. If actual training flights need to occur the use of the current Power River MOA and ATCAA should be adequate. If other size areas are required only a couple times a year, then there are many military areas to choose. For example on 06-23-2008, the internet shows over 720 different military areas. The military does not need any more areas.

PN-7

- Speed – Allowing greater than Mach 1 speeds and above in anything except positive controlled airspace could be very unsafe. Allowing that type of speed above 10,000 MSL and having VFR traffic near-by would give a very short reaction time to see and avoid.

SA-7

- Chaff – Many of the rural electric consumers rely on the grasslands for their income and any fires that can be prevented would be the only responsible risk management plan. Many of the lands underlying the proposed PRTC are not readily accessible by rural fire departments and with the typical dry conditions, a grass fire could be not only financial devastating, but could in worse case be harmful or fatal.

SA-5

- Attendance – BEPC staff attended the scoping meeting held in Bowman, ND. In talking during this meeting to some of the military folks that all the previous meeting had only 177 people attend says volumes on the ineffectiveness of getting people to attend. Why not a meeting in Bismarck, this proposed airspace is almost to the border of our FAA approach airspace to the southwest?

NP-8

- If the PRTC continues, then several **SAFETY FACTORS** need to be resolved.
  - 30 distance between PR4 and Bismarck airport. Normal aircraft factory recommendations for descents would require Basin's Citation Model 560 to be 17,000 MSL and be either 33 or 43 miles from the airport depending on the type of descent. If the high MOA is active, then we cannot comply with the Factory recommended descent profile. If any of the ATCAA's are active, then the problem gets worse and safe operation would be compromised. Leading air ambulance turboprop would need to start out of altitude 46 miles from Bismarck at a factory recommended 1,500fpm descent. The local Bismarck air ambulance piston twin would need approximately 42 miles to descent from 17,000 to traffic pattern in Bismarck.

AM-5

3025

Page 3

The distance from the edge of the MOA/ATCAA is too close to the airport. This distance would be near the same at other airport that would be bounded by the proposed PRTC. A sixty (60) nautical mile radius from IFR airport to the edge of the PRTC would then allow normal and safe operations. AM-5

- There needs to be communications coverage for all of PRTC at all altitudes to control, de-conflict and cover other non-standard operations.
- There needs to be ATC radar coverage for all of the PRTC within the low and high MOA for the FAA's ARTCC to control and monitor all aircraft within the MOA and ATCAAs. AM-3
- FAA ARTCC boundaries need to be modified so one "Center" has control of all aircraft in the PRTC. There are many time requests are not handled in a timely manner due to the coordination required between centers facilities. AM-1
- Real time data on status of PRTC needs to be available for everyone to see. No changes within 36 hours should be allowed by the FAA except if already planned usage is cancelled. AM-12

Basin Electric Power Cooperative again is strongly against this proposed Powder River Training Complex and hope that this proposed Powder River Training Complex proposal will be cancelled. GE-2

Sincerely,

Fred E. Adams

Fred E. Adams, CAM
Basin Electric Power Cooperative
Chief Pilot/ Travel Supervisor

Cc: Mr. Barry Cooper, FAA Central Region Administrator
Mr. Bob Lamond, National Business Aircraft Association
Mr. Larry Taborsky, North Dakota Aeronautics Commission

3026

BISMARCK AERO CENTER

2301 University Dr. #53

Bismarck, ND 58401

RE: Powder River EIS

TO: Whom it may concern

Bismarck Aero Center (BAC) is a Fixed Base Operator (FBO) located at the Bismarck Airport (KBIS) and is a subsidiary of Aircraft Management Services (AMS). We have been in business at the KBIS airport for 20 years. As a FBO we wear many hats and service many areas of aviation. We are an avid supporter of our military and its contribution to our freedoms. Our main revenue comes from ground support of the flying public. We have many concerns pertaining to the proposed expansion of the Powder River MOA.

As a provider of aviation fuel 30 % of our fuel business comes from transient aircraft. The implementation of the proposed changes would encourage our cross country clients to find other stops that were more predictable and less inhibited by restrictions that reroute IFR traffic. This alone could cost us in excess of $300,000 in gross revenue annually.

There are approximately 80 medical flights that originate in Bismarck monthly. Not all of these flights originate at our facility; however all of them require maintenance, and purchase fuel and require storage at this airport. These flights service the small communities such as Hettinger and Bowman in North Dakota and some of the western cities in eastern Montana with medical services that are not readily available in the small rural communities. These teams can be more efficient and flying adds economic value to them and the community. The proposed MOA expansion would cause cancellations and delays that would soon render these services too expensive to provide and these services would no longer be available to the rural communities. SO-8

Under this proposal there are provisions to accommodate air ambulance flights. Air ambulance flights are rarely scheduled and as implied are needed on the spur of the moment. The lack of communication in the MOA would imply that this MOA could not be cleared without delay to a life flight request. These could cause life and death delays. The EIS states that most of these flights are conducted below 10,000 feet witch is a statement that is not the norm any more. Most lifeguard flights today are provided by high performance pressurized aircraft capable of flight in excess of 25,000 feet. These high flights satisfy the need for increased safety and comfort for the passengers. SA-19 SA-18

Our Upper Midwest economy is spurred by energy development. Oil and energy companies fly daily trips from out of this area transporting teams of specialists in and out of the area. The expansion of this MOA will cross the direct route of many of these flight and cause delays that will have a negative effect on the their respective companies and the state of North Dakota. SO-8

Charter operators provide flights into these rural areas that are proposed to underlie the expanded MOA's. These operators operate under a more stringent set of rules and the uncertainty and unpredictability of these airspaces will cause significant delays to these operators. SO-8

North Dakota has a very high use of agricultural aircraft used to apply pesticides to growing crops. With the amount of productive acres that lie below the proposed expansion and their need for these services, the exposure to conflict with military aircraft multiplies exponentially during the application season. Regulation suggests that once these heavy less maneuverable aircraft apply their load and start back to the airfield to reload that they maintain an altitude of 500 feet SA-15

3026

or greater AGL and that puts them in conflict with low flying military aircraft. With agriculture being the mainstay of the North Dakota economy, any delay would have a huge economic impact on the state and it's producers. SA-15

The EIS makes provisions for the existing Victor airways however these airways are scheduled to be phased out. The FAA and NASA are working on a transportation system of point to point navigation and the satellite GPS is the heart of this system. With the new Technically Advanced Aircraft designs, all navigation will be point to point. AM-16

During my review of this document I found numerous areas of incorrect documentation and misinformation. Page 3-153 attempts to chart agricultural acres and revenues but is not representative or logical in its presentation. The figures are erroneous. I reviewed the charts representing charted flights through the proposed airspace. Some of these charts (Figure 3.1-13.)referred to flights below 4,000, feet. There is no radar coverage below 6-8,000 feet in most of this area so I find this documentation misleading. If these pages are representative of this document, then this document is misleading and not factual at best. LU-4 AM-31

I have been flying in excess of 45 years and all of my flying has originated in North Dakota. I have been flying into and around the existing MOA's my entire flying career. My experience has been that posted "HOT" times have rarely been adhered to and that popup times are the norm. I have had more delays when the MOA was not scheduled and all of a sudden became "HOT". AM-12

The Bismarck Airport is the gateway to Bismarck North Dakota, our states capital. Implementation of this proposal, added to the proposed changes in the airspace to the northeast (EIS for the use of RPA's, Grand Forks, ND) would virtually cripple air commerce into and out of the Bismarck Airport. This virtually affects every citizen of the Bismarck/Mandan area. SO-5

Thank you for your time. I may be reached at 701-223-4754 or at bobs@bismarckaero.com.

Respectfully submitted,

Bob Simmers

President

3027

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 11/03/10

PLEASE PRINT

I attended the public hearing held at Hoth, ND. I was disappointed with the opposition to the expansion. Since the hearing the media continues to print concerns of those not in favor of expansion. I remember the training flights of years ago. I don't remember opposition.

As far as airplanes making noise, so do the barking dogs belonging to a dog trainer a few blocks from my home. One speaker had his cattle spooked by an airplane. I also own cattle and have had them spooked by snowmobiles, deer, coyotes, dogs, and housecats. Another speaker suggested that aerial crop sprayers would be affected. I aerial crop spray and the airforce won't hinder my operation.

I would welcome activity in our area of Southwestern ND. They're GE-1

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	Rex J. Kelsch
ORGANIZATION:	Mott, ND Airport Authority
ADDRESS:	PO Box [illegible] 4
CITY/STATE/ZIP:	Mott, ND. 58646

Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format) ___ hard copy format

No, please do not include me in the mailing list for distributing the Final EIS. I do not wish to receive an EIS or further information.

PLEASE NOTE: This Draft EIS is provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) NEPA Regulations (40 CFR §§1500-1508), and 32 CFR §989, Environmental Impact Analysis Process (EIAP).

The EIAP provides an opportunity for public input on Air Force decision-making, allows the public to offer inputs on alternative ways for the Air Force to accomplish what it is proposing, and solicits comments on the Air Force's analysis of environmental effects.

When making an oral comment, please clearly state your name and the name of the organization, if any, which you are representing before you begin your comments. Please do not provide any other personal information, such as your home address and phone number when making an oral comment. Your oral comments will be used to develop a transcript and permanent record of this meeting. This transcript will be will be published in the FEIS. If you would like a copy of the Final EIS or other associated documents, you may state that on a written comment card or add your name and address to the mailing list.

Providing personal information is voluntary. If you choose to not provide personal identifying information, your comments will be given the same weight and consideration as any other comments submitted. Private addresses provided will be compiled to develop the mailing list for those requesting copies of the Final EIS. Only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EIS.

Please hand this form in at a public hearing or mail before November 13, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

3027

not exactly crowded. GE-1

Rec'd 11/15/2010

3028

MONTANA MDT DEPARTMENT OF TRANSPORTATION
Montana Department of Transportation
2701 Prospect Ave PO Box 201001 Helena MT 59620-1001
Jim Lynch, Director
Brian Schweitzer, Governor

November 12, 2010

Ms. Linda Devine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Subject: Draft Environmental Impact Statement for Powder River Training Complex

Dear Ms. Devine:

The Montana Department of Transportation (MDT) supports and understands the importance of training our United States Military but remains very concerned with the current proposal to expand the Powder River Training Complex for many reasons:

- Montana is home to the Hays MOA in north central Montana and the current Powder River MOA. We are happy to share our airspace as currently provided but feel that if expansion is necessary, it should occur in North and South Dakota where the air bases are located. PN-2
- The EIS does not consider all possible alternatives. It must include considerations to expand the Devils Lake, Tiger and Lake Andes MOAs under the same criteria as the existing Powder River MOA.
- These existing MOAs could offer accommodation with less impact.
- The communication and use regarding the proposal has been confusing and portrayed as only 10-days per year. The impact of approximately 240 days per year needs to be analyzed and clarified. PN-5
- The revised proposal eliminated impacts to the Billings, Bismarck and Dickinson airports. The same must be done for Montana's other public and private airports located underneath the MOA. There is no provision for airborne access to Ashland, Baker, Broadus, Colstrip, Ekalaka, Hardin or the 40+ private airstrips located in southeast Montana. AM-5
- The EIS information on the number of airports underlying the Powder River Training Complex is underestimated at 39 airports. Montana alone has close to 50 airports underneath the proposed MOA.
- The EIS states that the number of airports and airfields located under the proposed MOA create what is "perceived" as an impact by airport operators and users. This proposed expansion is a real impact, not perceived and must be explained. AM-4
- VFR aircraft are allowed to enter the airspace at their own risk and are to "see and avoid". VFR traffic flying in the area and sharing the airspace with large, low-flying, high speed bombers and fighters creates an unsafe environment. SA-7
- There is no method to provide for safe separation of military and civilian aircraft due to limited or no radar and voice communications in the area. AM-3
- Seven of Montana's eight essential air service airports are located in eastern Montana. These communities receive this service because of their necessity to enter the national transportation system, to conduct business and receive medical services. The expansion will force the air carrier to divert and be re-routed around the proposed MOA causing increased expenses for fuel, aircraft time, maintenance and lost productivity. SO-7

I am confident that we can continue to work together to enjoy our open skies and share the existing airspace that Montana currently provides you. This allows us to maintain the most competent and qualified armed forces in the world. And because of our need to maintain their expertise along with the reasons stated above, you need to look at the expansion of Devils Lake, Tiger and Lake Andes MOAs not the Powder River MOA. Those expansions would better facilitate both the training of our armed forces and allow the essential general and commercial aviation industries to share our airspace without a negative economic impact. PN-2

Sincerely,

Jim Lynch, Director

Director's Office
Phone: (406) 444-6201
Fax: (406) 444-7643

Web Page: www.mdt.mt.gov
Road Report: (800) 226-7623 or 511
TTY: (800) 335-7592

3029

SDWEA
SD Wind Energy Association
300 East Capitol Avenue, Suite 1
Pierre, SD 57501

November 11, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley Air Force Base, VA 23865

Dear Ms. DeVine,

The South Dakota Wind Energy Association would like to comment on the new Power River Basin Flyover area.

We are concern that wills new flyover area will impede wind development in rural South Dakota. Since 1995 I have been working on installing anemometer to record wind speed in Western and Central South Dakota. Our measuring equipment is at 100 meter currently and the wind projects that we have been working on have a total height of excess 600 feet over on ridge top and buttes. SO-17

We would like to tell rest of your sorry and be at the negotiation table if you proceed.

Sincerely,

Steve Wegman
Executive Director,
South Dakota Wind Energy Assoication
300 East Capitol Ave.
Pierre, SD 57501

Attachment
Project map

SOUTH DAKOTA WIND ENERGY ASSOCIATION

Residents in Colorado and New Mexico Fear Impact of Military's Nighttime Sorties

By Stephanie Simon

The U.S. Air Force thinks the rough-hewn peaks of southwest Colorado and northern New Mexico make excellent surrogates for the treacherous mountain ranges in global hotspots such as Afghanistan. Some local residents beg to differ.

In a bid to provide Special Operations pilots more realistic simulations of wartime missions, the Air Force has proposed a vast new tactical training zone that stretches across 94,000 square miles of rugged terrain. Starting next year, commanders want to send C-130 transport planes and CV-22 Osprey tilt-rotor aircraft skimming across the region after dark at altitudes as low as 200 feet and speeds of up to 288 miles per hour. They envision three sorties a night.

The pilots would dart among the ridges and dip low over the rangeland, practicing the stealth needed for covert operations, said Col. Stephen Clark, wing commander at New Mexico's Cannon Air Force Base, which is pushing the proposal.

Pilots would be required to avoid cities in the zone, including Santa Fe and Taos in New Mexico and Aspen, Pueblo and Durango in Colorado. But communities and residents fighting the Air Force say that hundreds of low-altitude flights each year will spook cattle, scare children, rattle adobe buildings, create pollution and mar the tranquility they cherish.

"Our economy is based on people coming here for the beauty of the land, the solitude, the wild qualities," said Cliff Rain, who lives in Arroyo Hondo, N.M., north of Taos. He started an opposition group called Peaceful Skies.

At least four county commissions and two city councils have taken a stand against the proposal, and the Air Force has received 1,200 comments, most expressing concern about the impact on people and wildlife.

Satellite image of terrain in flight-training zone near Arroyo Hondo, N.M.

Military officers say the fears are overblown. The Air Force already sends pilots zipping across the region, at times as low as 200 feet above the ground, though current regulations have the effect of limiting night sorties to a half-dozen well-surveyed routes, Col. Clark said.

Under the new proposal, pilots would be allowed to map their own routes through the tactical training zone, increasing the challenge and realism of the training, Col. Clark said. It would also tend to disperse the noise and disruption across a broader area. He said he doesn't anticipate that any one village or ranch would experience the air craft overhead more than a couple times a month.

Col. Clark said the military has not measured noise levels of aircraft flyovers at 200 feet. For someone standing on the ground, aircraft at an altitude of 500 feet would create a sound exposure of 91 to 95 decibels, or "somewhere between a lawn mower and a chain saw," he said.

The Air Force has hired a consultant to assess potential environmental impacts, which will be the subject of public comment next spring, after which Special Operations commanders will decide whether to scrap, revise or implement the proposal.

Kathleen Dudley plans to throw herself into fighting the Air Force should commanders choose to move ahead. A writer in Mora, N.M., northeast of Santa Fe, Ms. Dudley said she and her husband were eating lunch on their deck recently when a military aircraft screamed overhead, flying so low "that we were looking into the eyeballs of a pilot bearing down on us."

"I was terrified," she said. "You don't hear or see them until they're upon you, and then it's like being in a war zone."

urges the military to minimize the

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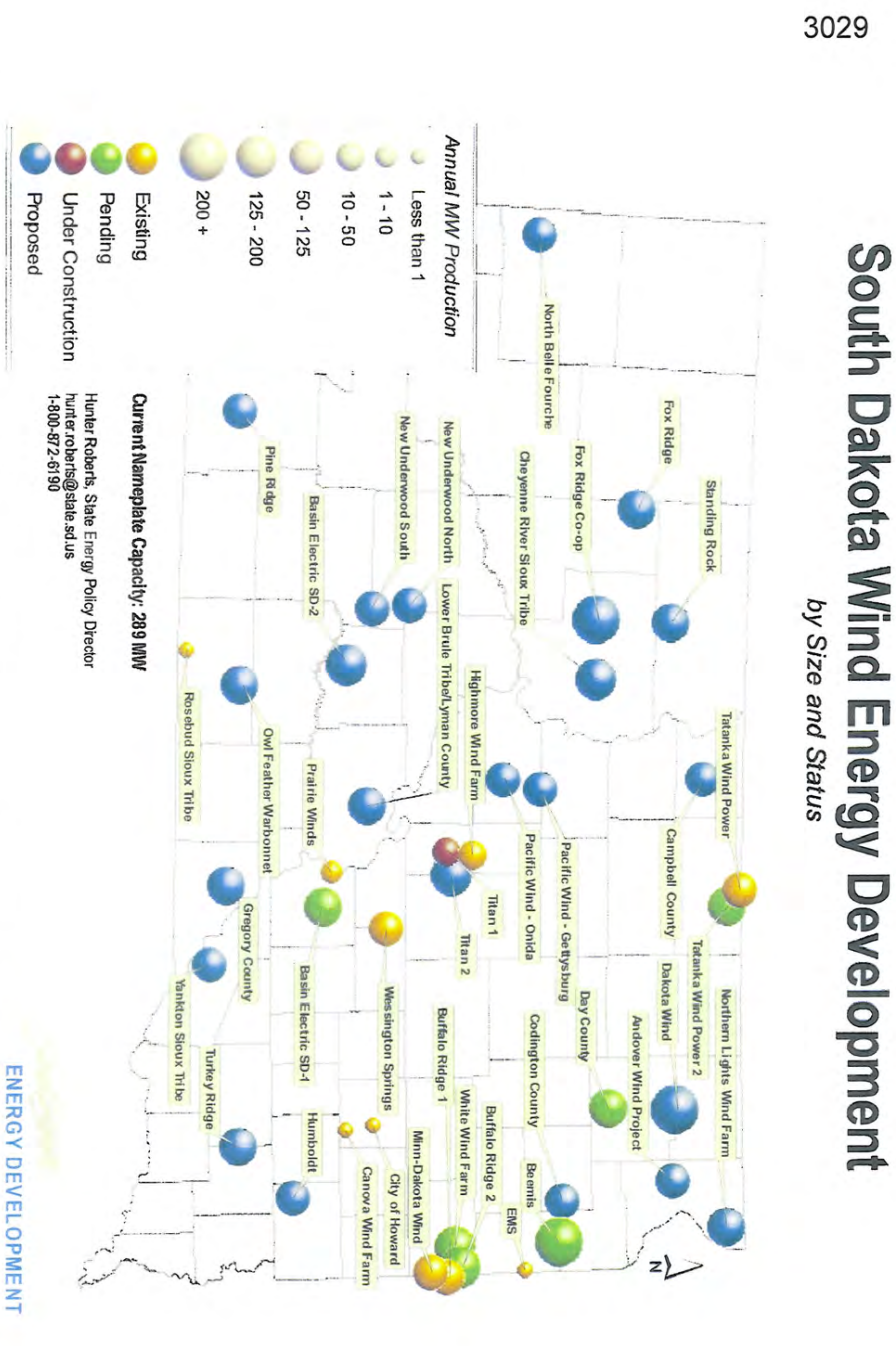
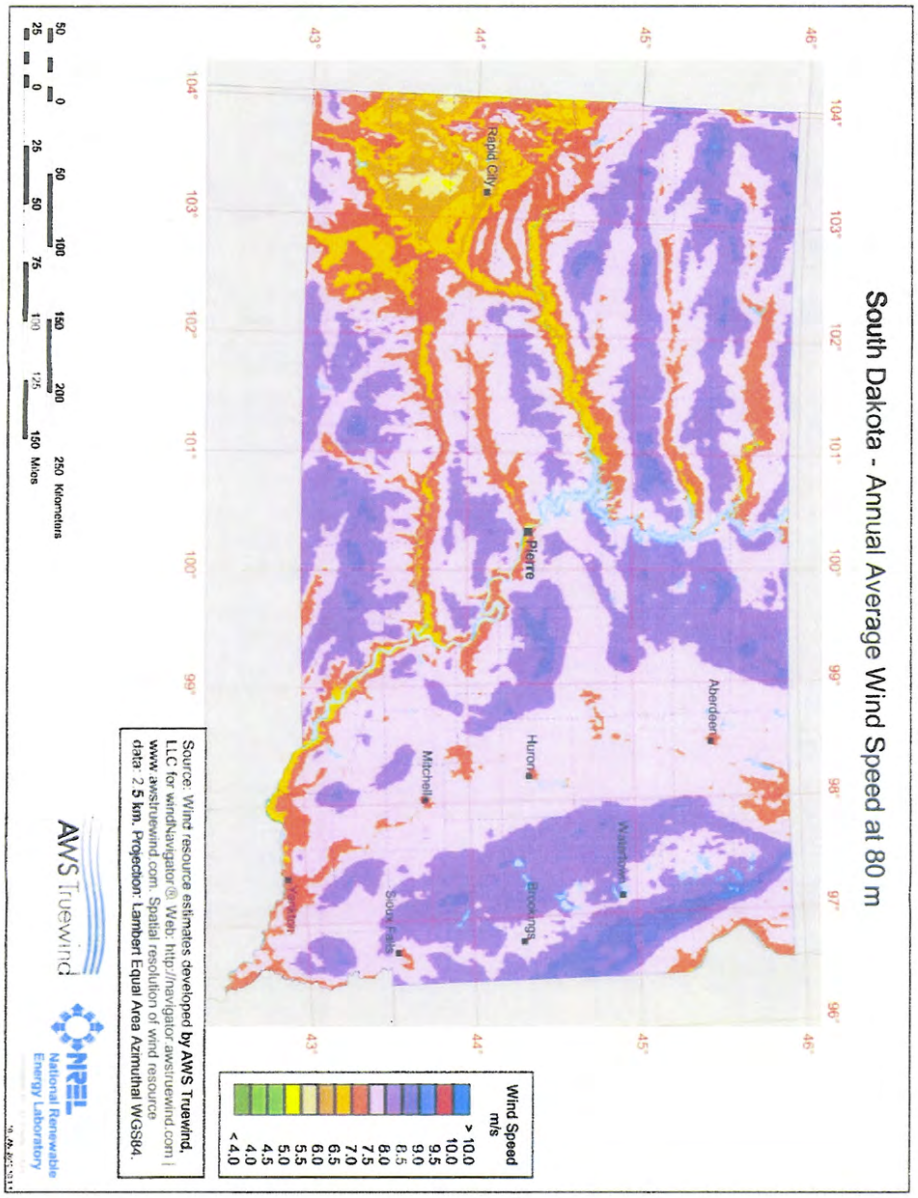
3029


South Dakota Wind Energy Development
by Size and Status
Standing Rock
Tatanka Wind Power
Northern Lights Wind Farm
Fox Ridge
Campbell County
Tatanka Wind Power 2
Fox Ridge Co-op
Dakota Wind
North Belle Fourche
Andover Wind Project
Day County
Cheyenne River Sioux Tribe
Pacific Wind - Gettysburg
Highmore Wind Farm
Pacific Wind - Onida
Codington County
Buffalo Ridge 2
New Underwood North
Titan 1
Beemis
EMS
Lower Brule Tribe/Lyman County
Titan 2
White Wind Farm
Buffalo Ridge 1
New Underwood South
Minn-Dakota Wind
Wessington Springs
City of Howard
Basin Electric SD-2
Canova Wind Farm
Pine Ridge
Prairie Winds
Basin Electric SD-1
Humboldt
Owl Feather/Warbonnet
Gregory County
Rosebud Sioux Tribe
Turkey Ridge
Yankton Sioux Tribe
N
Annual MW Production
Less than 1
1 - 10
10 - 50
50 - 125
125 - 200
200 +
Existing
Pending
Under Construction
Proposed
Current Nameplate Capacity: 289 MW
Hunter Roberts, State Energy Policy Director
hunter.roberts@state.sd.us
1-800-872-6190
ENERGY DEVELOPMENT
Please note this map may not represent every proposed wind farm in SD, it only represents the wind farms that the SD Governor's Office of Economic Development has direct knowledge of.
Sep '09

3029


South Dakota - Annual Average Wind Speed at 80 m
Rapid City
Pierre
Aberdeen
Huron
Mitchell
Watertown
Brookings
Sioux Falls
Wind Speed m/s
> 10.0
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
< 4.0
Source: Wind resource estimates developed by AWS Truewind, LLC for windNavigator® Web: http://navigator.awstruewind.com | www.awstruewind.com. Spatial resolution of wind resource data: 2.5 km. Projection: Lambert Equal Area Azimuthal WGS84.
AWS Truewind
NREL
National Renewable Energy Laboratory
50 25 0 0 25 50 50 75 100 100 125 150 150 200 250 Kilometers
Miles

3030

SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

500 East Capitol Avenue
Pierre, South Dakota 57501-5070
www.puc.sd.gov

Capitol Office
(605) 773-3201
(866) 757-6031 fax

Warehouse
(605) 773-5280
(605) 773-3225 fax

Consumer Hotline
1-800-332-1782

Dustin Johnson, Chair
Steve Kolbeck, Vice-Chair
Gary Hanson, Commissioner

October 6, 2010

Ms. Linda DeVine
PRTC EIS Project Manager
ACC/A7PS
129 Andrews Street, Suite 337
Langley AFB, VA 23665-2701

RE: Impact of proposed Powder River Training Complex on wind generation

Dear Ms. DeVine:

We have received inquiries at the Public Utilities Commission from landowners about the impact of the proposed Ellsworth PRTC on potential wind energy development in the project area. We wish to ensure we understand the effects of the proposed action on our constituents and their properties so we can accurately respond to questions.

Our inquiry should not in any sense be interpreted as expressing opposition to the project. The commission has the utmost respect for the service provided by Ellsworth and its personnel, often involving great personal sacrifice. We express pride and gratitude that our state is home to such a significant national defense institution. We also understand the need for Ellsworth to maintain training and readiness facilities that enable the base to fulfill its mission. GE-9

Based on our reading of the Draft Environmental Impact Statement, wind energy development would not be negatively affected by the PRTC expansion. For example, in Land Use under Proposed PRTC, Section 4.8.3.1 on p. 4-95, the DEIS states with respect to Alternative A, the preferred alternative:

> A concern noted by scoping participants was the potential incompatibility of low-level flight with land dedicated to wind farms due to the height and electromagnetic emissions of the wind turbines. Like other tall structures, existing and future structures must be officially charted with FAA and avoided by appropriate vertical and lateral distances. As a precaution for proposed night operations and other commercial and private flight, tall structures are required to have lights that warn of their presence. Overflights at altitudes would avoid the physical structure and electromagnetic emissions of wind turbines. The Proposed Action would not inhibit the development of future wind farms or other industrial land uses. (emphasis supplied).

3030

Similar language is repeated at several other places in the DEIS. Later in Section 4.9.3.1.4, Environmental Consequences, Energy Resource Development, the DEIS contains the following general policy statement:

> In 2007, the Department of Defense released a letter stating that the DoD would not oppose the development of wind farms or other sources of renewable energy that would not impact military readiness or training. The Air Force would coordinate with FAA and other regulatory agencies to evaluate wind farm proposals under the proposed airspace on a case-by-case basis.

These excerpts from the DEIS indicate the case-by-case evaluation in reference to the PRTC project has concluded curtailment of wind tower development is not necessary to accommodate the project, is not being requested and will not be a natural consequence of the project.

Please provide affirmation regarding our interpretation so we can share this with landowners who have contacted us and are investigating wind energy development potential in the PRTC area.

SO-17

Sincerely,

Dustin Johnson	Steve Kolbeck	Gary Hanson
Commissioner	Commissioner	Commissioner

Cc: Todd Goddard, Northwest Landowners Energy Alliance
Bob Drown, Northwest Landowners Energy Alliance

3031

Big Sky. Big Land. Big History.
Montana
Historical Society

Historic Preservation
Museum
Outreach & Interpretation
Publications
Research Center

September 20, 2010

HQ ACC/A7PS
ATTN LINDA DEVINE
129 ANDREWS STREET
ROOM 337
LANGLEY AFB VA 23665 2769

RE: Powder River Training Complex, National Historic Preservation Act (NHPA) Section 106 Compliance.

Dear Linda,

Thank you for the EIS and the cover letter which lays out your plans for complying with Section 106. Our office thinks that this project may have an adverse effect on cultural resources in Montana. We would not be able to comment in detail on what properties may be affected, or what level they may be affected, until after a survey report is submitted. We recognize that not every section of land will be affected that was outlined in the maps submitted, so we need to define the undertaking to a degree that will allow a file search and survey to be conducted. CV-2

We would look forward to a meeting on this subject in the late fall or early winter of 2010. If the meeting cannot be held in Helena, Montana, we would request funding to attend such a meeting. Please keep us abreast of the planning on this undertaking as it develops.

If you have any questions or concerns about what I have written above, you can contact me at (406) 444-0388, or email at jwarhank@mt.gov.

Sincerely,

Josef J Warhank
Review & Compliance Officer

File: DOD/USAF/2010

225 North Roberts Street
P.O. Box 201201
Helena, MT 59620-1201
(406) 444-2694
(406) 444-2696 FAX
montanahistoricalsociet

3032

COMMITTEE ON NATURAL RESOURCES

COMMITTEE ON AGRICULTURE

COMMITTEE ON BUDGET

WESTERN CAUCUS EXECUTIVE COMMITTEE

Cynthia M. Lummis
Congress of the United States
Wyoming

November 22, 2010

Ms. Linda Devine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769.

SENT VIA FAX: (757) 764-1975

Dear Ms. Devine

Enclosed is a copy of the correspondence I received from my constituent, Mr. Wade Bergslien, Pilot for True Drilling Company of Casper, Wyoming concerning the Powder River Training Complex. I believe Mr. Bergslien was in attendance at the meeting in Gillette and that he made his concerns about the proposed project known at that time to your agency, the Federal Aviation Administration and Air Combat Command. I believe you will also find this information self-explanatory.

I would respectfully ask for your thorough review of Mr. Bergslien's comments and for you to provide me with as much information possible including, but not limited to, what measures are taken to ensure that his concerns will be given full and fair consideration throughout the analysis process. It may also be helpful for Mr. Bergslien to know precisely what options are available to him and his business and the proper procedures he must follow to remain adequately involved.

GE-12

You may reply to me at my Casper District Office, Post Office Box 44003, Casper, Wyoming 82602; or fax (307) 261-6597. Your assistance is greatly appreciated. My Field, Jackie King, may be reached at (307) 261-5585 with any questions or comments pertaining to Mr. Berglien's inquiry.

Sincerely,

Cynthia M. Lummis
Member of Congress

CL/jk

cc: HQ ACC/A7PP, Sheryl Parker
FAA, Megan Rosia

PRINTED ON RECYCLED PAPER

3033

True Drilling Company
P.O. Box 2360
Casper, Wyoming 82602

November 10, 2010

Congressman Cynthia Lummis
United States Congressman, Wyoming
1004 Longworth House Office Building
Washington D.C. 20515
202-225-2311

Dear Madam:

We the aviation department of the True Companies located in Casper, Wyoming would like to say we are in disagreement with the proposed Powder River Training Complex. This proposal is excessive in size as well as scope and will seriously impair the efficient use of our aircraft, and requires additional review before any consideration of implementation. GE-2

The needs of the United States Air Force and all of the benefits it forecasts for all components involved are noteworthy, yet they negatively impact flight operations such as ours and other corporate aircraft. The summary of the PRTC addresses how the Air Force will increase training capabilities and gain fuel and maintenance savings at the same time. However if implemented the civilian sector while be tasked with longer flight legs and increased fuel consumption which goes hand in hand with increased maintenance costs. SO-7

We are a long time participant in the energy industry of the Rocky Mountains. Corporate aircraft are an integral tool and facilitate companies such as ours and help us efficiently develop the natural resources with what we have been blessed. Bottom line is that streamlining our operations, thru the effective use of our aircraft, means reduced man-hours for those within and out of our companies who are dependant on our services.

As I have stated the proposed PRTC is immense and if granted is approximately 350 miles wide and will detrimentally affect all of our operations into and out of the proposed area within eastern Montana and western North Dakota. Aircraft dispatched from Casper or other airports that are set back from the MOA will be directed around the MOA when the airspace is "hot" (in use) and this will mean additional time and fuel and decrease our payloads. This could mean increasing fuel loads and or dropping passengers or using a larger aircraft than the trip should require. In times of obscured weather it could mean not even being able to reach your intended destination due to fuel requirements at arrival. An en-route tech stop is not a positive when time is of essence. SO-7

To compound the problem the proposed quarterly exercises have potential to increase usage as other units will want to travel to the new area for their requirements. This will only decrease the airspace availability time potentially impacting the civilian users even more, additionally this would find fault with the Air Forces forecasted fuel savings.

The Air Force and the FAA are stressing their willingness to coordinate to the civilian sector when these airspaces will be in use, yet those who fly professionally will admit that this coordination is weak at best. If this proposal comes to fruition, the Air Force and the FAA will be tasked with becoming stewards to an area which many companies and families find their livelihoods dependant upon. The Environmental Impact Statement or EIS does not approach or encompass our sector of the energy business, which is corporate aviation, to include charter aviation. It fails to consider that aircraft as far AM-1 SO-17

RECEIVED
NOV 15 2010
BY:

3033

away as Houston, Texas are dispatched daily to western North Dakota and eastern Montana. This portion of the energy business will as stressed as ours will. SO-17

In closure, it is clear that the inability to share this airspace will result in a less efficient cost structure for not only the energy industry but also all effected companies. These costs will ultimately be borne by the American citizen who is already stressed by the weakest economy in a generation. We request your assistance first in ensuring that the decision makers, the Air Force, the FAA and ATC, understand the burden placed on private industry; and second to facilitate a different solution for the military that benefits all parties. SO-22

Sincerely, Wade Bergslien

Wade Bergslien
Pilot True Drilling Company

3034

STATE OF SOUTH DAKOTA
M. MICHAEL ROUNDS, GOVERNOR

November 15, 2010

Linda Devine, Program Manager
ACC/A7PS
129 Andrews Street, Suite 337
Langley AFB, VA 23665-2701

Dear Linda,

The purpose of this letter is to convey my support for the Alternative "A" of Air Combat Command's Powder River Training Complex Environmental Impact Statement, dated August 2010.

I strongly believe in our nation's armed forces being well equipped and trained to the best of their ability to successfully complete combat operations. Toward that objective, I am fully supportive of providing them the airspace to sharpen their combat skills to be able to both protect themselves and defeat our nation's adversaries in the most effective and efficient manner.

Therefore, I am committed to the success of your initiative to provide the airspace required to successfully complete such training missions. My endorsement of Alternative "A" is further founded on the efforts Air Combat Command has made to accommodate those citizens affected by training flights and the knowledge that Ellsworth's leadership team will continue to fully consider special requests for such considerations.

GE-1

Thanking you in advance for this pioneering work in combat aviation training, please do not hesitate to contact me as we proceed with the realization of the best training complex our nation has developed in the past 50 years.

Sincerely,

M. Michael Rounds

MMR:ls

STATE CAPITOL • 500 EAST CAPITOL • PIERRE, SOUTH DAKOTA 57501-5070 • 605.773.3212

3035

North Dakota Farm Bureau
Bringing ag home

1101 1st Ave. N., Fargo, ND 58102
P.O. Box 2064, Fargo, ND 58107-2064
Phone: 701-298-2200 • 1-800-367-9668 • Fax: 701-298-2210

4023 State St., Bismarck, ND 58503
P.O. Box 2793, Bismarck, ND 58502-2793
Phone: 701-224-0330 • 1-800-932-8869 • Fax: 701-224-9485

January 3, 2010

Ms. Linda DeVine, HQ ACC/A7PS
29 Andrews St., Suite 337
Langley AFB, VA 23665-2769

Dear Ms. DeVine:

North Dakota Farm Bureau members oppose the proposed U.S. Air Force expansion of the Powder River Training Complex. The Minot Air Force Base and the Ellsworth Air Force Base are both important strategies in our national defense. While we recognize the need for national security and proper training for our military, quadrupling the size of the area would have detrimental impacts to residents in southwest North Dakota. GE-2

Maj. Matthew Reese has said, "We're looking at expanding the Powder River Training Area to about four times its current size, over primarily unpopulated areas." We believe the residents in southwest North Dakota are just as important as other areas of the country and deserve consideration. EJ-2

The noise of the low-flying B-1 and B-52 bombers will spook beef cattle and sheep, causing them to run. The animals will not only lose weight, but can injury themselves by stepping in a prairie dog hole or other obstacle. In this part of the country, ranchers make their living raising cattle and sheep. Agriculture is the number one industry in North Dakota and the southwest area of our state is a vital component of our industry. These people depend on livestock for their livelihood. BI-4 SO-13

The noise will similarly impact wildlife. At the same time, the flares set off by the aircraft could start fires in the area. BI-4 SA-5

With 27,000 members, North Dakota Farm Bureau is an independent, non-government, voluntary organization united for the purpose of analyzing issues and formulating action on agricultural concerns.

We hope the U.S. Air Force will reassess its expansion of the Powder River Training Complex. Thank you for your consideration of this matter.

Sincerely,

Eric Aasmundstad

Eric Aasmundstad
President

cc: Sen. John Hoeven
Sen. Kent Conrad
Rep. Rick Berg

3036

Dickinson
Theodore Roosevelt
REGIONAL AIRPORT
11120 42nd St. SW, Suite A • Dickinson, ND 58601
Phone: 701-483-1062 • Fax: 701-483-1072
dickinsonairport@ndsupernet.com • www.dickinsonairport.com

Linda DeVine, Program Manager
ACC/A7PS
129 Andrews St. Suite 337
Langley AFB, VA 23665-2701

Dear Ms. DeVine,

My name is Matthew Remynse; I am the manager of the Dickinson Theodore Roosevelt Regional Airport (Dickinson Airport) in Southwest North Dakota. The Dickinson Airport is governed by the Dickinson Municipal Airport Authority (DMAA) a five member board appointed by the City of Dickinson. Aviation has a vital part in the economic development of Southwest ND and the DMAA has the responsibility of assuring that aviation in southwest ND continues to grow, remains strong, is convenient, and remains readily available for our citizens. I have been following the development of the MOA expansion and believe that the expansion will adversely impact aviation activities in southwest North Dakota. I'm writing to inform you of the concerns I have with the expansion of the Powder River MOA.

I'd first like to describe the current economic situation in southwest, ND and how the Dickinson Airport plays a part. Southwest ND is seeing unprecedented growth and is in the mists of a growing economy that is being pushed by the oil development of the Bakken and Three Forks Oil deposits. Aviation has played a large role in the growth by allowing companies from across the nation to fly into the Dickinson Airport utilizing both commercial and general aviation. In a 2004 study conducted by the North Dakota Aeronautic Commission, it was determined that the Dickinson Airport has a $30 million impact on Southwest ND and creates 305 direct jobs. The study also determined that each commercial passenger that flies into Dickinson spends approximately $710 per trip. In 2004 the airport had just over 5,000 commercial boardings for the year, by taking 5,000 passengers and multiplying it by an average of $710 that is an impact of $3.5 million. If we move ahead six years to 2010 the airport has already boarded 8,200 passengers and will be over 10,000 boardings for the year. Based on the 2004 number of $710 that is impact of $7.1 million to southwest ND. This impact includes jobs of airline personnel, airport personnel, and personnel in Southwest ND who support the traffic such restaurants, motels, rental cars, and service stations. This impact allows southwest ND to continue to grow its economy while the rest of the country is in a downturn.

I feel that the expansion of MOA could affect both General Aviation and Commercial Aviation to and from the Dickinson Airport during a time in which southwest ND is seeing such unprecedented growth.] SO-22

Commercial aviation has played a large role in the growth of Dickinson. Great Lakes Airlines operates three round trips daily between Dickinson and Denver. The airline has been able to keep up with the demand of travelers by adding additional flights and working hard to assure that Dickinson passengers

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get to Denver at time where they can connect with other flights. The hard work of the airline has not gone unnoticed by the businesses using the airline either. The airports annual boardings have continued to rise since the oil activity started in late 2006. In 2006 the airport only had two round trips that were shared with another community and airport's annual boardings totaled 5,400 passengers. In 2009 there were three round trips shared with another community and the airport's annual boardings were 8,937. Today the airport has three round trips daily and only one of those round trips is shared. The airport's boarding s as of October 31st were 8,217. By the end of 2010 the airport is going to have over 10,000 boardings.

All of this success is due to the fact that Great Lakes Airline is able to offer convenient reliable air service to southwest ND. If the MOA were to be expanded the airline would be affected. The times proposed for PR-4 coincide with the two busiest trips a day. This may cause our commercial flights to be delayed or forced to divert around the MOA because the MOA is "hot". Both of these scenarios will cause the airline to incur additional costs and inefficiencies. This translates into southwest ND no longer having the convenient affordable air service it has come to expect. If passengers do not have convenient affordable air service out of Dickinson they will choose other airports that are not affected by the MOA. This is a direct loss of passengers for the airport.

There are many possible effects that the airport could receive due the the loss of passengers. The biggest effect is the loss of air service. If the airport starts losing passenger the airline will no doubt reduce the air service into the Dickinson Airport ultimately reducing the available seats to southwest ND passengers and greatly reducing the redundancy and reliability of our flights. If the airport were to lose passengers it will fall into a lower category for funding. As the airport closes out 2010 it will be above 10,000 boardings for the year. Every year the airport is above 10,000 boardings a year it is able to receive $1 million in funding from the FAA for capital improvements of the airport. If the airport loses this status the airport will lose $850,000 a year in funding. This will slow the airport growth and will not be able to meet the infrastructure demands of the growing region. Every passenger lost to another community is $710 that is no longer being spent in southwest ND. If the airport were trend back to 2006 numbers that would be an annual loss of $4 million dollars to southwest ND's economy.

SO-22

The Dickinson Airport has seen general aviation grow just as we have seen commercial aviation grow. This is evidenced by the increase in fuel and hangar sales at the airport, and the amount of entries in the airport's GA operations log. The airport's operation tracks all the general aviation traffic. General Aviation plays a role in the economic sustainability of the growing region as well. General aviation at the Dickinson Airport provides charter service, freight service, air medical and agricultural service. The airport's FBO, Western Edge Aviation provides charter service, flight instruction, aircraft rental, aircraft maintenance, courtesy car and a full pilot's lounge. Above all, these services allow for any person or business from across the world to fly right into our economy and I feel that the development of the MOA could disrupt the general aviation traffic coming into the Dickinson Airport.

SO-8

The proposed MOA essentially blocks off the Dickinson Airport from any traffic coming for the south, southwest and southeast. A majority of the traffic the airport receives comes from these directions due the geographical location of the airport. The PR -3 and PR-4 MOA are active during the morning, which is a busy time for general aviation traffic and this has the potential to reduce the amount of traffic that utilize the airport. Any time an aircraft chooses not to utilize the airport it is a direct loss of income for the FBO and airport. An aircraft can take between 30-100 gallons of fuel when it stops at the airport. If an aircraft decides to use another airport it could cost the airport and FBO anywhere from $60-$200 per aircraft. It is difficult to gauge the amount of traffic that could be lost, but suppose the airport lost 10%

SO-22

3036

of its GA traffic or 240 aircraft. If the airport were to lose 240 aircraft to another airport the Dickinson airport could stand to lose $48,000 in revenue. How would an airport compensate for the lost revenue? There are two options, reduce services, or increase fees. Either option the airport chooses will ultimately cause the airport to lose more customers. The expansion of the MOA is an economic hardship to the FBO and southwest ND. The reduction in traffic could lead to a loss of jobs, and create further economic hardship to the region.

SO-22

SO-10

The above paragraphs speak toward general aviation as a whole, but the MOA expansion will affect each aspect of general aviation differently. Charter service coming into and out the Dickinson Airport will be affected any time there are IFR conditions. Since IFR is prohibited when the MOA is "hot" it will provide unpredictability into the charter operation causing charter companies to experience delays and cancellations. Medical flights that serve the small general aviation airports underneath the MOA may be delayed or canceled creating a huge burden to the hospitals that rely heavily on doctors from larger towns. Businesses utilizing private aircraft will be negatively impacted. The potential for rerouting around the MOA will cause additional hardships to the company as a result of additional fuel and time.

SO-5

I understand the need for the military to train it personnel, but the expansion of the MOA will negatively impact the airport and the economy in southwest ND. I thank you for your time and strongly urge the USAF to take the No-Action Alternative. If this airspace is chartered it would be detrimental to aviation in southwest ND. Again I thank you for your time and if you should have any questions please do not hesitate to contact me at 701-483-1062

GE-2

Sincerely,

Matthew Remynse
Airport Manager

3037

UNITED

Friday, November 12, 2010

Ms Linda A. Devine
129 Andrews Street, Room 337
Langley AFB, VA 23655-2769

Reference: Powder River Training Complex Draft Environmental Impact Statement (EIS)
FAA Airspace Study 10-AGL-6NR

United Air Lines, Inc. and Continental Airlines, Inc. are wholly owned subsidiaries of United Continental Holdings, Inc. Together with United Express, Continental Express and Continental Connection, these airlines operate a total of approximately 5,800 flights a day to 371 airports on six continents from their hubs in Chicago, Cleveland, Denver, Guam, Houston, Los Angeles, New York/Newark Liberty, San Francisco, Tokyo and Washington, D.C. A significant number of our flights cross the proposed Powder River Training Complex (PRTC) every day providing vital scheduled air service to and from many domestic and international city pairs.

We hereby submit the following comments in response to the Powder River Training Complex Draft Environmental Impact Statement (EIS).

Both Continental Airlines and United Airlines have long shown extraordinary levels of support for the men and women of our armed forces and are truly grateful for their service and sacrifice. In the modern world, more than ever, we recognize the need for them to train as they fight.

As proposed, the Powder River Training Complex (PRTC) Military Operations Areas (MOAs) will be comprised of an unprecedented amount of airspace from parts of Montana, Wyoming, North Dakota and South Dakota. Though the PRTC covers a somewhat sparsely populated part of the United States, numerous jet routes and efficient trajectories pass through this airspace. For example, on Tuesday, August 17th 2010, between the hours of 1400Z and 0200Z between FL 330 and FL390, three hundred ninety five flights passed through the proposal area. The majority of these flights were scheduled Part 121 (air carrier) operations. But in total, on that day, from the surface to FL 450, 776 flights of various kinds transited or used airspace within the proposal area. If the PRTC is activated as described in the EIS on a daily basis, most of these flights will have to find another way to get to their destinations. AM-21

About 110 United and Continental flights transit the proposed PRTC to or from our hubs in SFO, LAX, DEN ORD, IAH, IAD, EWR and CLE daily. When the area is in use each of these flights will have to fly an average additional 50 flight miles to avoid the area. The extra flight miles at cruise will require an additional 55,000 pounds of fuel each day. SO-7

3037

At current fuel prices with the proposed times of use this represents $6.000.000 in fuel costs and 14.3 million pounds of extra fuel burned each year to our airline. SO-7

In the EIS, the United States Air Force (USAF) describes in detail proposed quarterly Large Force Exercises (LFEs) designed to last one to three days each. We have no objection to these limited duration exercises and consider this to be high value use of the airspace. GE-14

In our review of the proposal, however we do not see justification for activation of the MOA /ATCAAs beyond the LFEs. Blocking the area Monday through Thursday from 7:30am to 12:00pm and then from 6:00pm to 11:30pm with an additional block from 7:30am to 12:00pm on Friday will require hundreds of flights a day to be delayed or rerouted around the area. The excess fuel burn associated with these flights' altered trajectories and the associated increased emissions do not appear to be addressed in the EIS. SO-22 AQ-4

United and Continental Airlines had hoped to be able to address our concerns regarding the "Proposed Action Alternative A" with the USAF directly and at the national (NAS) level. Such an opportunity to have a frank and open discussion with the USAF and other stakeholders regarding their needs might have lead to other potential alternatives to manage the airspace more safely and efficiently. However, the USAF has been unwilling to meet to discuss the proposal beyond the LFEs and that has left us few alternatives. GE-11

United Airlines and Continental Airlines feel that this proposal has not had sufficient review at the NAS (national) level. The LFE use of the airspace appears to be manageable in terms of its impact on other NAS users and not significantly different from other similar exercises that are conducted periodically in other parts of the NAS. The non-LFE portion of the proposal impacts a vast volume of airspace on a daily basis and will put an undue burden on the environment and hundreds of civil aviation and non-participating DOD flights every day. United Airlines and Continental Airlines object to the non-LFE portion of the proposal based on its adverse impacts on the efficient use of the navigable airspace. GE-14

Sincerely,

Timothy L. Stull
Managing Director Air Traffic Strategy and Programs
United Airlines
1200 E Algonquin
Elk Grove, IL 60007

3037

Cc:

Robert Henry
Operations Support Group Team Manager
FAA Northwest Mountain Regional Office
1601 Lind Ave., SW
Renton, WA 98057

Mike O'Brien
Midwest Manager, Tactical Operations
2300 E Devon Ave,
Room 307
Des Planes, IL 60018

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Mike Rizzo, ATREP
FAA, ATO Central Service Center
Operations Support Group, AJV-C2
2601 Meacham Blvd
Fort Worth, TX 76137

Roger Mcgrath
OSG, ATO Central Service Center, AJV-C23
2601 Meacham Blvd
Fort Worth, TX 76137

3038

Written Comment Sheet
Public Scoping Meeting for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 9-16-10

PLEASE PRINT

As President of the Sundown Ranches HOA. We welcome the Training Complex. We want to have the best fighting force on the planet. And if the expanded/new complex helps. Then we are all for it.

As an American I like seeing our war planes @ work. In our remote area, we don't get to see it much.

GE-1

Scott Evans

**** CONTINUE ON BACK FOR MORE SPACE ****

NAME: Scott Evans
ORGANIZATION: Sundown Ranches Home Owners (HOA) Asso.
ADDRESS: [redacted]
CITY/STATE/ZIP: [redacted]

☐ Yes, please include me in the mailing list for distributing the EIS. I would like to receive a copy of the EIS in: ___ hard copy format ___ CD (electronic format)

☒ No, please do not include me in the mailing list for distributing the EIS. I do not wish to receive an EIS or further information.

Please note: Providing your private address information is voluntary. This information will be used to compile a mailing list for distributing future information regarding this EIS. Failure to provide such information will result in your name not being included on the list. Private address information will not be released for any other purpose unless required by law.

Please hand this form in at a public scoping meeting or mail before August 4, 2008 to:
Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

3039

SOUTH DAKOTA STOCKGROWERS ASSOCIATION

Kenny Fox, *President*
foxtranch@gwtc.net
(605) 344-2516
Shane Kolb, *Vice-President*
lazyys@sdplains.com
(605) 244-7145
Margaret Nachtigall, *Executive Director*
margaret.sdsga@midconetwork.com
(605) 342-0429

November 11, 2010

To:
Linda Devine
HQ ACC/A7PS
129 Andrews St. Suite 337
Langley AFB, VA 23665-2769

Re: Powder River Training Area Expansion - Comments

To Whom It May Concern:

Background:
The South Dakota Stockgrowers Association (SDSGA) is an organization of 1,300 cattle and sheep producers committed to representing the independent livestock producers in regards to the sustainability of their livelihoods.

SDSGA appreciates the opportunity to provide meaningful input regarding the expansion of the Powder River Training Complex.

Comments:

South Dakota livestock producers understand and support the need for military training for the security and benefit of our country.

We also understand and support the need for livestock producers whose livlihoods feed and promote the health and well being of the citizens of our country; whose inherent job it is to protect the land that is their sustaining factor. It is with these facts in mind that we oppose the expansion of the Powder River Training Complex as it is defined today. GE-2

1) Opposition to military aircraft flying at 500 feet altitude. PN-4
   A.) At present there are over 300 private planes registered to people in this area. Many of These small planes belong to ranchers who use them in their day to day work. Some belong to people whose job is predator control. Some belong to people who use them for transportation to and from work in small towns. Crop sprayers who work seasonally according to certain crops, and only in weather conditions that prevent drift of spray, do not have the luxury of working according to a set schedule. SO-15 SO-2

426 St Joseph Street, Rapid City, SD 57701 ■ www.southdakotastockgrowers.com

3039

We have been told that Ellsworth must notify the Federal Aviation Administration two hours before a mission and that the information can be obtained by phone or website. We realize this is for the purpose of being a "good neighbor", and we certainly hope to be the same. However, many of these folks would be in the air before any given time; are not radio equipped, and often are not in close proximity to a computer or phone. AM-12

The increased number of military aircraft in the area flying at that altitude is a danger to farmers, ranchers and business people who have the right and the need to use their small aircraft. SA-7

2) Opposition to chaff and flares.

A.) We understand there is a "small" chance of a dropped flare igniting a fire. There is also a "small" chance of lightening striking the ground and causing a fire, but it happens. According to Ellsworth Air Force personnel "there would be roughly half a dozen flights a day at Powder River". That means there would be roughly half a dozen chances a day for the "possibility" of a fire. This would be extremely dangerous in oil and/or gas fields such as those in Harding County and parts of North Dakota, Montana and Wyoming. SA-5

Although we were told by Air Force personnel that there has never been a fire from a flare, we understand a 17,000 acre fire near Atlantic City, New Jersey in 2007 was the result of a flare accidentally dropped from an Air Force aircraft.

3) We have found no evidence of an Environmental Impact Study on the effects of noise, chaff and flares over the habitat area of the Greater Sage Grouse. In March 2010, prior to the Powder River Training scoping meetings, the U.S. Fish and Wildlife Service listed this Sage Grouse as "Warranted but Precluded" under the Endangered Species Act. BI-3

4) We appreciate the fact that the training area is directed away from major airports and commercial air-traffic lanes. However, several times we have heard Air Force personnel refer to the training area as a "sparsely populated" area. The reason it is sparsely populated is due to the fact that you cannot produce food to feed our nation in an urban area. It would seem as though the Air Force has established a certain distinction between urban and rural populations and has chosen an area of lesser importance instead of looking at *unpopulated* areas. LU-1

South Dakota Stockgrowers appreciate the opportunity to comment on this extremely important subject. We have the greatest respect for the United States Air Force and are fully aware of the need for their continued training and education. We hope those of you who make these decisions will also realize the importance of this country's farmers and ranchers and would have the same respect for our needs and will take our concerns into consideration as you make the final plans.

Most Sincerely,

Margaret Nachtigall, Executive Director
South Dakota Stockgrowers Association

3040

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 12-29-10

PLEASE PRINT

SEE ATTACHED LETTER

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	WILLIAM L. NEUMILLER
ORGANIZATION:	PPL MONTANA
ADDRESS:	[redacted]
CITY/STATE/ZIP:	

☒ Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ☒ CD (electronic format) ___ hard copy format

☐ No, please do not include me in the mailing list for distributing the Final EIS. I do not wish to receive an EIS or further information.

PLEASE NOTE: This Draft EIS is provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) NEPA Regulations (40 CFR §§1500-1508), and 32 CFR §989, Environmental Impact Analysis Process (EIAP).

The EIAP provides an opportunity for public input on Air Force decision-making, allows the public to offer inputs on alternative ways for the Air Force to accomplish what it is proposing, and solicits comments on the Air Force's analysis of environmental effects.

When making an oral comment, please clearly state your name and the name of the organization, if any, which you are representing before you begin your comments. Please do not provide any other personal information, such as your home address and phone number when making an oral comment. Your oral comments will be used to develop a transcript and permanent record of this meeting. This transcript will be published in the FEIS. If you would like a copy of the Final EIS or other associated documents, you may state that on a written comment card or add your name and address to the mailing list.

Providing personal information is voluntary. If you choose to not provide personal identifying information, your comments will be given the same weight and consideration as any other comments submitted. Private addresses provided will be compiled to develop the mailing list for those requesting copies of the Final EIS. Only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EIS.

Please hand this form in at a public hearing or mail before ~~November 15, 2010~~ EXTENDED TO JANUARY 3, 2011 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

3040

December 29, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley Air Force Base, VA 23665-2769

RE: Proposed Powder River Training Complex

Dear Ms. DeVine

Thank you for allowing us to comment on the Proposed Powder River Training Complex EIS. We are a 2300 megawatt Coal Fired Steam Electric Station located in Colstrip on Highway 39 thirty miles south of Forsyth. We are located in the proposed PR-1 High Military Operation Action Area and just north of the PR-1B high Military Operation Action area that covers the Northern Cheyenne Indian Reservation.

In Alternative A of the Proposed EIS, Large Force Exercises will be conducted 1-3 days per quarter or 10 days annually. In light of the Homeland Security Act and the safety and security of our employees here at the Colstrip Steam Electric Station, we are requesting a notification process be added to the Proposed Action and Alternative Action Items in the Environmental Impact Statement (EIS).

A notification of when LFE's (Large Force Exercises) will occur in our area will allow our manager and our security department to have this information available in case questions arise from our employees about activities in the air space above our power plants. It would also be a good idea to contact the police and sheriffs offices in the towns of the affected areas during LFE's. In our situation, we are thinking an email to our security department and to our plant manager would be sufficient notice. The timing should be 2-3 days notice prior to the start of the LFE's

AM-12

Thank you again for allowing us to comment on your Powder River Training Complex EIS.

Sincerely,

William L Neumiller

William L Neumiller
Senior Environmental Engineer
PPL Montana – CSES

3041

Nov. 12, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews St., Suite 337
Langley AFB, VA 23665-2769

Dear Ms. DeVine:

The North Dakota Stockmen's Association (NDSA) is an 81-year-old trade organization that represents nearly 3,000 North Dakota beef cattle producers. Our association is a strong supporter of the U.S. military and credits the freedoms we enjoy and the ability we have to live out our American dream, raising cattle and providing a safe, wholesome product for consumers, to the hard work and sacrifices of past and present soldiers.

Our members understand the importance of training and equipping our forces so they are able to protect our nation and defend our way of life. Yet, the massive proposed expansion of and the low-level flight involved with the Powder River Training Area could negatively impact livestock operations in the region, and we urge you to instead consider other alternatives to improve military readiness and expertise.

Our members identified the following major concerns with the Powder River Training Complex proposal in a policy resolution at our recent convention: possible interference with producers checking livestock with small aircrafts at similar altitudes, the potential of fires when flares are released and the startling of livestock due to noise. SA-7

We understand that flares are only being planned for higher-elevation flights, which should allow for burnout before they near the surface, but we are concerned that if those thresholds are not followed and flares are accidentally deployed, serious damage could result, like in the May 2007 accident in the Warren Grove area in New Jersey. The Environmental Impact Statement indicates that the use of flares would be suspended when the fire danger reaches the "extreme" category. The proposed expansion area in North Dakota, however, is big grasslands country, often with lots of "fuel" for prairie fires. Consequently, we believe that a much lower fire danger category would have been a more appropriate trigger. SA-5

The Environmental Impact Statement points out that "increases in the Day-Night Average Sound Level and individual noise events from an aircraft overflight would be noticed and could be perceived as a significant impact by residents under the airspace." Livestock producers agree and find the low-level flights, such as the B-1 missions proposed, where adjusted sound exposure levels could hit as high as 133 dB, a particular concern. The uncertainty of low-level overflight and the inability to anticipate when such an overflight could occur would contribute to the startle effect of animals. This, of course, could result in livestock fleeing, breaking loose and/or causing infrastructure damage and/or injury or death to themselves or humans tending to their care. BI-4

We appreciate the inclusion of the "temporary avoidance areas" in the plan; however, must point out several limitations with this concept. The Environmental Impact Statement identifies branding and weaning as potential activities, which could be indicated as times to avoid upon arrangements between air space managers and livestock producers. Those activities would certainly be ones to avoid, but it is important for planners to understand that these are not the only times when livestock would be gathered, penned and have an increased tendency to spook. For instance, backgrounding and finishing are growing enterprises in this region, and complement the already prevalent cow-calf production that occurs there. Considering the functions of these cattle enterprises, it is not unusual for some cattle to be corralled for three to six or even more months out of the year, so the temporary avoidance concept may not be workable for military officials. Another question that arises is how livestock producers would "register" these avoidance areas, and how much notice would have to be given so trainees could adjust their routes? Unfortunately, Mother Nature "unplans" many work plans on livestock operations, and, consequently, producers need the flexibility to respond to whatever the conditions allow them to do without the delay of any sort of waiting or processing period. SO-13

The Environmental Impact Statement indicates a desire to minimize the annoyance that the expanded training area would cause for residents. Have planners considered putting applicable farmsteads on a permanent avoidance area list, and, if so, would that be a practical option? LU-2

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3041

We would also appreciate more information regarding the proposed threat emitter sites. The Environmental Impact Statement alludes to some of the details, but does not include many specifics, like the number of sites being proposed. Are plans to lease the acreage for all sites, or would some property be acquired as well?] CM-2

In summary, the North Dakota Stockmen's Association supports U.S. troops, the defenders of our democracy; however, livestock producers have significant concerns about the proposed Powder River Training Complex expansion project and, therefore, encourage the utilization of current or alternative options that would be less intrusive.

We appreciate this opportunity to comment and ask questions about the proposed plan.

Sincerely,

Jason Schmidt

Jason Schmidt, President
North Dakota Stockmen's Association

11/01/2010 08:14 7014457309 EL PAGE 02

3042

"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6352

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

11-9-10

I am the pilot for the North Dakota Game and Fish Department and am responding to the proposed Powder River Training Complex (PRTC). The NDGF has two aircraft and eight vender aircraft which are used extensively in the area proposed as well as in the current Powder River MOA and ATCAA.

Being the NDGF Aviation Department and an avid general aviation enthusiast, I strongly oppose any increase in the size of the existing Powder River MOA and ATCAA. I recommend the "No Action Alternative" based on the following reasons:

GE-2

The department can have surveys, surveillance missions and radio telemetry work going on nearly every day of the week using the two department aircraft and vender aircraft. A great percentage of this is done in the south western part of the state as well as telemetry work done in South Dakota and Montana as far south as the Wyoming border. Reducing the regularity of these flights due to a "hot MOA" combined with weather considerations would cause time constrictions that would be unworkable. It is understood that this expanded area would not be a "Restricted Air Space" and that civil operations would be allowed, but to rely on see and avoid tactics with 400 mph to 500 mph closing speeds is unrealistic.

SA-8

Sincerely,
Jeff Faught

Jeff Faught

Pilot
North Dakota Game and Fish Department
[redacted]

3043

From: North Dakota Aeronautics Commission
PO Box 5020
Bismarck, ND 58502

To: Linda DeVine, HQ ACC/A7PS, (PRTC EIS)
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 10-AGL-6NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

November 8, 2010

Subject: Comments on the Powder River Environmental Impact Study

Executive Summary:
The Powder River Military Operations Area (MOA) is presently located primarily in Montana. Additional airspace is being requested by the 7th Bomb Wing from Ellsworth Air Force Base, South Dakota. The 5th Bomb Wing from Minot Air Force Base, North Dakota would be an additional user. Air warfare has changed, and additional air space is being requested to provide realistic training for these and others. The requested airspace would expand to approximately four times the original MOA, and affect North Dakota from Bismarck south and west to the borders, and from 500 feet above the ground to 60,000 feet. Options were given, with option A being what was requested by the Air Force, option B expanding only into North Dakota, option C expanding only into Montana, and a no-action alternative.

The North Dakota Aeronautics Commission attended each Environmental Impact public hearing and noted citizen's concerns at each hearing. In addition, the commission has received numerous additional inputs as the proposed airspace debate gained publicity. The North Dakota Aeronautics Commission recommends option C, since it would satisfy all of the military's needs while minimizing the negative impacts to our state. Option C, as was stated by the Air Force at these hearings, would be the preferred option because this plan would allow for continued economic prosperity and quality of life while allowing the military to satisfy all of its training needs, including mountainous terrain training in the western portion of the proposed MOA.

D0-5

1

P.O. Box 5020 • Bismarck, ND 58502 • 2301 University Drive, Bldg. 22 • Tel: 701.328.9650 • Fax: 701.328.9656
E-mail: ndaero@nd.gov • Web: www.nd.gov/ndaero

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3043

Factors leading to this decision:
The following topics reflect the concerns of North Dakota's citizens which would need to be addressed if the Powder River 4 MOA sector (the eastern portion) was to become active:

Airlines

- The city of Dickinson has benefited greatly from the Department of Transportation's Essential Air Service program, helping small cities to connect with the rest of the country. The goal of the program is to build an airline infrastructure to become independent of funding in the future. In recent years, the oil development has helped to increase loads toward 10,000 passengers, a significant threshold for FAA funding increases from $150,000 to $1 million annually. Ten days of cancelled flights due to military operations could make the difference in making this threshold.

SO-5

Corporate/Charter

- FAR Part 135 flight operations and company operations specifications requirements often dictate that flights must be conducted on instrument flight plans (IFR). Flights would not be permitted through any airspace that is active or scheduled, severely limiting these companies. This uncertainty of available airspace would make it prudent to change a company's destination. These communities count on the oil industry, hunting and tourism for a large part of their livelihood. If the destination changes, the community suffers.

SO-9

Aerial Applicators

- 127,060 acres were sprayed in southwest North Dakota associated with the proposed MOA in the previous year. The Federal Aviation Regulation 91.119 requires aerial applicators to fly at least 500 feet above any person or structure when transiting between fields and their airport. This puts the sprayers at the same critical altitude where the crews of large, high-speed military aircraft are concentrating on terrain following training and tactical maneuvers.

SA-15

Private Pilots

- During a period of declining pilot numbers, this airspace would limit the state's ability to produce new pilots. Concerns of special use airspace would keep any prudent student from flying where their skills at see-and-avoid would be critically tested. The proposed military airspace is below radar contact, and visual is the only means of separation at 600 knots closing speeds.

SO-26

2

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3043

- The sector gaps are intended to allow transit on VOR navigation, or Victor airways. These airways are no longer the normal means of navigation, but a hold-over from before the advent of GPS. Pilots generally fly direct to save time and fuel, and the FAA's NexGen plan reinforces this. The airways can be used to avoid the MOA, but at an increased cost to the flying public. SO-7

FBOs

- Fixed-base operators are the anchor points for general aviation. They survive through the combined income of fuel sales, flight training, aircraft rentals, and hangar fees. Civil flight training will be curtailed without adequate training areas for student pilots. Flight paths for transient aircraft will change to avoid potential airspace restrictions, losing fuel and other sales at the FBOs. An FBO in Bismarck anticipates a loss of $300,000 in revenue annually. SO-5 SO-7

Local Communities

- Cattle herdsman at the hearings passionately objected to the low altitude aspects of the proposal. Many grew up in the same area when B-52s flew low altitude routes, and saw the devastation of startled cattle, breaking necks and limbs against stockade fencing. Even the most positive of the ranchers asked, "Please- can you just give me a number to call a real person when my year's income is killed in a stampede?" SO-13 GE-8
- A Real estate agent knows what makes the property valuable – they value the peace and serenity that gave people a reason to live there. Many people noted the "startle" effect on a fly-over at 500 feet for unsuspecting people. SO-1

Weather Modification

- Crops and homes are kept safe by aerial hail suppression, which requires quick response, accurate radar imagery, and precise cloud seeding. By design, the chaff which will be deployed ruins the weather radar returns, putting a halt to their business. Cloud seeding often requires close proximity to the clouds or penetration, dictating the need for an instrument (IFR) clearance. IFR is not permitted in the active MOA, halting cloud-seeding operations and putting homes and agriculture at risk for damage from the weather. SO-28

Clinics

- Approximately 80 medical flights each month originate in Bismarck. Doctors and their staff would not accept the loss of revenue associated with driving between their homes and outlying clinics. Flights requiring an IFR clearance could not be conducted into an active or scheduled MOA, and the proposed time of MOA activity (07:30- 12:00) corresponds with the times needed to deliver these medical teams to rural clinics. Cancellations or delays would jeopardize the clinics in the rural areas including the towns of Hettinger and Bowman. SO-5

3

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3043

Air ambulance operations

- The EIS implies that most air ambulance flights are below 10,000'. The majority of air ambulances are now pressurized turboprops operating above these altitudes. Rural communities have been assured that all military operations will cease in the event of an air ambulance operation, but the FAA and Air Force should be aware that the aircraft may be operating between Flight Level 180 and 250.

SA-18

Tribal Concerns

- Separate and private hearings were conducted at the tribal reservations. Concerns were stated, but were not submitted to the aeronautics commission.

NA-2

Aerial Wildlife surveys and predator control

- This topic is important to North Dakota, but will be detailed through the response from the North Dakota Game and Fish Department.

SO-15

Conclusion

Option C, which excludes the area in western North Dakota, would provide the additional airspace and geography needed for the additional training required by the Air Force without deteriorating North Dakota's economic, environmental, and quality of life elements. The public input was emotional and well documented across the state. The reasons against the Powder River 4 MOA varied between the different communities of North Dakota, but the solutions to each community's concerns could be solved by selecting Option C of the Environmental Impact Proposal. Regardless of the final decision, the following modifications would minimize the negative effects on North Dakota:

DO-5

1. Attempt to shrink the North Dakota area as much as possible ... exclude areas around cities and airports.

AM-5

2. Raise the minimum altitude as much as possible. A floor of 10,000 within the eastern sector would allow for most business to continue and limit the hazards caused by high-speed military aircraft and their operations.

DO-4

4

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3044

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 4-21-10

PLEASE PRINT

Due to the economic activity related to natural resource development in our community, I have concerns with the flight space proposed interfering with our airport expansion and any expansion of constructed or proposed wind farms in our area. While I believe training for the Air Force is essential necessary, I would recommend flights that near Bannon County to be at higher altitudes near 14,000 ft. From my daily duties I regularly see to try to decrease impacts on community quality of life. These low and other low flights I believe will be a public nuisance or impact our daily living. My greatest concern however involves the chaff. AM-5 SO-17 LV-2

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	Ashley Alderson
ORGANIZATION:	Bannon County Development Corp
ADDRESS:	[redacted]
CITY/STATE/ZIP	[redacted]

Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ✓ CD (electronic format)
___ hard copy format
No, please do not include me in the mailing list for distributing the Final EIS. I do not wish to receive an EIS or further information.

PLEASE NOTE: This Draft EIS is provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) NEPA Regulations (40 CFR §§1500-1508), and 32 CFR §989, Environmental Impact Analysis Process (EIAP).

The EIAP provides an opportunity for public input on Air Force decision-making, allows the public to offer inputs on alternative ways for the Air Force to accomplish what it is proposing, and solicits comments on the Air Force's analysis of environmental effects.

When making an oral comment, please clearly state your name and the name of the organization, if any, which you are representing before you begin your comments. Please do not provide any other personal information, such as your home address and phone number when making an oral comment. Your oral comments will be used to develop a transcript and permanent record of this meeting. This transcript will be will be published in the FEIS. If you would like a copy of the Final EIS or other associated documents, you may state that on a written comment card or add your name and address to the mailing list.

Providing personal information is voluntary. If you choose to not provide personal identifying information, your comments will be given the same weight and consideration as any other comments submitted. Private addresses provided will be compiled to develop the mailing list for those requesting copies of the Final EIS. Only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EIS.

Please hand this form in at a public hearing or mail before November 13, 2010 to:
Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

3044

and its effect on our local Bamman Radar. While this radar is most utilized during the summer months by the weather modification program, it is in the process of being up and running year round. This radar is vital to our area due to the lack of radar coverage from Bismarck, Rapid City & Billings. Because these three radars are a good distance away, none of them accurately cover Bamman County. Again, we need radar coverage & without the Bamman Radar - we have none. The economic impact from severe weather on our agriculture community is huge. Our farmers & ranchers need to have radar coverage to see approaching storms and the increased protection from the weather modification program. This program's hail suppression activities are proven successful and protect our agriculture community from great loss, not to mention the loss to property owners from hail damage, flooding, heavy runoff. Near our radar is very important and appreciated. SA-16

As a community we support our Armed Forces and we appreciate the opportunity to have public input in this project. NP-3

Thank you for your consideration of our concerns & compromise on these important issues.

3045

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** _____

PLEASE PRINT

WE'VE HAD B-52 TRAINING FLIGHTS SINCE THE 90'S - HOW LONG IS THIS PROGRAM SCHEDULED FOR ? — AS A COUNTY COMMISSIONER FOR FALLON COUNTY IN MONTANA - I HAVE CONCERNS FOR THE OPERATION OF OUR LOCAL AIRPORT - COMMERCIAL PILOTS (BRINGING IN OIL FIELD EXECUTIVES) HAVE TOLD OUR AIRPORT MANAGER THEY WILL BE AVOIDING OUR AIRPORT WITH THE IMPLIMATION OF THIS PROGRAM IN ITS PRESENT FORM*** CONTINUE ON BACK FOR MORE SPACE **** THERE IS PLANS TO (SEE BACK) S0-10

NAME: WILLIAM L RANDASH
ORGANIZATION: FALLON COUNTY COMMISSION
ADDRESS: BOX 846
CITY/STATE/ZIP: BAKER, MONT 59313

Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format) ___ hard copy format

No, please do not include me in the mailing list for distributing the Final EIS. I do not wish to receive an EIS or further information.

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Please hand this form in at a public hearing or mail before November 13, 2010 to:
Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

3045

LENGTH OUR LANDING STRIP BY 1000' FEET — LAND HAS BEEN ~~PURCHASED~~ PURCHASED & BIDS ARE ABOUT TO BE LET, GRANTED FEDERAL MONEY IS THE PRIMARY FUNDING AGENCY — BUT WHAT A WASTE OF TAX PAYERS MONEY IF THE STRIP IS NOT GOING TO BE USED. SO-10

I DO REALIZE THAT TRAINING OUR PILOTS AND AIR CREWS IS ESSENTIAL. PN-1

3046

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 10/14/10

PLEASE PRINT

THE AIR FORCE NEEDS TRAINING THEY PROTECT US FROM FOREIGN ENEMIES WE NEED TO SUPPORT THEM WITH THEIR TRAINING NEEDS. GE-9
I AM PROUD TO SEE THE PLANES IN THE AIR EVEN IF SOMETIMES THEY SCARE THE XXXX OUT OF ME.
THE AIR FORCE HAS ALWAYS BEEN EASY TO WORK WITH @ OUR LOCAL GOVT, "COUNTY"

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	RUSTY JARDEE
ORGANIZATION:	CARTER CO. SHERIFF
ADDRESS:	
CITY/STATE/ZIP:	EKALAKA, MT. 59324

☐ Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format) ___ hard copy format

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Please hand this form in at a public hearing or mail before November 15, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

3047

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! DATE: _____

PLEASE PRINT

The proposed area includes areas of excellent potential for the development of wind energy. We would request a firm definitive statement that this federal action would not result in limitations or constraints on the development of wind energy projects either by the Federal Aviation Administration or the military NP-6

**** CONTINUE ON BACK FOR MORE SPACE ****

NAME: Ron Rebenitsch
ORGANIZATION: Basin Electric Power Cooperative
ADDRESS: 1717 E Interstate Ave
CITY/STATE/ZIP: Bismarck, ND 58503

Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format) ___ hard copy format

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PLEASE NOTE: This Draft EIS is provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) NEPA Regulations (40 CFR §§1500-1508), and 32 CFR §989, Environmental Impact Analysis Process (EIAP).

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When making an oral comment, please clearly state your name and the name of the organization, if any, which you are representing before you begin your comments. Please do not provide any other personal information, such as your home address and phone number when making an oral comment. Your oral comments will be used to develop a transcript and permanent record of this meeting. This transcript will be will be published in the FEIS. If you would like a copy of the Final EIS or other associated documents, you may state that on a written comment card or add your name and address to the mailing list.

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Please hand this form in at a public hearing or mail before November 13, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

3048

MEMO

DATE: September 20, 2010
TO: The United States Air Force
FROM: Holly Waddell, Chairman, Dakota Rural Action Holly Waddell
SUBJECT: Expansion of the Powder River Training Complex

Thank you for your time in considering the public comments presented at the various hearings being held.] NP-3

On behalf of Dakota Rural Action (DRA), I wish to present this copy of DRA's policy in regards to the proposed expansion of the Powder River Training Complex. Our membership adopted this resolution in 2008 and members still have grave concerns about this proposal. DRA is a family agriculture and conservation group organized to help South Dakotans preserve the family farm and ranch, the environment, and our unique way of life. Offices are located at 910 Fourth Street, Ste. A, in Brookings, South Dakota; phone 605-697-5204.

OPPOSITION TO EXPANSION OF THE POWDER RIVER TRAINING COMPLEX (adopted 2008)

WHEREAS, The United States Air Force and Ellsworth Air Force Base is proposing an expansion to its Powder River Training Complex which would:

1. Expand and enhance the existing Powder River Complex (PRC), which currently has both airspace and ground-based Air Force training assets in South Dakota, Wyoming, Montana, and North Dakota
2. Add new airspace with a floor of 500 feet and eliminate some existing airspace
3. Support additional ground-based simulated threat emitters under the Military Operations Areas (MOAs)
4. Authorize use of defensive chaff and flares throughout the special use airspace
5. Permit supersonic flight above 10,000 feet throughout the special use airspace
6. Support large force (over 20 aircraft) exercises (Federal Register:
May 29, 2008 Volume 73, Number 104), and

WHEREAS, the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321, et seq.) requires the Federal Government to coordinate with counties which have a Natural Resource Plan; and

WHEREAS, Jet plane take-offs produce 120 decibels, and noise levels greater than 85 decibels are hazardous to hearing and regular exposure of more than one minute at 110 decibels or louder can cause permanent hearing loss; and] NO-5

WHEREAS, There are no provisions for airborne access to any municipal or private airstrips except Rapid City Regional severely limiting private air travel, crop dusters, ambulance aircraft ability to travel with no provision for reimbursement of fuel or time consumption; and] SO-7

WHEREAS, Chaff is composed of aluminum–coated glass fibers that reflect radar being released in packets of 0.5 to 100 million fibers, which is determined to be necessary by the Department of Defense, but is known to affect human health, public safety by interfering with air traffic control radar and weather radar observations, electrical equipment, and impacts to wildlife and food supplies in an agricultural area are unknown; and] SA-14] SA-16

WHEREAS, 'Flares' burn at 2000 degrees and pose a serious fire risk if they are ejected as proposed at less than 1500 feet over an area that depends on voluntary fire departments and 'Duds' (flares which failed to ignite), that fall to the ground can endanger people or animals as they contain magnesium and lead; and] SA-5

WHEREAS, official Air Force policy precludes wind energy development due to radar interference; now] SO-17

THEREFORE BE IT RESOLVED, that Dakota Rural Action calls for full coordination between the US Air Force, Ellsworth Air Force Base and the impacted local governments and agencies to ensure minimal impact of the expanded airspace to human and animal health, the environment and natural resources, and use of local infrastructure necessary for maintaining a rural quality of life; and] NP-10] LU-1

BE IT FURTHER RESOLVED that any airspace used by the Air Force is rented from the landowner, with annual payments (not perpetual easements) to compensate for the use of the land including, but not limited to impacts to agriculture and wind energy production potential.] SO-1] SO-17

3049

Written comments
Proposed Powder River Training Complex

Continuing economic development efforts and retaining quality of life in Grant County, North Dakota, is extremely important to the Grant County Job Development Authority (JDA) and all of Grant County. Consequently, the Grant County JDA requests the following concerns be addressed in regards to the proposed Powder River Training Complex:

1) With respect to Grant County and North Dakota, would the proposed airspace expansion hinder the day-to day operation of the existing communications towers (i.e. cell, radio, microwave, etc.) which are within the confines of the proposed airspace expansion?

2) Grant County is the potential site for wind energy development; the county currently has developers considering the construction of wind farms in the county. One developer is in the queue with the Federal Energy Regulatory Commission. With respect to Grant County and North Dakota, would the proposed airspace expansion affect the development of wind tower sites within the confines of the proposed airspace expansion?

SO-17

3) Would aircraft flying in the vicinity of wind turbine farms negatively impact the mechanical operation and/or electrical generating capacity of these machines?

SA-24

4) What is the approximate number of flights (low and high estimates) we can expect to occur in the proposed expansion on a daily, weekly and monthly basis?

AM-27

5) Grant County depends upon regional air ambulance and helicopter medical evacuation (MEDEVAC) capability to transport patients who are in danger of losing life, limb or eyesight. Will the USAF give these flights priority over its scheduled military training?

SA-19

6) With respect to Grant County and North Dakota, will the infrastructure exist (assigned civilian compatible frequencies, repeaters, etc.) for air ambulance and MEDEVAC operators on lifesaving missions to be able to directly communicate their need for airspace with the authority (FAA, military controllers, etc.) in charge of this airspace?

AM-1

Respectfully submitted,

Luann Dart, director
Grant County JDA
PO Box 309
Elgin, ND 58533

Alaska Airlines 3050

November 5, 2010

Ms. Linda DeVine
HQ ACCC/A7PP
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Dear Ms. DeVine:

Alaska Airlines (ASA) has reviewed the Draft Environmental Impact Statement for the Proposed Powder River Training Complex (PRTC). We appreciate the opportunity to provide our comments on the impacts this proposal will have on civil aviation.

The proposed PRTC greatly expands MOAs and ATCAAs over North Dakota, South Dakota, Wyoming and Montana. The proposed expansion controls the airspace from the surface to FL600 resulting in significant negative impacts to commercial aviation. It will routinely cause re-routes that increase track miles, increase fuel burn and emissions, and reduce operational reliability. Additionally, it will degrade the safety of our flights because this proposal eliminates severe weather avoidance route options.

Routes
Alaska Airlines' primary and alternate weather routes go through the proposed PRTC. Twenty-five flights per day would be directly impacted by the ATCAA during the proposed hours of operation. Per the DEIS, the PRTC could be scheduled "other times by NOTAM", permitting military access to the MOA 24 hours per day. In a 24 hour period, up to 38 Alaska Airlines' flights could be impacted if the ATCAA is activated above FL260.

SO-8

Fuel Burn/Emissions
Changing our primary route around the proposed PRTC between SEA and DCA would add 36 miles per flight (or 700 lbs of fuel). Just this one re-route would burn 153,000 additional gallons of fuel per year. The increased fuel burn adds up quickly when considering all of ASA's impacted flights both in cost (estimated to be in the millions of dollars annually), and environmental impacts from increased emissions.

In addition to burning fuel to fly the extra distance, we will burn additional fuel to carry this fuel. For example, from SEA to DCA, the cost to carry the extra 700 lbs of fuel to fly around PRTC is about 70 lbs. Even if the military releases the airspace tactically, the extra fuel needs to be carried for dispatch purposes. To avoid carrying this fuel, we would need to know the airspace is available 5 to 6 hours prior to flight through it.

SO-7

BOX 68900 SEATTLE, WA 98168-0900/206 433 3200

3050

Severe Weather
Due to restrictive airspace constraints on the East Coast, it is essential for us to have route flexibility leading up to the constrained "catch points". On a daily basis, our routes could flex dramatically over the course of several hours due to weather. Because of the turbulence over and along the east side of the Rocky Mountains, Alaska Airlines reroutes flights further north than optimal to ensure they are safe from severe weather and turbulence hazards. The proposed ATCAA above FL260 prevents this northerly reroute away from terrain and would force flights into airspace that is already constrained by numerous MOAs and ATCAAs in the southwest increasing flight distance by more than 100 miles.

SO-8

Cumulative Impacts
While the direct impacts of delays, inefficient routings, and reduced weather avoidance routes are significant, the indirect impacts of flights being rerouted around the PRTC also need to be considered. According to the DEIS, more than 500 daily IFR flights between 18,000' and FL370 currently fly through the proposed PRTC. These aircraft would be forced to funnel through narrow corridors, similar to what happens today in the southwest due to military complexes R2508 and R4800. This compounds the impacts for the flights directly impacted as well as the traffic that now has to share the remaining available airspace.

SA-3

Alaska Airlines has determined that any expansion of the PRTC airspace above FL260 will cause safety concerns and an undue financial burden. We oppose development of the Powder River Training Complex as proposed and would like to work with the Air Force to develop an alternative that balances the needs of the military with those of commercial aviation.

GE-2
GE-11

Sincerely,

Captain Gary Beck
Vice President, Flight Operations

3051

AOM

"The Voice of Aviation in Montana"

Aviation Organizations of Montana

November 12, 2010

Ms. Linda Devine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Dear Ms. Linda Devine,

As the current President of the Board for the Aviation Organizations of Montana, I was requested to make written comment concerning the proposed expansion of the Powder River Military Operations Area. Of these organizations, some have been in existence for many years, one since 1939. At our last board meeting which was held October 16th 2010, we had a lengthy discussion concerning the proposal. At the conclusion of the discussion we had a unanimous vote of those attending to voice our negative opinion. This proposal would be detrimental to aviation as a whole in the State of Montana. The restrictions to commercial and private instrument flights would not be economically feasible to be rerouted during the times of activation, which would be quite extensive. With flight levels from 500 feet above ground level to 45000 feet above ground level, there is nothing that can penetrate this airspace safely with "see and avoid" tactics. Spray plane pilots and ranchers occupy the lower levels, with commercial and general aviation pilots occupying the middle to upper levels of airspace from approximately 1000 feet above ground level to a maximum of 45000 feet above ground level. We do not believe the full economic impact has been properly addressed and we are in agreement with many of our elected Montana officials. This is simply not a good proposal for the State of Montana. The Aviation Organizations of Montana is comprised of the following:

SO-7

SA-7

SO-22

1. Montana Pilots' Association
2. Montana 99's
3. Montana Flying Farmers
4. Experimental Aircraft Association
5. Montana Community Airport Assoc.
6. Montana Aviation Trades Association
7. Association of Montana Aerial Applicators
8. Montana Airport Managers Association
9. Montana Antique Airplane Association
10. Montana Seaplane Association
11. Montana Civil Air Patrol
12. Aircraft Owners and Pilots Association
13. Montana Aeronautics Division of the Department of Transportation

Assn. of Montana Aerial Applicators • Montana Airport Management Assn. • Montana Antique Aircraft Assn.• Montana Aviation Trades Assn.• Montana Flying Farmers • Montana Pilots Assn. • Montana Ninety-Nines • Montana Seaplane Pilots Assn. • Civil Air Patrol • Experimental Aircraft Assn.

3051

As you can tell from the list above this represents most aviation aspects in the State of Montana. With all due respect we would like to see the Airforce adopt option D. which would be no change to the current Powder River Military Operations Area.] GE-2

Sincerely,

Wade Cebulski

Wade Cebulski, President
Aviation Organizations of Montana
P.O. Box 333
Seeley Lake, MT 59868

cc.
FAA
Senator Max Baucus
Senator Jon Tester
Congressman Denny Rehberg

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Frederick, Maryland 21701

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3052

November 11, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Re: Draft Environmental Impact Statement for Powder River Training Complex

Ms. DeVine,

The Aircraft Owners and Pilots Association (AOPA) represent the interests of more than 410,000 general aviation pilots and aviation enthusiast nationwide. On behalf of our members, we support the United States Air Force (USAF) and their need to conduct training in a manner in which they fight. However, the massive airspace expansion being proposed in the Powder River Training Complex (PRTC) Draft Environmental Impact Statement (DEIS) would be the largest Special Use Airspace (SUA) complex in the United States and cover an area of approximately 28,000 square miles, roughly the size of South Carolina. AOPA contends that the PRTC is an overly expansive airspace request that will severely and unnecessarily impact the national airspace system and the operators who fly in the affected airspace. The USAF has not provided sufficient justification for such a massive expansion of the airspace for year round activities.

While large areas of special use airspace and generous charted times of use translate into flexibility for the USAF, that flexibility results in substantial negative impacts on general aviation. The proposed PRTC will result in significant economic impacts to airports, flight schools, pilots, and small businesses that rely on general aviation. AOPA is also concerned with multiple safety issues related to the PRTC including high speed, low altitude maneuvering, deployment of chaff and flares, and limited radio communications and radar coverage. For these reasons, AOPA opposes the PRTC proposal for year round airspace expansion and provides the following concerns and associated impacts of the proposed airspace expansion.

Proposed airspace does not match demonstrated need

The PRTC proposal would establish four Military Operations Areas (MOA) extending from 500 feet above ground level (AGL) to 12,000 feet mean sea level (MSL) with charted times of use amounting to 44.5 hours per week. However, the DEIS states that the USAF expects to use most of these MOAs for just 15 hours per week. While charting 44.5 hours of use provides enormous flexibility for the USAF, it would increase operating expenses, increase delays, and degrade safety for 285 based civil aircraft and countless Visual Flight Rules (VFR) transient operators who will be required to traverse an active MOA to arrive or depart one of 39 airports underlying the PRTC. Pilots operating under Instrument Flight Rules (IFR) will be routed around the MOA's when they are in use and likely will incur delays as a result of reroutes. In addition, the proposal provides for the use of Notice to Airmen (NOTAM) to schedule SUA outside of charted times of use. With a minimal need provided in the justification for the proposed expansion, the extensive charted times as well as the allowance of additional flexibility seems excessive. .

SO-7
SA-7
SO-8
PN-5

According to page 2-40 of the PRTC DEIS, only 75 to 100 minutes per week will be spent at altitudes below 2,000 feet AGL. AOPA questions the need to activate airspace below 2,000 feet for the same duration as airspace above 2,000 feet when it is only expected to be used 10% of the time. Perhaps subdividing actual needed airspace would be a better solution than requesting a massive SUA with excessive charted times. Similar solutions could have resulted from early dialogue with the user community had they been part of the planning process from the conceptual phase of airspace development.

AM-26

AIRCRAFT OWNERS AND PILOTS ASSOCIATION

3052

Economic Impacts of the Proposal are Excessive

The USAF is required to give public use airports that underlie the MOA a 3 nautical mile radius and 1,500 foot exclusion area. However, this exclusion area does not allow for aircraft to ingress and egress the airport safely nor does it provide any accommodation to the 20 private use airports that would be unusable during times of PRTC SUA activation. Without real time SUA data, locally based and transient pilots will lose flexibility in choosing departure and arrival times at airports underlying the PRTC. In the long term, this reduction in flexibility will result in businesses and private owners relocating their aircraft outside of the PRTC to avoid the expense and delay associated with operating through expansive special use airspace.

AM-5

SO-10

Fixed base operators (FBO) rely on local and transient aircraft as their primary sources of income. When local operators begin relocating their aircraft to airports outside of the PRTC, income from fuel sales, hangars, and tie down fees will drop precipitously. Based on data contained in the 2007-2008 Montana Economic Impact of Airports Study, the average airport underlying the PRTC provides 5 jobs, $81,000 in annual payroll, and nearly $200,000 in economic activity to the surrounding community. With 19 publicly owned airports underlying the PRTC, this translates to approximately 95 jobs, $1,539,000 in annual payroll and $3,800,000 in economic activity in the surrounding communities directly attributed to the airport. This economic activity is not sustainable under the PRTC and will be eroded until reaching a point where operating an aviation business under the PRTC is no longer financially viable. Transient aircraft will be more likely to utilize an airport outside of the PRTC even if means renting a car and driving to their desired destination inside the PRTC. This will further erode the FBO's income through lost fuel sales and ramp fees. Operating margins for an FBO are extremely thin and even a small decrease in normal traffic levels will have devastating consequences to these small businesses.

SO-10

SO-5

The PRTC will destroy the flight training industry at 39 airports underlying the proposed airspace. In the DEIS, the USAF explained that one of the key drivers of the PRTC was avoiding expensive, unproductive commutes to distant ranges. The same can be said for general aviation pilots who are paying for flight training as well. Flight instructors would be forced to choose between conducting a flight in an active MOA with low altitude military aircraft operating at speeds in excess of 500 knots, or commute as much as 50 minutes to conduct the flight training outside of the SUA. A typical general aviation training flight lasts approximately 1.5 hours. Adding an additional hour and forty minutes of flight time to every flight lesson will more than double the cost of earning a pilot certificate. When faced with additional flight time expenses exceeding $7,000.00 over the course of their private pilot training, potential student pilots will simply drive to an airport outside of the PRTC, or forego learning to fly altogether. This is too high a price for civil aviation to pay when other options must be considered by the USAF to be a responsible steward of the national airspace system.

SO-26

We appreciate the USAF's willingness to return SUA to the National Airspace System (NAS) when it is no longer in use, as mandated by the Federal Aviation Administration (FAA) Joint Order 7400.2G, paragraph 21-1-8. Unfortunately, the lack of real-time information sharing makes it nearly impossible in the current airspace environment for non-participants to know the actual status of a SUA at a given time. Although the USAF plans to notify Air Traffic Control (ATC) when the airspace is no longer active, there is limited communication coverage in the PRTC area making it unlikely that general aviation pilots will be aware that the SUA has been deactivated, or is about to be activated. Because general aviation pilots as well as other operators do not have access to real-time SUA data, pilots are forced to typically rely on the charted times of use for a given SUA area. The excessive charted times of use and lack of real-time information compound the economic impacts of special use airspace.

AM-12

SO-8

3052

Ms. Linda DeVine
Page 3
November 11, 2010

Safety Concerns of Non-Participating VFR Traffic

General aviation traffic operating within the boundaries of the proposed PRTC use see and avoid to mitigate the risk of a mid air collision. The success of see and avoid is dependent on aircraft below 10,000 feet operating at or below 250 knots. The USAF plans to operate at speeds up to 540 knots within the PRTC. While this operation may be legal under the USAF's waiver with the Federal Aviation Administration (FAA), it does not make good sense nor is it a responsible use of this massive airspace area. At best, this operation will render see and avoid difficult to impossible. Despite the waiver permitting operations in excess of 250 knots below 10,000 feet, the requirements for see and avoid remain. The USAF has not explained how, at more than 500 knots, they plan to see or avoid a VFR aircraft operating legally within the active MOA.

SA-7

Because the proposed airspace will be accessible to non-participating VFR aircraft, there are increased risks associated with the release of chaff and flares that the USAF has not adequately identified. The flares burn in excess of 2000 degrees Fahrenheit for at least 500 feet vertically, creating a risk of the flare embers coming into contact with non-participating aircraft. With the failure rate of these flares at 1%, there is also a potential for an un-ignited flare (dud) to come into contact with a non-participating aircraft while in flight. The damage that would result from such contact would range from minor to disastrous and could potentially result in loss of life.

SA-5

SA-16

The use of chaff within the proposed MOA poses a similar risk. By design, chaff must form a cloud of metallic fibers at least 30 meters in diameter. The risks to non-participating civil aircraft unknowingly flying through one of these clouds includes, but are not limited to: in-flight windscreen blanketing, engine foreign object damage (FOD), turbine FOD, propeller FOD, aircraft environmental system contamination, and possible navigation and communication equipment interference.

SA-26

Summary

AOPA understands and respects the military's need to train. However, the massive scale of this airspace will have devastating impacts on the general aviation industry. The size and charted times of use are excessive, unjustified, and must be reduced. We strongly recommend the USAF utilize early and continuous dialogue with the user community during the development of additional SUA to meet training requirements. Based on the economic impacts and safety concerns with the proposed expansion of the PRTC, we strongly recommend the USAF go back to the drawing board and involve users in a meaningful dialogue to ensure any considered airspace expansion includes input from the user community. As proposed, AOPA opposes the PRTC due to the lack of justification for this expansive airspace design and its substantial impact on civil aviation. We appreciate the opportunity to provide comments on the Draft Environmental Impact Statement for the Powder River Training Complex.

AM-6

GE-11

GE-2

Sincerely,

Thomas E. Kramer

Thomas E. Kramer
Manager
Air Traffic Services

3053

BASIN ELECTRIC POWER COOPERATIVE
1717 EAST INTERSTATE AVENUE
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PHONE: 701-223-0441
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November 10, 2010

Ms. Linda DeVine
HQ AC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

RE: Powder River Training Complex (PRTC) Draft Environmental Impact Statement (EIS)

Dear Ms. Devine:

Basin Electric Power Cooperative is submitting this letter as its official, formal comments on the August 20, 2010, Draft Environmental Impact Statement (EIS) related to the expansion of the Powder River Training Complex (PRTC) in South Dakota, North Dakota, Wyoming, and Montana. This letter supersedes any other comments that may have been made on behalf of Basin Electric in any other public forum.

Basin Electric has long supported our men and women in uniform, and is proud to have several employees as active members of the National Guard. Military bases are key accounts and many of the base personnel are members of our distribution cooperatives. The Basin Electric cooperative family continues to work tirelessly to ensure that the bases and the members have a reliable and affordable power supply.

Basin Electric supports the need for the military to have adequate airspace for readiness training and wants to work constructively with the military and FAA on these issues. After review of the Draft EIS, we identified two items needing further clarification and/or possible modifications to the proposed training area:] GE-11

1. **Communications and radar coverage.** We are pleased that the Air Force expressed an interest in further developing the regional communications structure to support commercial and private aviation. Basin Electric believes this is important and commits to work with the Air Force on this issue, including support in the federal budget process for additional appropriations if needed. We look forward to a continued dialogue on this important issue.] AM-3

2. **Commercial airport buffers.** The Draft EIS indicates the MOAs' boundaries will come within 30 miles of larger commercial airports, such as Bismarck and Dickinson. However, manufacturer guidelines for aircraft used by Basin Electric, and many others common to general aviation, recommend descents of between 33 and 43 miles from the airport. Would extending the MOA boundaries to between 45 to 60 miles from these airports adversely affect the use of the training airspace by military aircraft?] AM-5

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We sincerely appreciate the good working relationship that our members have with the United States Air Force. Our desire is that as the final EIS and decision are prepared, that all affected parties can find common ground to support military training and readiness while minimizing impacts to communities and businesses in the region. Thank you for your consideration of these comments. GE-11

Respectfully,

Ronald R. Harper
CEO & General Manager

3054

Bismarck
AIRPORT

November 10, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews St, Room 337
Langley AFB, VA 23665-2769

RE: Powder River Training Complex EIS

Dear Ms. DeVine:

The purpose of this letter is to provide comments to the Powder River Military Operations Area (MOA) Environmental Impact Statement (EIS). Bismarck Airport (KBIS) is a Non-Hub primary commercial service airport serving Bismarck, Mandan and surrounding areas of North Dakota. Bismarck has three airlines that serve approximately 360,000 total passengers per year with direct commercial service to six non-stop destinations. Bismarck Airport has 70 Based Aircraft and two Fixed Based Operations (FBO's) serving all aeronautical users with fuel, maintenance, air taxi, avionics, upholstering, hangaring, and other flight line services. Two major energy companies also have hangars, aircraft and flight departments on our airfield. Bismarck Airport has among its tenants the North Dakota Army National Guard Army Aviation Support Facility. Bismarck Airport and the City of Bismarck are strong supporters of the military; however, we have concerns about the proposed expansion of the Powder River MOA.

The proposed MOA expansion will have several negative impacts on private and commercial aviation users in Bismarck that should be considered as this proposed expansion of the Powder River MOA is reviewed.

Aircraft departing Bismarck to conduct business at communities and airports within the proposed MOA will be limited to flying by Visual Flight Rules (VFR) when the expanded MOA is active. A business must be able to count on flight under Instrument Flight Rules (IFR) to get personnel into airports in the proposed MOA during inclement weather. We are concerned about safe and unlimited access to neighboring airports at Bowman, Elgin, Hettinger and Mott, which are under the proposed expanded MOA PR4. Bowman and Hettinger have community medical facilities that are serviced by fly-in medical specialists under IFR controlled airspace by

SA-3

SO-5

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Part 135 and Part 91 aviation providers. These flights deliver medical specialists, on a scheduled basis, to area clinics from large regional medical facilities in Bismarck. There are approximately 80 medical flights that originate from Bismarck Airport each month. These flights are serviced by Bismarck's FBO's or private owners. The proposed MOA expansion would cause delays and cancelations to those teams of medical personnel who travel to serve those communities.

While the Air Force says that active emergency ambulance flights will be accommodated, routine travel by medical teams will be negatively impacted. Those teams routinely fly under IFR, an option not available when the MOA is active. Medical teams that experience delays and cancellations resulting from the MOA will find that they cannot count on air transportation as an efficient means of travel. As a result, these medical providers may stop their services to those communities altogether, eliminating convenient access to essential medical service to thousands of rural residents of southwestern North Dakota. The reduction in flights would also have a negative economic impact on the aviation service providers in those communities. SO-5

Charter operations will be impacted because they operate under more stringent flight rules. The unavailability of flight under IFR flight rules when the MOA is active will introduce unpredictability that will result in unnecessary delays and cancellations. SO-8

Hettinger and Bowman Airports have expended significant efforts developing and improving their airport facilities. They have installed automated weather reporting at their airports to improve dependability of air services by both charter and private operators under Instrument Flight Rules to their cities. These efforts will be negated whenever the PR4 MOA is active. IFR flights from Bismarck to these communities during these times are effectively eliminated during any scenario with limited ceiling and visibility. Both the communities and the aviation service providers will suffer social and economic hardship due to the proposed expansion of the PR MOA. SO-10

Oil and energy companies also fly daily trips from Bismarck Airport into and out of the airspace that is proposed in this expansion of the current Powder River MOA. The expansion of the MOA will introduce additional negative impacts because the flight route of many of these operations is across and through the expanded MOA. The re-routing around the proposed MOA will cause unnecessary financial hardship on these companies as a result of increased cost for aircraft time, fuel, lost productivity, increased maintenance, etc. SO-7

A harder to measure negative impact to Bismarck Airport will be when private and corporate pilots choose to go around the expanded MOA to "avoid the hassle" of passing through or SO-6

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around it. As a result they will choose a route that avoids Bismarck altogether resulting in more social and economic hardship due to loss of fuel and support services sales at our FBO's at a time when they are already hurting due to the national economy. SO-6

North Dakota is the number one producer of 13 agricultural commodities so changes that negatively affect agricultural production will be felt throughout the economy of all of North Dakota. We have heard comments about the proposed MOA from area crop sprayers and others (USDA Animal Damage Control) who routinely fly at low levels (below 500') to conduct their business. These operators are concerned about little or no vertical separation between them and low flying, high speed military aircraft when there is no radar coverage at this altitude. If this proposed MOA expansion leads to increased crop losses and livestock depredation due to these operators inability to perform their functions, the negative effect on agriculture will ripple through North Dakota's number one economy. SA-7 SO-11

We are concerned about the negative effects of the expanded MOA on the three (3) airlines serving Bismarck. All three (Delta, United and Allegiant) have direct flights to four (4) destinations to the south and west of Bismarck requiring them to fly above or around the proposed MOA. When departing Bismarck they will have to either climb rapidly to over 18,000 feet within 35 miles or fly south into South Dakota and then back to the west before being able to fly direct to their destinations. Both scenarios add costs and time to the airlines and the passengers who use them making both options less efficient. Bismarck already has higher than average fares for airline travel. This proposal will drive our air fares even higher by the inefficiency that it creates for the airlines, this translates into economic hardship for our citizens. When these same airlines approach Bismarck to land, the options are the same: fly over or go around. If they fly over, they will have 35 miles or less to come down from over 18,000 feet making a more rapid descent likely. This may cause alarm and discomfort for some of passengers. We understand that all three (3) airlines will be providing their own separate comments on this proposal. AM-5 SO-7 AM-5

With proposed 500 Foot Above Ground Level Military Operations, safe separation of aircraft is questionable. We feel the lack of low altitude radar coverage and lack of voice communications as well as the coordination/communications issues that will be necessary between the three (3) Air Traffic Control Centers (ATCC's) at Salt Lake, Denver and Minneapolis, has not been adequately addressed. With proposed 500 Foot Above Ground Level Military Operations, safe separation of aircraft is questionable. This puts military and civilian aircraft in a situation with higher potential for mid-air collisions. We also feel the current NOTAM system is inadequate to inform aviation users of changes in use of the MOA when it is active. AM-3 SA-1 AM-12

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Because of these concerns and others there will be an overall decline in use of the Bismarck Airport and adverse social and economic impact on our airport, community and region. We know the impact of aviation on any community is huge. Bismarck Airport's economic impact has been calculated at $178,759,000 a year with 558 direct jobs. This information comes from the 2004 North Dakota Aeronautics Commission Local Economic Impact of Aviation report. This does not take into account increases of activity resulting from increased oil and gas exploration in the region. If this proposed expansion gets approved the airport's economic engine will be degraded!

SO-10

SO-17

While Bismarck Airport and the City of Bismarck understand need for Military Operation Areas to train our military, the size of this expansion is unprecedented, increasing the existing MOA by four times its current size. The MOA when active will impede access to medical facilities, negatively impact aviation business, airlines and cause traffic separation concerns in an area of limited radar and communications coverage. The Bismarck Airport requests that the USAF take the no-action alternative. None of the other alternatives (A-C) presented will alleviate the socio-economic hardships placed upon the aviation users and communities that will be affected by the Air Force's proposal.

GE-2

Thank you for the opportunity to comment

Sincerely,

Gregory B Haug
Airport Manager

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Wyoming High Plains District
2987 Prospector Drive
Casper, Wyoming 82604-2968

TAKE PRIDE IN AMERICA

In Reply Refer To:
9211 (WYP000)

OCT 26 2010

Linda DeVine, Program Manager
ACC/A7PS
129 Andrews St., Suite 337
Langley AFB, VA 23665-2701

Dear Ms. DeVine:

The Wyoming High Plains District Office of the Bureau of Land Management (BLM) is supportive of the Proposed Actions described in of the Powder River Training Complex Environmental Impact Statement. Upon review, I have comments regarding two potential impacts on fire operations within the High Plains District. I would appreciate your consideration in adopting the following mitigations to the final approved plan: GE-1

- Impact one – Deployment of chaff and flares, increases fire risk to public lands administered by the Bureau of Land Management.

  Recommended Mitigation – Notify Casper Interagency Fire Dispatch Center at 307-261-7691, when training within the Wyoming portion of the Power River Training Complex includes deploying chaff and flares. SA-5

- Impact two - Air Space Conflicts

  Recommended Mitigation – Notify Casper Interagency Fire Dispatch Center, Air Desk, at 307-261-7695, when training flights are in the Wyoming portion of the Powder River Training Complex. AM-12

Thank you for your consideration and the opportunity to comment. For further information regarding the content of these comments and recommended mitigation measures, please contact the BLM, High Plains District Fire Management Officer, Jay Esperance at 307-261-7690.

Sincerely,

Stephanie Connolly

Stephanie Connolly
District Manager

11/15/2010 16:00 FAX 406 233 3650 MCFO BLM 002

3056

United States Department of the Interior

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TAKE PRIDE IN AMERICA

In Reply Refer To:

1600 (MTC000)

NOV 15 2010

Ms. Linda DeVine
PRTC EIS Project Manager
HQ ACC/A7PP
129 Andrews Street, Suite 337
Langley AFB, VA 23665-2701

Dear Ms. DeVine:

Thank you for the opportunity to provide public comment on the Powder River MOA Training Complex (PRTC) draft Environmental Impact Statement (EIS). The United States Department of the Interior (USDI), Bureau of Land Management (BLM), Eastern Montana/Dakotas District (EMDD), Division of Fire and Aviation within the Eastern Montana Fire Zone (EMFZ) has reviewed the proposal and would like to provide comments. As our agency is a primary user of the current and proposed airspace, we would like to see the following concerns addressed in the final Environmental Impact Statement and in your deliberation toward choosing your preferred alternative to implement:

1) PRTC PROPOSED ACTION ALTERNATIVES
During the 2008 public scoping period, our office provided you with a request to consider another alternative as was stated below:

> "BLM would also like DoD to evaluate one additional alternative. Please consider, in addition to the existing MOA, adding only one area identified as area PR-3 MOA in the proposal literature. This MOA location north of the existing MOA would add space for additional DoD training and also have the least impact on the Eastern Montana Fire Zone (EMFZ) as far as the number and frequency of aircraft to schedule/deconflict."

In reviewing the PRTC draft EIS, the military determined this alternative would not provide adequate training airspace. In consideration of the proposed alternatives, the Fire and Aviation Division of our BLM office would prefer to support the No-Action Alternative over the proposed Alternatives A, B, and C. This is due to the following considerations: potential increased man hours that would be required to coordinate/deconflict the majority of our emergency response flights, which now occur in areas not designated as MOA airspace; potential increased man hours that would be required to coordinate/schedule almost daily fire detection flights during the summer that would occur in the majority of the proposed PRTC identified MOA's; lack of assurances that DoD aircraft can be contacted immediately in "real time" to ensure they will relocate or curtail low level training operations and safely yield to higher priority emergency response aircraft entering active MOA's.

GE-2

SA-19

Should the DoD elect to adopt an alternative other than the No-Action Alternative, then the Fire and Aviation Division of our BLM office would prefer the implementation of proposed actions as presented in Alternative B. This is due to the following considerations: our area of highest

DO-2

emergency response aircraft activity occurs over the Ashland Ranger District of the Custer National Forest (adjacent to theNorthern Cheyenne Indian Reservation) where there is currently no MOA established- and the option to not establish PR-1A/B MOA and Gap A MOA would help to ensure that our highest use area remains minimally impacted; savings of taxpayer dollars realized in fuel conservation by utilizing MOA's located closer to established military bases, where it is less likely for our emergency response aircraft to be dispatched to (thus providing for fewer interrupted military training sorties). DO-2

2) PRIORITY TO LIFE FLIGHT & EMERGENCY RESPONSE AIRCRAFT
Our staff attended public hearings for the PRTC draft EIS in Miles City, MT on Friday, October 15, 2010. DoD personnel addressing the attendees at those public hearings confirmed that Life Flight and Emergency Response Aircraft activity held higher priority for MOA airspace use than military training sorties within the existing and proposed MOA's.

The BLM would like to see the Final EIS address exactly how the DoD intends to uphold MOA airspace use prioritization. While the scheduling of known flights involving resource project missions and non-emergency fire reconnaissance is understood, the process of having military training missions/sorties yield to Life Flight and Emergency Response Aircraft is not well addressed. Verbiage within the draft EIS indicates that emergency-related activities would be avoided by military training aircraft and that ATC would notify the training aircraft of the emergency. After being contacted, the affected military training mission would avoid the incident area, move to another active airspace or return to base in accordance with agreed-to procedures. The draft EIS does not seem to address the additional impacts to public and civil entities involved with emergency related missions should the existing MOA be expanded into the PRTC. SA-19

The BLM would like the final EIS to adequately address the impacts to public and civil entities who provide aircraft with rapid access in response to emergency related missions. The BLM would also like to see the specific procedures and protocols of prioritized MOA airspace use be well documented for correct implementation. The nature of life flight and emergency response aircraft missions are unpredictable as to specific launch times. Any steps taken to ensure military aircraft training at low level (i.e. below 5000 feet AGL) yield to higher prioritized missions (by altering training areas or curtailing operations) will need to be immediate and real time. SA-19

3) IMMEDIATE "REAL TIME" COMMUNICATIONS WITH MILITARY AIRCRAFT AM-12
When an interagency dispatch center launches public aircraft to respond to a wildfire, these aircraft and pilots meet established standards to ensure operational safety. These interagency fire aircraft are required by policy to maintain radio communications with the dispatching unit at all times. The jurisdictional agencies bare the expense of radio communication systems to ensure that aircraft can be contacted real time in the interest of protecting life and property. AM-3

One of the greatest concerns of the Fire and Aviation Division within our BLM office involves the delay in relaying airspace use prioritization to military aircraft currently in training within the MOA. Verbiage within the draft EIS indicates the DoD is aware that there is limited communication capabilities in the region. Specific verbiage within the draft EIS states "radar and radio communications are limited below 12,000 feet MSL and in some areas are limited below FL180". (see page ES-14) However, also within the draft EIS there is verbiage stating that the military "would establish communication procedures to ensure the ability to recall the military aircraft from the low altitude MOA's" (see page 2-110) and that the military "would

establish communication procedures to ensure deconfliction with emergency flight operations within the proposed airspace" (see page 2-110).

In another section of the draft EIS, there is verbiage which seems to contradict this where it states "there is no proposal for increased radio frequency coverage or radar coverage for the PRTC airspace where current coverage is limited" (see page ES-18). DoD officials have informed us that it may take up to 30 minutes for either them or the controlling ARTCC to contact military aircraft currently involved in low level flight profiles. Our response times enable us to have aircraft within MOA airspace in as little as 15 minutes. Because military aircraft in training are not required to maintain immediate "real time" communications to yield the airspace to higher priorities, there can be an unsafe period of at least 15 minutes, and likely more, of increased potential for mid-air collisions. This period of increased risk and exposure would require mitigation to address the effects to other airspaces uses.

AM-3

SA-19

The BLM would like to see the DoD address in the final EIS how they will ensure that military training aircraft will be contacted immediately in "real time" to be informed that they must yield to the more critical life flight and fire suppression aircraft in the interest of promoting mid-air collision avoidance. Incident response dispatch centers would need some form of confirmation that military aircraft have indeed been contacted and acknowledge that they are yielding low altitude flight profiles to higher priority emergency response aircraft occupying the airspace.

AM-12

SA-19

4) COLLISION AVOIDANCE UNDER V.F.R. CONDITIONS
Due to the nature of each agency mission, "see and avoid" may not be sufficient mitigation for mid-air collisions. BLM would like DoD to address more reasonable and effective avoidance measures other than "see and avoid" VFR procedures to prevent mid-air collisions, and seek to increase the safety of our aviation personnel.

SA-1

5) REASONABLE AVOIDANCE MEASURES
There exists predictable periods of airspace usage based on historical data from which reasonable mid-air collision avoidance measures can be implemented. For example, the BLM rarely responds to wildland fires with aircraft from November through April. The shoulder months of the fire season include May and October where average fire season use of aircraft is low. Usage increases to a moderate level in June and September. Our period of highest aircraft use is July and August, when ground fuels are most receptive to ignition sources such as lightning.

In addition, the majority of our incidents are concentrated within a known geographical area. With the likelihood of aircraft responding almost daily to fire dispatches into what would likely be the PR-1A/B MOA and Gap A MOA during what is typically a two month period, it would seem appropriate for the DoD and partnering agencies such as the BLM to adopt reasonable avoidance measures in the interest of mid-air collision avoidance. This falls in line with your planned actions to avoid altitudes that would interfere with commercial aircraft. In addition, many of our aircraft have to transition from established bases to the TFR area each mission to reload with fire suppressants/retardants and thus have a period of risk during flight not addressed by implementing the TFR.

SA-1

Please find attached a 20-year fire occurrence map indicating historical incident locations. The majority of fires on the EMFZ are "short duration" which means that the use of aircraft to aid in the suppression of these fires typically lasts only 1 to 2 days. It is impractical to establish a TFR for multiple fires when most are going to be contained within 2 shifts. It would be more practical if the EMFZ could call the DoD scheduling desk and let them know that we have active fires requiring the use of aircraft and that our aircraft will remain 3500' AGL and below (our

AM-12

3056

ceiling height for Fire Traffic Area dimensions). If the DoD would initiate avoidance measures such as establishing their training floor (hard deck) with a reasonable buffer (say 5000' AGL) then the establishment of TFR's that could number into the hundreds annually during June through September may be avoided. USAF personnel informed BLM that DoD training is typically done either at low level or well above our Fire Traffic Area ceiling. Ideally it would save multiple agencies tremendous coordination time, effort, and expense if no low level DoD training were held during the primary fire season when the EMFZ utilizes aircraft on active incidents (typically between June through September). AM-33

It would seem to be less efficient and more costly when low level military training missions within the proposed PR-1A/B MOA and Gap A MOA are curtailed or interrupted repeatedly from frequent emergency response aircraft dispatches. When considering the data presented in the draft EIS concerning the Average Annual Baseline Training Hours and Estimated Annual Day-to-Day Time and Altitude Distributions, implementing a 5000' AGL low level VFR training floor as a temporary avoidance measure during the highest fire occurrence period would seem a reasonable and realistic solution.

Verbiage within the draft EIS indicates that the military would establish reasonable temporary or seasonal avoidance areas for concerns with other topics already identified, such as over ranches during calving/weaning/branding seasons or cultural native American/tribal events. Specific verbiage indicates the military "would establish reasonable temporary or seasonal avoidance areas or could adopt other measures identified in Government-to-Government consultation..." (see page 2-100). The BLM would like the PRTC final EIS to address reasonable avoidance measures which would include no low level military training flights during the highest incident response months within all existing and/or proposed PRTC MOA's. AM-33

6) SCHEDULING OF LONG DURATION MULTIPLE MOA FLIGHTS

With the current size of the Powder River MOA, it has been practical to work out a schedule with DoD when fire detection aircraft need to patrol the Eastern Montana Fire Zone (EMFZ). Lightning maps from the previous storms determine areas that are to be flown by detection aircraft. Historically the majority of fire activity on the EMFZ is south of Interstate 94. To date, we have been successful to direct flight routes through the current MOA during periods of DoD inactivity.

However, with the proposed expansion of the PRTC spanning from Billings, MT to Bismarck, ND this would end up encompassing most of the southern half of the EMFZ, which is where our predominant fire activity occurs. At public hearings held in eastern Montana during October of 2010, DoD officials commented in their presentations that expansion of the current MOA into the PRTC would not impact Life Flight or Emergency Response Aircraft missions. Is there analyses within the draft EIS to support this? Incidents within the current MOA utilizing aircraft require man-hours to coordinate and deconflict the airspace each time. With the proposed expansion, that workload will increase proportionately. SA-19

How will BLM be able to do late morning/early afternoon VFR reconnaissance flights (typically lasting about 3-4 hours due to the size of the area of jurisdiction) to cover that area in the proposed Powder River 1, 2, and 3, which may need to occur daily from June through September? Would DoD schedulers be able to reserve a 3-4 hour time slot in late morning/early afternoon for Powder Rivers 1-3 that will facilitate a VFR detection flight daily through those 3 MOA's for basically a 4 month period? AM-33

7) FUTURING POTENTIAL MOA AIRSPACE USAGE
The PRTC Draft EIS indicates that expansion of the existing MOA into the PRTC will benefit both current and future DoD training needs, yet there is very little discussion found within the document to address potential future airspace use. The BLM would like to see the EIS address how expanding the current MOA could potentially allow additional training opportunities that have to date been prevented, due primarily because of size. PN-2

8) MISCELLANEOUS UNANSWERED QUESTIONS
Most of the following questions were presented during the public scoping period and answers were either not provided or could not be found within the draft EIS:

- What safety measures beyond see-and-avoid will the DoD implement to buffer between military and civil or public aircraft operating concurrently within an active MOA? SA-1
- Will there be quantity limitations as to how many military aircraft will occupy any given PRTC area at any one time? AM-27
- As ARTCC's covering the proposed PRTC are divided between Salt Lake City, Denver, and Minneapolis, will there be a communication gap in contacting military aircraft that are moving between MOA's as ARTCC's hand off DoD aircraft to each other? SA-4
- Will the FAA be considering moving ARTCC jurisdictional boundaries to simplify coverage within the PRTC?
- How will the scheduling of non-DoD aircraft occur within the MOA's during the quarterly "mass" large force DoD exercises (LFE's) that are anticipated to last from 1-3 days? AM-12
- If the DoD will be monitoring seasonal fire conditions to determine when to discontinue use of chaff and flares over receptive fuels (i.e. NFDRS; Red Flag Warnings; etc.), how and when will the decisions be made to implement and rescind these actions? SA-5
- What sort of aircraft chaff/flare training is available to educate interagency wildland fire investigators? SA-27
- How quickly will newly used flares and chaff deteriorate so that fire investigators who find them at fire origin locations can determine that the fire could not have started from recently utilized or misfired flares?
- With a larger area to facilitate training of more mission profiles, what are the additional impacts of military ground assets that will likely be integrated into the local training should the MOA expand? CM-2
- USAF personnel stated that there is one large fixed and two mobile pedestals used as threat emitters in 15 locations currently within the Powder River MOA. They also stated that these threat emitters require electricity and phone connections, and are therefore moved infrequently. The USAF representatives said that no new threat emitters were anticipated for installation, as current emitters would be adequate for the entire expansion. Should long term needs dictate the need for additional threat emitters, how will the DoD undertake NEPA analysis tiered to the final EIS?
- Will the military include the use of AWACS aircraft during the Large Force Exercises (LFE's) to enhance the realism of an actual large force mission and concurrently increase the safety of civil, public, and military aircraft within the MOA? AM-27

Thank you again for the opportunity to provide input into the final EIS. If you have any general questions, you may contact Kathy Bockness, Planning & Environmental Coordinator for the Miles City BLM Field Office, via phone at 406-233-2844.

Aside from the comments above to the Draft PRTC EIS, the Montana/Dakotas BLM State Office currently has a signed Memorandum of Understanding (MOU) between the BLM and Ellsworth Air Force Base in South Dakota where scheduling of the existing MOA occurs. While this document is adequate toward assisting our agencies in achieving mutual objectives of shared airspace usage within the existing MOA, any expansion of the existing Powder River MOA into a larger PRTC would necessitate changes be made to the agreement to address the additional impact.

GE-11

Personnel who assembled the original MOU agreed that should the MOA be expanded into the PRTC, the document would have to be updated to reflect changes such as the structure of an expanded MOA or inclusion of other affected agencies. Discussions then addressed the likelihood of formulating a MOA committee to address issues/concerns by the identified agency partners as well as development of a more inclusive MOU.

In consideration of the large number of civil and public entities, of which may include city, county, state and federal agencies and other potential partners which could be affected by implementing an expansion to the existing Powder River MOA.....it is requested that a multiple agency "umbrella" Memorandum of Understand (MOU) be developed. We would encourage that development of the MOU be accomplished by open invitation and collaborative teamwork in good faith from interested partners, with periodic meetings of an area MOA committee to review concerns and make needed updates.

NP-10

If you require additional specific information or need clarifications, you may contact Kevin Gappert, Unit Aviation Manager for the Fire and Aviation Division of the Eastern Montana Fire Zone (EMFZ), via: phone at (406) 233-2909 office or (406) 853-5163 cell; email at kgappert@blm.gov or write him at BLM, 111 Garryowen Road, Miles City, MT 59301.

Sincerely,

M. Elaine Raper

M. Elaine Raper
District Manager

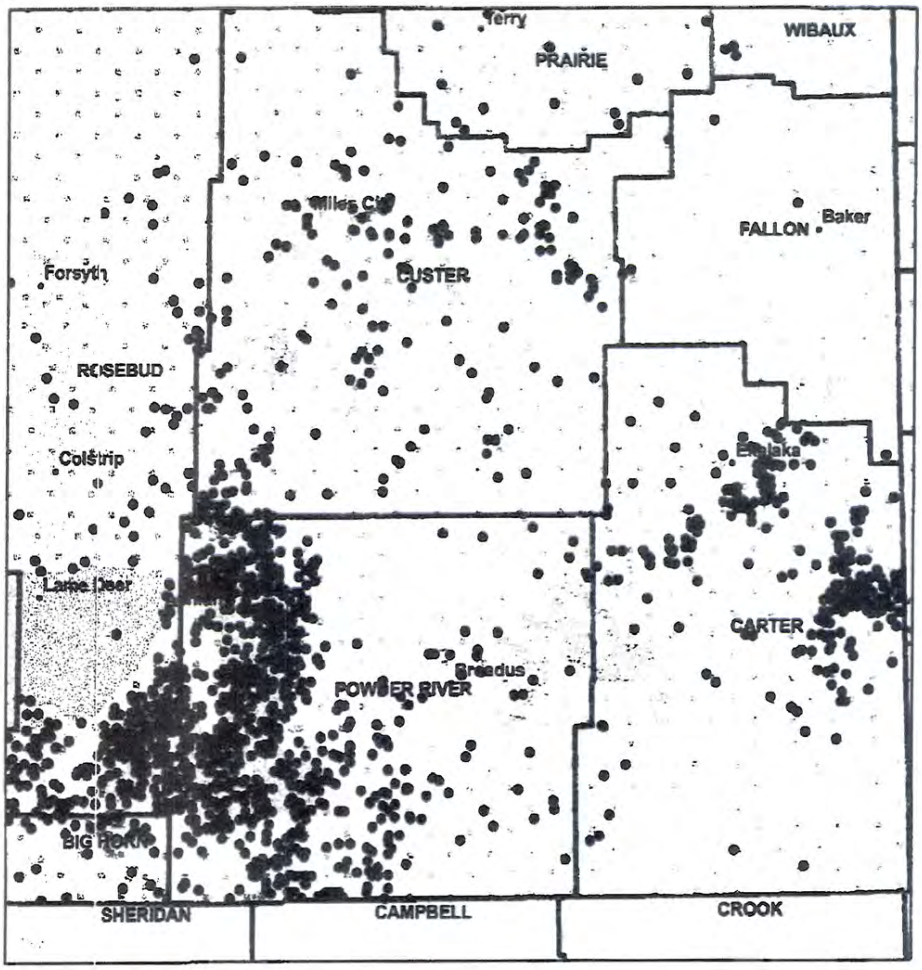
Enclosure (Map)

11/15/2010 16:02 FAX 406 233 3650 MCFO BLM ☑008

3056

20-Year Fire Occurrence (1989-2009)

State of Montana
1:1,181,252



United States Department of the Interior
Bureau of Land Management
Eastern Montana/Dakotas District

N W E S

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Miles

Legend

- Dispatch MT Towns
- Finalignition_20YearFires
- BIA
- BLM
- BNSHD J
- BOR
- COE
- DOD
- FWS
- LOCAL
- NPS
- OTHER
- PRI
- STATE
- USFS
- USFS NG
- USFS WA

CAUTION:
Land ownership data is derived from less accurate data than the 1:24000 scale base map. Therefore, land ownership may not be shown for parcels smaller than 40 acres, and land ownership lines may have plotting errors due to source data.
No warranty is made by the Bureau of Land Management for the use of the data for purposes not intended by the BLM.

NAD 1983 Albers

3057

To: Ms. Linda De Vine

From: Bowman, North Dakota Airport Board

Subject: Powder River Training Area

We the undersigned Airport Board members are very concerned about the proposed final impact draft presented at the public hearing, in Bowman, North Dakota, September 22. Bowman would be directly under Powder River Area 3. We are in the process of building a new airport to accommodate the growing energy industry in our area. This energy growth, along with small businesses and agricultural commodity production are essential for the survival of our communities. The expanded Training areas would greatly impact this growth potential. SD-10

We hope the recommendations include raising the Area 3 floor to 10,000 MSL, which would greatly reduce the impact of our flight operations. DD-4

Alternative C would be our next choice associated with the Powder River proposal.
In conclusion, we hope these recommendations and concerns are considered in the final Powder River impact study. Thank you for your attention. DD-5

Eugene Miller
Stanley Pope
Bob Mu

3058

CityServiceValcon

Veterans Day 2011

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Rm. 337
Langley AFB, VA 23665-2769

Re: Powder River MOA Proposed Expansion

Ms. LeVine:

Greetings, we appreciate the invitation to comment on the proposed expansion of the PRMOA. As proposed, the expansion will have a negative impact on our business, CityServiceValcon. We provide aviation fuel and related services to airports in the PRMOA area.

It is our view that given the complexity and restrictions of the PRMOA, that sales to our existing customers in the affected area will be reduced. Fully 75% of the business is generated from transient aircraft. Should the result be only a 25% reduction in sales, the impact will be $1,903,000.00 annually. SO-5

In addition, this student pilot finds the concept of VFR "See and Avoid" in an area with B-1's, B52's, F-16's, etc. operating at speeds exceeding 500 kts. Without radar coverage and possibly with their lights off is dangerous. Should this proposal move forward, please consider adding layers that would allow through traffic such as 8,000 – 12,000 MSL and 16,000 – 24,000 MSL to allow transitioning aircraft through MOA and improvements to radar and radio coverage. Proposed activities such as supersonic flight, live flares, defensive chaff, Lights-out NVG training, closure rates far exceeding what is acceptable to the FAA for civilian operations, lack of radar and radio coverage throughout the area. I remain convinced that these are operations which should be conducted in Restricted Airspace not in a MOA. Lastly, the addition of CTAF to military aircraft would be considered wise. SA-7 AM-26 AM-11

Sincerely:

Breezy Burlison

Breezy Burlison
Aviation Sales
CityServiceValcon

DELTA

3059

November 9, 2010

Ms. Linda A. Devine
129 Andrews Street, Rm 337
Langley AFB, VA 23655-2769

Re: (a) Powder River Training Complex Draft Environmental Impact Statement (EIS)
(b) FAA Airspace Study 10-AGL-6NR

Delta Air Lines serves more than 160 million customers each year within its United States and global network, Delta and the Delta Connection carriers offer service to more than 350 destinations in nearly 70 countries on six continents. Delta has a significant presence in the Midwest and Rocky Mountain area, including service to several cities affected by the proposed Powder River Training Complex, and flights which traverse the PRTC area flying to and from the west coast everyday. Delta Air Lines strongly supports the training needs of men and women in uniformed service to our country. Our forces deserve the best training possible, including the ability to train in realistic combat conditions.

While Delta initially supported the PRTC proposal, changes have occurred in the proposed use times that force us to withdraw support. The first briefing interaction took place in 2008 through the RTCA ATMAC Airspace Working Group (AWG) with mixed results and an apparent change is use plans. The timeline follows:

- Spring 2008 - the AWG formed a sub-group with a primary task of receiving and addressing the proposed MOA and ATCAA changes concerning Powder River from an aviation community perspective. The AWG sub-group met with the FAA and USAF on several occasions

- March 2008 – first brief to the AWG. PRTC proposes to create three Gap MOAs and three Gap ATCAAs to serve as specially scheduled airspaces for *two two-hour time blocks an estimated one to two days monthly*
- June 2008 – full AWG meeting dedicated to Powder, included USAF proponents and environmental contractors
- February 2009 – update presented by USAF and FAA Central Service Center
- June 2009 – verbal update from USAF (no progress)
- September 2009 – verbal update presented by FAA Central Service Center (no progress)
- March 2010 – update from USAF – maps and schedule
- May 2010 – email update from USAF (no progress on aeronautical review)
- August 2010 – last AWG, ZDV provides update on Powder, no Service Center update, USAF email update. *MOA activation plans now include Mon-Thurs, 0730-1200, and 1800-2330, and Fridays, 0730-1200*

In each briefing, the USAF described the need for quarterly Large Force Exercises lasting 1 to 3 days each per calendar year and Delta was supportive of this proposed frequency of use, even though high and low altitude routes would be affected. At no time was daily use indicated. Unfortunately, the USAF appears to have altered its use plans to allow for Monday – Friday scheduling of the MOAs with only non-specific mention of the use of the overlying ATCAAs FL180-260, and FL260 and above. We find no justification which supports use of the areas, especially the high areas, at greater frequency than the quarterly LFEs that were originally described. Utilization of the airspace on a Monday-Friday basis could have significant impact on Delta's service to local communities such as Rapid City, Bismarck, Billings, Bozeman, etc., and the impact to high altitude, overflying traffic would cause delays and reroutes affecting on time performance and fuel burn.

PN-5

SO-7

3059

In addition, it does not appear as if the USAF has considered the tenets being put forth in the recent National Special Activity Airspace Proposal (NSAAP) of which it was a party. NSAAP Section 5.2.2 spells out specific scheduling requirements for real-time needs, rather than a 'blanket' schedule period during which the MOA/ATCAA may or may not be used. Delta strongly recommends that the USAF support this process in reviewing its PRTC proposal. AM-12

As it is currently proposed, it is with regret that Delta Air Lines must withhold support for the Powder River Training Center initiative. GE-2

Respectfully,

Lorne Cass
Director, ATM & Industry Affairs
Delta Air Lines, Inc.
1010 Delta Blvd., Dept OCC 19
Atlanta, GA 30320 USA

1.404.715.1945
1.612.308.0926 (m)

United States Department of the Interior
OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Denver Federal Center, Building 67, Room 118
Post Office Box 25007 (D-108)
DENVER, COLORADO 80225-0007

November 12, 2010

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ER 10/725

Ms. Linda Devine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley Air Force Base, Virginia 23665-2769

Dear Ms. Devine:

The U.S. Department of the Interior (Interior) has reviewed the U.S Air Force's Draft Environmental Impact Statement (DEIS) for Powder River Training Complex, Ellsworth Air Force Base (AFB), South Dakota. The U.S. Air Force (USAF) seeks to improve airspace assets for required training by B-1 aircrews stationed at Ellsworth AFB, South Dakota and B-52 aircrews stationed at Minot AFB, North Dakota. The USAF proposes to develop the Powder River Training Complex to improve training through establishing new airspace and modifying existing airspace.

Interior submits the following comments under the authority and provisions of the National Environmental Policy Act (42 U.S.C. 4371 et seq.), the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. §§1531 to 1543 et seq.), and the Migratory Bird Treaty Act (16 U.S.C. 703).

FISH AND WILDLIFE RESOURCES

General Comments

Under the ESA, Federal agencies are required to review their proposed activities to determine whether species federally listed as threatened or endangered, or habitat(s) designated by the Interior as critical habitat, may be affected. If such a determination is made, formal interagency consultation with the U.S. Fish and Wildlife Service (USFWS) is required under Section 7(a)(2). If the USAF determines that the selected alternative may (either adversely or beneficially) affect federally-listed species or critical habitat, please contact the USFWS' Field Office (phone (605-224-8693) in Pierre, South Dakota, to initiate formal consultation.

In addition, section 7(a)(1) of the ESA requires Federal agencies to use their authorities in furtherance of the purposes of the ESA, i.e., "...to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions."

The DEIS does not explain how the USAF will meet its 7(a)(1) responsibilities for this project. We recommend that USAF contact the USFWS Field Office in Pierre, South Dakota, to establish reasonable temporary or seasonal periods when impacts will be avoided, or adopt other conservation measures to avoid and minimize intrusive impacts upon federally listed threatened, endangered, or candidate species. In particular, USFWS recommends that measures be developed to avoid impacts to endangered whooping cranes (*Grus americana*) which migrate through the area, and to two species that are candidates for listing that breed in the project area: Greater sage-grouse (*Centrocercus urophasianus*) and Sprague's pipit (*Anthus spragueii)*. A full analysis of the direct (noise, visual stimulants) and indirect effects (fire) from chaff and flare exercises on federally listed threatened, endangered, or candidate species should be considered.

BI-8

The USFWS also recommends that mitigation measures include limited operations of low-level flights in the Powder River 4 Military Operations Area during spring and fall bird migration.

BI-6

Specific Comments

Sprague's pipit has been added as an ESA candidate species since the DEIS was completed. The USFWS recommends that affects of the project on Sprague's pipit be addressed under the section "Threatened, Endangered, and Other Special Status Species," which begins on page 4-75.

BI-9

NATIONAL PARK RESOURCES

General Comments

The National Park Service (NPS) is concerned the proposed project will potentially adversely impact the soundscapes, visitor experience, cultural resources, and sacred sites of Little Bighorn Battlefield. Many of their concerns were raised conceptually in a letter dated July 24, 2008 in response to the Notice of Intent to prepare the EIS.

The mandate of the National Park Service (NPS) is to preserve and protect the scenery, and natural and cultural resources of parklands, such as Little Bighorn Battlefield for the enjoyment of the American public, and to leave them unimpaired for the enjoyment of future generations (16 USC 1-4). The "scenery" includes the natural soundscape, as well as the landscape (NPS *Management Policies 2006*). A soundscape refers to the total acoustic environment of an area. The soundscape of a national park, like air, water or wildlife, is a valuable resource that can easily be degraded or destroyed by inappropriate sound levels and frequencies.

CU-2

According to the Little Bighorn Battlefield National Monument General Management Plan (GMP) (updated 1995), "The primary purpose of Little Bighorn Battlefield National Monument is to preserve and protect the historic and natural resources pertaining to the battle of the Little Bighorn and to provide visitors with a greater understanding of those events which led up to the battle, the encounter itself, and the various effects the encounter had on the two cultures involved".

A portion of the National Monument is actively administered and maintained as Custer National Cemetery and is the final resting place of approximately 5,000 U.S. veterans and dependents. The National Monument contains 2 parcels of land separated by 5 miles, the Custer Battlefield unit and the Reno Benteen Battlefield, with a combined acreage of 786 acres. The Custer Battlefield unit has been protected since 1879, and the Reno Benteen unit since 1926, first by the War Department as Custer National Cemetery, and later (since 1940) by the NPS. The entire battlefield is listed on the National Register as Custer Battlefield Historic District 1 and Historic District 2 (Reno Benteen Battlefield).

Under the 1995 GMP, the battlefield is managed as a historic zone, "...where all activities would be managed to preserve, protect, and interpret cultural resources and their settings." The NPS has worked extremely hard to preserve the landscape, vegetation, setting, and feeling of the battlefield to as closely as possible evoke the landscape and conditions of 1876. A recent Cultural Landscape Inventory (2010) for the National Monument found the cultural landscape retains a high degree of integrity and concluded that "...despite external encroachment and ever increasing visitation, Little Bighorn largely retains its qualities of remoteness and history. The natural setting of the battlefield appears much as it did in 1876, with its scattered markers in isolation or in larger clusters poignantly expressing a moment frozen in time that can be felt and appreciated by visitors to the site." The National Register program identified seven aspects of integrity: Location, Design, Setting, Materials, Workmanship, Feeling, and Association. Retention of these qualities is essential for a property to convey its historic identity or evoke its appearance during a significant period in history. Little Bighorn Battlefield's cultural landscape retains the integrity of all seven aspects. CV-2

Soundscapes

Under the proposed action in the EIS, the National Monument would be included in area PR-1B-MOA, which would be from 500 feet above ground level (AGL) up to, but not including 18,000 mean sea level (MSL). On Page 3-60, Table 3.2-3 (Average Frequency of Military Aircraft Noise Events at Selected Noise-Sensitive Locations), contains a footnote that the published aircraft avoidance area is 0.75 nautical miles horizontally and 2,000 feet AGL for the National Monument. However, the reference for this footnote should be noted (Federal Aviation Administration Advisory Circular, FAA AC-91-36D), as the general public may not know where to find this information. It should also be noted that this avoidance regulation is voluntary as aircraft are requested, but not required, to maintain a minimum altitude above noise sensitive areas. Overflights over 2,000 feet are restricted above the National Monument under the National Park Air Tour Management Act of 2000 (Public Law 106–181). The area above the National Monument does not currently have military special use airspace or training operations. Under the proposed action, Large Force Exercises (LFEs) could occur above Little GE-15

Bighorn for 1-3 days per quarter. This would include supersonic flights for up to 10 days per year. Training exercises would include the deployment of chaff and flares. The EIS notes that three aspects of the increased noise could cause environmental impacts: 1) increases in ambient noise levels, 2) low-level startle effects; and 3) sonic booms. We have concerns about the effects of all three types of noise on soundscapes, visitor experience and cultural resources, and we disagree with the assertion that "Infrequent overflights over 2,000 feet would not be expected to be perceived as a significant intrusion to a National Monument" (EIS Executive Summary, page ES-24). LU-2

Acoustic data collected by the NPS at Devils Tower National Monument during June and July, 2010, show that ambient conditions in that park are very quiet. The daytime median exceedence level (L50) was 29.8 dBA (the sound pressure weighted [A] level given in units of decibels) and 35.0 dBA at the monitoring locations. Put another way, the percent of time the ambient sound level was above 35 dBA was less than 5 percent of the time from 0700 hours to 1900 hours, and less than 1 percent of the time from 1900 hours to 0700 hours. Although the NPS has not conducted acoustic monitoring at the National Monument, we would expect the ambient levels would be similar away from the road or visitor center in areas where a visitor would expect to have solitude and a contemplative atmosphere.

Thresholds of significance that have been established by the Federal Aviation Administration (FAA) are based on community response. FAA Order 1050.1E notes that special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within national parks. The threshold cited in the Draft EIS, 55 DNL (Day-Night Average Sound Level), as the threshold below which adverse impacts would not be expected to occur does not adequately address disruption of tranquility or disruption of solitude. Although the noise analysis in the Draft EIS is very detailed and describes the types of impacts that would occur at various levels of noise, no specific discussion is provided as to how thresholds of significance were defined in determining impacts of noise; for instance, negligible, not significant, to the resources described in the document. In other words, it is not clear how conclusions about impacts were determined. NO-4

Visitor Experience and Soundscapes

The National Monument is of enormous significance to American history, the American public, and the 280,000 to 420,000 visitors who visit the site annually. The National Monument is the second most visited tourist site within the state of Montana, and its economic importance to Southeastern Montana cannot be underestimated. Additionally, it has great significance to the U.S. Military and their Crow and Arikara allies, who suffered one of their most famous defeats at this site in 1876 at the cost of over 260 men, and to the Cheyenne, Lakota, and Arapaho tribes whose victory at this site also came with significant losses of warriors and noncombatants. CU-2

Today, many Americans, Veterans, and Tribal members view Little Bighorn Battlefield as a solemn and sacred place of reflection, where they can come reflect upon the human sacrifice that all sides made defending what they believed was right, and reflect on cultural changes that have occurred since the battle. Many visitors, Tribes, and stakeholders have commented over and over that the ability to hear the natural sounds, listen to the wind blowing, and hear the sound of the Meadowlark is a fundamental part of the Little Bighorn Battlefield experience. LU-2

Increases in ambient noise levels, low level startle effects and sonic booms would all impact the visitor experience and natural soundscapes of the site, and would impact visitors' ability to enjoy the contemplative and sacred atmosphere that is so fundamental to Little Bighorn Battlefield. Being startled by a sonic boom while standing alone on Last Stand Hill, contemplating the sacrifice of the U.S. Army and the Cheyenne and Lakota, would have a serious impact on the visitor experience and that person's ability to imagine what it was like to be on that same hill in 1876. All three types of noise would likely impact NPS operational and educational activities such as the outdoor ranger programs (guided walks and outdoor ranger talks) that take place 10 times a day between May and October and that over 60,000 visitors each year enjoy. LU-2

In addition, the increases in ambient noise levels, low-level startle effects, and sonic booms would also impact the family members and loved ones who come to pay their respects to the over 5,000 veterans and dependents who are buried at the National Cemetery. Increased noise would also significantly disrupt the solemn and reflective atmosphere for the 10 to 15 funerals that are still conducted annually at the National Cemetery. The release of chaff or flares over the battlefield also has the possibility of visual impact to all of the visitor experiences during these and other services, as well as during operational activities and the special activities listed above. Fallen chaff and flare remnants would also have the potential to litter the battlefield, disrupting the historic scene. LU-9

Additionally, the National Monument issues approximately 25 special use permits per year for activities such as Tribal religious or cultural ceremonies, commemorative events by military and non-military groups, and commercial filming. Increases in ambient noise levels, low level startle effects, and sonic booms would significantly disrupt these activities. As described in the EIS, "Native Americans from the four directly impacted reservations explained that low-level overflights and intrusive noise would be detrimental to their cultural practices." These types of cultural practices, highly significant to Tribal members from 17 reservations throughout the region occur not only on reservations but at sites such as Little Bighorn Battlefield. We suggest further consultation with the Lakota, Dakota, Nakota, Cheyenne, Arapaho, Arikara, and Crow Tribes about how low level overflights might impact their cultural practices, ceremonial practices and offerings at Little Bighorn Battlefield National Monument. NA-4

Cultural Resources

The EIS notes the possibility of sonic booms causing the failure of glass, plaster or other structural elements. Little Bighorn Battlefield is home to many irreplaceable cultural resources, including historic monuments and structures. The two-story stone lodge constructed in 1894 as the Superintendent's residence is said to be one of the first permanent dwellings in Eastern Montana. Thanks to preservation work and good care, it retains its historical and architectural integrity and is in good condition. However, it would be unacceptable if sonic booms caused the failure of its historic glass windows and/or doors, or plaster, or disturbed its stone foundation or exterior walls. Other historic structures at the Battlefield that must be protected from sonic booms include the Fort C.F. Smith Memorial (circa 1868), quarried from local limestone and the 1881 7th Cavalry granite memorial on Last Stand Hill, both of which are part NO-2

of Historic District One; and the Reno-Benteen granite memorial (circa 1928), located in Historic District Two.

The EIS also notes the possibility of sonic booms causing "...bric-a-brac balanced on shelf edges such as mantles or bookcases to be vibrated off and fall and break." It should be of note that the National Monument's priceless museum collection and rare book collection is stored onsite. The museum collection includes over 119,000 objects, many of which are fragile and sensitive, and many of which are on display in the museum gallery of the Visitor Center. If sonic booms were to cause exhibit or museum collection items to fall or break, or for windows or glass exhibit cases to break, it would have serious unacceptable resource protection, security, and safety impacts. NO-2

The EIS also notes the possibility for future threat emitters on 15 acre sites, which would be subject to further environmental review (ES-30). In the future we would like to be notified if any threat emitters are proposed in the historic viewshed of the National Monument, which includes adjacent lands pertaining to the Battle of the Little Bighorn, as these would have an adverse effect on the cultural landscape/historic viewshed. CM-2

Natural Resources

The EIS states: "Flares burn out in approximately 500 vertical feet, or a minimum of 1,500 feet above the ground. There would be a very slight potential for increased fire risk if flares were accidentally deployed substantially below authorized altitudes." The National Monument's prairie grass ecosystem and riparian zone has a very high fire danger from over nine years of prolonged drought, especially between July and September, and use of chaff and flares should be restricted over the National Monument and adjacent lands. We also recommend that local Bureau of Indian Affairs, Big Horn County, and area fire departments be involved in training and fire protection from chaff and flares. SA-5 AM-24 DO-2 SA-13

One of the NPS primary missions is to preserve natural resources unimpaired. Baseline data about wildlife species at the National Monument is incomplete. However, we are concerned about the potential for low level flights to impact all types of wildlife species with increased ambient noise, startle-effect, and sonic booms. The National Monument has several species of concern, including Sage Grouse, wild Turkey, and several nesting sites for Canadian Geese, Great Blue Herons, and other water fowl in the riparian zone along the Little Bighorn River in the Custer Battlefield sector. These species may be adversely affected by low level overflights and noise including sonic booms and jet engines. BI-9 BI-4

Specific Comments

Please provide a citation for footnote 2 in Table 3.2-3 (Average Frequency of Military Aircraft Noise Events at Selected Noise-Sensitive Locations), that states the Devils Tower National Monument published aircraft avoidance area is 5 nautical miles (NM) horizontally and 18,000 feet AGL. The notice on the Billings Sectional Aeronautical Chart, dated 26 August 2010, states "...for reasons of national welfare pilots are requested to avoid flights within 3 NM of Devils Tower National Monument." AM-24

Ms. Linda Devine 7

CONCLUSIONS

Based on information provided in the DEIS, the USFWS determines that the relative impacts of the DEIS alternatives on fish and wildlife resources would be as follows:

Alternative A. This alternative would likely have the largest potential impact to federally listed as threatened and endangered and on migratory birds, because it increases the level of disturbance to the Greater sage-grouse in all four states, and to Sprague's pipit. BI-8

Alternative B. This alternative would likely have the least impact to the Greater sage grouse in Wyoming and Montana. DO-2

Alternative C. This alternative would have the least impact to endangered whooping cranes and other migratory birds that use the principal migrational routes of the central and Mississippi flyways. DO-5

No Action Alternative. This alternative would have the least impact on federally listed species since there would be little to no increase in the current activities. GE-2

The NPS is quite concerned with the proposed action and its potential to affect visitor experience, natural soundscapes, cultural resources, and sacred sites at the National Monument. Our first preference would be the No Action alternative, although we realize this may not be feasible given your purpose and mission. We note that Alternative B would have had no low-level flights over the National Monument (in addition to other culturally sensitive areas). We would strongly support either a reconsideration of this Alternative or the modification of the preferred alternative to include expansion of the avoidance distance to include the National Monument to reduce or eliminate the noise and visual impacts of low level military aircraft. The avoidance measure listed is the standard for all aircraft; however, military aircraft are substantially louder than general aviation aircraft. An avoidance distance similar to the one charted for Devils Tower National Monument would be acceptable. GE-2 DO-2 AM-24

The Department has a continuing interest in working with the Air Force to ensure impacts to resources of concern to the Department are adequately addressed. If you have questions regarding Fish and Wildlife Resources comments, please contact Mr. Scott Larson, Field Supervisor of the U.S. Fish and Wildlife Service' Ecological Services Field Office, in Pierre, South Dakota, at telephone (605) 224-8693. For issues concerning National Park Resources comments, please contact Regional Environmental Coordinator Nick Chevance, Midwest GE-11

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Ms. Linda Devine

Regional Office, National Park Service, 601 Riverfront Drive, Omaha, Nebraska 68102, telephone 402-661-1844.

Sincerely,

Robert F. Stewart
Regional Environmental Officer

3061

Ms. Linda DeVine

HQ ACC/A7PS

129 Andrews Street, Rm. 337

Langley AFB, VA 23665-2769

Re: Powder River MOA Proposed Expansion

Ms. LeVine:

My name is Ray A. Jilek, president of Eagle Aviation, Inc., the Fixed Base Operator at Black Hills Airport in Spearfish, SD and I am also the Airport Manager. I had previously attended your "Scoping" meeting in Belle Fourche, SD June of 2008 and Public hearings in both Rapid City and again Belle Fourche September 14th & 15th.

We are very concerned with the MOA proposal as presented and detailed in the Environmental Impact Statement. The following "Bullet" points are some of the primary issues with which we have concerns that have not been fully addressed to this point:

- Black Hills Airport ranks #5 of 34 public use airports within your study area for annual operations and is **not even shown** on your maps.
- During the time your data was compiled Black Hills Airport's primary runway was closed for lengthening and re-construction with a total investment of approximately 10 million dollars.
- We are currently moving forward with a full-length parallel taxiway project with a price tag of approximately 7 million dollars.
- Due to our recent expansion we are in the process of developing new LPV approaches to runway 13/31 for category A, B, & C aircraft. IFR capabilities throughout this construction period have been curtailed or significantly reduced.

AM-4

Eagle Aviation at Black Hills Airport
605-642-4112 • Fax 605-642-1838
Cessna
300 Aviation Place, Spearfish, SD 57783
eagle@mato.com • eagleaviaitoninc.com

3061

- Expanding the MOA to an area of 37,800 Sq. Mi. (Larger than the state of Indiana) will have a **dramatic effect** on air travel to and from the Black Hills Region. AM-6
- IFR traffic to or from any area north of the Black Hills will be **significantly impacted** and may very well chose an **alternate destination** even though the Black Hills region is the most popular destination for recreation / tourism within hundreds of miles. SO-5
- VFR "See and Avoid" as proposed in your document is an incredible increased risk to flight safety assuming one was able to conduct flight under VFR conditions considering a closure rate of **800 plus knots**. (B-1 pilot stated 580 kt. Airspeed as normal within the MOA) SA-7
- FAR 91.117 requires a civilian pilot to reduce speed to below 250Kts. Anytime one is bellow 10,000 ft. to provide an opportunity to "See and Avoid" (Max. potential closure rate **of 500 Kts.)**
- Exemption #7960C authorizes the USAF to operate in the Powder River MOA "**Lights-Out**" at night to practice night vision goggle usage and yet we are told to feel safe flying through the MOA after dark VFR **"See and Avoid"?** SA-11
- As stated in your EIS, Radar coverage is **unavailable below 8000 ft.** which will provide no help for a VFR flight through the MOA. AM-3
- With the proposed MOA extending from 500 ft. AGL up to 60,000 ft. it will be **impossible for IFR** traffic to transition through this area when the MOA is active Mon. through Fri. 6:00 AM till Noon and again Mon. through Thurs. from 6:00 PM till 11:30 PM or other times when activated by NOTAM. AM-21
- The three corridors along Victor airways would allow IFR traffic through, below 18,000' except during Large Force Exercises. These corridors do **little to mitigate** the impacts to the Black Hills and most IFR traffic would generally fly above 18,000' due to weather as well as operating efficiency.
- Restrictions on IFR traffic through the MOA would not only have **significant economic impact** to our customers, but also to all commercial airline traffic that traditionally flies over this area as they are incapable of flying above 60,000'. SO-7
- Your EIS does nothing to address **the economic impact** of this proposal other than stating a "Potential Economic Impact" to General Aviation. SO-22
- Approximately 80% of our fuel sales are to Transient aircraft. If the MOA were to be expanded as proposed, one could reasonably expect a **significant reduction** in fuel sales which contribute to the employment of our existing employees as well as a significant reduction in the collection of "**Flowage Fees**" collected for Lawrence County to help offset the operational costs of this Public-Use Airport. SO-10

In addition to the above concerns, I have issues with the proposed activities planned for this expanded MOA. Specifically, the concept of VFR "See and Avoid" in an area with B-1's, B52's, F-16's, etc. operating at speeds exceeding 500 kts. Without radar coverage and possibly with their lights off is dangerous, reckless and foolish like a ticking time bomb. Should this proposal move forward, please consider adding layers that would allow through traffic such as 8,000 – 12,000 msl and 16,000 – 24,000 MSL to allow transitioning aircraft through MOA and improvements to radar and radio coverage. Proposed SA-7 AM-26

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activities such as supersonic flight, live flares, defensive chaff, Lights-out NVG training, closure rates far exceeding what is acceptable to the FAA for civilian operations, lack of radar and radio coverage throughout the area, etc. I'm convinced that these are technically operations which should be conducted in Restricted Airspace not in a MOA. The last issue of concern is the complete lack of any effort to identify or quantify the significant economic impacts of the proposal to the entire region.

AM-11
SO-22

Sincerely:

Ray A. Jilek, Airport Manager

Black Hills Airport / Clyde Ice Field

3062

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

NOV 19 2010

Ref: EPR-N

ATTN: Ms. Linda A. DeVine
HQ ACC/A7PS (PRTC EIS)
129 Andrews Street, Suite 337
Langley AFB, VA 23665-2769

Dear Ms. DeVine:

Re: Powder River Training Complex DEIS
CEQ# 20102947

In accordance with our responsibilities and authorities under the National Environmental Policy Act (NEPA), and Section 309 of the Clean Air Act, the Region 8 office of the U.S. Environmental Protection Agency (EPA) has reviewed and is providing a CEQ rating for the Draft Environmental Impact Statement (DEIS) for the proposed Powder River Training Complex (PRTC).

The purpose for the DEIS is to analyze the environmental effects of designating additional airspace in Wyoming, Montana, North Dakota, and South Dakota, adjacent to Ellsworth AFB, that would provide military aircrew training opportunities that cannot be accomplished in the existing Powder River military operations area (MOA). Alternative A, the Air Force Proposed Action, would expand and enhance the existing Powder River airspace to become the PRTC. The enhanced airspace would provide realistic, integrated B-1 bomber training close to Ellsworth AFB to maximize training in local airspace and minimize long-distance commute time to remote training ranges. The expanded training complex would also support continued and enhanced B-52 training for aircraft from Minot AFB. Alternative A is based on B-1 and B-52 training needs, which in turn dictate the airspace structure and number and type of airspace operations that occur within the proposed PRTC airspace units. The FAA and the USAF identified the no action and two additional action alternatives to the proposed alternative after several public hearings to obtain input from the public and other stakeholders. We defer to the FAA, which has jurisdiction by law or special expertise for administering all navigable airspace in the public interest of safety.

The DEIS documents the process that analyzed impacts identified during the scoping hearings. We reviewed a summary of the issues raised during those hearings and were satisfied with the public involvement process required by NEPA. Environmental impacts were assessed and mitigation measures were designed to address the following relevant planning issues organized into the applicable resource categories of interest:

- Regional energy development projects including tall wind turbine towers
- Civil/commercial aircraft flight operation compatibility

3062

- Access to local general aviation airports
- Destructive ground effects of sonic booms from military aircraft
- Chaff and flare deposition under severe wildland fire conditions

In general, the DEIS is well organized and thorough in its analysis of impacts. It also clearly demonstrates where impacts from the proposed alternative may be significant. However, EPA was disappointed in the decision to screen several alternatives that were considered but not carried forward into detailed analysis. An increase in funding for commuting (§2.3.3.2), use of flight simulators (§2.3.3.3), and relocation of basing for the training aircraft (§2.3.3.4) were considered but not very well explained before dismissal from detailed analysis. We believe the public would be better served by providing them a better understanding of the increased funding required for longer flight commutes to remote military training airspace. Also the limited discussion on expanding the use of flight simulators seems to underestimate the public perception that simulation technology available to the military is highly sophisticated and capable of integrating the entire Air Force team and obtaining aircrew combat mission readiness. The Final EIS should discuss how the Base Realignment and Closure (BRAC) Commission voted to retain Ellsworth AFB for continuing to base a B-1 fleet without, at the same time or within the BRAC analysis, determining whether the existing airspace could meet the change in military training requirements for these multi-mission aircraft.

DO-6

PN-7

GE-16

The DEIS discusses the proposed management practices that would be used to control the risk of wildland fires initiated from the use of flares within the PRTC (§2.4.6.2). The Air Force proposes to discontinue release of flares in an MOA when fire danger is rated "extreme" under the National Fire Danger Rating System (System) provided by the United State Forest Service Wildland Fire Assessment System. However the "extreme" classification under this System identifies conditions where fires start quickly, spread furiously and burn intensely. All fires in this condition are potentially serious because fire development into high intensity burning will usually be faster and occur from smaller fires than in the very high fire danger class. EPA suggests that a more conservative management approach be adopted within the PRTC so that release of flares is not authorized whenever the System rates the fire danger as "moderate" or higher (i.e. high, very high, or extreme). The System classifies "moderate" fire danger as those conditions when fires can start from most accidental causes, but with the exception of lightning fires in some areas, the number of starts is generally low. Fires in open, mature grasslands will burn briskly and spread rapidly on windy days. EPA recommends that the Final EIS provide information on how often the System rated fire danger moderate or higher in the proposed PRTC during the last major drought year (2002). This historical comparison would give the reader some idea of how often adverse fire conditions would not permit use of flares.

SA-5

EPA evaluated the potential effects of the proposed action and the adequacy of information in the Draft EIS. EPA rates this proposal to establish the Powder River Training Complex with a Lack of Objection ("LO") under our rating criteria. The "LO" rating means that our review has resulted in finding no environmental impacts that have not been effectively mitigated in the proposed alternative. We are raising no objections to the proposed action.

2

3062

We appreciate the opportunity to provide comments at this stage of the project. If you have any questions or would like to discuss our rating, please contact me (303 312-6004) or James Hanley (303) 312-6725 of my staff.

Sincerely,

Larry Svoboda
Director, NEPA Program
Office of Ecosystems Protection and Remediation

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3063

Essential Air Service Task Force
643 Remuda Creek Road
Fort Peck MT 59223
(406) 525-3318

November 10, 2010

Ms. Linda Devine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Subject: Draft Environmental Impact State for Powder River Training Complex

Dear Ms. Devine:

The Montana Essential Air Service Task Force consists of representatives from Montana's seven eastern essential air service communities located in; Sidney, Glendive, Miles City, Glasgow, Wolf Point, Lewistown and Havre.

The task force opposes the expansion of the Powder River Training Complex into Montana. The proposal and charted times of use are extreme and unsupported and the colossal level of this proposal will have devastating impacts on southeast Montana. GE-2 AM-6

Any disruption in air service to these communities is unacceptable. These scheduled flights are in most cases the only form of public transportation available. Essential Air Service plays a key role in local communities by attracting and retaining businesses that depend on commercial air service, in health care by enabling our citizens to easily access sophisticated healthcare that is often absent in rural communities. SO-5

Great Lakes Airline provides this service with flights originating from Denver. When the MOA is active, Great Lakes will be forced to divert and fly through the proposed gaps. During a Large Force Exercise, the carrier will be re-routed and made to fly around this large mass of airspace. SO-6

Adding additional time and expense to any air carrier or general aviation operator is not acceptable. In these volatile economic times and current state of the aviation industry, I urge you to adopt the "no action alternative" and do not interrupt our commercial or general aviation activities. SO-7 GE-2

The task force values and appreciates our United States military forces. We thank you for your service to this great country.

Sincerely,

John Rabenberg
Chairman

c: task force members
Federal Aviation Administration

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LANTIS ENTERPRISES, INC.
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PO Box 699, 4755 E. Colorado Blvd.
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lantisnet.com

November 1, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andres Street, Room 337
Langley AFB, VA 23665-2769

Dear Ms. DeVine,

I am writing to express my concerns over the expansion of the Powder River Training Complex (PRTC). I have four major concerns. The first is the expense burden on business and private aviation, the second is destination aviation and the loss of revenue in the Black Hills, third is the impact on ranching and the loss gains therefore the loss of revenue, and the fourth is safety.

Our business and private aviation will be affected because of several different reasons. The expansion of the PRTC will increase operating costs immensely because of restricted flight schedules as well as the added flight costs and wages for Lantis Enterprises, Inc. The increases can be figured at an added $680 in flight costs as well as an extra $350 in wages for employees per flight if we would be required to fly around the PRTC. This would be detrimental to our company as we need to make regular flights to check on our facilities and businesses; we are literally estimating costs just for our company in excess of $100,000.00 a year. This would not include the cost of being grounded for several hours while waiting for the flight exercises to be completed so that we could take off or land. To expect businesses and individuals to reschedule their lives, business, and flight plans around the PRCT flight exercises is not an option.

SO-7

SO-8

Private aviation would be negatively impacted through all of the public and private use airports in the region. During PRCT flight exercises, small airports would see a drastic reduction in the amount of traffic in an out of their facility. These flight exercises would even cause a permanent reduction in business, business which is vital not only for the airport, but the surrounding community. For example, the local airport here in Spearfish, based on the numbers gathered by the PRTC is rated fifth highest for activity in the region, even though those numbers were gathered during a reconstruction period, of which over a month of the data collection information the airport was completely closed. If they were to lose any

SO-10

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business, either temporarily or permanently, this would cause significant damage to current business relations as well as future relations. SO-10

I believe that this would cause destination aviation in the Black Hills area to decrease. Tourism is a big part of the viability of the Black Hills. If the PRTC expansion did take place I believe that this would have a large economic impact on this area. SO-9

Another concern that I have is for the ranching business. My family owns a large ranch with various numbers of livestock in northwest South Dakota. The problems that would be caused by the low flying aircraft and other exercises would be sizeable. This would cause stress on the livestock, resulting in low weights, increased veterinary bills, increased cost for fencing repairs and the loss of livestock. It would also be difficult to attempt to coordinate events such as moving livestock or branding around the PRTC schedule with any amount of efficiency. The expansion of the PRTC into this area would cause the resale value of our ranching operation to decrease. All of these combined concerns regarding our family ranch would have large economic ramifications on that facet of our business. SO-13

There are many safety concerns that need to be considered regarding the PRTC. Civilian pilots operating under Visual Flight Rules (VFR) have addressed that flight, with the current size of the PRTC, is already a risk to fly through. The combination of the expansion of the area to the proposed size, the lack of suitable and reliable surveillance radar and radio communications at low altitudes, and the high speed of the Bomber and other aircraft involved would take an already risky situation and escalate it to a dangerous situation. AM-3 SA-7

The expansion of the PRTC to the proposed areas will add a considerable amount of grassland to the project, and while they will practice using chaff and flares at such a low altitude there is a heightened probability that these could come into contact with another aircraft. Furthermore this practice could cause a major fire in some rural areas. This is a major problem, as the rural areas all have volunteer firefighters and it can take some time for them to arrive on scene. With the hot dry summers that we have in this area, one ember from a flare could very quickly engulf the entire acreage of a ranch or farm. This one exercise alone could cause the loss of crops, livestock and possibly a home and ranch buildings. SA-26 SA-5

According to the Air Force, the sound of a Bomber has been used as a weapon in combat, described as a "show of force," and is deafening to the human ear. The level at which hearing loss begins is 90-95 decibels, with physical pain beginning at 125 decibels. A Bomber with afterburners emits 133 decibels at 2000 feet above ground level (AGL). This is louder than a rock concert. This doesn't take into effect the sonic booms that will be occurring and the affect that they will have as well. Stated indoor levels of 113 decibels as well as the supersonic flight could also cause damages to people's homes and possessions. Who will pay for the damages caused every time a supersonic flight breaks a window in someone's home or even in their vehicle? These are all problems that need to be very carefully considered, especially the repeated flights at a decibel that can cause hearing loss. NO-5 SO-12 NO-11

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Two suggestions that I would like to make regarding the expansion of the PRTC are to allow two elevation gaps for flights and to expand and improve radar surveillance and radio communications. My proposal would be to allow for two separate elevations from the surface to 5,000 feet AGL and from 26,000-34,000 feet MSL that would be open at all times for private, business and commercial flights to have access to, with radio and radar coverage. This would allow flights for both entities to continue at all times and would alleviate the extra costs that would arise instead of having flights grounded during these exercises. This proposed plan would not cripple the public and private use airports. This would be a compromise on both parts and would satisfy the need for flight time for the USAF and for the private, business and commercial aviation. AM-26

If the expansion was to occur before that could happen there would need to be some major improvements in radar surveillance and radio communications. This should be an essential requirement for a project of this size because of the increase in air traffic. AM-3

I believe that all of the noted problems and improvements need to be carefully considered and a very in-depth economic impact study needs to be conducted and information compiled. If a project of this size is not handled appropriately and the studies are not done correctly ahead of time, major damages would be caused and several people would be very disgruntled when it comes to the USAF, our troops need our support not a fight with the public it's very existence is to protect. SO-22

With all of the problems, concerns, and work that should be addressed, I believe that we are nowhere close to where this project should be approved. If you have any questions, please do not hesitate to contact me.

Travis Lantis

Travis Lantis
CEO, Lantis Enterprises
President, Lantis Aviation

3065

MAMA

Montana Airport Managers Association

November 15, 2010

Ms. Linda DeVine
HQ/ACC/A7PP
129 Andrews Street, Room 317
Langley AFB VA 23665-2769

Dear Ms. DeVine:

The Montana Airport Manager Association (MAMA) represents the interests of Montana's airports, both large and small. The proposed expansion of the Powder River MOA is an issue that causes many members of MAMA much concern. The area of eastern and south eastern Montana being considered in the proposed expansion of the Powder River MOA significantly increases the impact to Montana airspace without any economic benefit to this area of Montana. In fact this expansion will add to an already difficult economic condition in this part of the State. The Air Force bases in North Dakota and South Dakota provide a very large economic impact to those States and subsequently should be willing to shoulder the burden of an expanded MOA in their respective States, as opposed to a large expansion into neighboring Montana. SO-24

In recent years south eastern Montana has began to see an increase in general aviation activity as the result of the exploration of Montana's natural resources. This activity has fueled local economies through the sale of fuel, overnight parking, hotel accommodations, use of restaurants, and rental car sales. IFR aircraft would be significantly restricted in the use of the air space over these areas and subsequently could result in a loss of revenue to these communities. Any loss of revenue will impact the ability for these communities to maintain their airports and provide a safe airport environment. Many local residents depend on aerial applicators to spray fields at low altitudes, additionally many local ranchers who pilot aircraft will fly at low altitudes to check on livestock spread out over many square miles. The ability for these activities to safely perform a necessary function is greatly diminished with an expansion of the Powder River MOA. It does not appear that there will be a method to provide for safe separation of military and civilian aircraft due to limited or non-existent radar and voice communication. SO-9, SA-9, AM-3

The aviation industry has taken some hard lumps over the past few years and requiring aircraft to circumvent this expanded area will only serve to increase the cost of operating an aircraft in the vicinity of the Powder River due to the need to use additional fuel, which the price is steadily increasing on. This impact could be especially difficult on the Essential Air Service (EAS) provider that currently serves seven (7) cities in eastern Montana that are near the propose Powder River MOA and may need to deviate many miles on many of its flight routes, adding additional costs to a very revenue lean operation. SO-7

Billings Logan International Airport – 1901 Terminal Circe – Room 216 – Billings, MT 59105 406-657-8484

3065

While MAMA and its members whole heartedly supports all branches of the U.S. military, and all agree that training is important, we believe that with the expansion of the Powder River MOA, the airports of eastern and south eastern Montana and their supporting communities are being asked to provide more than their fair share in helping the military in their training needs. GE-3

Sincerely,

Kevin Ploehn
President
Montana Airport Managers Association

KP:

3066

MDT **Montana Department of Transportation**
Aeronautics Division
2630 Airport Road
PO Box 200507
Helena MT 59620-0507

Jim Lynch, Director
Brian Schweitzer, Governor

October 7, 2010

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB VA 23665-2769

Subject: Powder River Training Complex; scoping comments

Dear Linda:

Thank you for the conversation and information today.

I am requesting that all comments received by your office during the scoping period of the Powder River Training Complex environmental process be copied and shared with the Federal Aviation Administration to be entered into its record for the aeronautical study they are conducting in conjunction with this proposal.] NP-5

I appreciate your willingness to assist in this matter and look forward to meeting you in Billings.

Sincerely,

Debbie Alke
Administrator

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MONTANA PILOTS' ASSOCIATION
INCORPORATED

3067

P.O. BOX 4311 • HELENA, MONTANA 59604
www.montanapilots.org

November 9, 2010

Ms. Linda Devine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Dear Ms. Devine,

As President of the Montana Pilots Association which was founded in 1939 and represents approximately seven hundred members, I was requested to send this letter of comment, after a unanimous vote by the board of directors. We are not in favor of any expansion to the Powder River Military Operations Area. Several Montana Pilots Association members, including myself, state officials, eastern Montana county officials, ranchers, and numerous other concerned parties attended a meeting September 7th 2010 in Billings, Montana. The meeting was arranged by Congressman Denny Rehberg's staff member, J.T. Korkow, with Colonel Jeffrey B. Taliaferro, Wing Commander Ellsworth Air Force Base, Rapid City, South Dakota and his staff. I also attended the public hearing meeting in Billings, Montana. The Montana Pilots Association has come to the conclusion the negative economic hardships to the aviation community in the State of Montana are not acceptable. We are in agreement with our elected officials: Senator Max Baucus, Senator John Tester and the State of Montana, whom have all voiced the negative impact this proposal will have on our State. Jim Lynch, Director of the Montana Department of Transportation and Debbie Alke, Administrator of the Aeronautics Division, Department of Transportation, have also made numerous negative comments to this proposal.

It was quite evident the majority of folks that made comment at the Billings public hearing were not in favor for many reasons, including concerns over negative economic impacts to commercial and private aviation operations, safety issues such as spooking of domestic animals, wildlife stress, and Post Traumatic Stress victims from previous military conflicts. The list of opposition is long and varied.

So with all due respect please mark our comment down as No-Action Alternative, which is no change to the current Powder River Military Operations Area.

GE-2

Sincerely,

Wade Cebulski

Wade Cebulski, President

Cc:
Federal Aviation Administration
Senator Max Baucus
Senator Jon Tester
Congressman Dennis Rehberg

3068

NDBAA Response to the EIS for the Powder River MOA Expansion Request

North Dakota Business Aviation Association (NDBAA) represents commercial and corporate pilots, FBO's, SASO's and anyone that incorporates aviation in to their business operations. Our Mission is to promote the interests of those that benefit from the use of business aviation in North Dakota

The proposal for the expansion of the Powder River MOA by the US Air Force has no foreseeable value to the professional and corporate air traveler. As it is proposed, it will only cause delays and add expense to those traveling into and out of western North Dakota. It will also delay and even deter many flights that would have crossed over and stopped in North Dakota to seek a different alternative stop.] SO-8

For those that satellite out if the Bismarck/Mandan area with medical and legal services to the smaller rural communities, it will cause unpredictable delays in those travels. In some cases it will cause complete cancellation of services to the smaller communities.] SO-5

Delays to critical care flights are proposed to be minimal however when these flights are most needed any delay can mean the difference between life and death.] SA-19

Respectfully submitted,

Jonathan P. Simmers

Secretary

[redacted]

[redacted]

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STATE HISTORICAL SOCIETY OF NORTH DAKOTA

John Hoeven
Governor of North Dakota

North Dakota State Historical Board

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Parks and Recreation Department

Francis Ziegler
Director
Department of Transportation

Merlan E. Paaverud, Jr.
Director

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August 25, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB VA 23665-2769

ND SHPO 08-0893 USAF Powder River Training Complex - low flying training missions B-52s and B-1s in Southwestern North Dakota

Dear Ms. DeVine,

We received your initial consultation materials regarding ND SHPO 08-0893 USAF Powder River Training Complex low flying training missions B-52s and B-1s in Southwestern North Dakota. We request more detailed maps to understand better which aircraft would be flying in which corridors in North Dakota. Other comments include:

- There is one newly listed National Register Property in the APE: Evangelisch Lutheraner Dreienigkeit Gemeinde (Church) Grant County, City of New Leipzig. CU-2
- We have concerns regarding fragile historic earthen-based homes and outbuildings in the area. Many of these have earthen walls or stone walls with mud plasters that could be damaged or destroyed easily by vibrations. Stern Homestead is an example, and there are several others that are eligible for but not listed in the National Register of Historic Places. NO-2
- We have concerns regarding low flying aircraft and disturbances to the tranquility of the prominent buttes in the area, such as Sentinel Butte. LU-2

We look forward to further review information and consultation. If you have any questions please contact Susan Quinnell, Review and Compliance Coordinator at (701) 328-3576, squinnell@nd.gov.

Sincerely,

Merlan E. Paaverud, Jr.
State Historic Preservation Officer (North Dakota)

North Dakota Heritage Center • 612 East Boulevard Avenue, Bismarck, ND 58505-0830 • Phone 701-328-2666 • Fax: 701-328-3710
Email: histsoc@nd.gov • Web site: http://history.nd.gov• TTY: 1-800-366-6888

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BOARD OF COUNTY COMMISSIONERS
POWDER RIVER COUNTY
PO Box 200
Broadus, Montana 59317

Phone: 406-436-2657
Fax: 406-436-2151

Ray Traub, Broadus
Don McDowell, Broadus
Les Thompson, Broadus

November 1, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

RE: Powder River Training Complex expansion

Dear Ms. DeVine:

We, the board of County Commissioners of Powder River County, Montana, would like to express our concerns about the expansion of the Powder River Training Complex.

First: With a floor of 500 feet, our area has no radar below 15,000 feet. We feel if you do this, a system should be in so Salt Lake can see all the activity that is here. This would include landing and take offs from the Broadus Airport and our local rancher's private air strips. AM-3

Second: This complex should not limit any of our natural resource development. We feel this is very important because of the economic development this would bring to our area. Along with this, if the 9 am to 2 am flight times are obeyed, then energy company's corporate planes could work with that. Also, the farmers and ranchers in the area could adjust to those times. SO-17

Third: We feel Elsworth Air Force Base should plan annual meetings in our area to meet with the local residents. A face to face meeting would provide opportunity for interaction between local residents and Air Force personnel. That way we see them and they see us, face to face. Sometimes things look good on paper, but reality is sometimes different. This would give the Air Force a chance to listen to local concerns. It would also give the local residents a chance to meet and listen to Air Force concerns. GE-5

Fourth: There must be written protocol for operation of firefighting, and life flight aircraft. Operations of aircraft in this capacity may range from several hours to several days. Crop dusters and aircraft involved in predator control have a limited window of opportunity to perform their tasks. Protocol must be included that does not restrict the use of this type of aircraft, which could affect our local economy. SA-19 SO-12 SO-15 SO-2

3070

Fifth: We do depend on recreationalists who come to our area to get away from noise and debris. Every effort can and must be made to minimize the effect low flying aircrafts would have on this type of economic industry in our county. SO-9

Powder River County Board of Commissioners are interested in how you address concerns related to this proposal.

Sincerely,

BOARD OF COUNTY COMMISSIONERS
POWDER RIVER COUNTY

Roy Traub, Chairman

Don McDowell

Les Thompson

3071

TRIBAL COUNCIL
(AT LARGE)
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Running Antelope District
Samuel B. Harrison
Porcupine District

December 9, 2010

Ms. Linda DeVine
ACC/A7PS
129 Andrews St. Suite 337
Langley AFB, VA 23665-2701

RE: Powder River Training Complex Draft EIS

Dear Ms. DeVine,

The Standing Rock Sioux Tribe (Tribe) appreciates the opportunity to comment on the Powder River Training Complex Ellsworth Air Force Base, South Dakota Draft Environmental Impact Statement (DEIS) and it environmental impacts to the Standing Rock Indian Reservation (Reservation).

Before we begin our comments on the DEIS, the Standing Rock Sioux Tribe is very supportive of the U.S. military and its efforts to protect and serve our country. Many of our tribal members are proud to have served in the Armed Forces. GE-9

In the DEIS, we request that you use "Standing Rock Indian Reservation" when referring to our Reservation and "Standing Rock Sioux Tribe" when referring to our Tribe.

We were notified of this project two years ago when people from Ellsworth Air Force Base visited the Reservation and gave a presentation. At that time, we were told by several different military personnel that the flights over the Reservation would be infrequent, even nonexistent. The few flights that would take place would be at a very high altitude. However, in the recently released DEIS, it appears that there are plans to fly at altitudes of 500 ft. over our Reservation, contrary to what we were led to believe. The information provided by military personnel to the Tribe directly contradicts the proposed DEIS. If what we were told two years ago by Army personnel is correct, it should be included in the DEIS. PN-5 PN-4

Our people are deeply concerned about low-level flights and sonic booms that would occur over our Reservation, especially during the summer months. Many tribal members practice traditional religious ceremonies outdoors in the summer on tribal lands. Aircraft flying at low-levels and/ or sonic booms would be not only disruptive and intrusive but also highly disrespectful to our spiritual and religious practices. NA-4

BLDG 1 NORTH STANDING ROCK AVE. P.O BOX D • FORT YATES, NORTH DAKOTA 58538
PHONE: 701-854-7201 or 701-854-8500 • FAX 701-854-7299

3071

Ms. Linda DeVine
Powder River Training Complex Draft EIS
Page 2

Our religious practices take place outdoors and can occur anywhere on Tribal lands within the reservation boundaries, both day and night.

Also, many of our tribal members are also cattle ranchers and sonic booms and low-flying aircraft would be disruptive to their ranching activities such as calving, branding, weaning or other penning operations. BI-4

For these reasons, we are requesting that the entire Standing Rock Indian Reservation be made an avoidance area and that there be no low-level aircraft or sonic booms over tribal lands during the months of June, July and August. Please find attached a map of all tribal lands within the exterior boundaries of the Standing Rock Indian Reservation NA-5

Please be reminded that "Federal agencies shall protect and preserve Native American religious cultural rights and practices". [*See,* American Indian Religious Freedom Act, 42 U.S.C. §1996 (1978), et. seq.] In this case, we interpret that to mean that the U.S. Army will refrain from low-level flight and sonic booms during the summer months when tribal members are practicing their traditional and religious ceremonies.

Moreover, many of our tribal members are concerned about the dispersion of chaff over the Reservation. Although the DEIS claims that the chaff will likely disperse before reaching the ground and that there is little harm, we request that the military limit the use of chaff over the Reservation and start using new technologies available that create invisibility. NA-6

Our tribal members are also concerned about the potential of a lit flare reaching the ground and causing a fire. While there is a small chance this may occur, we would like the Air Force to assume full liability for all damages including the cost of fighting range fires started by flares. SA-5

We are disappointed in the brief history of Native Americans that is portrayed in the DEIS on pages 3-109 to 3-113. Not only are there misspellings but also factually incorrect information. We offer the following corrections for inclusion in the DEIS. NA-12

Page 3-109, second paragraph
Change the word legend to history.
Change semi-woodland to woodland
The last sentence uses the date mid-1800s, change to mid-1700s.

Page 3-110
The third paragraph starts with "The Treaty of Fort Laramie". Please note that you are referring to the second Treaty of Fort Laramie of 1868. The first Treaty of Fort Laramie was in 1851.

3071

Ms. Linda DeVine
Powder River Training Complex Draft EIS
Page 3

Also in this paragraph, Yanktonai is misspelled

We ask for a rewrite of the fourth paragraph. The sentence "Conflict was exacerbated by the Black Hills gold rush" is a polite way of saying that the Fort Laramie Treaty was repeatedly violated by white settlers in search of gold. Please include language that states the Black Hills are sacred to the Dakota and Lakota, and were illegally taken from the Lakota and Dakota by the U.S Government. To this day, the Dakota and Lakota people refuse to accept money for their sacred Black Hills (Paha Sapa) and continue to fight legally. We object to the following language, "Mining and other intrusions in to the Great Sioux Nation created tension..." Mining in the Black Hills was a direct violation of the 1868 Fort Laramie Treaty.

NA-12

Page 3-112
The last sentence in the first paragraph refers to the "battle" at Wounded Knee. This was not a battle but a massacre. All weapons were taken from the Dakota and Lakota and they were surrounded by the 7th Calvary. In less than one (1) hour, 350 Lakota men, women and children were slaughtered at the hands of the U.S. Government.

Page 3-112
In the third paragraph the first sentence is incorrect. The five reservations, including Standing Rock, were created by the Act of March 2, 1889, not the Dawes Act.

We hope that you are able to incorporate these changes into your historical section. We believe it is important that you provide an accurate account of history.

If you have any questions, please call my office at 701-8524.

Respectfully Submitted,

Charles W. Murphy, Chairman
STANDING ROCK SIOUX TRIBE

3072

Charles W. Murphy
Chairman

Mike Faith
Vice Chairman

Adele M. White
Secretary

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Kenel District
Errol D. Crow Ghost
Bear Soldier District
Milton Brown Otter
Rock Creek District
Frank Jamerson Jr.
Running Antelope District
Samuel B. Harrison
Porcupine District

October 11, 2010

Linda DeVine
ACC/A7PS
129 Andrews St. Suite 337
Langley AFB, VA 23665-2701

RE: Powder River Training Complex
Ellsworth Air Force Base, SD
Draft Environmental Impact Statement

Dear Ms. DeVine,

The Standing Rock Sioux Tribe appreciates the opportunity to review the Powder River Training Complex Draft Environmental Impact Statement (DEIS).

Due to the many complex issues presented in the DEIS and the variety of concerns from our tribal members, we would like request a 30-day extension on the comment period.] NP-5

Should you have any questions please contact Adrienne Swallow, Environmental Protection Specialist at 701-854-8582 or aswallow@standingrock.org.

Sincerely,

Charles W. Murphy
Chairman
STANDING ROCK SIOUX TRIBE

BLDG 1 NORTH STANDING ROCK AVE P.O BOX D • FORT YATES, NORTH DAKOTA 58538
PHONE: 701-854-7201 or 701-854-8500 • FAX 701-854-7299

3073

Dear Madam:

Comments regarding the public hearing for the Proposed Powder River Training Complex held in Gillette, Wyoming October 18, 2010

I represent the True Companies from Casper, Wyoming. We are in the oil and gas drilling and production business, pipeline, trucking, and oil field supply business. We travel to North Dakota and eastern Montana on company airplanes on a regular basis. This proposal creates a three hundred mile obstacle between Casper and Gillette, and our destinations in North Dakota (Williston, Watford City, Stanley, Minot, Dickinson, Bismarck,) and Montana (Ekalaka, Baker, Glendive, Sidney.) The proposed Powder River Training Complex extends from Billings, Montana to Bismarck, North Dakota. For us to get to each of these destinations except Bismarck, avoiding the entire Complex will add at least two hundred miles (45 minutes to an hour depending on the airplane used) for each round trip. We often pickup and or drop off employees in Gillette to be taken to, and returned from, North Dakota. While the distance from Gillette to Dickinson, North Dakota is 200 miles, when the complex is active, we will have to fly to Dickinson via Bismarck adding 200 miles to each leg and will cost us an extra 400 miles (1.5 to 2.2 hours depending on the airplane used) for each round trip. In addition to the time and expense impact, the weight of the fuel to fly the extra 100 miles each way is the same as a passenger, so we will also be losing utilization. In the two weeks prior to the public meeting in Gillette we went to Bismarck twice, Minot, Stanley, Watford City, and Williston. Your proposed schedules are, and have been, about the same as our schedules. The phrase " and other times by NOTAM " implies that this 300 mile wide obstacle will active more and more often.

SO-7

There are many other users of this area in the energy business who aren't even aware of this airspace grab. I've not seen anything in the AOPA magazine, Business and Commercial Aviation, or any other trade publications. Is this an oversight? I think you need to expand your public awareness.

3073

The Air Force briefers at the public meeting are no doubt briefing us in good faith. I believe they truly believe they are telling us the way it will be. However, a center controller WILL NOT ALLOW IFR TRAFFIC IN AN ACTIVE MOA OR ATCAA. Flying VFR in an active MOA is okay if the weather is clear and there are large bombers in the airspace. Flying VFR in an active MOA in less then good weather, and or with fighter type aircraft is NOT SAFE. To believe otherwise is naïve, and to state otherwise is irresponsible. It is doubtful that the briefer has ever been denied access to a piece of airspace that suddenly turned active and been vectored 60 miles out his way because someone didn't do their job. He has never had to reroute and make an unscheduled fuel stop for these reasons; I have. Long after they (the briefers at the public meeting) are transferred or retired we users will continue to be dealing with broken promises, more restrictions, etc. I expect that once this airspace is established, it will be in use more than the Air Force briefers and your EIS tells us, and we believe the Gap ATCAA'S will be active more often, further burdening our operations.

SA-3

NP-7

The information to pilots for pre flight briefings about MOA'S and ATCAA'S have historically been unreliable, and inaccurate. I am paying (as a tax payer and user) to get accurate, reliable information on special use airspace from normal Flight Service Station channels. Many of the Flight Service Station briefers don't even know how to find this information. With your (USAF and FAA) track record, we users expect the Powder River Training Complex will be a nightmare from a planning and operational standpoint.

AM-12

With a planned complex this large and other types of aircraft using this airspace, the implication is that you'll be inviting other units to Ellsworth The fuel savings to the Air Force appears non-existent because instead of the local units traveling to existing ranges, other units will be traveling to Powder River. Ellsworth and the Powder River Training Complex will become busier and more congested, and our company's operations will suffer further.

SO-14

Again, with the frequency of our trips through the airspace in question, and the track record of timely, accurate, and reliable information to pilots, I expect this huge airspace proposal to be a fiasco for many years to come.

John Campbell
Chief Pilot True Drilling Company

3074

United States Department of Agriculture | Forest Service | Custer National Forest | 1310 Main Street Billings, MT 59105 406 657-6200

File Code: 1530/1950
Date: November 9, 2010

Linda DeVine
Program Manager
ACC/A7PS
129 Andrews St., Suite 337
Langley AFB, VA 23665-2701

Dear Ms. DeVine:

Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for the Powder River MOA Training Complex. The proposed action would change where Air Force training exercises occur over National Forest System (NFS) lands managed and administered by the Custer National Forest. The Forest Service, Custer National Forest, is providing the following comments.

We acknowledge the efforts of the Air Force to expand their training area to reduce fuel costs and continue to provide training for their pilots with this effort. We do ask that some things be clarified or considered in more detail. Training flights already occur over much of the Ashland and Sioux ranger Districts in Powder River and Carter counties, MT and Harding County, South Dakota, in the current Powder River A and B MOAs. Staff from each ranger district report they have not heard of problems as a result of the use of that airspace.

1) Use of Above Ground Level vs. Mean Sea Level

The presentation at the Buffalo, SD presentation mentioned having planes at certain elevations above the ground. One was Above Ground Level (AGL) for most flights. However, another type of training flight mentioned would use Mean Sea Level (MSL) instead. We suggest using AGL as the guide when talking about all flights unless a specific training need is identified that needs to use MSL instead.

AM-32

2) Archaeology

The Forest Archaeologist indicates there is no reference or analysis of the action to the North Cave Hills, South Cave Hills, or Slim Buttes cultural landscapes. It is our understanding that the North and South Cave Hills land units of the District are considered sacred to the Lakota, Mandan, Hidatsa and Arikara tribes and are used for vision quests, solitude, etc. These three land units are part of the Sioux Ranger District and are located in Harding County, South Dakota. The Sioux Ranger District consists of eight land units, five of which are located in South Dakota

CU-2

3074

and the remaining three in southeast Montana, in Carter County. We recommend that you may wish to contact the tribes regarding those areas they might consider sacred. CU-2

There appears to be no analysis on the effects of noise and vibration, related to sonic booms and low altitude fly-overs, to the geologic units where rock art sites currently listed on the National Register of Historic Places are located. The sites are listed in tables, but no analysis is disclosed if there are potential effects. Also, there does not appear to be analysis of effects to four potentially eligible historic structures located within the analysis area - Jessie Elliott Guard Station, Tri-point Lookout, and the Molstad Cook shack located on the Sioux Ranger District; and Poker Jim Lookout and Whitetail cabin located on Ashland Ranger District. Environmental Consequences address potential effects on p. 4-83 of the DEIS but these structures are not included. The concern is the potential effects of noise and vibration to the rock art sites and historic structures located on the Forest and within the proposed project area. We would appreciate it if you would evaluate the effects of noise and vibration to these resources. NO-2

Find enclosed copies of the Record of Decision for the Sioux Ranger District Oil and Gas Leasing Final Environmental Impact Statement, Appendices and maps. This reference provides information regarding heritage sites and traditional cultural properties on the South Dakota portion of the Sioux Ranger District. Also enclosed are copies of the site forms for the historic structures. These site forms are confidential documents and not subject to the Freedom of Information Act (FOIA) requests.

3) Botany

The Forest Botanist has recommended that several species of sensitive plants be included in the analysis. All but one of these species are considered Northern Region Forest Service Sensitive Species, and one is a Species of Interest. Forest Service sensitive species are analyzed pursuant to the National Forest Management Act (NFMA) to determine whether the effects of an action to these species would cause a trend toward listing under ESA. The single Species of Interest in this instance should be considered like a Sensitive Species, the determination of effects being similar to that of a Sensitive Species. These species are indicated in the table below. Recommended additions are indicated in "red" colored text. BI-9

Forest Service, Custer National Forest additions to Appendix K. Add to footnote 2, after FSR_= USFWS Sensitive and Region; USFS = Forest Service Sensitive or Species of Interest.

Common Name	Scientific Name	Project Area States and Counties of Known Occurrence				FED	Habitat
		ND	SD	MT	WY		
Nutall desert-parsley	Lomatium nuttallii			Big Horn, Rosebud		USFS Species of Interest	Open, rocky pine woodlands in mid to

1

3074

Common Name	Scientific Name	Project Area States and Counties of Known Occurrence				FED	Habitat
							lower elevation.
Pregnant sedge	Carex gravid var. gravida			Big Horn, Carter, Powder River, Rosebud		USFS	Green ash ravines and wooded draws.
Visher's buckwheat	Eriogonum visheri			Carter		USFS	Barren rock outcrops or clay outwash.
Barr's milvetch	Astragalus barrii			Powder River, Rosebud		USFS	Gullied knolls, buttes, & barren hilltops, often on calcareous soft shale and siltstone.
Ovalleaf milkweed	Asclepias ovalifolia			Carter		USFS	Prairies and woodlands in sandy, gravelly or clayey soils.
Prairie gentian	Gentiana affinis		Harding			USFS	Wet meadows, shores, seeps, springs, and low prairie.
Mountain bluebells	Mertensia ciliata		Harding			USFS	Forested slopes, damp thickets, moist

Page 3

3074

Common Name	Scientific Name	Project Area States and Counties of Known Occurrence				FED	Habitat
							valley bottoms.
Small yellow lady's slipper	Cypripedium parviflorum			Carter		USFS	Fens, damp mossy woodlands, seepage areas.

In Appendix K, add to footnote 2, after FSR_= USFWS Sensitive and Region; USFS = Forest Service Sensitive or Species of Interest.

4) Fire, Fuels, and Fire Suppression, and Emergency Aircraft

The Forest Service recommends using a combination of the National Fire Danger Rating System's (NFDRS) Adjective Fire Danger Rating and the National Weather Service's Red Flag Warning system to determine times when flare use should be suspended. The NFDRS Adjective Fire Danger Rating is based on indices that track season long and short term fire danger trends by combining calculated Staffing Levels and Ignition Component. We suggest utilizing Miles City Dispatch calculated values for determining the Adjective Fire Danger Rating and suspending flare use between 1000 and 2100 during days of Very High and Extreme Adjective Ratings or raising the minimum altitude for flare deployment to 5000 feet during Very High and Extreme rating days. Very High and Extreme ratings tend to correlate with the potential for numerous fire starts and large fires thus representative of environmental conditions where flares used at low altitude would cause a fire. Additionally, the National Weather Service issues Red Flag Warnings when predicted wind speed, minimum relative humidity and/or lighting activity reach critical thresholds for a particular fire weather zone. The Forest Service recommends suspending flare use during Red Flag Warning issuances.

SA-5

During fire season (June-September) how much notice will Miles City Dispatch be given of planned exercises. We would ask that large quarterly exercises be scheduled in June or late September to avoid the peak of fire season and fire aviation traffic which is typically mid-July through the first part of September to reduce airspace traffic conflicts.

AM-12

SA-13

We have reviewed the July 2008 scoping comments submitted by the Bureau of Land Management (BLM) and concur and incorporate those comments into our recommendations. The Forest Service and BLM jointly work together with other Federal, Montana State and local departments, such as the Department of Natural Resources and Conservation, as well as the Bureau of Indian Affairs in the management and suppression of fire in the Eastern Montana Fire Zone (EMFZ). Due to the large number of cooperating agencies in EMFZ and the need for rapid fire management response, we want to emphasize the need for quick, efficient and effective communication between the Air Force and Miles City and/or Billings Dispatch Center(s).

SA-19

3074

5) Recreation

The Proposed action Powder River Training Complex (PRTC) completely covers the Ashland Ranger District, completely covers seven of the eight land units that comprise the Sioux Ranger District (Long Pines, Ekalaka Hills, Chalk Buttes, East Short Pines, West Short Pines, North Cave Hills, and South Cave Hills), and partially covers the eighth land unit on the Sioux Ranger District (Slim Buttes).

The Ashland and Sioux ranger districts on the Custer National Forest are very popular destinations for hunters. National Forest System (NFS) lands provide an important recreation opportunity for hunters both in local communities and those who travel from neighboring states. Families return annually to hunt on these particular lands. Hunting provides individuals an important connection to the land, an opportunity to engage in individual and family hunting traditions, and a way to provide meat for oneself and family. During the various hunting seasons, use of the Forest occurs throughout the week, though use is heaviest on weekends. Noise from aircraft has the potential to negatively affect hunters and their prey. LV-5 SO-6

Review of the Powder River Training Complex Draft EIS and Executive Summary, indicates that based on the noise, safety, biological, and land use analyses, it appears that impacts to recreationists, in particular hunters, and big game are likely to be minor in both context and intensity under all of the action alternatives and the no action alternative. From a recreation perspective, there is no clear preferred alternative. (The no action alternative concentrates impacts, although they would still be expected to be minor; the action alternatives disperse impacts over a larger area, but portions of the additional area are utilized by recreationists on the Forest.)

6) Wildlife

The Forest Wildlife Biologist has recommended that several wildlife species be included in the analysis. Some of these species are considered Northern Region Forest Service sensitive species, and others are Forest Plan Habitat Indicator Species (also known as Management Indicator Species (MIS)), and other species are Forest Plan key species. Forest Service sensitive species are analyzed pursuant to the National Forest Management Act (NFMA) to determine whether the effects of an action to these species would cause a trend toward listing under ESA. The analysis of Habitat Indicator Species and Key species ensure an action is consistent with the Custer National Forest Land and Resource Management Plan (Forest Plan) pursuant to NFMA. These species are indicated in the table below. Recommended additions are indicated in "red" colored text. Please make the Biological Evaluation (BE) available for review. BI-9

Forest Service, Custer National Forest additions to Appendix K. Add to footnote 2, after FSR_= USFWS Sensitive and Region; USFS = Forest Service Sensitive, Management Indicator Species, or Key Wildlife Species.

3074

Common Name	Scientific Name	Project Area States and Counties of Known Occurrence				FED	Habitat
		ND	SD	MT	WY		
Blue-gray gnatcatcher	*Polioptila*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, Sensitive	Open stands of juniper and limber pine with intermixed sagebrush.
Loggerhead shrike	*Lanius ludovicianus*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, Sensitive	Grassy pastures that are well grazed, nest in shrubs or small trees, preferably thorny such as hawthorn.
Long-eared myotis	*Myotis evotis*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, Sensitive	Use a variety of habitats but are strongly associated with coniferous forests.
Long-legged myotis	*Myotis volans*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, Sensitive	Primarily a coniferous-juniper forest bat found at moderate elevations (≥6000ft) but may also inhabit riparian cottonwood bottoms and desert areas.
Greater Short-horned lizard	*Phrynosoma hernandesi*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS' Sensitive	Areas with short, sparse grass or sagebrush; flats with pebbly or stony soil; and rock outcrops.
Western kingbird	*Tyrannus verticalis*		Harding	Big Horn, Carter, Powder River,		USFS, MIS	Open or partially open country with scattered trees, including agricultural

3074

Common Name	Scientific Name	Project Area States and Counties of Known Occurrence				FED	Habitat
				Rosebud			lands.
Lark sparrow	*Chondestes grammacus*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, MIS	Open or partially open country with scattered trees, including agricultural lands.
Bullock's oriole	*Icterus bullockii*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, MIS	Open deciduous woodland and riparian areas.
Yellow warbler	*Dendroica petechia*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, MIS	Brushy riparian especially with willows.
Ovenbird	*Seiurus aurocapillus*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, MIS	Mid-late successional, closed-canopied deciduous or deciduous/conifer forests with limited understory.
Golden eagle	*Aquila chrysaetos*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, Key Species	Open hilly to mountainous areas. habitat
Merlin	*Falco columbarius*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, Key species	Patchy shrub/grassland habitats with large trees to support nesting (secondary nester).

In Appendix K, add to footnote 2, after FSR_= USFWS Sensitive and Region; USFS = Forest Service Sensitive, Management Indicator Species (MIS), or Key Wildlife Species.

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The Forest Wildlife Biologist indicates that he could not find the Biological Assessment and recommends that one be prepared, pursuant to the Endangered Species Act, and as noted in section 3.6.2 of the DEIS. Please make the Biological Assessment available for review. BI-9

The Forest conducts flights for wildlife surveys (e.g. goshawk nest surveys), reconnaissance flights after lightning activity or infrared flights to determine hot spot activity during fire operations. Please clarify what procedure will be used when coordinating flights with the DoD flight scheduling desk at Ellsworth AFB. The nature of some of these flights does not warrant requesting a TFR due to the limited amount of flight time required. How much consideration and how far in advance would we be able to schedule flights to avoid conflicts with planned exercises? AM-1

Again, thank you for the opportunity to comment on the DEIS for the Air Force's proposal to expand the Powder River MOA Training Complex. Please contact Mark Slacks, Forest Planner, by phone at 406-657-6205x240 if you have any questions regarding our recommendations. Also enclosed is a CD that contains a copy of the Forest Plan for the Custer National Forest, Record of Decision to the Forest Plan, and Management Area Maps.

Sincerely,

Frederick W Prange (For)

MARY C. ERICKSON
Forest Supervisor

CC: Ashland District Ranger
Sioux District Ranger

3075

WEATHER MODIFICATION
INCORPORATED

November 12, 2010

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Subject: Comments on the Draft Environmental Impact Statement for the Powder River Training Complex

Dear Ms. DeVine:

Weather Modification, Inc. is the primary contractor providing specially-modified aircraft and pilots for the North Dakota Atmospheric Resource Board (NDARB) cloud seeding project each summer. The ND Cloud Modification Project (NDCMP) runs from June 1 through September 1 each year, with options to extend through the end of September if growing conditions merit. This project is sponsored and primarily financed by the individual counties that make up the two current target areas of the NDCMP, with the State of North Dakota providing some matching funds, project meteorologists, weather radar support, and overall project management through the ARB. The two project target areas (Districts 1 and 2) together cover 10,425 square miles – nearly 15% of the State's total area.

District 1 is comprised of Bowman and portions of Slope counties with buffer zones on the northern and eastern sides, in the southwestern corner of ND. This area is completely overlaid by the proposed PR-3 MOA and the GAP B and C MOA's. Airborne cloud seeding activities have been going on in this District 1 area since 1961. The objective of the program is to provide relief from damaging hailstorms while also producing enhanced rainfall amounts during the growing season.

WMI's contract with the ARB to provide services for District 1 cost the taxpayers of Bowman and Slope counties about $135,000 for the 2010 summer season. As an indication of the value received for this expenditure, a 2009 study commissioned by the ARB showed that this program produces a 98 to 138-1 gross economic impact resulting from the increased agricultural production that the program allows. This is a huge impact for the citizens of southwestern ND.

SO-28

As part of our contract with the ARB, WMI bases two cloud seeding aircraft in Bowman, ND to serve the District 1 target area. These aircraft, sometimes supplemented by other WMI aircraft from the northern District 2 area, operate around 130 flight hours per season depending upon weather conditions. Operations are conducted 24/7, with the crews on call during the entire

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www.weathermodification.com

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INCORPORATED

season ready for immediate launch. Flights generally last around 2 hours, with the entire flight track normally contained within the District 1 area. SO-28

Figure 1 (below) shows a map of District 1 with all operational flight tracks plotted; blue is District boundaries and buffer zone areas, black is flight tracks while not seeding, green / yellow / red are flight tracks during seeding activities.

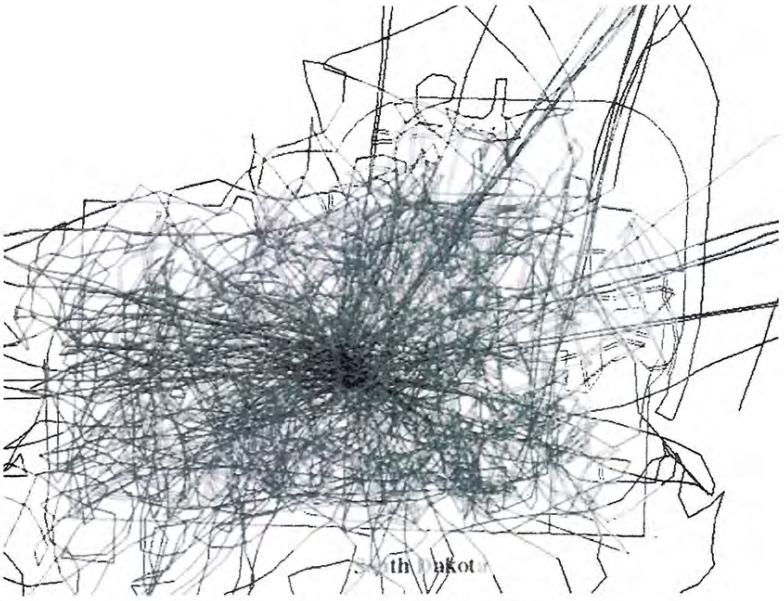

Fig. 1: 2010 NDCMP District 1 cumulative flight tracks

This graphic shows the unpredictable routes that the seeding aircraft fly during operations, as their flight paths are dictated by the thunderstorms around which they must operate. While seeding takes place only to target storm cells that will impact the District, the aircraft must also work around the storms to gain access to the proper areas of the storm cells for effective seeding. Safe operations around severe and cumuliform weather cells also require that the aircraft crews be able to escape the storm if lowering visibility or other storm growth were to SA-3

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trap them, precluding a visual return to their base at Bowman. Also note that approximately 30-40% of these flights take place during nighttime hours.

While most of the seeding flights are conducted near the cloud bases under visual flight conditions (VFR), about 15% of District 1 seeding flights are conducted at "cloud top" (in and around the tops of the growing cumulus areas at altitudes between 15–23,000 ft) under instrument flight rules (IFR). And some flights that start as VFR operations become IFR flights when conditions deteriorate. This means that for effective and safe flight operations the WMI aircraft MUST be able to operate under IFR in this area, as well as the surrounding area if needed to skirt the severe weather.

SA-3

This raises several operational and safety issues that could be adversely impacted by the expanded MOA areas.

1. While the WMI seeding aircraft do mostly operate VFR, by necessity they do not fly a pre-planned route, speed, or altitudes. VFR flight plans are not filed as the route, altitude, duration, or even the eventual destination of the flight are all unknowns when the aircraft is launched. Where the storms go, so must go the airplanes. While the WMI aircraft are always coordinating with each other they are not always going to fly a predictable flight path which could increase collision hazards with military aircraft during MOA operations.

SA-1

2. When the WMI aircraft are called to operate as IFR flights for certain mission parameters, they will need to be able to do so immediately. Thunderstorms do not occur at preplanned times, and this means that the WMI crews have little advance notice when they are called to fly. Even the best forecasting cannot accurately predict the exact onset and timing of thunderstorm formation or movements, and even though the WMI aircraft are guided by the NDCMP ground based weather radar at Bowman this does not afford extra time at the start of storm formation. Therefore while the draft EIS mentions coordination with Ellsworth AFB to "deconflict" the airspace, WMI aircraft will need that to happen very quickly. We simply are not in a position to plan ahead.

AM-13
SA-19
SO-28

3. As already pointed out, when the weather conditions deteriorate making it unsafe to remain VFR, WMI aircraft will need to be able to "airfile" IFR flight plans and transition to those plans IMMEDIATELY. This is a safety issue; to operate safely around severe weather means that all options must be available to the WMI aircraft crews. Since the only reason they will be flying around the thunderstorms is to protect crops and property for the taxpayers in the target area, they must be able to "stick with it" as long as possible before they must abandon the area. When the weather is clear, WMI aircraft will not be operating except if transiting between storms or bases.

SA-3

AM-13
SA-19
SO-28

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Simply stated, the WMI aircraft must be afforded every opportunity to operate in the area of the proposed PR-3 MOA without undue delays or prohibitions on IFR flights, and in a safe manner without added collision hazards while operating in an already potentially hazardous flight environment. Coordination with Ellsworth AFB would of course be welcome but "deconfliction" of the airspace cannot be delayed for any appreciable amount of time. Procedures and protocols must be put in place that will allow these operations in a timely manner.

SA-15
AM-13
SA-19
SO-28

Weather Modification, Inc. has been safely operating in and around severe weather conditions around the globe with our aircraft since 1961 without an injury accident. We pride ourselves in providing a safe and reliable service to our customers, and those same customers – in this case, taxpaying citizens of the State of North Dakota - deserve the freedom to be protected from the hailstorms and drought that threaten their livelihoods.

Thank you for the opportunity to again provide comments regarding this matter.

Hans Ahlness
Vice President – Operations
Weather Modification, Inc.

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3076

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Wyoming State Parks & Cultural Resources

State Historic Preservation Office
Barrett Building, 3rd Floor
2301 Central Avenue
Cheyenne, WY 82002
Phone: (307) 777-7697
Fax: (307) 777-6421
http://wyoshpo.state.wy.us

September 8, 2010

Dimasalang F. Junio
Colonel, USAF
Chief, Programs Division (A7P)
Dept of the Air Force
HQ ACC/A7P
129 Andrews Street
Langley AFB, VA 23665-2769

Re: Powder River Training Complex Section 106 Compliance (SHPO File # 0910JPL002)

Dear Colonel Junio:

Thank you for consulting with the Wyoming State Historic Preservation Office (SHPO) regarding the Powder River Training Complex (PRTC) Draft Environmental Impact Statement. Our office will be happy to provide comments regarding the expansion of the PRTC once tribal consultation has been completed, and the results of said consultation are provided to our office for review.

NP-10

Please refer to SHPO project #0910JPL002 on any future correspondence regarding this undertaking. If you have any questions, please contact John Laughlin at 307-777-3424.

Sincerely,

John P. Laughlin
Archaeologist/Senior Cultural Resources Specialist

Dave Freudenthal, Governor
Milward Simpson, Director

Rec'd Sep 30, 2010

[Type text]

3077

[redacted]

November 6, 2010

Ms. Linda DeVine
EIS Project Manager
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

Dear Ms. DeVine,

The expansion of the Powder River MOA at this time appears unnecessary. We are engaged in a war where the United States has technological superiority. It has been stated that we will begin decreasing our forces overseas. The airspace which is currently in place is massive in size and any further addition will cause undo hazard to persons, property and business. The majority of commercial aviation operates under Instrument Flight Rules, when active the MOA will restrict such operations.

PN-3
AM-6
AM-21

Sincerely,

Benjamin Taylor
Flight Instructor
UND Aerospace

3078

AmericanAirlines®

November 23, 2010

Ms. Linda DeVine
HQ ACCC/A7PP
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

Dear Ms. DeVine,

American Airlines (AA) has reviewed the Draft Environmental Impact Statement (DEIS) for the proposed Powder River Training Complex (PRTC), which expands Military Operations Areas (MOAs) and Air Traffic Control Assigned Airspace (ATCAA) over portions of Montana, Wyoming, North Dakota, and South Dakota. AA strongly supports our armed forces and the need to develop a realistic training environment to protect our democracy and our citizens.

We also pride ourselves by being supportive of the families of our military personnel with our annual Skyball and Snowball Express activities. In addition, we have several aircraft in our fleet sporting yellow ribbons to express our gratitude to those that serve or have served. The latest, a Boeing 767 named Flagship Independence, was dedicated just last week at JFK Airport. The observance also served as a send-off for approximately 150 wounded warriors and their guests as they departed on the aircraft for a weekend in Las Vegas.

Initial briefings on the PRTC indicated that activities would be limited to quarterly Large Force Exercises lasting up to 3 days per event. Although this activity would have a significant impact on the routes we fly in the area, we were able to support the proposal with the limited number of days of activity. However, the DEIS indicates that the usage will now be up to 240 days a year and would impact more than 500 IFR flights daily at FL370 and below. We find that the impact upon the National Airspace System (NAS) as well as our operation will be unacceptable.

GE-14

Impact upon AA flights will primarily be in two areas:

1. Flights to and from destinations in the Pacific Northwest will have to be routed around the airspace. Our analysis indicates that the impact will be about 9 minutes additional flying time and about 133 gallons of fuel for each flight that is required to circumnavigate the airspace. This adds up to about $445 per flight including other operating costs factored in.

2. Convective weather activity across the Midwest or Ohio Valley many times forces additional flights north through the PRTC airspace. Due to the part time

SO-7

SYSTEM OPERATIONS CONTROL, P.O. BOX 619617, MD 867-GSWFA, DFW AIRPORT, TEXAS 75261-9617

3078

usage of these routes it is difficult to quantify the impact. However, when there is already one constraint in the airspace that is impacting traffic flows, then any additional constraint, such as the PRTC, will only exacerbate the problem by limiting the number of options, resulting in additional miles flown and fuel burn. SO-7

With the number of flights that transit the proposed PRTC airspace each day, the impact to flights required to be routed around the areas will be significant. This results in less than optimum profiles for our flights and limited opportunities to manage abnormal situations during weather events.

Use of the PRTC above FL260 on a daily basis will have a significant adverse impact upon the operational efficiency of American Airlines. This also adversely affects the people we serve, our passengers. As a result, American Airlines cannot support the proposed PRTC as it is outlined in the DEIS. SO-22 GE-2

Sincerely,

Jeffrey B. Osborne
Managing Director
System Operations Control

01/24/2011 MON 11:11 FAX 406 477 8294 ENVIRONMENTAL PROTECTION ☑002/005

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-WOHEHIV-
The Morning Star

NORTHERN CHEYENNE TRIBE
ADMINISTRATION
P.O. BOX 128
LAME DEER, MONTANA 59043
(406) 477-6284
FAX (406) 477-6210

-WOHEHIV-
The Morning Star

December 22, 2010

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley, AFB, VA 23665-2769

Dear Ms. DeVine:

The Northern Cheyenne Tribe (Tribe), again, appreciates all your efforts to provide comments on the hearing that was held on the DEIS on December 7, 2010 regarding the Powder River Training Complex (PRTC).

The Tribe has an array of concerns regarding the far-reaching and long-term effects of the PRTC on the welfare of our members and health of the Reservation environment and nearby areas. Because the PRTC will affect the Tribe's homeland, we take a long view of how the project will impact our people, both their economic and social well-being, but also the environment to which their traditional, spiritual and ceremonial practices are integrally linked.

Below is a summary of comments from the Tribe, tribal members, and tribal agencies regarding the DEIS on the PRTC. We ask that the Air Force examine the effects of the PRTC on these resources in its preparation of a DEIS for the project.

1. The Tribe monitors air pollution from various sources on and off the Reservation. We are very concerned with the potential emissions such as carbon monoxide, sulfur dioxide, uranium tailings, and other toxins from the "jet trail" and their long term negative effects on human health.

AQ-5

LITTLE WOLF AND MORNING STAR - Out of defeat and exile they led us back to Montana and won our Cheyenne homeland that we will keep forever.

2. At the Tribe's request, the EPA designated the Northern Cheyenne Reservation a Class I air shed in 1977. This reflected the Tribe's long-standing value of protecting the clean air of its homeland in southeastern Montana. We are concerned with the impacts to visibility and air quality caused by the PRTC, particularly with respect to carbon monoxide, nitrogen oxides, sulfur dioxide, uranium tailings and other pollutants that are likely to be emitted by the increase in air traffic over the Reservation's air space. The Air Force should analyze the effects of the PRTC on the "increments" established for the Reservation under the Prevention of Significant Deterioration (PSD) provisions of the Clean Air Act, 42 U.S.C. §7473. This analysis is required under NEPA because an EIS must discuss the possible conflicts of the proposed action with federal, state, and local (including tribal) laws as well as the "significance" of the potential impacts. 40 C.F.R. § 15-2.16(a)-(c). The Montana DEQ prepared an "increment consumption analysis" as part of its EIS for the Roundup power plant in 2002. This document showed that the Class I increments for 24-hour and 3-hour SO^2, had been exceeded and that the post-baseline projects such as the Colstrip Units #3, and #4 have consumed significant parts of the increments for annual NO^2 and 24-hour PM_{10}. The EIS for the PRTC should include a similar increment consumption analysis so as to avoid any further violations of federal law.
3. Visibility is a very significant issue for the Tribe. The EIS should analyze the cumulative impacts of the PRTC on visibility on and near the Reservation as well as acute visibility impacts from individual jet contrails.
4. The deployment of chaff and flares can cause fires leading to collateral impacts to the Reservation and the property of the Tribe and tribal members. Potential fire concerns affect the total environment of the Reservation from quality of water, fish, wildlife, plant fauna, to the people who live here. The scoping document indicates that the Air Force will coordinate fire response efforts. The EIS should examine this in detail given the large area covered by the project, the limited resources of the Reservation to combat PRTC-caused fires, and the importance of a quick response time to protect tribal resources, including timber in the hot, dry Montana summer weather.
5. Noise pollution is a significant concern. Sonic booms would be highly disruptive to the tribal communities on and near the Reservation. Noise pollution can disrupt normal activities such as sleep, prayer, ceremonies, and other traditional and day-to-day activities. Tribal members have told us that they chose to live on the Reservation (rather than urban areas) because of the peace and quiet that life here provides, particularly when outside in the hills, valleys and forests for fishing, hunting, gathering berries and medicinal plants, and participating in traditional ceremonies and family gatherings. A major change in air traffic over or near the

LU-9

AQ-6

AQ-7

SA-5

SA-6

NO-5

NA-10

Reservation would severely impact this vital aspect of the local environment. Sudden and dramatic noise impacts could cause short- and long-term health problems, especially for those that are sensitive to noise. The EIS should examine the baseline noise on the Reservation and predict the increase in noise caused by PRTC in its analysis of the impacts of noise on the Reservation environment. It is critical that this examination considers "single-event" (*i.e.* the noise caused by a single fly over or sonic boom) rather than average noise that will be caused by the PRTC.

NA-10

NO-9

6. The threat of aircraft accidents, during training, is a serious concern. Fallout from air collisions and other potential accidents would create hazards for the local environment, including safety of those on the ground, fire, and property damage. The distraction caused by unpredictable, low flying, loud aircraft could also lead to an increased risk of accidents on the ground.

SA-1

7. The PRTC would conflict with and jeopardize current air traffic over the reservation, such as by ranchers who own planes. The PRTC would also significantly impact future plans for an airport within the Reservation. In addition to considering these effects on the Northern Cheyenne Reservation, the Air Force should examine the effects of other commercial and military aircraft operations located in proximity to Indian reservations in other parts of the country. We understand that such operations near other reservations have adversely impacted on-reservation economic development efforts.

SO-10

8. The Reservation's wildlife is already scarce and subject to intense pressure from coal bed methane and other energy development near the Reservation. The EIS should examine how PRTC activities will impact wildlife on and near the Reservation, including whether animals will take refuge in other areas where there is less aerial activity. Deer, elk, and other land animals are vital to the subsistence and ceremonial existence of tribal members, and we cannot afford to have additional pressures on these resources. The EIS should examine how reduced access to wildlife will affect the subsistence, cultural and ceremonial practices of the Tribe.

BI-4

LU-5

9. The spirituality of the Northern Cheyenne people will be compromised by the PRTC. The reservation and surrounding area is considered one contiguous cultural landscape. There are many places where ceremonies are performed that often last for several days. Prayers, ceremonies and other spiritual activities would be significantly and adversely affected by the noise, visual and other likely impacts of the PRTC. The EIS must consider these impacts and, as requested below, an alternative that would eliminate or significantly mitigate them.

NA-4

10. The social and economic impacts are far reaching and will create unforeseen circumstances. For example, economic development on the Reservation, which has

NA-10

historically been very difficult to achieve, could be frustrated because of noise impacts caused by low-altitude and supersonic flights, possible on-the-ground accidents related to sudden and loud noises and other adverse impacts of the PRTC. This is also an environmental justice issue, as the impacts of the PRTC would be more heavily felt by the tribal community than other groups. The Tribe has a high rate of poverty and must be able to take advantage of any economic development opportunities that are feasible for the remote location of its Reservation. For example, the Tribe is considering development of a casino on tribal trust lands near the Tongue River Reservoir.

NA-10

EJ-2

The Tribe requests that the Air Force consider a No-Action Alternative (4.6.3.4) including a No-Action Alternative (4.7.3.4) that would eliminate the creation of the PRTC and eliminate the expansion of training airspace. This would provide that PR-A, PR-B MOAs would not overfly Native American reservations. Powder River Training aircraft would not overfly Devils Tower, Bear Butte, and fly adjacent to Deadwood at altitudes above 18,000 feet MSL.

GE-2

The above comments are comments gathered by the Tribe as part of the hearing on December 7, 2010 and also comments from the communities.

If you have any questions, please feel free to contact my office at 406-477-6284 or email me at Leroy.spang@cheyennenation.com.

Sincerely,

Leroy A. Spang, President
Northern Cheyenne Tribe

C: Northern Cheyenne Tribal Council
Steve Chestnut, Tribal Attorney

3080

BIG HORN RIVER ALLIANCE

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November 5, 2010

Linda DeVine
HQ Air Combat Command/A7PP
129 Andrews St
Suite 102
Langley AFB Va. 23665-2769

Ms. DeVine,

Please accept these comments and include them in the formal statements that will be provided to the agencies regarding the PRTC determination.

The *Bighorn River Alliance* is a non-profit conservation organization created to preserve, protect, and enhance the Bighorn River fishery in southeastern Montana. We oppose plans to expand the PRTC airspace and training area as proposed during the hearing in Hardin, Montana on Friday, Oct 22, 2010. GE-2

We are concerned that the PRTC airspace expansion will negatively impact the quality of the recreational experience on the Bighorn River. It will also be detrimental in attracting and retaining recreational users which will affect commercial activity in the area. LU-1 SO-9

The PRTC did not provide factual evidence for several material claims, and in some cases provided questionable data to support their efforts to expand the PRTC airspace. Our concerns are as follows:

a. Testimony and information in the Power Point presentation indicated that decibel levels would be at, or below, 100db. This contradicted the Air Forces own data that shows decibel levels of over 150 db at flights above 2000'. NO-4

b. It was stated that the LFE would not have an impact on property values; yet this was not supported with any hard data. It is well established that property values are adversely affected when property is in proximity to railroad tracks, industrial sites, mining operations, or busy transportation corridors. The operation of military aircraft can create similar problems. We would be interested in hearing more about the noise pollution, plus the risks imposed on Bighorn Valley residents and recreational users in the area. SO-1

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3080

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c. In the PRTC Power Point, and in all of their printed and on-line data, they describe LFE as only taking place 10 days a year. In reality, it is very possible that it will take place for 12 days a year, and based on 20 aircraft generating one sonic boom per flight, there is the potential that we might be dealing with 240 sonic boom events during this time. PN-5

d. The proposed airspace overlay directly impacts Bighorn River recreational users from the Wyoming border to Hardin, Montana. This is the blue-ribbon trout stream section of the river, and is world famous for its angling opportunities. LU-2

e. Penned, free range livestock, and wildlife, will be negatively affected. BI-4

f. Will impede the use of recreational and corporate aircraft trying to access the two public-use airstrips which serve the Bighorn Valley. SO-10

g. We believe the current 9,748 sq miles of airspace is sufficient. PN-2

h. PRTC airspace does not provide for non-military corridors utilizing different altitudes for different classes of aircraft. AM-20

i. The PRTC proposal did not recognize one airport directly under the proposed airspace (PMD Ranch, BIL VOR 112* radial, 43.7DME fix) or the public use airport we depend on, 5U7 in their assessment. AM-4

In summary, the boundaries of the proposed PRTC airspace would negatively affect recreational and commercial opportunities along the Bighorn River valley. We request that the "No Action" alternative be selected. GE-2

Please confirm that this letter was received, and that our concerns were considered as part of the Environmental Impact Assessment that is to be conducted.

Respectfully,

Hale Harris

Hale Harris
Board of Directors
Bighorn River Alliance

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3081

Written Comment Sheet
Public Hearing for the Proposed Powder River Training Complex

Thank you for your input! **DATE:** 10-27-10

PLEASE PRINT

The proposal is excessive in size and scope and requires more review. AM-6

The Air Forces gained benefits will Negatively effect the corporate aviation operators as we will see increased fuel, maintenance and other associated costs. These will be passed on to the consumer. SO-7

Corporate aviation within the energy industry is not even addressed in the EIS. SO-6

Aircraft as far south as Houston will be effected daily, as energy operations fly into and over the proposed area on a daily basis.

****** CONTINUE ON BACK FOR MORE SPACE ******

NAME:	Wade Bergsliem
ORGANIZATION:	True Drilling Co, Pilot
ADDRESS:	[redacted]
CITY/STATE/ZIP:	[redacted]

- ☐ Yes, please include me in the mailing list for distributing the Final EIS. I would like to receive a copy in: ___ CD (electronic format) ___ hard copy format
- ☐ No, please do not include me in the mailing list for distributing the Final EIS. I do not wish to receive an EIS or further information.

PLEASE NOTE: This Draft EIS is provided for public comment in accordance with the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) NEPA Regulations (40 CFR §§1500-1508), and 32 CFR §989, Environmental Impact Analysis Process (EIAP).

The EIAP provides an opportunity for public input on Air Force decision-making, allows the public to offer inputs on alternative ways for the Air Force to accomplish what it is proposing, and solicits comments on the Air Force's analysis of environmental effects.

When making an oral comment, please clearly state your name and the name of the organization, if any, which you are representing before you begin your comments. Please do not provide any other personal information, such as your home address and phone number when making an oral comment. Your oral comments will be used to develop a transcript and permanent record of this meeting. This transcript will be published in the FEIS. If you would like a copy of the Final EIS or other associated documents, you may state that on a written comment card or add your name and address to the mailing list.

Providing personal information is voluntary. If you choose to not provide personal identifying information, your comments will be given the same weight and consideration as any other comments submitted. Private addresses provided will be compiled to develop the mailing list for those requesting copies of the Final EIS. Only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EIS.

Please hand this form in at a public hearing or mail before November 15, 2010 to:

Ms. Linda DeVine
HQ ACC/A7PS
129 Andrews Street, Room 337
Langley AFB, VA 23665-2769

1.8 RESPONSES TO COMMENTS

The following comment codes are used in the preparation of the Comment Response Matrix provided in Table 1.8–1.

AM	=	Airspace Management	EJ	=	Environmental Justice	PN	=	Purpose and Need
AQ	=	Air Quality	GE	=	General	PR	=	Physical Resources
BI	=	Biological Resources	LU	=	Land Use	SA	=	Safety
CM	=	Cumulative	NA	=	Native American	SO	=	Socioeconomics
CU	=	Cultural Resources	NO	=	Noise			
DO	=	Description of Proposed Action and Alternatives	NP	=	National Environmental Policy Act			

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
AM = Airspace Management			
AM-1	1034, 2007, 2051, 2062, 2081, 2096, 3025 3033, 3049, 3074	Concern about coordination between the Air Force and the FAA for the recall of military aircraft from the airspace as necessary in a timely manner.	As explained in DEIS and the FEIS Section 1.5, the FAA is a cooperating agency and will make decisions regarding airspace establishment. FEIS Section 2.3.1 describes mitigations associated with the scheduling of the airspace. The Air Force will establish procedures acceptable to the FAA to recall military aircraft from the airspace prior to the Air Force operating in the proposed Low MOAs. Military aircraft would be recalled in a timely manner for a number of reasons such as IFR arrivals and departures to airports within the airspace, as well as to support emergencies.
AM-2	1082, 2009	Concern about impacts from increases in military air traffic from Ellsworth AFB to the proposed airspace.	As described in FEIS Section 2.5.2, the increased size availability of a local training airspace would allow an increase in training activity; however, total flight operations would not be expected to exceed those analyzed and published (12,000) in the 2008 Ellsworth AFB Air Installation Compatible Use Zone (AICUZ) Study, which is available on the Ellsworth AFB website (http://www.ellsworth.af.mil/shared/media/document/AFD-090428-076.pdf).
AM-3	1044, 1058, 1060, 2007, 2010, 2020, 2025, 2034, 2043, 2062, 2063, 2068, 2071, 2073, 2077, 2091, 2103, 2107, 2109, 3003, 3009, 3012, 3023, 3024, 3025, 3028, 3053, 3054, 3056, 3061, 3064, 3065, 3070	Concern for the lack of radio and radar coverage and communication. Can the Air Force work with the FAA to place radio and radar equipment? Concern regarding the uncertainty of low-level flights.	FEIS Section 4.1 acknowledges the limitations of radio communication and radar coverage within the airspace. FEIS Section 2.3.1 describes the scheduling of the airspace. The Air Force acknowledges that limited radio and navigation coverage exists in many of the areas proposed for the PRTC and is committed to not schedule low MOAs until adequate communication to withdraw a training aircraft is established. To partially address this concern, the Air Force will coordinate with FAA to establish procedures to announce to other aircraft when military aircraft enter or exit training airspace below 12,000 feet MSL and to monitor other aircraft transmissions when operating below 12,000 feet MSL during non-LFE training. The Air Force and FAA will continue coordination to enhance the situational awareness of aircraft operators as to whether PRTC low altitudes MOAs (airspace below 12,000 feet MSL) are active. This may

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
			include practices for use of existing data, equipment, and procedures as well as integration of advancements in software and/or equipment.
AM-4	1060, 1100, 2010, 2025, 2066, 2072, 2116, 3012, 3021, 3023, 3028, 3061, 3080	Concern that not all of the airports and airfields are identified in the Draft EIS-particularly the Black Hills Airport. Concern that not all of the registered aircraft are accounted for in the Draft EIS data and that not all of the flights are accounted for in the analysis.	FAA sectional aeronautical charts for Cheyenne and Billings, which encompass the proposed airspace, were used to identify public airports and private airfields under the proposed airspace. Airports or airfields which were not recognized on FAA charts are not included in the analysis. DEIS Section 3.1 included public airports, including the Black Hills Airport, and private airfields. Airport operations reported to the FAA are included in the impact analysis.
AM-5	1039, 2014, 2117, 2060, 2062, 2096, 3025, 3028, 3043, 3044, 3052, 3053, 3054	Concern that the airspace will impact airport access and the setback distances are not adequate to support major airports on the edge of the airspace. Suggestions to expand the setback distances or apply setback distances to airports under the airspace.	FEIS Section 2.3.1 explains the mitigations incorporated to adjust MOA boundaries, activation of PR-1A and PR-1C High MOAs and ATCAAs only during LFEs, distance setbacks for other commercial airports, and setbacks on a Victor airway to support access and transit of the airspace. MOA and ATCAA scheduling, setback distances allow for preferred civil aviation climb or descent rates. As described in FEIS Section 2.3.1 and in accordance with FAA Order 7400.2K, the Air Force will avoid private airfields by 1,000 feet AGL and 1NM radius and public airports by 1,500 feet AGL and three NM radius.
AM-6	1058, 1066, 1095, 1107, 1116, 1118, 2014, 2094, 2118, 3023, 3052, 3061, 3063, 3077, 3081	Concern the airspace is a large area that will be blocked off to civilian aircraft access and will impact general and commercial aviation. Concern the size of the airspace and proposed times of use are excessive for Air Force purposes. Suggestions for additional review and coordination with communities and agencies.	DEIS Sections 1.2 and 1.3 described the reason for the airspace to provide the best training for aircrews, and FEIS Section 4.1 acknowledges that the airspace will impact general aviation and commercial aviation. As described in FEIS Section 2.0, the full extent of the proposed airspace would be active for LFEs. During non-LFE times the Gap MOAs/ATCAAs would not be active. FEIS Section 2.3.1 explains that the ATCAAs would be capped at FL260 and that advance scheduling of airspace and announcement by NOTAM of MOA activation would allow near real-time information to be available.
AM-7	2020, 3023	Is the Air Force going to fly lights off at night? This would prevent VFR access.	The proposed airspace does not include lights out night training in the existing or proposed MOAs.

Table 1.8–1. Comment and Response Matrix

Code	*Letter/Transcript Number*	*Description*	*Response*
AM-8	1090, 2022, 2089	Do you fly with transponders or use methods to electronically see other aircraft?	Bomber aircraft have transponders. B-1 aircraft do not have equipment to electronically see other aircraft.
AM-9	1067, 2020, 2037	Is this going to become restricted airspace?	This proposal does not include the creation of restricted airspace. The Air Force is only considering the creation of Military Operations Areas and Air Traffic Control Assigned Airspace as described in FEIS Sections 2.4 through 2.7.
AM-10		Comment response code not used.	
AM-11	1067, 2020, 3058, 3061	Concern that the proposed activities would be more appropriately conducted in a Restricted Area.	There is no proposal for restricted airspace, and B-1s currently train in the Powder River MOAs and associated ATCAAs. DEIS Section 1.3 explained why the local MOA and ATCAA airspaces are needed, and DEIS Section 2.3 presented the detailed alternative screening process for the airspace. DEIS Section 1.2 explained that training locations with restricted airspace would continue to be used for specific military training missions.
AM-12	1004, 1008, 1011, 1012, 1033, 1034, 1044, 1059, 1070, 1073, 1090, 1091, 1094, 1111, 2034, 2041, 2059, 2060, 2072, 2081, 2085, 2087, 2091, 2095, 2100, 2103, 2106, 2109, 2115, 3021, 3025, 3026, 3039, 3040, 3052, 3054, 3055, 3056, 3059, 3073, 3074	How will people know when the airspace is hot? How much notice will be given? How will it be scheduled? The Air Force has taken all the flexibility at the expense of civil aviation. The NOTAM system is inadequate. Requests for prior notice of LFEs or training flights in specific areas.	FEIS Section 2.3.1 explains that there would be airspace advance scheduling and 2-hour NOTAM activation allows near real time information. The NOTAM system is the way FAA communicates with civil aviation. Quarterly LFE exercises of one to three days would be scheduled at least 30 days in advance. IFR flights would be accommodated by using the stacked MOAs. Pilots who elected to not fly see-and-avoid through a scheduled airspace or were required to fly weather IFR or other IFR could see an inability to obtain unrestricted access as an adverse impact. The Air Force will continue to coordinate with FAA to support procedures to announce to other aircraft when military aircraft enter or exit training airspace below 12,000 feet MSL and to monitor other aircraft transmissions when operating below 12,000 feet MSL during non-LFE training. The Air Force and FAA would continue coordination to enhance the situational awareness of aircraft operators as to whether PRTC low altitudes MOAs (airspace below 12,000 feet MSL) are active. This may include practices for use of existing data, equipment, and procedures as well as integration of advancements in software

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
			and/or equipment.
AM-13	2041, 3006, 3075	Concern for the inability to fly IFR while the MOA is activated to conduct cloud seeding operations. Would like the Air Force to train in PR-3 in morning block.	FEIS Section 4.9.3.1.2 describes cloud-seeding coordination requirements. The Air Force would coordinate with the North Dakota Atmospheric Resource Board to establish procedures whereby Air Force training requirements and weather modification operations can be mutually compatible.
AM-14	1009, 1096, 1109, 1117, 2042, 2066, 2075	Concern aircraft are flying below 500 feet and people are being 'buzzed'. What kind of enforcement is available?	The B-1 has an altitude setting capability which established terrain following at specific altitudes. The terrain-following capabilities are tested prior to B-1 launch to ensure that the aircraft fly at the set altitudes. As described in DEIS Section 1.4, low-altitude proficiency training for terrain-following flights would occur down to 500 feet AGL. Should an aircraft be reported as flying below the authorized altitude, recent aircraft data can be reviewed to determine deviations and appropriate corrective actions can be taken.
AM-15	1007, 2044, 2124	Concern people's buildings are being used as targets.	As described in FEIS Section 2.3, the Air Force avoids low-level overflight of ranches and residences as noted in the Powder River Training Complex Briefing Guide, 14 February 2011, which is required reading for every military user of the Powder River MOA prior to each flight.
AM-16	2059, 3026	Concern that the proposal makes provisions for Victor airways which are being phased out in favor of point-to-point navigation. Proposal needs to consider point-to-point navigation impacts.	Civil aircraft regularly use GPS for point-to-point navigation. GPS point to point VFR could continue to fly see and avoid. Training in an active MOA would be adjusted to support IFR transit and IFR arrivals and departures to airports under the proposed airspace. The Air Force and FAA would continue coordination to develop procedures to handle those nonparticipants (i.e., aircraft not participating in MOA training) operating IFR entirely within the PRTC while simultaneously supporting the expeditious completion of the training flight and the return of the affected airspace to the NAS.
AM-17	2066, 2072, 2106, 2124	There is no discussion of Remotely Piloted Aircraft.	There are no proposed remotely-piloted aircraft (RPA) associated with PRTC action. No RPA aircraft would be based out of Ellsworth AFB. The RPA personnel based at Ellsworth AFB

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
			operate RPA remotely through satellites.
AM-18		Comment response code not used.	
AM-19	2087, 2094	The DEIS does not consider other aircraft in the area such as hot air balloons, paragliders, and other small aircraft. It also does not discuss other users who do not reside within or adjacent to the proposed airspace.	DEIS Section 4.1 explained that other light aircraft and paragliding occurs within the area. Frequently, such recreational activity occurs during weekends when B-1s would not normally be training. DEIS Section 4.1.3.1.3 described the airports on the periphery of the proposed PRTC. DEIS and FEIS Section 3.1 contain FAA-documented air traffic use through the airspace during the times the proposed airspace would be active. This includes local flights and transient users who do not reside in, or adjacent to, the proposed airspace. As noted in FEIS Section 4.1, all flight activity, including FAA IFR information, public airports and private airfields, was used to explain potential impacts. Section 4.9 considers other users of the airspace.
AM-20	1056, 2089, 2095, 3080	Will corridors be open 24 hours a day to allow VFR and IFR traffic? Suggestions for non-military corridors are created separate by altitude for different classes of aircraft use.	FEIS Section 3.1.3.4.1 describes the Victor airways and explains that Victor airways would be avoided during day-to-day training and be open 24 hours a day to allow IFR traffic. VFR traffic could use the Victor airways or fly see-and-avoid in an active MOA. During LFEs, from one to three days per quarter for up to ten days per year, Gap MOAs and ATCAAs would be activated an estimated four hours per day. IFR traffic could not be routed through an active MOA. The high and low MOAs would permit IFR routing by adjusting training aircraft operations in the airspaces.
AM-21	1060, 1118, 2051, 2118, 2119, 2095, 3012, 3023, 3037, 3061, 3077	Concern that IFR traffic would not be permitted through the airspace when active. Concern that commercial and GA traffic would have to avoid the airspace while it is active and have to re-route to destination. The corridors do little to mitigate the impacts to airports and GA.	FEIS Section 2.3 explains that the proposed ATCAA ceiling is lowered from FL600 to FL260 and that there would be airspace advance scheduling and NOTAM activation to allow for near real time information. The NOTAM system is the way FAA communicates with civil aviation. Section 4.1 explains that IFR and VFR traffic can operate on the Victor airways. VFR can fly see-and-avoid through an active MOA. IFR traffic could not fly in an active MOA. The Air Force would work with ATC to adjust operations to accommodate IFR traffic. IFR flights would be

Table 1.8–1. Comment and Response Matrix

Code	*Letter/Transcript Number*	*Description*	*Response*
			accommodated by using the stacked MOAs for training aircraft. Quarterly LFE exercises of one to three days would be scheduled at least 30 days in advance. The Air Force will continue to coordinate with FAA to support procedures to announce to other aircraft when military aircraft enter or exit training airspace below 12,000 feet MSL and to monitor other aircraft transmissions when operating below 12,000 feet MSL during non-LFE training. The Air Force and FAA would continue coordination to develop procedures to handle those nonparticipants (i.e., aircraft not participating in MOA training) operating IFR entirely within the PRTC while simultaneously supporting the expeditious completion of the training flight and the return of the affected airspace to the NAS.
AM-22	2095	Wants to ensure the airspace approved is charted.	FEIS Section 1.6 explains that FAA will make decisions regarding airspace establishment. The FAA will be responsible for charting the approved airspace in accordance with FAA processes (see FEIS Section 2.12) and applicable regulations.
AM-23		Comment response code not used.	
AM-24	2105, 3060	Aircraft avoidance area above 2,000 feet above the Little Bighorn Battlefield National Monument is voluntary.	At the request of the National Park Service, the Little Bighorn Battlefield National Monument will be avoided by low-level flights (below 5,000 feet AGL) from one hour before to one hour after posted hours of operation and at other times as arranged. Supersonic flight would not be authorized in the proposed PR-1C airspace to reduce even remote possibilities of sonic booms at the National Monument.
AM-25	2106	Why is the Air Force training with countermeasures particularly in the context of the current conflict and Al Qaeda's capabilities?	B-1 and B-52 aircrews train with all capabilities of the aircraft to be prepared for all contingencies. FEIS Section 2.8 describes the need for realistic training with countermeasures and Section 2.8.5 describes the countermeasures.
AM-26	2109, 3052, 3058, 3061, 3064	Would like to see more stratification in the MOAs to create more flexibility.	As presented in FEIS Table 2.5-1, the Air Force and FAA have stratified the MOAs and created eight MOAS in PR-1 to create flexibility for transit of the area.

Table 1.8–1. Comment and Response Matrix

Code	*Letter/Transcript Number*	*Description*	*Response*
AM-27	2094, 2122, 3049, 3056	How many aircraft will train simultaneously during LFEs and non-LFE training? Will there be limitations to the number of military aircraft occupying the airspace at one time? What types of aircraft will train in the airspace?	As described in FEIS Section 2.4.3, during normal training periods, there would be one to two aircraft training in each MOA complex for a total of four to eight aircraft training in the four MOA complexes. During LFEs, there would be approximately 20 aircraft training for two two-hour periods per day for one to three days per quarter up to 10 days per year. As discussed in FEIS Section 2.8, transient (occasional) users of the training areas include B-1s and B-52s from other bases; B-2s from Whiteman AFB; RC-135s from Offutt AFB; F-15s, F-16s, F-22s, and other fighters, tankers, and other aircraft various bases typically from the surrounding area.
AM-28		Comment response code not used.	
AM-29		Comment response code not used.	
AM-30	2134	Do the aircraft carry ammunition?	Ammunition would not be carried for training in the proposed PRTC. Defensive countermeasures (chaff and flares) would be carried in the proposed PRTC as described in Section 2.8.5 of the FEIS.
AM-31	3026	Airspace use figures are inaccurate.	Airspace use figures are derived from FAA IFR data, airport reports of operations, and airfield numbers of based aircraft. The airspace use numbers have been updated to 2013 reports and are accurate.
AM-32	3074	Would like to see using AGL unless necessary to use MSL.	Variations in ground elevation under the airspace make using only AGL impractical. Altitudes are defined in accordance with FAA Order 7400.2. MSL, AGL, and FL are explained in Section 2.4.2 of the FEIS.
AM-33	3056	Concern for coordinating firefighting or reconnaissance activities during fire season. Would like avoidance measures for fire traffic established June to September for no low-level flying training. Would DoD schedulers be able to reserve a 3-4 hour time slot in the late morning/early afternoon to facilitate VFR fire	FEIS Section 2.3.1 describes mitigations incorporated in the proposal. The Air Force will work with tribes, individuals, and others to establish reasonable seasonal avoidance areas. The Air Force commits to expanding the current Memorandum of Understanding for routine fire reconnaissance flights as is done in the current Powder River airspace and the current Memorandum of Understanding. The Air Force would

Table 1.8–1. Comment and Response Matrix

Code	*Letter/Transcript Number*	*Description*	*Response*
		reconnaissance flights? This would support fire reconnaissance and response.	coordinate with BLM to update the Memorandum of Understanding to include the proposed PRTC. As suggested in Letter 3056 from the BLM at Miles City, the updated Memorandum of Understanding may be a part of a larger Memorandum of Understanding.
AQ = Air Quality			
AQ-1	1048	Would quantities of fuel used for proposed training change air quality in Eastern Montana?	Section 4.4.3 of both the DEIS and FEIS provide analyses of potential air quality impacts that would occur from the project alternatives within all areas, including Eastern Montana. Appendix K includes the supporting air emission calculations. The results of the analyses determined that air emissions from each project alternative would produce less than significant air quality impacts to all areas of the project region, including Eastern Montana.
AQ-2	1073	Need to study the effects of the increased number of planes that will use the area. Sulfur has been shown to modify cloud properties.	Sulfur oxides generated from the combustion of aviation fuels can convert to sulfates and sulfuric acid in the atmosphere, which can then take the form of cloud condensation nuclei and promote the development of both liquid cloud particles and ice crystals. Alternative A would generate small increases in SO_2 emissions compared to existing conditions – an increase of about three tons per year (see Table 4.4-1 of the DEIS and FEIS). These emissions would be spread over about 27,000 square miles of atmosphere and therefore would be adequately diluted to the point that they would not result in substantial changes to cloud formation at any locality.
AQ-3	1050, 1073	Because of Air Force training in the area, air quality is not as good as it once was. The proposed actions will greatly increase air pollution. The only air sampling currently done within the existing training areas is the Crow Indian Reservation in Montana. How much will air emissions increase from existing levels due to increased Air Force activities in the area.	While the Lame Deer PM_{10} site is the only air monitoring station overlain by the proposed PRTC, due to its rural nature, the project region for the most part has very good air quality, as described in Section 3.4 of the DEIS and FEIS. Regarding the impact of proposed training activities to ambient air quality, please see the response to comment AQ-1 from letter 1048.

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
AQ-4	3037, 3050	What is the justification for activation of the MOA/ATCAAs beyond the LFEs – this will require rerouting hundreds of flights per day around the airspace. The excess fuel associated with these altered flight trajectories and associated increased emissions do not appear to be addressed in the EIS.	The modified alternatives proposed in the FEIS no longer include the use of airspaces above FL260. Air emissions above FL260 would not degrade air quality. This lower airspace ceiling would minimally affect the routes of commercial airlines in the future and therefore would not result in an increase in emissions from future commercial airlines operations within the project region.
AQ-5	3079	Concern about the potential emissions of toxins from the proposed aircraft trails and their effects on human health.	Section 4.4.3 of both the DEIS and FEIS provides analyses of potential air quality impacts that would occur from the project alternatives within all areas, including the Northern Cheyenne Reservation. The results of the analyses determined that air emissions from each project alternative would produce less than significant air quality impacts to all areas of the project region. In addition, Section 4.4.3 of both the DEIS and FEIS concluded that potential emissions of toxic air contaminants generated by the project training would result in less than significant impacts to public health at all locations within the project region.
AQ-6	3079	The EIS should perform a Prevention of Significant Deterioration (PSD) increment consumption analysis for the Northern Cheyenne Reservation to determine the significance of air quality impacts from the proposed training activities.	The federal PSD requirements only apply to major stationary sources of emissions and not mobile sources, such as the project aircraft. Therefore, the air quality analysis in the EIS did not rely on the requirements of the PSD regulation to determine the significance of project air quality impacts. However, the air quality analysis in the EIS uses the Montana and National Ambient Air Quality Standards (NAAQS) as criteria to determine the significance of project air quality impacts. One of the main objectives of the PSD regulation and increment consumption analysis is to also ensure that proposed major stationary sources do not contribute to an exceedance of a NAAQS. PSD is addressed in Section 3.4.2 of the DEIS and FEIS and the relationship of PSD to the Northern Cheyenne Reservation is addressed in Section 4.4.3 of the FEIS.
AQ-7	3079	Analyze the cumulative impacts of the proposed action to visibility on and near the Northern	Determination of the significance of an activity on visibility in a federal Class I area such as the Northern Cheyenne Reservation

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
		Cheyenne Reservation as well as acute visibility impacts from individual jet contrails.	is typically associated with evaluation of stationary source emissions. Nevertheless, Section 4.4.3 of the FEIS has been revised to include an evaluation of cumulative impacts to visibility within the Reservation from the project. The results of the analysis determined that the minimal increases in emissions from the project would not substantially contribute to cumulative visibility impairment within the Reservation. Individual aircraft exhaust trails are composed of particulate matter and organic compounds that dissipate quickly and would not have a lasting effect on visibility. Water vapor from project aircraft emissions that would occur within the higher and coldest altitudes of the atmosphere also could develop into ice crystals and could form contrails. These contrails also would dissipate quickly and would not have a lasting effect on visibility within the Reservation. Therefore, the project would not produce significant impacts to acute visibility within the Reservation or any other portion of the project region.
BI = Biological Resources			
BI-1	1010, 1061, 1069, 1092, 2005, 2069	Animals acclimate to noise and continue producing as under normal conditions.	As explained in both the DEIS and FEIS Sections 3.6 and 4.6, B-1 aircraft have been training in what constitutes PR-2 for several decades. There is no demonstration or claim that this training has affected birthrates or animal reproduction under the airspace.
BI-2	1043, 1082, 2006, 2071, 2092, 2116, 2121	Concern that noise and vibrations will impact animal's fertility and ability to reproduce.	As explained in FEIS Section 4.6.3 and in cited scientific studies, close, loud, sudden noises combined with a visual stimulus produce the most intense reactions for livestock and wildlife. However, given the infrequency of low-level overflight and sonic boom effects at any given location under the airspace, noise and startle effects are unlikely to reach the level at which it would affect animals' ability to reproduce.
BI-3	1100, 1119, 2006, 2021, 2026, 2074, 2100, 2116, 3012, 3039	Concern on the impact to Sage Grouse and may cause it to be listed as endangered.	FEIS Section 3.6.3.3 explains that the greater sage grouse is currently a candidate species. Section 4.6.3 explains that human surface activity has been shown to disturb sage grouse leks.

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
			Infrequent random overflights or rare sonic booms during ten days of LFEs would not be the type of noise that has been demonstrated to affect sage grouse leks. FEIS Section 2.8.5 quantifies the distribution of chaff and flare residual materials. Such a concentration would not be expected to impact the greater sage grouse.
BI-4	1002, 1007, 1011, 1054, 1056, 1059, 1063, 1083, 1086, 1096, 1097, 1103, 1111, 1115, 2023, 2036, 2044, 2079, 2093, 2099, 3010, 3035, 3041, 3060, 3071, 3079, 3080	Concern of the startle effect on animals and that livestock and wildlife will not acclimate to the noise. Livestock and wildlife could be startled leading to injury or weight loss or cause wildlife to take refuge in other areas or to be driven from a Reservation. Concern for negative impacts during sensitive cattle operations such as branding, calving, or shipping in the spring and fall. Requests to avoid overflight of homes and corrals.	FEIS Section 2.3.1 (4b) presents mitigations and explains that the Air Force would continue the current practice of establishing reasonable temporary avoidance areas when notified by potentially affected individuals. This process is identified in FEIS Section 4.8.3.1. FEIS Section 4.6 describes the startle effects on animals, including threatened and endangered and other special status species. Low-level overflights may elicit a temporary behavioral response in wildlife, such as a change in posture or running a short distance; however, studies have also shown rapid habituation after initial responses in species such as pronghorn, elk, and bighorn. There is no evidence that overflight activity as proposed would drive animals away from a region such as a Reservation. Under the current use of Powder River training airspace ranching and recreational activities including hunting occur with minimal disruption. Overflights may affect but are not likely to adversely affect threatened and endangered species. FEIS Sections 4.6 and 4.9 describe startle effects upon domestic and ranch animals. Although infrequent, startle effects to individual animals could be an adverse impact. As described in Section 4.9 in the event of damage there is an established procedure for claims which begins by contacting Ellsworth AFB Public Affairs.
BI-5	1100, 2026, 3002	Concern with chaff and flare residual materials	FEIS Section 4.3 explains that chaff dispersion is projected to be

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
		in pastures near birthing livestock. Suggests chaff and flares are not released at 2,000 feet AGL when cattle and sheep are lambing.	0.00377 ounces per acre annually. Chaff rapidly breaks down and becomes indistinguishable from soil. Section 4.6 explains chaff and flare effects and notes that any contact with chaff or flare residual materials would be highly unlikely. Chaff and flare plastic, Mylar, and/or paper residual materials can be deposited anywhere on the ground. As described in Sections 4.3 and 4.7 these residual materials could annoy people finding and identifying them, but there would be no physical effect on any animals, including birthing animals.
BI-6	1039, 2057	Concern migration patterns will be disrupted. Suggestion for a mitigation measure to limit low-level operations in Powder River 4 during spring and fall bird migration.	FEIS Section 2.3 explains the mitigation measure for Modified Alternative A includes no PR-4 or Gap C Low MOA. Alternative C does not include PR-4 low level overflights. Modified Alternative B includes a PR-4 and Gap C Low MOAs, in which noise impacts would be slightly more intense under the PR-4 MOAs as stated in FEIS Section 4.2.3.2. In other areas, flights at altitudes below 3,000 feet AGL, where most birds migrate, would be random and occur approximately twice per day for 15 to 20 minutes for each mission requiring low-altitude training. There is no reason to believe that this infrequent activity would in any way disrupt migration patterns. FEIS Sections 3.3.3.4 and 4.6.3 address bird strike hazards and potential effects on migratory bird species or migration patterns including along the Central and Mississippi flyways
BI-7	1039, 1113	Shadehill Reservoir, an important waterfowl refuge and staging and over-wintering area for ducks and geese, has been omitted from maps showing surface water.	As a result of the scale of the maps used to present the PRTC and the size of Shadehill Reservoir, the surface water map in the DEIS did not specifically call out the reservoir. The location of that reservoir has now been identified on FEIS Figure 3.5-2.
BI-8	3060	Would like seasonal avoidance areas or other conservation measures to minimize impacts to federally listed threatened, endangered, or candidate species, particularly to reduce impacts to endangered whooping cranes, greater sage-grouse, and Sprague's pipit. A full	FEIS Section 2.3.1 explains that the mitigation measure for Modified Alternative A includes no Low MOA under PR-4 or Gap C, where the possibility of affecting whooping crane is greatest. Modified Alternative C also does not include PR-4 low level overflights or a PR-4 and Gap C MOAs. Modified Alternative B does include PR-4 and Gap C Low MOAs, in which noise impacts

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
		analysis on direct and indirect effects from chaff and flare exercises on threatened and endangered species should be considered.	would be slightly more intense than currently as stated in FEIS Section 4.2.3.2. It would be possible to define avoidance measures in consultation with USFWS to avoid impacts on the whooping crane should Alternative B be selected. In other areas, flights at altitudes below 3,000 feet AGL, where most birds migrate, would be random and occur approximately twice per day for 15 to 20 minutes for each mission requiring low-altitude training. Sprague's pipit and greater sage grouse, both candidate species for federal listing, are potentially present over fairly broad areas under proposed project airspace. Analysis of the potential for overflight effects on avian species in Section 4.6.3 of the FEIS indicates a low possibility of adverse effect on these species from the proposed action or alternatives. Section 4.3 of the FEIS explains that chaff dispersion is projected to be 0.00377 ounces per acre annually. Chaff rapidly breaks down and becomes indistinguishable from soil. There are multiple studies which have not found either direct or indirect effects of chaff or flares on biological species (see FEIS Appendices C and D).
BI-9	3060, 3074	Sprague's pipit has been added as an ESA candidate species since the publication of the Draft EIS and needs to be addressed under the Threatened, Endangered, and Other Special Status Species section of the EIS. Sensitive plant and wildlife data for wildlife species at the Little Bighorn Battlefield National Monument and Custer National Forest is incomplete. Recommend preparing a Biological Assessment/Evaluation.	A discussion of Sprague's pipit as an ESA candidate species has been added to FEIS Sections 3.6.3.3 and 4.6.3.1 and included in Tables 3.6-4 and 4.6-1. Information on sensitive plant and wildlife species at the Little Bighorn Battlefield National Monument and portions of Custer National Forest lying underneath airspace that would be used by the project has been reviewed, and Tables 3.6-4 and 4.6-1 have been updated with this information. The updated EIS analyses of Threatened, Endangered, and Other Special Status Species conclude that project elements "may affect but are not likely to adversely affect" threatened and endangered species. The Air Force submitted the updated analysis dated 30 May 2014 (FEIS Appendix E) to the USFWS and received their concurrence as noted in their letter to the Air Force dated 27 June 2014 found in Appendix E of the FEIS.

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Code	Letter/Transcript Number	Description	Response
CM = Cumulative			
CM-1	2026	The Keystone XL Company plans to install a 36-inch high-pressure pipeline though Harding County.	FEIS Chapter 5.0, Cumulative, includes the pipeline. There is no ground construction associated with the proposed changes in airspace. FEIS Section 2.3.1 explains flare release altitude limitations and overflight avoidance of construction and mining sites where sensitive electronics could be affected. It would be almost impossible for chaff, flares, or electronic emissions to impact any pipeline.
CM-2	1001, 2045, 2083, 3041, 3056, 3060	Would like more discussion regarding threat emitters or other ground assets. Request for information on how additional NEPA analysis would be conducted on the future emitters and notification of whether emitters would be placed within the Little Bighorn Battlefield National Monument viewshed.	The proposed PRTC has no new ground assets. As explained in FEIS Section 2.5.7, new ground-based threat emitters are not part of the proposed action. FEIS Section 5.1 explains that threat emitters, if sited, would have separate NEPA evaluation.
CM-3	2053, 2108	Concern the full impact of the proposal will not be known for several years and that it may be too late to mitigate any impacts once they are known.	As explained in FEIS Section 3.8, the existing Powder River MOAs have a somewhat greater proportion of rangeland and smaller proportion of agricultural land than the entire potentially affected area. Most land use types are represented under existing airspace and have effectively been overflown for decades by B-1 training aircraft at the same altitudes proposed for the expanded airspace. The only differences are tribal land and designated urban land which are not under existing MOAs (See FEIS Section 3.9.).
CM-4	1061	Southeast Montana is being considered for wind energy development with new wind farms on high ridges and plateaus. Future wind turbines may be considered in project's planning phase.	Existing and potential wind farms are considered throughout the analysis, including FEIS Sections 3.8, 3.9, 4.8, and 4.9. Existing wind farms are mapped and avoided, and future wind farms, when approved, would also be mapped and avoided. (See FEIS Appendix J for lighting.) The proposed action would not inhibit the development of future wind farms or other industrial land uses. (See FEIS Section 4.8.)

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
CU = Cultural Resources			
CU-1	1082, 2009	Some towns in the document are misclassified as ghost towns.	All ghost towns beneath the airspace were reviewed; some were found to include permanent resident populations, but are still classified ghost towns. These are noted in Table 3.7-4 of the FEIS.
CU-2	2053, 2057, 2093, 2105, 3031, 3060, 3069, 3074	Concern for disruption of the use or character of cultural, sacred, and historic sites (including newly listed sites such as the Evangelical Lutheran Trinity Church) and activities and protection of those sites and activities, including protecting landscapes, soundscapes, and scenery. Suggests consultation with all tribes and reservations to which Little Bighorn Battlefield National Monument is highly significant. Suggests additional definition of undertaking to allow a survey to be conducted. Concern the analysis does not include impacts to the North Cave Hills, South Cave Hills, or Slim Buttes cultural landscapes in Harding County, SD.	Following consultation regarding the proposed action with ACHP, SHPOs from MT, WY, ND and SD, Crow Tribe, Northern Cheyenne Tribe, Standing Rock Sioux Tribe, Cheyenne River Tribe, FAA and NPS, the Air Force created a modified PRTC proposal ("Modified Alternative A"). The "Programmatic Agreement among 28th Bomb Wing, Ellsworth Air Force Base, the State Historic Preservation Offices of Montana, North Dakota, South Dakota and Wyoming, and the Advisory Council on Historic Preservation Regarding the Proposed Development, Implementation and Operation of the Powder River Training Complex" (FEIS Appendix N) is among consulting parties comprised of signatories (28 BW, SHPOs from MT, ND, SD and WY, and the ACHP) and invited signatories (FAA, NPS, and Crow Tribe). The Cheyenne River Sioux Tribe, Northern Cheyenne Tribe and Standing Rock Sioux Tribe have also been invited to sign, but have not yet elected to do so. The modified alternative and the Programmatic Agreement address areas of avoidance, modes of flying, and procedures for notification regarding special avoidance areas or times for sensitive resources and other communications. Some locations under the ATCAAs and the Gap MOAs would never see low level overflight or, at most could see LFE low level overflight one to three days per quarter up to 10 days per year. Although Section 106 consultation has concluded for the purposes of the EIAP, the Air Force will continue to consult with the tribes and other stakeholders. FEIS Section 3.7 explains consultation conducted by the Air Force, including Government-to-Government consultation. The Section also includes newly listed sites. FEIS Section 4.7 explains the stipulations agreed to in the Programmatic Agreement. FEIS

Table 1.8–1. Comment and Response Matrix

Code	*Letter/Transcript Number*	*Description*	*Response*
			Section 2.3.1 explains that the Air Force will also work with individuals and organizations to identify sensitive noise areas and periods of avoidance.
CU-3	2083, 2103	Concern the Native American lands are being given more concessions such as avoiding cultural and religious activities.	Modified Alternative A describes changes in airspace use that address cultural resources concerns expressed by all stakeholders, not just Native Americans. FEI*S* Section 3.7 explains that Native American lands have a special relationship requiring Government-to-Government consultations. The Programmatic Agreement described in CU-2 stipulates avoidance, minimization and mitigation procedures available to the signatories, including not only the tribes but the ACHP, the SHPOs and others. Potential environmental consequences to public, private, and tribal lands are all addressed in the FEIS. (See FEIS Section 4.8.)
CU-4	2124, 2142	Would like economic relationship with the Air Force.	The Air Force is willing to explore opportunities to enhance economic relationships with tribes.
DO = Description of Proposed Action and Alternatives			
DO-1	2052, 2121	Would like more clarity on the proposed flying levels of the alternatives.	FEIS Sections 2.5-2.8 describe each alternative's altitudes and estimated time at altitudes for training. Section 2.4 presents the scheduled MOA times and altitudes. Section 4.9 explains the average number of low-level overflights. An average of six to nine low-level overflights of any given location, depending on alternative, is seen as an unavoidable adverse impact. Information would be made available on airspace use for training.
DO-2	2105, 3056, 3060	Would prefer Alternative B or some variation of the preferred alternative that excludes low-level flights-specifically to avoid low-level flights over Little Bighorn Battlefield National Monument, interference with emergency response aircraft flights over the Ashland Ranger District of the Custer National Forest, and least impact to Greater sage grouse in Wyoming and Montana.	FEIS Section 2.3.1 explains mitigations to reduce potential effects on the Little Bighorn Battlefield National Monument. Section 4.3 explains that military training would be halted in the affected airspace due to any ground safety emergency that involves a life-flight. Section 4.8 explains land use impacts. Section 4.6 explains overflight effects on the greater sage grouse.

Table 1.8–1. Comment and Response Matrix

Code	*Letter/Transcript Number*	*Description*	*Response*
DO-3	1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033	Would prefer the floor no lower than 5,000 feet AGL and no supersonic flight.	Chapter 1.0 of the FEIS explains the purpose and need for the airspace, the requirement for training down to 500 feet AGL, and the need for realistic battlefield tactics at supersonic speeds during one to three days of quarterly LFEs. Chapter 2.0 of the FEIS describes the alternatives and estimated time airspace would be scheduled for training. MOA segments and multiple MOA have been included to allow for IFR transit.
DO-4	1096, 1114, 2043, 2076, 3001, 3043, 3057	Would prefer the floor no lower than 10,000 to 15,000 feet MSL, particularly in new MOAs.	Chapter 1.0 of the FEIS explains the purpose and need for the airspace, the requirement for training down to 500 feet AGL, and the need for realistic battlefield tactics at supersonic speeds during one to three days of quarterly LFEs. Chapter 2.0 of the FEIS describes the alternatives and estimated time airspace would be scheduled for training.
DO-5	3043, 3057, 3060	Alternative C would have less impact on the economy and quality of life, as well as bird migration routes including the endangered whooping crane.	FEIS Section 2.3.1 explains the mitigation measure for Modified Alternative A includes no PR-4 and Gap C Low MOAs. Modified Alternative C does not include PR-4 low level overflights. Low altitude overflight would be avoided in PR-4.
DO-6	3062	Would like more discussion on Alternatives Considered but not Carried Forward were not further analyzed.	FEIS Sections 2.10 and 2.11 explain selection standards and application of those standards. FEIS Sections 2.10.5.4 through 2.10.5.6 explain the need for training locations that are in close proximity to Ellsworth AFB.
DO-7	2126, 2130, 2132	Requests the proposed eastern border of PR-4 to be modified so it does not overlap tribal lands.	FEIS Section 2.3.1 explains the mitigation measure for Modified Alternative A includes no PR-4 or Gap C Low MOAs. Modified Alternative C does not include PR-4 or Gap C low level overflights. Tribal lands with PR-4 would not be subject to low level overflights with either of these alternatives.
EJ = Environmental Justice			
EJ-1	1039, 1076, 2050	Concern the Air Force is discriminating by acknowledging the tribe's various religious, cultural, and traditional activities and are not making the same concessions to other individuals who have voiced opposition. EO	DEIS Section 3.7 explained that Native American lands have a special relationship requiring Government-to-Government consultations. Potential environmental consequences to public, private, and tribal lands are all addressed in FEIS Section 4.8. As described in DEIS Section 3.10 and Appendix F of the FEIS, EO

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
		12898 as described in Appendix F of the Draft EIS, essentially insures the fair treatment of all people regardless of race, color, national origin, or income.	12898 directs that all agencies "To the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions" (available at http://www.archives.gov/federal-register/executive-orders/pdf/12898.pdf). See also response to EJ-2.
EJ-2	1009, 1054, 1106, 1108, 2077, 2128, 3014, 3035, 3079	Concern that low-income (or low population) areas under the airspace will become the location used for this proposal. Impacts of the PRTC would be more heavily felt by the tribal community than other groups.	Both the DEIS and FEIS in Section 1.4 and 1.5 discuss the purpose and need of the Proposed Action, including the selection criteria used to choose the locations for implementing the Proposed Action. Reasonable alternatives, modified as a result of public hearings on the DEIS, public comments received, and extensive consultations and special outreach with the public, agencies, and tribal representatives, are presented in FEIS Section 2.3.1. Analysis of the effects of these modified alternatives is presented in FEIS Sections 3.10, 4.9, and 4.10. Section 3.10 quantifies the minority and low-income population and youth population under the airspace. Any person under the airspace, minority or non-minority, could experience an average of one sonic boom per day during the not more than 10 days per year of LFE training. Individuals under the low MOAs could also experience low-altitude overflights of a training aircraft between 500 feet to and including 2,000 feet above the ground. Low-altitude overflights in low MOAs would result in unavoidable uncertainty, startle, and adverse noise impacts. These impacts would apply equally to any minority or non-minority persons regardless of income or age under any of the low MOAs. Modified Alternatives A and C avoid low-altitude overflight of Native American Reservations, including the Northern Cheyenne

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Code	Letter/Transcript Number	Description	Response
			Reservation, except for portions of the Crow Reservation. Modified Alternative B does not include low-altitude overflight of the Crow or Northern Cheyenne Reservations but does include low altitude overflight of portions of the Cheyenne River and Standing Rock Reservations. Section 4.10 explains that low-altitude training in PR-1A, PR-1C, and PR-1D MOAs overlie portions of the Crow Reservation that have a minority population in excess of 50 percent. An adverse impact not adequately or acceptably mitigated, which cannot otherwise be avoided, presents the potential for a disproportionately high and adverse human health or environmental effect on that population. Under Modified Alternatives A and C, implementation of the mitigations identified in this EIS, including those developed through extensive consultations and outreach with the affected populations to resolve adverse effects under the NHPA, would adequately or acceptably mitigate adverse impacts to such a degree that they are not significant under applicable standards. Consequently, these modified alternatives in conjunction with specified mitigations would not result in disproportionately high and adverse human health or environmental effects for environmental justice purposes.
GE = General			
GE-1	1010, 1040, 1041, 1042, 1061, 1062, 1065, 1069, 1072, 1075, 1077, 1090, 1092, 1110, 2002, 2003, 2005, 2012, 2038, 2065, 2069, 2087, 2098, 2120, 2122, 2123, 2136, 3009, 3013, 3015, 3016, 3017, 3018, 3019, 3027, 3034, 3038, 3055	In support of the proposal.	Thank you for your interest and participation in the NEPA process. Your comment has been entered into the record.
GE-2	1002, 1003, 1004, 1005,	Not in support of the proposal. In favor of the	Thank you for your participation in the NEPA process. Your

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
	1006, 1009, 1011, 1012, 1034, 1035, 1036, 1037, 1039, 1043, 1045, 1046, 1047, 1049, 1050, 1051, 1052, 1053, 1054, 1056, 1058, 1063, 1065, 1073, 1084, 1085, 1086, 1089, 1093, 1094, 1096, 1104, 1106, 1108, 1111, 1116, 1118, 2017, 2033, 2053, 2054, 2058, 2062, 2071, 2072, 2076, 2080, 2082, 2083, 2090, 2091, 2092, 2093, 2106, 2107, 2108, 2119, 2121, 2124, 2126, 2127, 2128, 2129, 2131, 2132, 2133, 2135, 2138, 2139, 3004, 3005, 3010, 3011, 3012, 3020, 3022, 3025, 3033, 3035, 3036, 3039, 3042, 3050, 3051, 3052, 3054, 3056, 3059, 3060, 3063, 3067, 3078, 3079, 3080	No Action Alternative.	comment has been entered into the record.
GE-3	1046, 1064, 1085, 1093, 1105, 2008, 2067, 3065	Statements that the proposal is unfair, unnecessary, present an unreasonable burden on people affected, and undeserved by the people affected. Concern the Air Force proposal is unjustified for training requirements.	The Air Force appreciates your participation in the public involvement effort for the Powder River Training Complex proposal. The environmental process described in Section 2.12 of the FEIS is designed to include public and agency perspectives for review by decision-makers. Section 2.4 describes the proposal, and Section 1.2 describes the reason for the training requirements. Sections 2.10.4 and 2.10.5 explain the limitations on current training. The screening criteria for identifying alternative training locations are described in Section 2.11.

Table 1.8–1. Comment and Response Matrix

Code	*Letter/Transcript Number*	*Description*	*Response*
GE-4	2009	Comment that the Ellsworth Task Force has not volunteered Rapid City to be overflown.	The Air Force appreciates your participation in the public involvement effort for the Powder River Training Complex proposal. Your comment has been included in the FEIS, which will be considered before the Air Force makes a final decision.
GE-5	1004, 1009, 1051, 1063, 2011, 2029, 2046, 2070, 2074, 2100, 2127, 3070	Concern the Air Force and FAA will disregard the public comments and taxpayers to get what they want and forget the meaning of 'good neighbor'. Statements that the Air Force is not trusted due to denial of negative impacts in the past and lies and broken promises from other government agencies, Concern for too much government interference near food and livestock production. Suggestions for annual meetings between Air Force and citizens to listen to local concerns and give local residents a chance to listen to Air Force concerns.	FEIS Section 2.3.1 describes the mitigations incorporated into the PRTC proposal in direct response to public and agency concerns. This includes advanced notifications to the public of LFEs. The Record of Decision (ROD) will be legally binding. Any and all mitigations contained in the ROD will become the legal obligation of the Air Force. With the execution of the Programmatic Agreement, in particular stipulation #VII, the Air Force would provide a summary report detailing the training activities held and other issues. The Air Force has programs designed for community relations, including the Mid-Air Collision Avoidance program. Under this or another suitable program, the Air Force will consider all requests for meetings in communities beneath the proposed PRTC airspace. The Air Force will monitor the effectiveness of these programs through the mitigation and monitoring program to be established as part of this proposal.
GE-6	1093, 2009, 2116	Concern the military is trying to instill fear in the American people and looking for wars to fight to get what they want.	The purpose of the proposed PRTC is to provide the best training possible for aircrews. FEIS Sections 2.10.4 and 2.10.5 explain the limitations on current training. The selection criteria for identifying alternative training locations are described in FEIS Section 2.10 and 2.11.

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
GE-7	1039, 2015, 2031, 2054, 2139, 3014	Questions the sovereignty of the U.S. government for airspace above private property. "Reasonable and ordinary use is the airspace above your property" is often litigated and routinely protected as a property right. Resolution adopted by the Standing Rock Tribe in 2008 states the use of the airspace was reserved for the tribe pursuant to the Treaties of 1851 and 1868 at Fort Laramie.	FEIS Section 1.6 explains that navigable airspace is under the jurisdiction of the FAA.
GE-8	1007, 1036, 1083, 2015, 2031, 2044, 3043	Concern that a live person at the base cannot be reached to handle complaints, questions, or damage claims. Whom do we contact for rapid response? Previous attempts to resolve a complaint have received a poor response or damage claims are not paid.	The Air Force Public Affairs Office is charged with the responsibility of handling public inquiry. FEIS Sections 2.8.5.2 and 3.3.3.2 identify the process for addressing claims.
GE-9	1004, 1040, 1041, 1054, 1062, 1087, 1088, 1097, 1107, 1112, 2034, 2044, 2045, 2047, 2048, 2068, 2072, 2076, 2088, 2094, 2097, 2100, 2117, 2120, 2123, 2134, 2136, 2142, 3013, 3015, 3024, 3030, 3046, 3071	Supports a well-trained military and supports its mission.	The Air Force appreciates your participation in the public involvement effort for the Powder River Training Complex proposal.
GE-10	2039, 2072, 2121	Can a test-run be done first for feedback before charting the MOAs? Are there any procedures to suspend it or modify it once the airspace is charted if there is a problem?	There is no provision for a test-run of MOAs in the applicable FAA requirements. However, the area under PR-2 has been overflown by B-1 and other training aircraft for many years. FEIS Section 2.3.5 describes the process, after adoption of mitigations to monitor the effectiveness of the mitigations to determine the need, if any, for adjustments.
GE-11	1041, 1042, 1077, 1096, 1097, 1107, 2041, 2091, 2094, 2098, 3006, 3007,	Would like to work together with the Air Force to maintain all missions. Must address the needs of all airspace users. Monitoring and	To the address the needs of all airspace users and other stakeholders, as expressed during public outreach, agency review and tribal consultation, Air Force developed many

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
	3008, 3013, 3037, 3050, 3052, 3053, 3056, 3060	evaluation of the Proposed Action should be ongoing. Previous coordination with stakeholders may have led to additional alternatives but the Air Force was unwilling. Requests for the Air Force to coordinate the development of an alternative.	mitigations, which are listed in FEIS Section 2.3.1. FAA Order 7400.2 states: "Although the FAA must protect the public's right of freedom of transit through the airspace, full consideration shall be given to all airspace users, to include national defense; commercial and general aviation; and space operations."
GE-12	1057, 3032	Requests information on the proposal.	Individuals who requested copies of the EIS have received copies. FEIS Section 1 describes the reason for the training requirements and Section 2.2 describes the components of the proposed airspace. FEIS Section 2.10.5 identifies the limitations on current training. The selection criteria for identifying alternative training locations are described in FEIS Section 2.11.
GE-13	1068	Who conducted the studies discussed in the document?	The FEIS provides the list of preparers for the technical analysis in Chapter 7.0, and lists the reference studies used in this analysis as well as the sources of those studies in Chapter 6.0.
GE-14	3037, 3078	Do not support non-LFE portion of the proposal. LFE use of the airspace appears manageable but non-LFE use impacts a large volume of airspace on a daily basis and will put burden on hundreds of civil aviation and non-DoD flights every day.	As described in Chapter 1.5 of the FEIS, the Air Force needs additional airspace for realistic, high-quality, local training in addition to LFE training. The Air Force worked closely with the FAA to address impacts to commercial traffic. FEIS Section 2.3.1 describes the mitigations to address public and agency concerns.
GE-15	3060	The footnote for Table 3.2-3 should include "Federal Aviation Administration Advisory Circular, FAA AC-91-36D)."	FAA AC-91-36D recommends no overflight below 2,000 feet AGL over the Little Bighorn Battlefield National Monument. A mitigation has been incorporated into the proposal (see FEIS Section 2.3.1).

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Code	*Letter/Transcript Number*	*Description*	*Response*
GE-16	3062	Would like a discussion on BRAC commission voting to retain Ellsworth AFB and its B-1 fleet without determining its current airspace could meet its mission needs.	A response is unnecessary because the comment raises a concern which is outside the scope of the proposed action nor does the comment address the adequacy of the DEIS or the merits of alternatives discussed in it. The BRAC Commission report can be found at http://www.brac.gov/finalreport.html.
LU = Land Use			
LU-1	1011, 1039, 1045, 1063, 1076, 1098, 1108, 1109, 1111, 2013, 2032, 2033, 2048, 2083, 2099, 2103, 2111, 2116, 2130, 3039, 3048, 3080	Concern the quality of life, privacy, and integrity of the land would be impacted. Wants the integrity and stewardship of the land and quality of life maintained.	FEIS Sections 3.8 and 4.8 explain the existing land use and potential consequences, and Sections 3.9 and 4.9 explain the social and economic relationship of the people, communities, and land. Section 4.9 describes the estimated average extent of overflight at low altitudes and the mitigations are described in Section 2.3. Section 4.8 describes the consequences to different land uses, including private and public lands. Some individuals expressed the perspective that any low level training would be an adverse impact.
LU-2	1037, 1043, 1045, 1046, 1050, 1056, 1059, 1074, 1078, 1080, 1082, 1103, 1106, 1108, 1111, 1113, 2013, 2030, 2035, 2045, 2050, 2067, 2071, 2077, 2080, 2105, 2108, 3010, 3011, 3041, 3044, 3060, 3069, 3080	Concerned about the sudden overflight and noise impacts to the serenity of the land and people's way of life including recreation. Permanent avoidance areas may be needed.	FEIS Sections 3.2 and 4.2 explain the existing conditions and noise consequences. Section 4.9 describes the estimated average extent of low-level overflight and potential startle effect. The Air Force has incorporated mitigations, including establishment of reasonable temporary or seasonal avoidance areas or other measures identified in Government-to-Government consultation with affected tribes (see FEIS Section 2.3). Some individuals see military training and related startle or noise impacts as unacceptable to their quality of life and an adverse impact.
LU-3	1035, 1074, 1094, 1105, 2006, 2035, 2048, 2132	Concerns the proposal will damage or eliminate ranches/farms and the ranching/farming lifestyle.	FEIS Section 4.8 explains that B-1 training aircraft have overflown ranches and farms under the existing Powder River A and B MOAs (which are essentially PR-2) for decades. The ranching/farming/hunting lifestyle continues under this airspace and, in many ways, the ranches and farms are comparable to, or the same as, ranches and farms under the proposed additional airspace. FEIS Section 4.9 explains that the average number of low-level overflights per year would be approximately six to

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
			nine. This level of training activity could cause annoyance but, based upon the experience under the existing MOAs, would not significantly impact ranches, farms, or the ranching lifestyle. Individuals under the proposed airspace could see sudden overflight startle impacts as a significant impact.
LU-4	2045, 3026	Crop land acres have not been adequately identified in the analysis. Does not account for crop acres coming out of the Conservation Reserve Program (CRP).	FEIS Section 3.8 lists agricultural land area from available GIS data under the existing Powder River MOAs and under each proposed MOA. Section 4.8 explains why the proposed PRTC would not adversely affect land use under the airspace.
LU-5	2046, 2113, 3074, 3079	Concern of losing prime hunting areas.	FEIS Section 4.8 describes the importance of hunting land use under the proposed airspace. Section 4.9 explains an average of six to nine low-altitude overflights could occur per year in any given location under a low MOA. Prime hunting areas are located under the existing Powder River A and B MOAs (essentially the same as PR-2) where B-1s have been training for decades. Section 4.8 explains that low-altitude training and hunting coexist throughout the west.
LU-6	2130	The land use numbers are not shown on the maps and can't see on the maps how much acreage is included in the area.	In FEIS Section 3.8, Table 3.8-2 presents land use numbers calculated using geographic information systems. GIS data do not always coincide; however, the overall land use numbers presented in the report represent the best available information.
LU-7	1061, 1062, 2069, 3009	Property is under the current airspace or overflown by aircraft near Minot. No observable negative impact. Ranchers have requested no-fly zones during sensitive times for livestock with a phone call to Ellsworth AFB.	FEIS Section 4.8 explains that aircraft have overflown what is effectively the proposed PR-2 for decades. Section 2.3.1 explains that the Air Force will continue to work with ranchers to establish avoidance areas through identified mitigation measures.
LU-8	2074	Question if the Air Force adheres to county land use plans. Statement that individual county land use plans should be taken into consideration in the EIS analysis.	FEIS Section 4.8.1 explains that PRTC would not place restriction on land use or land use plans. Plans for energy development or related structures which could project into the airspace are considered in Section 4.9. (See also FEIS Appendix J.)
LU-9	2121, 2143, 3060, 3079	Concerned about the visual effects of large aircraft flying over, contrails, and chaff and flare	FEIS Section 4.9 describes the estimated average frequency of low-flying aircraft. Sudden overflight visual and startle impacts

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
		debris.	from aircraft and rare visual impacts from residual pieces of chaff or flares are adverse impacts. Aircraft emissions associated with the use of proposed airspace would not impact visibility (FEIS Section 4.4.3.1 and Section 5.1.2.1.4). At lower altitudes, individual aircraft exhaust trails can be visually detected for a brief period due to emissions of particulate matter and organic compounds. Below 3,000 ft AGL, these exhaust emissions rapidly dissipate (see FEIS Section 4.4.3.1). Contrails, or condensation trails, are an existing condition above the proposed PRTC airspace. Contrails are visible water vapor trails from aircraft engines associated with specific meteorological conditions and produced by high-altitude aircraft overflight. Commercial overflights of the four-state region are the primary contributors to these temporary artificial clouds. Overflight of military training aircraft could create condensation trails depending on flight altitude and meteorological conditions. Although contrails could be seen as an intrusion into an otherwise clear sky, such contrails, whether formed by commercial or military aircraft overflight, would not have an adverse effect upon tribal or other lands under the proposed airspace. By eliminating military flights above FL260 the Modified Alternatives would greatly reduce the potential formation of contrails. Effects of the visual intrusion of PRTC training activities on historic properties are addressed in FEIS Section 4.7.2.1.
NA = Native American			
NA-1	2053	Concern the consultation with the tribal governments will be labeled simply a fiduciary responsibility. There is no guarantee that comments will be implemented.	Ellsworth AFB has conducted Government-to-Government consultations with tribal governments and explained all aspects of the proposed airspace changes. Over the course of the past six years, Ellsworth AFB has consulted with tribal governments in compliance with Section 106 of the NHPA, and invited the tribes to be signatories to a Programmatic Agreement that includes stipulations specifying measures that resolve tribal concerns.

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			The Air Force will also continue to consult with the tribes on a Government-to-Government basis.
NA-2	2103, 3043	Separate and private hearings were conducted at the reservations and comments were not submitted specifically to aeronautics commission. Concern the tribal governments comments will not be made available or included in the Final EIS.	All written comments and transcripts received on the DEIS are included in the FEIS. (See Section 2.12). The FAA is a cooperating agency (see Section 1.6) in this EIS and has participated in the public hearing process. The FAA reviewed the EIS and related appendices and, subsequent to the Air Force Record of Decision (ROD), the Air Force anticipates that the FAA will adopt the FEIS, issue its own ROD and then publish the new airspace in the Billings Sectional Aviation Chart.
NA-3	2053	Concern the tribal government is not recognized as having a legal or constitutional relationship with the United States.	Ellsworth AFB has made special efforts to conduct Government-to-Government consultations with tribal governments as was described in DEIS Section 3.7. The obligation for federal agencies to engage with Native American tribes on a Government-to-Government basis is based on federal, statutes, executive orders (EOs), regulations, and policies. These include NHPA of 1966, the Native American Religious Freedom Act, Presidential Memorandum on Government-to-Government Relations (April 29, 1994), EO 13007 (Indian Sacred Sites) and EO 13175(Consultation and Coordination with Indian Tribal Governments), and DoD Instruction 4710.02 (DoD Interactions with Federally Recognized Tribes). These consultations, between Ellsworth AFB and the tribes, have included explanations of all aspects of the proposed airspace changes, and have resulted in some of the changes made in Modified Alternative A. As described in FEIS Section 4.7, the Air Force has executed a Programmatic Agreement that stipulates measures that resolve adverse effects to historic properties, religious ceremonies and important tribal events under the PRTC (refer to Appendix N). Furthermore, the Air Force will continue to consult with the tribes on a Government-to-Government basis.
NA-4	2053, 2054, 2055, 2132, 3060, 3071, 3079	The importance of the Native American ceremonies and religion is not adequately identified or analyzed in the Draft EIS. Military	DEIS Section 3.7 explained the importance of ceremonies and Government-to-Government consultation. FEIS Sections 2.3 and 4.7 explain the provisions of the Programmatic Agreement,

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		interference with and encroachment of sacred rights and religious practices is offensive, distracting, disrupting, and disrespectful. Ceremonies take place throughout the year-not just spring and summer. Suggestion for further consultation with affected tribes including tribes which conduct ceremonies at Little Bighorn Battlefield National Monument.	which includes avoidance areas and times, and specifies that when Native American ceremonial and religious sites are identified, the Air Force will consult to determine reasonable avoidance altitudes and times. Further consultation has resulted in the mitigations described in FEIS Section 2.3.
NA-5	2053, 2143, 3071	Suggests mitigations for no training during ceremonies throughout tribal homeland and over sacred grounds. Suggests no low-level overflights or sonic booms over Standing Rock Indian Reservation from June-August.	FEIS Sections 2.3 and 4.7 explain that during Government-to-Government consultations, the Air Force explained that when Native American ceremonial and religious sites are identified, the Air Force will consult to determine reasonable avoidance altitudes and times. Also, as discussed in FEIS Sections 4.7.2.1, and 4.7.2.3, a "Programmatic Agreement among 28th Bomb Wing, Ellsworth Air Force Base, the State Historic Preservation Offices of Montana, North Dakota, South Dakota and Wyoming, and the Advisory Council on Historic Preservation Regarding the Proposed Development, Implementation and Operation of the Powder River Training Complex" (Appendix N) is among consulting parties comprised of signatories (28 BW, SHPOs from MT, ND, SD and WY, and the ACHP) and invited signatories (FAA, NPS, and Crow Tribe). The Cheyenne River Sioux Tribe, Northern Cheyenne Tribe, and Standing Rock Sioux Tribe have also been invited to sign, but have not yet elected to do so. As explained in FEIS Section 2.3.1, Modified Alternatives A and C include a minimum training altitude of 12,000 feet MSL above the Standing Rock Indian Reservation, Cheyenne River Sioux Tribe, and Northern Cheyenne Indian Reservations. Supersonic training would be scheduled once per quarter for 1 to 3 days for a maximum of 10 days per year. An average of one sonic boom per LFE day could be experienced at any given location under the proposed airspace.
NA-6	2053, 2103, 2139, 3071	Request for more information on the frequency and amount of fuel or chaff dropped and flight	FEIS Section 2.3 explains that there is no proposed deployment of ordnance on tribal lands or any other lands under the

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
		time over tribal lands. Suggestion to limit the use of chaff over tribal lands and start using new technologies for invisibility.	airspace. The Air Force has identified fuel jettison areas and none are over tribal lands. FEIS Section 2.8 describes chaff and flare deployment as defensive countermeasures and explains the quantity of chaff (0.00377 ounces per acre per year) or flare residual materials (one plastic or Mylar piece per 149 acres per year) which could be randomly distributed anywhere under the training airspace, including on tribal lands. FEIS Section 2.8 also contains information on the frequency of aircraft use of the airspace as part of the Proposed Action.
NA-7	2054, 2056, 2057, 2058, 2129, 2130, 2140	Concern there is not enough respect for the Native American lands and their quality of life.	The Air Force has sought to work with Native American tribal representative to identify sensitive sites. DEIS Section 3.7 explained the importance of ceremonies and on-going Government-to-Government consultation. FEIS Section 4.7 explains that when Native American ceremonial and religious sites are identified, the Air Force will consult to determine reasonable avoidance altitudes and times.
NA-8	2053, 2055, 2058, 2124, 2139	Concern the proposal is in violation of treaties, specifically the Fort Laramie Treaty of 1868, for the absolute and undisturbed use and occupation of tribal lands. Suggestions that these treaties include airspace over tribal lands	DEIS Section 3.7 described the Fort Laramie Treaty of 1868. There is no ground construction proposed as part of the Powder River Training Complex. FEIS Section 1.6 explains that the FAA has sole responsibility of navigable airspace in the United States and associated offshore and other areas.
NA-9	2124, 2126, 2131, 2132, 2137, 2140, 2141, 2143	Were the meetings with the Native Americans Government-to-Government meetings? If not, why weren't they advertised as public hearings? Thought the purpose of the meeting was for the Air Force to give a presentation and was not going to include public comment or a court proceeding hearing. If a public hearing had been advertised more people would have attended.	Meetings with tribes are conducted on a Government-to-Government basis. Meeting participants are invited at the direction of the tribe. Such Government-to-Government meetings are in addition to advertised public hearings on the DEIS. (See DEIS Section 3.7.) The results of Government-to-Government consultations have been incorporated into the analysis as described in FEIS Sections 4.7, 4.10, and others.
NA-10	3079	Concerned about the sudden overflight and noise impacts to the serenity of the land and Native American way of life. Permanent	FEIS Section 2.3 explains the mitigations incorporated to support reasonable seasonal and temporary avoidance areas. Also FEIS Section 4.7.2.3 describes the stipulations of the Programmatic

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
		avoidance areas may be needed.	Agreement the Air Force has executed, including avoidance areas, times and dates, and a process for continued consultation as specific concerns arise regarding additional identification of Native American ceremonial and religious sites or other areas of concern. The Air Force will consult to determine reasonable avoidance altitudes and times. See Appendix N for the full text of the Programmatic Agreement.
NA-11	2124	Suggests a Memorandum of Agreement as part of a Government-to-Government relationship between the tribes and the Air Force.	Modified Alternative A incorporates a number of changes in airspace use in response to tribal concerns. Also, as described in FEIS Section 4.7.2.3, the Air Force, SHPOs and ACHP developed a Programmatic Agreement that resolves adverse effects that could result from the proposed action, through stipulations concerning avoidance, minimization or mitigation of adverse effects to historic properties, religious ceremonies and important tribal events under the PRTC. Refer to FEIS Appendix N for the complete and final text of the Programmatic Agreement.
NA-12	3071	History of Native Americans portrayed in the DEIS includes incorrect information. Suggested corrections are provided.	Additional edits incorporated into the EIS in response to specifics provided by the tribes.
NA-13	2124	Concern for illegal dumping of hazardous materials, chemical, nuclear, and other waste is being dumped.	As explained in Chapter 2.0 of the FEIS, no ground construction is included as part of the Proposed Action. Chapter 5.0 of the FEIS explains that threat emitters, if sited, would have separate NEPA evaluation. There are no proposed ground assets and no proposed construction or other wastes.

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
NO = Noise			
NO-1	2008	Concern with the noise increase from aircraft in holding patterns waiting to land.	As described in Section 2.5 of the FEIS, although the sorties may increase from FY2011 activity, total flight operations would not be expected to exceed those analyzed and published in the 2008 Ellsworth AFB Air Installation Compatible Use Zone (AICUZ), which is publically available at http://www.ellsworth.af.mil/shared/media/document/AFD-090428-076.pdf. The AICUZ study, which is incorporated by reference, identifies the noise levels associated with flight operations in the vicinity of Ellsworth AFB.
NO-2	1038, 1103, 1111, 2008, 2105, 3060, 3069, 3074	Concern for the disruptive nature of sonic booms and low-level overflights including startle effect and damage to buildings, windows, and other property.	As described in FEIS Section 4.2, low-level overflights and sonic booms would be infrequent. Overflights exceeding 65 dB SEL would occur once on 4 out of 10 days on average. An average of one sonic boom per day could be experienced on the not more than 10 LFE days per year. Startle effects generated by noise would be relatively rare, and the likelihood of significant structural damage from a sonic boom is very low, although it could occur. Any claims from Air Force-related damage would begin by contacting Ellsworth AFB Public Affairs.
NO-3	1115, 2008	Concern for the accuracy and scientific integrity of the B-1 aircraft noise predictions. Concern the effects are underestimated. When the B-1s use their afterburners, the noise is greater than reported.	FEIS Appendix I describes the noise models and accuracy of those models. DEIS Section 3.2 described the noise from B-1 afterburner use, and Appendix I, Table I-1, presents the noise level without afterburners. The numbers are measured numbers. FEIS Section 4.8 presents the consequences of SEL noise.
NO-4	1039, 1056, 1082, 2009, 2110, 3060, 3080	The noise numbers are misleading and vague because they are averages and generalized. They are not always consistent. No specific discussion is provided as to how thresholds of significance were defined in determining impacts of noise on the resources described in the document. The 55 DNL dB threshold cited in the DEIS does not adequately address	Section 3.2 of both the DEIS and FEIS explain that both average and single event level noises are included to provide a complete noise picture to the public, agencies, and decision-makers. FEIS Appendix I explains FAA noise policies. DEIS and FEIS Section 3.2.2 discussed factors involved in defining significance with regards to noise impacts.

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
		disruption of tranquility or disruption of solitude at national parks. No specific discussion is provided as to how thresholds of significance were defined in determining impacts of noise.	Neither the Air Force nor the FAA has specific significance thresholds for properties like the Little Bighorn Battlefield National Monument, which call for special consideration in determining noise impacts (see DEIS Section 3.2.2). Noise impacts on such properties are determined based on the context and intensity of the impacts on the resource on a case-by-case basis. FEIS Section 4.2.3 includes specific noise results for the National Monument, using single-event metrics (i.e., SEL and L_{max}) in addition to DNL. In a Programmatic Agreement under Section 106 of the National Historic Preservation Act (see Appendix N of the FEIS), the Air Force and the National Park Service have agreed that the Air Force will partially mitigate the effects of the PRTC on the National Monument (e.g., noise) by implementing specific measures, including a minimum training altitude of 5,000 feet AGL from one hour before to one hour after posted hours of operation.
NO-5	1003, 1037, 1045, 1078, 1096, 1109, 2017, 2021, 2023, 2030, 2032, 2067, 2085, 2092, 2110, 2111, 3048, 3064, 3079	Concern with the increase in noise, including sonic booms and vibrations, with low-flying aircraft and impacts to sleep, hearing, startle effects to humans and wildlife, annoyance, prayer, ceremonies, and other day-to-day activities. Suggestions for limitations set on aircraft noise including restrictions of noise to reasonable hours. Suggestions for analysis to use single-event noise rather than using average noise.	FEIS Section 2.5 describes training periods and the hours when training could occur. After dark flights are required for realistic training. FEIS Section 4.2 describes noise impacts, including sonic booms, and presents the change in average noise levels. FEIS Section 4.2 identifies the calculated number of times per training day when different sound levels would be exceeded. FEIS Section 4.2 also explains that individual aircraft operating at low altitude may have single events as loud as 133 dB sound exposure level (for a B-1 using afterburners at 500 feet AGL). As explained in FEIS Section 4.7.3.1, training aircrew avoid buildings during this fly-up maneuver. Supersonic would be proposed above 20,000 feet MSL for bombers and above 10,000 feet AGL for fighters. FEIS Section 2.8 describes the minimum altitude for supersonic maneuvers. FEIS Appendix I explains noise measures in more detail.
NO-6	2018	Does altitude have a factor in the decibels of noise reaching the ground?	DEIS Section 3.2 and FEIS Section 4.2 provide noise effects based upon aircraft altitude above ground level. This means that an aircraft flying at 10,000 feet MSL above 3,000-feet MSL terrain

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
			would have a noise effect comparable flying at 7,000 feet AGL.
NO-7	2018	Are there any ultrasonic magnetic waves involved in sonic booms?	DEIS Section 3.2 and Appendix I of the FEIS explain that sonic booms are created by sound pressure waves, not magnetic waves. There are no ultrasonic magnetic waves involved in sonic booms. The compression of air does result in sound effects beyond those audible to the human ear. Some sounds inaudible to humans can be heard by animals.
NO-8	2018	What would the decibels be at 10,000 feet AGL?	FEIS Appendix I, Table I-1 and I-2 describe the decibel levels for different aircraft types flying at different altitudes AGL. FEIS Section 2.11 presents sonic boom overpressures for various altitudes AGL. FEIS Section 4.2 provides noise effects based upon aircraft altitude AGL. This means that an aircraft flying at 10,000 feet MSL above 3,000-feet MSL terrain would have a noise effect comparable flying at 7,000 feet AGL.
NO-9	2101, 3079	There are several different units used to describe noise. Want to see single event sound exposure levels. How do decibels relate to psf? How can we understand the meaning of the sound measurements?	DEIS Section 3.2 explained that different noise measures are used to reflect different noise effects. FEIS Appendix I explains noise measures in more detail and Table I-1 provides typical noise levels for common sounds. Both average noise and single event sound exposure level noise are included in FEIS Section 4.2 to provide a complete picture to decision-makers and the public.
NO-10	1007, 1042, 1110, 2045, 2107, 3008, 3016, 3017	Do not want flights over homes or corrals also suggest avoidance areas similar to those given to Native American sacred grounds to include round-up areas, birthing areas, watering holes, etc. Not all the sensitive noise areas have been identified and want assurance all avoidance areas will be respected.	FEIS Section 2.3 explains that the Air Force will work with individuals, tribal governments, and organizations to identify sensitive noise areas and periods of avoidance.
NO-11	2112, 2116, 3064	Concern for the noise effects associated with Post Traumatic Stress Disorder and other health issues.	FEIS Section 4.2 describes studies conducted regarding performance effects of noise and other noise-related issues.
NP = National Environmental Policy Act			
NP-1	1009, 1064, 1068, 1074,	Questions if citizens can vote down the	Section 1.5 explains that the FAA has jurisdiction over navigable

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
	1096, 1117, 2024, 2032, 2071, 2125, 3012	proposal or sue the Air Force. Concern the Air Force can do this without the consent of citizens and is an infringement on citizens' rights. Suggests the Air Force is ignoring the concerns expressed by citizens.	airspace. FEIS Section 2.10 explains that federal environmental and airspace regulations will be followed in the decision-making process.
NP-2	1068, 1076, 2032, 2043, 2050, 2083, 2124, 2132	Concern that comments and objections are not being listened to and that elected officials are not representing citizen concerns. Hope that recommendations will be added in the Final EIS.	FEIS Section 2.10 explains that federal environmental and airspace regulations will be followed in the decision-making process. Section 2.10 also explains the opportunities for public concerns to be incorporated into the decision-making process.
NP-3	1071, 2047, 2068, 2107, 2108, 3044, 3048	Appreciation for the holding public hearings and providing a venue to provide comments and learn more about the proposal.	The Air Force appreciates your participation in the public involvement effort for the Powder River Training Complex proposal.
NP-4	2050, 2074, 2083, 2094	What is the role of the cooperating agency and do they work in our best interest? Suggests that a state law that gives Montana the role of cooperating agency and that the Air Force should coordinate with the state. Statement that as the cooperating agency and final authority, the FAA has the most influence in the decision.	FEIS Section 1.6 of the FEIS explains that FAA is the cooperating agency and will make decisions regarding establishing airspace.
NP-5	2057, 2072, 3066, 3072	How long is the comment period for the Draft EIS? Does the FAA see our comments?	Section 2.12.2 of the FEIS describes the DEIS public comment process and Section 2.12.3 of the FEIS describes the environmental process. The initial comment period opened on August 20, 2010 and was scheduled to end on November 15, 2010, but by request, the comment period was reopened and extended to January 31, 2011, nine weeks beyond the original timeline. Closure of the comment period for the DEIS was described in the public announcements. (See Appendix E.) FAA reviews the FEIS and determines whether to adopt it. Section 1.6 of the FEIS (Section 1.5 of the DEIS) explains that FAA is a cooperating agency and will make decisions regarding establishment of any airspace.

Table 1.8–1. Comment and Response Matrix

Code	*Letter/Transcript Number*	*Description*	*Response*
NP-6	2064, 3047	Can the Air Force and the FAA cooperating agency provide a commitment that will not limit wind energy projects?	FEIS Section 4.9.3.1.4 discusses towers and FAA requirements for tall structures.
NP-7	1012, 2066, 3073	If this goes through, can we ensure compliance with the project ROD? Concern the Air Force won't abide by their own rules.	The FEIS and ROD will be legally binding. Any and all mitigations contained in the ROD will become the legal obligation of the Air Force. (See Section 2.10.)
NP-8	1108, 1116, 1117, 2072, 2095, 2116, 2123, 2130, 2141, 3025	How were the meetings advertised? How was the public made aware of the proposal? Concern the meetings were not publicized widely enough or early enough to allow people to attend.	Section 2.12.2 of the FEIS describes the DEIS public comment process and the methods used to advertise meetings. In addition, Appendix E of the FEIS describes the advertising for the 19 public hearings and four Native American meetings held during the public comment period.
NP-9	1009, 2075, 2101, 3012	The language in the document seems vague, such as "expected to", "may be", "approximate", as well as using different units of measure.	DEIS and FEIS language reflects the predictive nature of the analysis conducted to identify potential effects of the action on future conditions. Measurement units in the DEIS and FEIS are similar to those used in other NEPA documents and when possible are consistent throughout the document, but are tied to the type of measurement being made. For example, measurements involving airspace use nautical miles, and measurements of ground areas are reported in acres or square miles. (See also response to NO-9.)
NP-10	2083, 2130, 3048, 3056, 3076	What is the process of government consultation? Would like to see other agencies/entities/citizens involved in the comment process and what their comments are. Will a Memorandum of Understanding be created amongst all agencies possibly impacted?	FEIS Section 2.10 explains the NEPA process. DEIS Section 3.7 explained the Government-to-Government consultation. FEIS Appendix E explains other agencies and entities which have been invited to participate in the NEPA process. Appendix E also identifies the public hearing locations and times to support participation by any and all involved parties.
NP-11	1039, 1045	This proposal does not follow Air Force Policy Directive 32-70 or EO 11991 in protecting or enhancing the environment. Concern the EIS is swayed towards the needs of the Air Force not	FEIS Section 2.10 identifies the policies and directives followed in the preparation of this EIS. Section 2.11 identifies one of the goals to be reduced environmental conflicts. Section 2.3 provides a list of mitigations.

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Code	Letter/Transcript Number	Description	Response
		for the concern of the environment.	
PN = Purpose and Need			
PN-1	1059, 2003, 2065, 2097, 3045	Aircrews need to be combat ready and additional airspace is needed.	The Air Force appreciates your participation in the public involvement effort for the Powder River Training Complex proposal.
PN-2	1002, 1003, 1004, 1009, 1011, 1034, 1037, 1046, 1050, 1056, 1058, 1063, 1064, 1065, 1067, 1068, 1073, 1084, 1085, 1093, 1096, 1098, 1101, 1102, 1107, 1109, 1111, 1118, 2006, 2024, 2046, 2047, 2048, 2076, 2077, 2083, 2086, 2092, 2095, 2100, 2101, 2102, 2106, 2109, 2113, 2117, 2121, 2122, 2128, 2134, 3003, 3012, 3014, 3016, 3017, 3018, 3028, 3056, 3080	Why can't you train somewhere else such as Nevada, Utah, the Hays MOA, in deserts, or over water? Why do you need the entire area? Suggests keeping flights in South Dakota and North Dakota. Other planes who want to use the airspace will have to use fuel to get here. Concern there is already enough disruption from military flights and substantial restricted areas already in place. The existing airspace is large enough.	FEIS Section 2.10 describes the training requirements and limitations for B-1 and B-52 aircraft. Section 2.11 explains how the training location alternatives have been identified. Section 2.11 explains that training in other locations is done to the extent possible. Other aircraft are included in LFE training (See Section 2.8). Section 1.0 of the FEIS discusses the purpose and need of the Proposed Action, including the training requirements for the Air Force.
PN-3	1034, 1058, 1101, 2006, 2034, 2046, 2047, 2083, 2098, 2106, 2113, 2116, 2121, 3024, 3077	Concern that this expansion is not necessary for national security. Suggestion that training be concentrated on ground training rather than aircraft. The Air Force needs to consider how to use America's resources wisely and the potential harm outweighs the benefits. What airspace will be given up?	FEIS Section 1.0 describes the need for a trained military force. Section 2.10 describes the B-1 and B-52 missions for which aircrews need to be trained. Section 2.11 details the training requirements and limitations of existing training airspace. Section 2.11 explains how the training location alternatives were identified. All airspace is reviewed on an annual basis by the FAA and the Air Force to determine its ongoing need and capabilities to meet the training airspace needs. This review process is separate from NEPA.
PN-4	2104, 2114, 3002, 3021, 3039, 3071	Why is it necessary to fly down to 500 feet (including Native American reservations)? Can they fly at 1,000 feet minimum?	FEIS Section 2.10 describes the low-altitude training associated with the B-1 aircraft. B-1 crews must maintain proficiency in low level employment down to 500 feet AGL to fulfill current and future combat requirements. According to FEIS Section 2.8,

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Code	Letter/Transcript Number	Description	Response
			approximately 15-20 minutes of a two hour mission would take place below 2,000 feet AGL. The vast majority of this training is currently accomplished at 1,000 feet ATL with a minimum amount of time spent at 500 feet AGL to maintain aircrew proficiency in the unique dynamics of flight at 500 feet AGL. The Standing Rock, Cheyenne River, and Northern Cheyenne Reservations would not be overflown below 12,000 feet MSL under Modified Alternatives A or C.
PN-5	1056, 1066, 2072, 2075, 2102, 3012, 3028, 3052, 3059, 3071, 3080	How many days do you need to train in the airspace? Information in the Draft EIS seems contradictory as to whether LFEs would be 10 days or 12 days per year. Thought the airspace would be used for 10 days but Draft EIS says over 200 days.	FEIS Section 2.5 describes the training requirements and presents the proposed scheduled time for the airspaces to be activated for training. Day to day training would be for 240 days per year. LFE training would be up to 10 days per year (of the 240 days).
PN-6	1058, 2106, 2114	The Bombers have been around a long time. Won't they be replaced soon?	DEIS Section 1.2 explains that the B-1 aircraft continue to be upgraded with multiple advanced technologies to ensure their usefulness and applicability into the future.
PN-7	1064, 3025, 3062	Suggestion that with today's technology, flight simulators can provide additional training. Existing airspace would be adequate with use of flight simulators. Flight simulators need further discussion.	As explained in FEIS Section 2.11.3.3, sophisticated flight simulators will continue to be used to the extent possible. Even the best simulators lack realism of actual flying and aircrews do not receive the same physical training challenge in simulators as during aircraft flight. Extensive aircrew use of simulators is already included in the flight requirements for the proposed PRTC.
PR = Physical Resources			
PR-1	2124, 2132, 3012	Would like to see more water and soil data. Water and soil information is inaccurate. pH in MT area is high to very high in Alkaline.	DEIS Section 3.5 mapped soil types and described pH. Almost all (99 percent) of the regional soils have a pH greater than 5.0 (extremely acidic) or less than 8.5 (strongly alkaline). There is no proposed surface construction (See FEIS Section 2.8.6). FEIS Section 4.5 explains that the only feasible soils or water consequences could be from minute particles of chaff. Chaff concentrations are calculated to be approximately 0.00377 ounces per acre per year. (See FEIS Section 2.4.6.3.) The soil pH

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
			is nearly entirely outside the range to react with chaff coatings, and the chaff particles rapidly become indistinguishable from silica and aluminum soil elements. No soils or water impacts would be anticipated. (See also FEIS Appendices C and D.)
SA = Safety			
SA-1	1006, 1044, 1054, 1102, 2001, 2018, 2028, 2042, 2059, 2063, 2066, 2072, 2080, 2084, 2085, 2095, 2107, 2121, 3005, 3054, 3056, 3075, 3079	Concern for mid-air collisions when flying at low levels. What are the safety statistics in the area? What safety measures will prevent mishaps?	FEIS Section 4.3 describes the flight safety of the B-1 and B-52 aircraft, including the Class A accident statistics. These include all aircraft operations, including training below 2,000 feet AGL. The Air Force and FAA would continue coordination to enhance the situational awareness of aircraft operators as to whether PRTC low altitudes MOAs (airspace below 12,000 feet MSL) are active. This may include practices for use of existing data, equipment, and procedures as well as integration of advancements in software and/or equipment.
SA-2	2007	Safety concerns in flying between Billings and Rapid City.	DEIS Section 3.1 explained that Victor airway V86 can be used between Billings and Rapid City, which would be outside the proposed MOA airspace and beneath existing and proposed ATCAAs. IFR or VFR aircraft could use this airway. VFR aircraft could fly see-and-avoid through an active MOA direct between Billings and Rapid City.
SA-3	1058, 1060, 1073, 1096, 2007, 2076, 2095, 2103, 3050, 3054, 3073, 3075	Safety concerns when rerouting during inclement weather or multiple flights on Victor airways without adequate communication.	DEIS Section 3.1 described Victor airway use during inclement weather flying IFR if MOA airspaces are activated. The stacked and additional MOAs are designed to provide for IFR access and training aircraft temporary relocation out of a specific airspace to allow for IFR transit. FEIS Section 2.3.1 explains that the announcement by NOTAM in advance of MOA activation provides as current information as possible. Pilots who could not fly VFR due to weather or contract requirements, sought to obtain real-time information on a MOA activation, and were not able to obtain such information see the lack of information as an adverse impact.

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SA-4	2007, 3056	Would like better communication with Denver Center, MNP, and SLC to increase safety. Will ARTCC communication boundaries be simplified?	The communication capabilities within the PRTC region are consistent with established requirements for the National Airspace System. Frequency coverage for aircraft operators will continue as currently established. The existing airspace management procedures used by Denver and Salt Lake Air Route Traffic Control Centers (ARTCC) for controlling PR A/B MOA will be revised and expanded to include Minneapolis ARTCC. Any additional coordination requirements necessary for the management of the PRTC will be added to agreements between the air traffic control facilities and the Air Force. The existing procedures within the Aeronautical Information Manual (AIM) covering contact with air traffic control facilities and details published on charts and other Flight Information Publications (FLIP) should be followed to contact the air traffic control agency responsible for any particular MOA.
SA-5	1043, 1050, 1054, 1058, 1063, 1068, 1082, 1084, 1086, 1100, 1101, 1102, 1106, 1108, 1109, 2009, 2029, 2035, 2049, 2071, 2074, 2092, 2099, 2107, 2116 2121, 2124, 2125, 2140, 3002, 3008, 3014, 3025, 3035, 3039, 3041, 3048, 3052, 3055, 3056, 3060, 3062, 3064, 3071, 3074, 3079	Concern about fires caused by flares and the need to restrict use of flares. Not enough analysis has been done. Extreme fire danger rating is too high; should be lower rating. Need to consider suppression capabilities in regional areas. Please provide an historical comparison. Would like flares dispersed no lower than 10,000 feet.	FEIS Section 2.3.1 describes altitude limitations of flare use and the cessation of use under certain fire danger ratings. FEIS Sections 3.3 and 4.3.3.1.3 describe the different types of flare failures and the potential impacts from flares deployed in fire danger conditions, including the National Fire Danger Rating System and the conditions under which Ellsworth AFB would suspend flare use. Ellsworth AFB mutual aid agreements are also described in that FEIS section. Regional response, including federal agencies, would occur for any fire, including an unlikely flare-caused fire. (See also FEIS Appendix D.)
SA-6	1050, 1082, 1084, 1100, 2009, 2100, 3079	A more thorough discussion on how fires from flares will be handled needs to be addressed.	The FEIS extensively and adequately discusses the potential for fires from any source and how such fires would be handled. FEIS Section 2.3.1 describes altitude limitations of flare use. FEIS Sections 3.3.3.3 and 4.3.3.1.3 describe the different types of

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Code	Letter/Transcript Number	Description	Response
			flare failures and the potential impacts from flares deployed in fire danger conditions. Section 3.3 explains that fire danger ratings are relative, not absolute, and are location-specific, and that land management agencies estimate fire danger for a given rating area. FEIS Section 4.3.3.1.3 also describes Ellsworth AFB mutual aid agreements with local and regional emergency response agencies, which are activated for any fire, including an unlikely flare-caused fire (See also FEIS Appendix D.)
SA-7	1005, 1037, 1039, 1058, 1060, 1065, 1066, 1070, 1073, 1080, 1083, 1091, 1096, 1100, 1107, 1111, 1116, 1118, 2010, 2018, 2019, 2020, 2021, 2022, 2025, 2035, 2061, 2063, 2068, 2071, 2072, 2073, 2075, 2081, 2085, 2091, 2094, 2096, 2103, 2104, 2106, 2107, 2109, 2113, 2117, 2119, 3003, 3004, 3005, 3010, 3012, 3022, 3023, 3025, 3028, 3039, 3041, 3051, 3052, 3054, 3058, 3061, 3064	Concern for private pilot's safety when they are flying in slow planes with much faster aircraft in the area, including impact from wind vortices. Similar concerns for high-performance GA flying into 3 NM circle airports and/or flying in thunderstorm conditions.	Training B-1 aircraft would use see-and-avoid as well as electronic capabilities to identify general aviation aircraft approaching the B-1's path of flight. FEIS Section 4.1 explains that see-and-avoid procedures are the responsibility of all pilots, including military pilots. Section 4.9 explains that uncertainty regarding low-level overflight and wake vortices could have the potential to affect low-flying aircraft, including highline patrol, pipeline patrol, and crop dusting aircraft. Section 4.3 describes the potential safety risks associated with military training aircraft and impacts from lack of communication. This safety risk is seen as an adverse impact. Section 4.3 describes training aircraft accident rates and safety concerns where worsening weather would require a VFR flight to go IFR but a scheduled MOA would prevent IFR flight. The stacked and additional MOAs are designed to provide for IFR access and training aircraft temporary relocation out of a specific airspace to allow for IFR transit. GA uncertainty about flying into scheduled training airspace is further addressed in AM-1. The random and unpredictable B-1 overflight which could occur at any given location an average of six to nine times per year or more at or below 2,000 feet AGL was seen by pilots at hearings as an adverse impact. (See Section 4.9). The Air Force and FAA would continue coordination to enhance the situational awareness of aircraft operators as to whether PRTC low altitudes MOAs (airspace below 12,000 feet MSL) are active. This may include practices for use of existing data, equipment, and procedures as

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Code	*Letter/Transcript Number*	*Description*	*Response*
			well as integration of advancements in software and/or equipment.
SA-8	2010, 3004, 3042	Concern for pilot's safety while doing frequent wildlife surveys.	DEIS Section 3.1 described the wildlife and wetlands surveys and photography and identifies specific weather conditions and time periods when such surveys would need to occur. Section 4.9 explains the need to coordinate with Ellsworth AFB to deconflict military operations.
SA-9	1002, 1007, 1039, 1045, 1055, 1100, 1108, 2013, 2073, 2079, 2095, 2115, 3003, 3011, 3065	Concern for safety during recreation and ranching.	FEIS Section 4.8.3 explains land use and recreation impacts and describes startle effects upon domestic and ranch animals. Recreation, including parasailing could occur at specific locations. Often these locations are identified on FAA aeronautical charts. Section 4.8 explains that the Air Force would not normally schedule the airspace from Friday noon through Sunday night to support heavy use recreational activities. Recreation can also include camps for youths and adults. The Air Force will work with ranchers and others to identify seasonal avoidance areas. (See Section 2.3.) Section 5.0 discusses recreational cumulative effects.
SA-10	1108, 2016, 2051, 2107, 3012	Aircraft and bird strike safety concern.	FEIS Section 4.3 explains bird-aircraft strike risk and actions taken to reduce risks.
SA-11	1058, 1066, 2020, 3061	Concern for safety if training includes flying lights out.	Training would not be with lights out in the proposed PRTC MOA airspace.
SA-12	1100, 2025, 2026	Concern for the danger of flares on wells and gas pipelines.	FEIS Section 2.8.5, Section 4.3.3.1.3, and Appendix D explain flare release altitude limitations of 2,000 feet AGL. Flares burn out in 500 feet or at 1,500 feet AGL. It would be extremely unlikely that a burning flare would strike the ground at all (see Section 4.3.3.1.3) and even more unlikely that a still-burning flare could fall at any specific location, such as a well.
SA-13	1100, 2026, 3060, 3074	Can chaff and flare use be limited to winter months to avoid peak fire season?	PRTC training requirements are necessary during summer months, but the Air Force would discontinue flare use when the fire rating is very high or extreme. FEIS Section 2.8 describes chaff and flare use, including flare release restrictions. Chaff

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Code	Letter/Transcript Number	Description	Response
			does not burn and does not pose any fire risk.
SA-14	1039, 1043, 1045, 1050, 1052, 1054, 1063, 1079, 1104, 1106, 1108, 2035, 2036, 2056, 2057, 2063, 2082, 2099, 2101, 2103, 2116, 3048	Concern of the health risks of ingesting the chaff and flare debris or from dud flares.	FEIS Section 2.8 and Section 4.3.3 describes the chaff and flare residual materials. Proposed chaff deployment would result in an estimated average of 0.00377 ounces of what is effectively soil per acre per year. Chaff and flare plastic or paper pieces have never been recorded as ingested by animals (see FEIS Appendices C and D). Appendix C explains that airborne chaff does not abrade to respirable particles. During controlled tests, animals rejected eating concentrations of chaff. Chaff fibers are dispersed in the air and upon contact with the ground, break down to become silica and aluminum particles indistinguishable from the composition of soil. The animal fat micro-coating of chaff fibers breaks down when exposed to sunlight. (See Section 4.5.) Section 2.8 describes the extremely low risk of any dud flares (one per three years in the entire airspace).
SA-15	1043, 2041, 3026, 3043, 3075	Concern for safety during cloud-seeding operations or agricultural applications.	FEIS Section 4.1 explains that military training pilots would be briefed where weather modification activity is planned. Information on this weather modification activity would need to be coordinated with the Air Force and the industry. Air Force would use see-and-avoid procedures to work with weather modification activities. (See also responses to SO-2 and SO-28.)
SA-16	2041, 2072, 2077, 3006, 3044, 3048, 3052	Concern with use of countermeasures interfering with radar. How will the 60 NM chaff deployment restriction be applied?	Aircrew pre-flight briefings (see FEIS Section 2.10.4.4) identify avoidance areas and distances for deployment of defensive countermeasures. FEIS Sections 2.3 and 2.8.5.1 describe the chaff deployment restriction relative to FAA radars. Weather radars have the ability or identify and distinguish chaff. FEIS Section 4.3.3.1.2 discusses the deployment of chaff after receiving clearance from FAA Frequency Management Authority.
SA-17	1007, 1009, 1082, 2042	Concern pilots are showing off and flying recklessly.	FEIS Section 2.10 describes the detailed activities required for pilot training and briefings in advance of missions. Pilots are training as they are expected to perform in combat and are not flying recklessly or showing off.

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Code	Letter/Transcript Number	Description	Response
SA-18	2059, 3026, 3043	Most medical flights are above 10,000 feet and may be operating at FL180 to FL250.	FEIS Section 2.3 explains that medical flights would be given priority. Section 4.1 recognizes that medical flights typically are above 10,000 feet MSL. The MOA stratification is designed to permit IFR transit, including emergency flights.
SA-19	1008, 1011, 1043, 1063, 1094, 1096, 1106, 2073, 2074, 3008, 3020, 3026, 3049, 3056, 3068, 3070, 3074, 3075	Concern there isn't adequate communication capabilities when medical or other emergency flights are needed. How will they be given priority?	FEIS Section 2.3 explains that medical flights would continue to be given priority, as they are expedited currently in the existing Powder River MOAs. FEIS Section 4.1.3.1.4 notes that the Air Force currently immediately shift aircraft or end training in the airspace to accommodate emergencies. Also Section 2.3 identifies that MOA segments are designed to permit IFR transit, including for emergency flights. The stacked and additional MOAs are designed to provide for IFR access and would allow training aircraft temporary relocation out of a specific airspace to allow for IFR transit. FEIS Section 4.1.3.1.4 describes the lack of radio coverage and communication within the airspace. Section 2.5 describes the scheduling of the airspace.
SA-20	1072, 1109, 2077, 2140	What are the response measures if an aircraft crashes?	DEIS Section 3.3 described the response measures if an aircraft crashes.
SA-21	1008, 1011, 1094, 1106, 2072, 2077	Concern pipelines won't be checked frequently enough for leaks due to inability to access the airspace.	FEIS Section 2.5 presents the proposed schedule for training airspace activation. Pipeline checks could always be performed below 500 feet AGL or when training airspace was not scheduled. As with any temporary avoidance area, when informed of an activity, the Air Force would work with the entity to avoid the area and/or altitude.
SA-22	1082, 1105, 2080	Concern for increased heart and other health problems for those who live under a flight path.	There is no particular flight path for aircraft training within the airspace. DEIS Section 3.2 described the random nature of flight training activity throughout the airspace. FEIS Section 4.9 describes the calculated six to nine annual average number of overflights for any given location within the airspace, although specific locations could be overflown more or less frequently. Individuals overflown may be annoyed, but there would be no flight paths with individuals regularly overflown.
SA-23	2074	Concern for the sonic boom's effect on	FEIS Section 4.2 describes the overpressure from sonic booms.

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Code	Letter/Transcript Number	Description	Response
		pipelines.	All pipelines are constructed to withstand substantially greater pressures than could possibly be generated by a sonic boom.
SA-24	2084, 3049	Concern of increased risk and inability to avoid towers when training or overflight damage to wind machines.	DEIS Section 3.3 explained that towers are mapped and lighted. Training aircraft identify and avoid all towers during flight operations. Permanent avoidance areas are established for towers. No damage to tall structures or wind machine operations would occur (see Section 3.3.3.3).
SA-25	2096	Concern the additional time pilots will be in the air trying to get around an active MOA will increase safety risks.	Pilots can transit an active MOA using see-and-avoid or receive IFR priority to arrive or depart an airport under an active MOA. FEIS Section 4.3 explains that general aviation unable or unwilling to transit an active MOA using see-and-avoid, unable to communicate for IFR flights, and unwilling to exercise ground hold or reschedule during the time the MOA would not be active could potentially expend up to 4 hours of additional travel time either in ground delay and/or re-routing around an active MOA. If a pilot chose to re-route and fly the additional time, there would be no quantifiable safety effect associated with a non-quantifiable estimate of whether or not a pilot would elect to re-route, ground hold, fly IFR, or fly see-and-avoid. FEIS Section 4.1 also explains that communication capabilities would be available prior to training in a low MOA. VFR pilots unwilling to fly see-and-avoid, ground hold, or reschedule could see any additional flight time as an adverse impact.
SA-26	1046, 2109, 2121, 2084, 3052, 3064	Concern chaff and flare use will create airborne FOD hazards.	There has not been a recorded instance of chaff or flare plastic or paper residual materials damaging an aircraft, even in extensive use training ranges such as Nevada Test and Training Range or Utah Test and Training Range. Chaff fibers, thinner than a human hair, rapidly disperse in the air. Plastic and paper pieces (described in FEIS Appendices C and D) fall to the ground as described in FEIS Section 2.8.
SA-27	1003, 1050, 1058, 1086, 1098, 1104, 1108, 1113, 1117, 2020, 2036, 2084,	Concern for the impacts from Chaff and Flare use on the environment, air quality, and people below. Concern that additional study needs to	FEIS Section 2.8 describes the lifecycle of chaff and flares. Section 4.8 describes the chaff and flare impacts, including residual materials which fall to the ground. FEIS Section 4.6

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Code	Letter/Transcript Number	Description	Response
	2092, 2101, 3056	be done to determine the effects of chaff on animals and humans. Will the Air Force provide chaff and flare education to fire investigators?	describes the extent of distribution of such residual materials. FEIS Appendix C explains that long-term studies to identify chaff have demonstrated that chaff breaks down quickly to particles of aluminum and silica, which are the most common elements in the soil. The degraded chaff particles are effectively indistinguishable from existing soil particles. FEIS Appendix D provides expanded details on flare type, usage, and impacts. As described in Section 2.8 and Section 4.3 of the FEIS, the Air Force will work with local fire departments under the proposed airspace to educate them on chaff and flare deployments and residual materials.
SA-28	1098, 2101	The analysis assumes chaff will be distributed evenly throughout the airspace, is this fact or will it be concentrated within routine training routes? Can the amount of chaff deployed be quantified?	FEIS EIS Section 2.8.5 describes the quantity of chaff deployed and chaff distribution. Chaff is not limited to any specific area. It is used in response to air- and/or ground-based threats. Winds at deployment altitude would disperse chaff fibers which are thinner and lighter than human hair. Aircraft training flights and chaff distribution would be random and not localized.
SO = Socioeconomics			
SO-1	1001, 1009, 1037, 1043, 1045, 1051, 1056, 1082, 1084, 1063, 1069, 1073, 1076, 1086, 1096, 1097, 1098, 1100, 1103, 1104, 1111, 1115, 1119, 2004, 2006, 2011, 2013, 2015, 2021, 2029, 2031, 2036, 2045, 2050, 2054, 2071, 2078, 2080, 2082, 2091, 2092, 2101, 2102, 2106, 2108, 2113, 2121, 3012, 3014, 3043, 3048, 3080	This will decrease home/ranch values. If the military is going to take our land, we should be compensated for it.	As described in FEIS Section 4.9, the presence or absence of training airspace over existing ranches and farms is not considered in land appraisal value within the ROI. (See also SO-19.)
SO-2	1005, 1008, 1011, 1068, 1073, 1083, 1094, 1096,	Spraying crops will be limited or impacted by low-altitude training overflights or wake	FEIS Sections 4.3.3 and 4.9 explains the safety elements associated with wake vortices and crop-spraying aircraft. Section

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Code	Letter/Transcript Number	Description	Response
	1114, 2004, 2015, 2031, 2045, 2059, 2107, 3002, 3004, 3039, 3070	vortices which will have an economic impact on our crops. Would like mitigations during crop spraying months.	4.9 describes the average overflight of any given area. Potential safety risk to agricultural application aircraft is an unavoidable adverse impact. Economic concerns related to agricultural uses are addressed in FEIS Section 4.9.3.1.2; impacts to crop-dusting etc., are discussed in Section 4.8, Land Use.
SO-3	1073, 1082, 2004	Concern the tax base will go down when property tax goes down impacting the regional area.	As described in FEIS Section 4.9, the presence or absence of training airspace over existing ranches and farms is not considered in land appraisal value within the ROI.
SO-4	2006	The quiet and serene environment is part of the value of the land.	FEIS Section 4.2 explains noise consequences. FEIS Section 4.9 describes the estimated average number of times per year a location could experience low-level overflight. Section 4.1 explains that individuals under the existing Powder River A and B MOAs (proposed PR-2) have been startled by low-altitude training aircraft. During hearings, individuals expressed the concern that even infrequent low-altitude overflights, and the uncertainty of such overflights, would have an adverse impact; that impact would be unavoidable.
SO-5	1063, 1096, 1108, 1119, 2010, 2043, 2059, 2063, 2071, 2073, 2095, 3004, 3012, 3020, 3026, 3036, 3043, 3052, 3054, 3058, 3061, 3063, 3068	Concern for the economic impact to the areas that become off limits to pilots, including medical teams.	No areas under the proposed MOAs would become off-limits to civilian pilots. FEIS Section 4.9 explains that emergency flights will be given priority. Different MOA segments facilitate IFR flights through activating or deactivating different MOAs (See Section 4.1.) Section 2.5.1 explains the schedule for flight training. If a MOA or ATCAA were scheduled, civilian aircraft seeking to fly IFR in the airspace or change from VFR to IFR due to weather would contact ATC and the Air Force training aircraft would temporarily use a different MOA. To support IFR flights. Economic concerns about flying VFR through active MOAs are addressed in Section 4.9.3.1.2.
SO-6	1009, 1051, 1096, 2010, 2020, 2044, 2071, 2073, 2094, 2096, 2101, 2117, 3001, 3004, 3008, 3054, 3063, 3074, 3081	Concern for the economic impact to businesses, such as during LFEs, due to people not able to or want to fly to the area.	The Air Force and FAA would continue coordination to develop procedures to handle nonparticipants (i.e., aircraft not participating in MOA training) operating IFR entirely within the PRTC while simultaneously supporting the expeditious completion of the training flight and the return of the affected

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Code	Letter/Transcript Number	Description	Response
			airspace to the NAS. The Air Force does not propose to schedule PRTC during weekends or holidays, which are high GA use. Increased civil aircraft flights at times, such as the beginning of hunting season, would function as described for IFR and VFR flights (see Section 4.1.3.1 for review of IFR and VFR civil flights). Section 2.5 describes the LFE activity and hours when LFE operations would occur. As described in Section 4.1, civil aviation could schedule around the quarterly LFEs conducted 1 to 3 days a quarter, for not more than 10 days per year. During an LFE there could be a period of 2 to 4 hours per day of training. This would not be expected to have a significant impact upon businesses in the area. Hunting and other forms of recreation coexist with military training under the existing Powder River MOAs. Normal flights could occur during LFE days when the airspace was not active. AM-1 addresses the overall need for communication and coordination. For noise effects on hunting see Section 4.9.2. Effects to reservations are discussed in the Cultural (Section 4.7) and Environmental Justice (Section 4.10) sections.
SO-7	1005, 1037, 1046, 1047, 1051, 1056, 1060, 1101, 1107, 1114, 1116, 2004, 2007, 2062, 2071, 2072, 2073, 2094, 2095, 2096, 2108, 2109, 2122, 3005, 3010, 3025, 3026, 3028, 3033, 3037, 3043, 3048, 3050, 3051, 3052, 3054, 3059, 3061, 3063, 3064, 3065, 3073, 3078, 3081	This will increase fuel consumption, increasing costs to private pilots and commercial airlines when they have to fly around the active MOAs. GPS and NexGen radar make Victor airways obsolete.	Civil aircraft flights above FL260 would not be affected by the proposed PRTC. FEIS Section 4.1 explains that there could be increased fuel consumption for civil aviation if a pilot did not schedule around the times of the NOTAM-announced activated airspace, chose not to fly see-and-avoid, could not fly in an inactive MOA segment, or decided to fly IFR around an active MOA. If a pilot chose not to do any of the above actions, an up-to-4-hour delay or re-routing could be seen by civil aviation pilots as an adverse impact (see also response to SO-6 and SO-9). When training airspace was not activated, a pilot's use of GPS for direct VFR flights would not be affected.
SO-8	1006, 1037, 1096, 2004, 3005, 3014, 3020, 3022,	This will cause long delays which will increase costs to civil aviation.	FEIS Section 4.9 explains the extent of delay which could be anticipated if GA elected to not fly see-and-avoid during the

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Code	Letter/Transcript Number	Description	Response
	3026, 3036, 3050, 3052, 3054, 3064, 3068		time period when a MOA was scheduled, were unable to fly IFR, or were unwilling to fly IFR under ATC direction, Table 3.1-7 presents the estimated daily civil operations within the airspace during proposed scheduled training hours. Delays of 2 to 4 hours for those who elected not to fly VFR see-and-avoid and could not fly IFR could be seen as an adverse impact.
SO-9	1009, 1037, 1045, 1056, 1065, 1108, 2014, 2015, 2071, 2082, 2105, 2107, 2108, 2113, 3023, 3026, 3043, 3064, 3065, 3070, 3080	Concern tourism, including hunting and recreation, will decrease when MOAs are in use.	FEIS Section 4.8 explains that hunting and recreation regularly occur under the existing Powder River A and B MOAs (proposed PR-2). MOA activation is not expected to impact tourism, hunting, or recreation, as described in Section 4.8. The mitigations described in FEIS Section 2.3.1 explain avoidance elements of the Little Bighorn Battlefield National Monument. The frequency of low level overflight (2,000 feet AGL or below) is estimated to average 6 to 9 times per year at any given location. In the unlikely event that a hunter or game was startled, the EIS notes that the hunter would likely be annoyed. (See FEIS Section 4.8.) FEIS Section 4.9 describes the potential GA flight delays which could occur as a result of GA pilot decisions when a MOA was scheduled. Air Force training operations would be temporarily adjusted to allow IFR arrival and departures to/from airports beneath PRTC (see FEIS Section 4.1).
SO-10	1006, 1058, 1060, 1063, 1068, 1081, 1095, 2014, 2040, 2059, 2072, 2073, 2074, 2090, 2099, 2117, 3001, 3003, 3005, 3012, 3020, 3023, 3036, 3045, 3052, 3054, 3057, 3061, 3064, 3079, 3080	Concern for the economic impact on regional airports, including future development of airports/airstrips.	FEIS Section 2.3.1 describes military training exclusion areas for public airports under the proposed airspace, which generally are a three-nautical mile circle with an altitude of 1500 feet. FEIS Section 4.3 explains that public airports and private airfields dependent on transient air traffic could be impacted. As a consequence, if an individual chooses not to, or is unable to, fly when the MOA is active, local airport users could experience delays of up to 4 hours. Pilots unable to fly IFR and unable or unwilling to fly VFR in an active MOA could experience an up-to-4-hour delay (see FEIS Section 4.1.3.1.3). The Air Force and FAA would continue coordination to develop procedures to handle those nonparticipants (i.e., aircraft not participating in MOA training) operating IFR entirely within the

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Code	Letter/Transcript Number	Description	Response
			PRTC while simultaneously supporting the expeditious completion of the training flight and the return of the affected airspace to the NAS.
SO-11	1005, 1008, 1011, 1058, 1086, 1094, 2017, 2021, 2078, 3054	Concern for the economic impact this will create on ranchers checking on their animals by plane.	FEIS Section 4.9 describes the average extent of overflight, and Section 2.10 describes the average time when military aircraft would be at altitudes 2,000 feet or below. FEIS Section 2.3 explains that the Air Force would provide for reasonable temporary avoidance when provided information of a ranching activity such as weaning and branding. Ranchers could access NOTAMs to determine when an airspace was active. Individuals who chose not to fly see-and-avoid during the period of a low-level scheduled MOA and could not delay or reschedule their flights to check on animals during the time when the MOA would not be scheduled, see the additional limitation as an adverse impact; that impact is unavoidable.
SO-12	1001, 1083, 1094, 1101, 1104, 2015, 2031, 2048, 2049, 2116, 3002, 3064, 3070	Who do we contact for damage claims? Will claims be handled locally? Ellsworth AFB does not respond to calls.	FEIS Section 4.3 explains that, for example, penned range cattle could be spooked by sudden noise or low-level overflight. FEIS Section 2.12 explains that the Air Force will work with ranchers to establish reasonable avoidance areas. The section also includes the damage claims process which begins by contacting Ellsworth AFB Public Affairs. (See also GE-8.)
SO-13	1001, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033, 1035, 1043, 1055, 1063, 1084, 1096, 1097, 1098, 1099, 1103, 1106, 1109, 1111, 1117, 2015, 2031, 2048, 2071, 2078, 2085, 2086, 2091, 3002, 3035, 3041, 3043,	Concern for the economic impact of animals getting spooked and hurting themselves or others, taking out a fence, reduced fertility, etc. How will we be compensated? Would like mitigation measures in place to avoid round up, birthing areas, finishing enterprises, etc.	FEIS Section 4.3 describes the potential impact to animals and explains that the Air Force will work with ranchers under a variety of circumstances, particularly when provided timely notification, to identify sensitive times and locations to avoid scheduling low-altitude overflight during those times. (See also BI-2.) FEIS Section 4.9 describes the average number of low-level overflight at any given location under the airspace. Low-level overflight is seen as an unavoidable adverse impact without mitigations. FEIS Section 2.12 describes how damage claims would be handled. Mitigations described in FEIS Section 2.3.1 include: "Temporary avoidance areas would be coordinated with ranches to reduce the potential for impact during concentration of range animals for branding, calving,

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Code	Letter/Transcript Number	Description	Response
	3064		weaning, and/or other ranch operation."
SO-14	1004, 1058, 1063, 1101, 2020, 2086, 2101, 2116, 3073	This project is too costly. Who pays for it? How is it a fuel savings for the Air Force if transient aircraft train in the airspace from other bases?	As explained in FEIS Section 2.10, the PRTC airspace provides for substantially improved training with available fuel resources.
SO-15	1005, 1008, 1011, 1094, 1100, 1119, 2025, 2026, 2030, 2061, 2081, 2116, 3039, 3043, 3070	Concern for the economic impact from the inability to perform predator control.	FEIS Section 4.9 describes the average extent of overflight, and Section 2.5 describes the average time when military aircraft would be at altitudes 2,000 feet or below. FEIS Section 2.3 explains that the Air Force coordinate with ranches to identify temporary avoidance areas to reduce the potential for impact during concentration of range animals for branding, calving, weaning, and/or other ranch operation. Ranchers could access NOTAMs to determine when an airspace was active. Individuals who chose not to fly see-and-avoid during the period of a low-level scheduled MOA and could not delay or reschedule their flights during a time when the MOA would not be scheduled, may see the additional limitation as an adverse impact.
SO-16	1008, 1038, 1043, 1063, 1096, 1100, 1113, 2027, 2071, 2078, 2081, 2091	Concern for the economic impact on wool value from chaff or chaff and flare materials.	FEIS Section 2.8 and Appendix C explain that chaff fibers rapidly break down and become the equivalent of soil. Wool processing procedures include methods for cleaning the wool for soil, burrs, or other materials. Chaff particles are indistinguishable from soil, so, in the unlikely event that a chaff particle alighted on a sheep, such particles would be removed along with other materials in the wool cleaning. There is no basis for believing that chaff or flare inert plastic or paper pieces would become attached to sheep or to any other animal. (See FEIS Appendices C and D for relative sizes of the plastic pieces.) The normal procedures for cleaning the wool would clean out any extremely unlikely pieces of chaff or flare residual materials.
SO-17	1005, 1082, 1096, 2035, 2038, 2045, 2059, 2064, 2072, 2074, 2079, 2101, 2116, 3004, 3007, 3008, 3010, 3014, 3029, 3030,	Concern for the impact of future wind farms, oil and gas development, or communications towers.	FEIS Section 4.9 explains that the Air Force would not oppose the development of wind farms which would not impact military readiness or training. Future wind farms approved by FAA would be mapped for flight avoidance. FEIS Section 4.8 explains that the proposed action would not inhibit wind farm development

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	3033, 3044, 3048, 3049, 3054, 3070		under the airspace. Sections 4.9 and 5.0 explain that no impacts to oil and gas development or other surface development would occur from aircraft overflights. Section 2.3 explains that an adopted mitigation would be the avoidance of known blasting operations (see Sections 4.9 and 5.0). Communications towers are designed to withstand wind forces substantially in excess of aircraft wake vortices. Towers are mapped and avoided. (See Section 3.3.) The proposed action does not include any Air Force construction projects under the airspace.
SO-18	2044, 2057, 2080, 2100	Concern that low-level or supersonic flights will damage houses or household items or disrupt lives and sleep.	FEIS Section 4.8 explains that vibration from infrequent sonic booms or an average of 6 to 9 low-level flights per year could vibrate bric-a-brac. Section 2.12 describes the Air Force procedure for damage claims. Sudden overflight or sonic booms during LFEs 1 to 3 days once a quarter for up to 10 days per year could be seen as an adverse impact.
SO-19	2045	More analysis needs to be done on impacts on property values. The document only uses appraisers in Montana.	FEIS Section 4.9 explains that MT, ND, SD, and WY state laws were reviewed to determine the appraisal process for property valuation, and appraisers were interviewed in MT. There are no property appraisal procedures or laws that would affect appraisal processes in any location under the proposed MOA (see Section 4.9.3.1.1). MT was used in the example because much of the existing Powder River A and B MOAs overlie MT.
SO-20	2045	Feedlots/CAFOs have not been adequately identified or considered in economic impacts.	FEIS Section 2.3.1 explains that the Air Force will work with ranchers and farmers to identify noise-sensitive locations and establish reasonable avoidance areas around those locations when they are in use.
SO-21	2045	EIS should explain how landowners and residents have been affected by past training.	FEIS Section 4.8 explains that B-1 training has occurred in Powder River A and B MOAs (proposed PR-2) for decades. Section 4.9 explains that ranch and farm activities as well as recreational activities, including hunting, all occur under the existing MOAs. Impacts have been avoided when seasonal avoidance areas were identified, for example, by ranchers. There is no quantifiable difference among the economic

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
			activities under the existing airspace or the proposed airspace, except that the percentages of ranching and agricultural land uses are somewhat different, and there are no designated urban or tribal areas under the existing airspace. Altitudes and avoidance areas proposed in the Modified Alternatives are designed to reduce effects on these areas. FEIS Section 5.0 describes past, present, and foreseeable actions and discusses cumulative effects.
SO-22	1060, 1105, 1108, 2045, 2059, 3008, 3012, 3023, 3024, 3025, 3033, 3036, 3037, 3051, 3061, 3064, 3078	The EIS does not adequately or accurately discuss regional or national economic impacts.	FEIS Section 4.8 explains that B-1 training has occurred in Powder River A and B MOAs (proposed PR-2) for decades. Section 4.9 explains that ranch and farm activities as well as recreational activities all occur under the MOAs. Public airports and private airfields, as well as energy development, are located under the existing training airspace. There is no substantial difference between the ranching and agricultural land uses under the existing airspace and under the proposed airspace, with the exception that the percentages of ranching and agricultural land uses differ somewhat. (See Section 3.8). The differences between the existing airspace and the proposed airspace are that there are no designated urban or tribal areas under the existing airspace. FEIS Section 4.1.3.1.3 explains that since the vast majority of the commercial jet route traffic is above FL260 and could have been significantly impacted by the higher altitude ATCAA flight training activities, proposed ATCAAs above FL260 were removed from the PRTC proposal.
SO-23	2071	Would like property values of homes in metropolitan areas near airports compared to those outside of flight path.	There are no areas under existing or proposed MOAs where noise levels approach those in metropolitan areas near airports. There are no proposed flight paths over any locations. FEIS Section 4.9 explains the random nature of flight activities within the existing and proposed MOAs. FEIS Section 4.2 explains that there are no areas under the proposed airspace where day-night (DNL) noise levels would approach the noise levels where property values are identified as being affected in metropolitan

Table 1.8–1. Comment and Response Matrix

Code	Letter/Transcript Number	Description	Response
			areas.
SO-24	1058, 1106, 1116, 1118, 2071, 2095, 2098, 2102, 2106, 2107, 2113, 2117, 3065	The economic benefits go to South Dakota and North Dakota but not Montana or Wyoming.	Direct economic benefits from a military installation are primarily experienced by the community or communities nearest the installation. In this case, Ellsworth AFB is located in the northwest part of South Dakota. The existing electronic capabilities are located in South Dakota, Wyoming, and Montana. National defense training requirements, not the distribution of economic benefits, drives the physical configuration and location of the proposed action. FEIS Section 1.0 describes the driving forces behind the purpose and need for the Proposed Action.
SO-25	1003, 1106, 2072, 2124	Concerns about base closure.	The potential for base closure is beyond the scope of this action.
SO-26	2073, 3004, 3012, 3043, 3052	Concern that flight instruction schools will be economically impacted.	FEIS Section 4.9 describes how regional airports would be avoided during B-1 flight training by a three-nautical mile by 1,500-feet avoidance area. If the avoidance areas do not permit flight instruction, students would not be expected to fly see-and-avoid in an active MOA. MOA scheduling information and announcement by NOTAM of MOA activation would help with planning for flight instruction. If the mitigations in FEIS Section 2.3.1 were deemed to be inadequate for flight instruction, operators could see the random low altitude flights as an adverse impact.
SO-27	1119, 2100	Concern if the Sage Grouse is listed as endangered, thousands of people will be put out of business.	DEIS Section 3.6 explained that the greater sage grouse is currently a candidate species. FEIS Section 4.6 explains that human surface activity has been shown to disturb sage grouse leks. Infrequent random overflights or rare sonic booms during LFEs would not be the type of noise that has been demonstrated to affect sage grouse leks.
SO-28	2041, 3006, 3043, 3075	Concern for the economic impact to cloud seeding operations as well as flight safety for VFR and IFR air operations for private and commercial purposes; affecting weather	DEIS Section 3.1 recognized that weather modification flights have to respond rapidly to meteorological conditions. FEIS Section 4.1 explains the mitigation measures for potential impacts to other airspace users. These measures would require

Table 1.8–1. Comment and Response Matrix

Code	*Letter/Transcript Number*	*Description*	*Response*
		modification operations (cloud seeding), crop spraying, and fire suppression throughout the region	increased communication between weather modification entities and the Air Force during scheduled MOA periods. Scheduling of airspace, announcement by NOTAM of activation, and effective communication should reduce impacts to cloud seeding operation, crop spraying, and fire suppression. (See FEIS Sections 4.1, 4.8, and 4.9.)
SO-29	1041	Few problems under airspace. One phone call establishes temporary no-fly zone for ranching operations.	DEIS Section 4.8 explained that aircraft have overflown what is effectively the proposed PR-2 for decades. FEIS Section 2.3.1 explains that the Air Force will continue to work with ranchers to establish avoidance areas.
SO-30	2059	Acreage listed in the agricultural table does not seem accurate.	Values in a Section 3.9 table in the DEIS were misaligned by one row. Table has been corrected in the FEIS.

APPENDIX H
FAA CIRCULARIZATION COMMENTS AND AERONAUTICAL STUDY INPUTS

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APPENDIX H FAA CIRCULARIZATION COMMENTS AND AERONAUTICAL STUDY INPUTS

This appendix contains correspondence submitted from the public to the Federal Aviation Administration (FAA) during the 2014 circularization process. The correspondence to the FAA was a response to an invitation for the public to provide comment on aeronautical impacts in light of the proposed airspace. This material was submitted to the Air Force pursuant to FAA Order 7400.2K, Part 5, Chapter 21, Section 5 and can be found in Letters 1 through 314 of this appendix. It also contains FAA memo, 25 July 2014, Aeronautical Study Consultations, PRTC MOA, 14-AGL-06NR, submitted to the Air Force and labeled as Letter 315 of this appendix. The FAA submitted all public comments from the circularization of the PRTC aeronautical proposal and the agency's summation of consultations on the results of the air traffic aeronautical studies, to the Air Force, as the Air Force's Cooperating Agency on the EIS. The FAA provided this information in keeping with the aeronautical processes of Order 7400.2. None of this information was obtained during or connected to the public comment period required for the Draft EIS. The Air Force has considered the material provided by the FAA in this Appendix and assigned one or more comment response codes using a format similar to the public comment response process reflected in Appendix G. Note that assigned comment response codes for correspondence provided by the public to the FAA are detailed immediately preceding Letter 1, while a separate response matrix is provided for the FAA's summary of aeronautical study consultations immediately before Letter 315. While all submissions were fully considered by the Air Force, only substantive submissions were carried forward for further analysis. The Air Force did not attempt to respond to any comment that discussed the nature of the FAA circularization process or any other issue which falls solely under FAA jurisdiction or oversight. Generally, the Air Force addressed substantive submissions in a collective fashion in order to harmonize interpretation of the inputs, apply codes similar to those used for responding to public comments on the Draft EIS, and otherwise adequately address the submissions in a reasonably efficient manner. By addressing these submissions, the Air Force provides additional information for the public, acts consistent with the spirit of the National Environmental Policy Act (NEPA), and facilitates consideration of the inputs by the decision-maker.

Powder River Circularization Catalogue

Letter Number	*Author*	*Comment Codes*
1	Stephen Robinson	AM-3, AM-12, GE-3, SA-18, SA-19, SO-7
2	Tony Wroter	DO-3, SA-4
3	Jon H (Illegible)	AM-5, AM-6
4	Cory R. Kesle	PN-2, AM-2
5	Jenny E. Haynes	AM-5, AM-6
6	Al Koeizer	PN-2, AM-5
7	Fred Lark	AM-3, AM-6, SA-1, SA-7
8	Jeff Kadlec	SA-1
9	Wade C (Illegible)	PN-2
10	Larry Peason	AM-13, PN-2
11	Melissa Foster	AM-5, AM-6, AM-21, GE-3, PN-4, SA-1, SA-7, SO-5, LU-1
12	Unused	
13	Jim Davis	AM-5, AM-6, AM-20, AM-21, AM-27, BI-4, GE-3, LU-1, LU-3, NO-5, NP-2, NP-3, SA-1, SA-5, SA-7, SA-9, SA-18, SA-25, SO-1
14	Butte County Commissioners	AM-3, SA-1, SA-5, SO-2,
15	True Drilling	AM-5, AM-6, AM-20, AM-21, LU-1, LU-3, SO-7, SO-8
16	Bowman City Commissioners	AM-3, AM-5, AM-12, BI-5, DO-3, PN-5, SA-5
17	Tracy Truit	AM-6, AM-12, BI-3, BI-4, GE-3, GE-9, LU-1, LU-3, PN-2, NA-1, NA-3, NO-2, NO-5, NP-2, SA-1, SA-5, SA-6, SA-9, SA-13, SA-17, SA-20, SO-5, SO-6, SO-27
18	Dane Castleberry	NO-5, PN-2, SA-1, SA-5, SA-19
19	Jessica Wuertzer	BI-4, LU-1, LU-2, LU-3, NO-2, NO-5, NO-10, SA-5, SA-6, SA-9, SA-13
20	James H. Bragg	AM-3, AM-6, AM-12, BI-5, NO-1, PN-2, PN-4, SA-5, SO-6
21	North Dakota Atmospheric Resource Board (Darin Langerud)	AM-13, SA-15, SA-16, SO-2, SO-28
22	North Dakota Aeronautics Commission	AM-3, AM-5, AM-6, AM-12, AM-13, PN-3, PN-4, SA-7, SA-15, SA-19, SO-5, SO-7, SO-26, SO-28
23	Baker Municipal Airport Commission (Roger Meggers)	AM-1, AM-5, AM-6, AM-12, AM-21, BI-1, GE-2, GE-3, GE-16, LU-1, LU-2, LU-3, NP-2, NP-11, PN-2, PN-3, PN-4, SA-1, SA-5, SA-6, SA-7, SA-9, SO-4, SO-5, SO-10, SO-17
24	Perkins County Board of Commissioners (Sylvia Chapman)	AM-5, AM-6, EJ-2, GE-2, GE-7, GE-9, LU-3, NP-6, NP-11, PN-2, SA-5, SO-7, SO-17, SO-19,
25	Bowman County Airport Authority Supervisors	AM-1, AM-5, AM-13, AM-21, AM-33, BI-5, LU-4, LU-5, SA-5, SA-6, SA-14, SA-15, SA-18, SA-19, SO-5, SO-6, SO-8, SO-9, SO-10, SO-15, SO-20, SO-28

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Letter Number	*Author*	*Comment Codes*
26	Meade County Commissioners (Alan Aker)	AM-5, AM-6, AM-14, GE-9, SA-5, SO-5
27	Scott Bachmeier	AM-06, AM-33, BI-4, LU-5, PN-2, PN-4, SA-8, SA-13, SA-18, SO-2, SO-17
28	Bowman North Dakota Rural Fire Department	PN-2, SA-1, SA-5, SA-19
29	NDAC (Rod Brekken)	AM-1, AM-3, AM-6, SO-2, SO-5, SO-28, SO-36
30	J. Robert Rusley	AM-5, BI-4, BI-5, GE-5, GE-9, LU-2, NO-5, PN-2, SA-5, SA-14, SA-19, SA-27, SO-1, SO-16
31	Robert Rusley	LU-3, PN-2, SA-12, SA-14, SO-2, SO-5, SO-12, SO-13, SO-17
32	Wilma Rusley	BI-2, BI-4, GE-2, GE-8, LU-1, LU-2, PN-2, SA-5, SA-14, SA-19, SO-2, SO-4, SO-5, SO-10, SO-17
33	R-CALF (Bill Bullard)	BI-1, BI-2, BI-4, LU-3, SA-5, SO-13
34	Carl A. Bolick	GE-2
35	Dale Edlund	GE-2, PN-3
35.1	EAA (Jonathan Harger)	Extension Request
36	Adams County Commission	GE-2, LU-1, SA-19, SO-4, SO-5
37	Essential Air Service Task Force (John Rabenberg)	AM-3, AM-5, SO-5
38	Lang & Sons (Jerry Lang)	AM-20, AM-21, BI-2, BI-4, GE-2, GE-10, PN-2, SA-1, SA-7, SA-19, SA-25, SO-7, SO-8, SO-10, SO-17
39	Max (Illegible)	AM-3, AM-5, AM-6, BI-5, PN-2, PN-4, SA-1, SA-5, SA-14, SO-24, SO-28
40	Robert Roswick	AM-3, AM-8, AM-12, GE-2, PN-2, SA-1, SA-19, SO-5
41	Illegible	AM-3, AM-6, AM-12, BI-5, LU-9, PN-4, SA-1, SA-7, SA-5, SA-6, SA-14, SO-9, SO-24, SO-28
42	John Tronstad	BI-3, BI-8, LU-1, PN-3, SA-1, SA-20, SO-1, SO-4, SO-5
43	Miles Cahoon	AM-6, AM-16, AM-20, GE-2, GE-14, SA-7, SA-25, SO-7
44	Marc Taylor	GE-2, SA-1, SA-7, PN-2, SO-8
45	Henry Esp	AM-4, AM-5, AM-6, SA-1, SO-11
46	Donalee Schmidt	GE-2, GE-7, SA-1, SA-8, SO-11
47	William & Sarah Brindley	AM-12, AM-20, GE-2, GE-9, GE-14, PN-3, SA-1, SA-3, SA-7, SA-25, SO-5, SO-11, SO-14
48	United Energy Corporation (Loren R. Kopseng)	AM-3, AM-5, AM-6, GE-3, SO-17
49	Richard Belgrad	AQ-1, AQ-5, NA-1, NA-2, NA-4, NA-5, NA-7, NO-1, NO-2, NO-5, NO-5, NO-10, SA-1, SA-20
50	Jeffrey Meyer	PN-2, SO-22
51	Bowman County Development Corp (Teran Doerr)	AM-1, AM-3, AM-5, AM-6, AM-20, AM-21, PN-4, SA-23, SO-8, SO-17, SO-28

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Letter Number	*Author*	*Comment Codes*
52	Jody Hoff	AM-6
53	ASI Industrial (Robert Hamlin)	AM-20, GE-2, SA-25, SO-7
54	Rodney Schaaf	AM-5, AM-6, PN-2, PN-4, SO-5
55	Loren R. Kopseng	AM-6, SO-5, SO-7
56	Recreational Aviation Foundation (John McKenna)	AM-5, GE-2, GE-3, PN-2, SO-5, SO-7
57	Gary Martin	AM-14, BI-1, BI-2, BI-3, GE-2, LU-7, NO-2, NO-5, PN-4, SA-1, SA-7, SA-20, SO-12, SO-24
58	Talbot Township Supervisors	AM-3, AM-6, DO-3, PN-4, SO-17
59	Craig Stebbins	AM-6, AM-9, SA-7, SO-5, SO-6, SO-26
60	Donald A. Morrison	PN-1, PN-2, PN-3
61	Pennington Co. Board of Commissioners (Lyndell Petersen)	GE-1, PN-1
62	Milton L. Amsden	GE-1
63	Douglas McDuff	GE-1
63.1	Tyler Thompson	GE-2, PN-3, PN-6
64	Unused	
65.1	Ed Aulser	NA-1
65A	Roger Meggers	Not Within Scope
66	Brian Dunlop	AM-5, DO-1, PN-3, SO-9
67	Unused	
68	Rod Brekken	NP-5, NP-8
69	TransCanada Keystone XL (F.J. (Rick) Perkins)	CM-1, SA-12, SA-21, SA-23, SO-17
70	Montana/North Dakota/Wyoming Aeronautics	Extension Request
71	Lex Len(illegible)	GE-2
72	Ron Lundquist	AM-1, AM-3, AM-21, DO-3, PN-4
73	Robert Hollister	AM-1, AM-12, AM-20, NO-2, NO-5, PN-2, SA-1, SA-7 SA-25, SO-5, SO-7, SO-8
74	Bowman County Commissioners	AM-1, AM-3, AM-5, DO-3, PN-4, SA-7, SA-21, SO-7, SO-10
75	Jamie Bryn	DO-3, DO-4, PN-4, SA-1, SA-7
76	Aviaton Organizations of Montana (Marilyn Hollister)	AM-3, AM-4, AM-21, GE-3, SA-4, SA-7, SA-18, SA-19, SO-5, SO-11, SO-21
77	Monte Reder	SA-8, SA-15, SO-2, SO-20, SO-28

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Letter Number	*Author*	*Comment Codes*
78	Everett & Viola Mitchell	AM-6, PN-2, SA-1, SA-9, SO-7, SO-8, SO-17
79	Jason Rittal	NP-2, NP-5, NP-8, SO-5, SO-10, SO-22
80	Greg Bach	AM-6
81	City of Bowman (Lyn James)	PN-2, PN-4
82	Jerry Dehaaf	AM-3, AM-6, AM-12, BI-5, LU-9, PN-4, SA-1, SA-5, SA-6, SA-7, SA-14, SO-9, SO-24, SO-28
83	David Helland	AM-5, SA-1
84	Dennis White	AM-6, PN-2, SO-11
85	Mike Choat	AM-6, AM-9, GE-3, PN-3
86	Steve Barbour	AM-1, SA-7
87	Weather Modification Inc. (Hans Ahlness)	SO-28
88	Baker Municipal Airport (Roger Meggers)	AM-3, AM-5, AM-6, AM-21, GE-2, PN-2, SO-10, SO-17, SO-26
89	Tom Barber	AM-20, AM-21, PN-4, PN-5, SO-11, SO-13, SO-15, SO-20
90	Michael Olauson	AM-6
91	Murill Halvorson	AM-5, AM-6
92	Roger Foster	LU-5
93	Nathan Schroht	AM-5
94	Tim Conway	SA-1, SO-5, SO-24
95	Tyler S. Reed	SA-1
96	Gary J. Martin	SA-1
97	Bentz (Illegible)	SA-1
98	Lindsay Brown	PN-3, SA-1, SO-24
99	Rosemary Hall	AM-6, SO-24
100	Unused	
101	Jim Sheffels	AM-9, PN-2, PN-3
102	Marc Taylor	AM-3, AM-6, AM-20, AM-21, SA-19, SO-7
103	Lucas Locke	AM-7, AM-20, BI-5, SA-1, SA-7, SO-24
104	Everett & Viola Mitchell	LU-2, PN-2, SA-1
105	NBAA (Robert G. Lambough)	AM-6, AM-12, AM-21, GE-5, SO-7, SA-19
106	Darrel Pittman	AM-3, AM-6, AM-12, GE-3, PN-2, PN-4, SO-6, SO-14, SO-25
107	Steven Vold	AM-20, BI-4, BI-5, PN-5, SA-25, SO-22
108	Bowman County Airport Authority	AM-3, AM-13, AM-21, AM-33, BI-4, BI-5, SA-7, SA-19, SO-5, SO-6, SO-7, SO-9, SO-10
109	Lewistown Municipal Airport (Jerry Moline)	GE-2

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Letter Number	*Author*	*Comment Codes*
110	Christina Craine	AM-3, AM-6, AM-14, PN-2, SO-2, SO-7
111	Andrew Galen	SA-1
112	Daniel Sorcison	SA-1
113	Karen Frank-Plumlee	PN-2, SA-12
114	Ed Aulser	AM-6
115	Michael D. Ferguson	AM-3, AM-5, PN-2, SO-6, SO-9, SO-10
116	Betty Mill	AM-14, AM-27, BI-4, BI-5, PN-2, SA-19
117	Marvin & Irene Kammerer	AM-6, BI-3, LU-3, PN-3
118	Gene Davis	BI-4, PN-2, PN-5
119	Omer Krueger	SA-9
120	Cindy Painter	BI-4, DO-3, SA-7
120.1	Joe Painter	BI-4, DO-3, SA-7
121	Joey Painter	BI-3, BI-4, DO-3
122	Laverne Hellyer	NO-2, SO-1
123	Mitchell's Oil Field Service (Dennis Twedt)	AM-14, BI-4, SA-19
124	Anita Lee	AM-33, GE-8, SA-7, SO-2, SO-13
125	Glenn Gay	BI-4, SA-9, SO-21
126	Wade Sikorski	BI-4
127	Shawn Dobberstein	NP-8
128	Rodney Schaaf	AM-14, BI-5, CM-4, DO-3, GE-8, NO-5, PN-5, SA-7, SA-19, SO-5, SO-6
129	Ken & Doris Bone	AM-12, BI-4, GE-8, NO-2, NO-5, PN-5
130	Alex Collins Jr.	BI-4
131	Austin Risty	AM-5, AM-6, LU-3, SA-1
132	Slope County Commissioners	AM-6, LU-3, PN-2, SA-19
133	Havre Flying Club	AM-6, BI-4
134	Vaughn Meyer	AM-5, AM-6, LU-3, SA-1
135	Bowman Area Chamber of Commerce	AM-5, AM-6, AM-33, SA-7, SA-14, SA-18, SA-19, SO-6, SO-9, SO-10, SO-11, SO-17, SO-28
136	Todd A. Schwarz / Grant County Commissioners	AM-6, BI-4, LU-3, SA-1, SA-19
137	Baker Air Service (Roger Meggers)	AM-3, AM-5, AM-6, AM-21, BI-4, GE-3, GE-5, PN-2, PN-3, SA-1, SA-5, SA-7, SA-11, SA-16, SA-20, SA-21, SO-5, SO-6, SO-7, SO-9, SO-10, SO-14, SO-17, SO-24, SO-27
138	Norma J. Kraemer	AM-3, GE-3, PN-3, SA-1, SA-5, SA-20, SO-5
141	True Drilling Co. (James Bergslien)	GE-5, SO-5, SO-6, SO-7

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Letter Number	*Author*	*Comment Codes*
142	Fallon County Commissioners	AM-3, BI-3, NO-2, SA-5, SA-19
143	Crescent Cross Ranch (William D. Lane)	AM-3, AM-12, AM-14, AM-21, AM-33, SA-5
144	Rodney Schaaf	AM-12, PN-2, PN-4, SO-5, SO-6
145	Marvin & Sharon Gookin	AM-12, BI-4, SO-6, SO-12
146	Bottom Line Aviation (Brent Kline)	AM-12, DO-4, PN-2, PN-4, SO-5, SO-6
147	Eugene Miller	AM-12, DO-4, PN-2, PN-4, SO-5, SO-6
148	Brian Dilse	AM-12, DO-4, PN-2, PN-4, SO-5, SO-6
149	Craig Erickson	AM-12, DO-4, PN-2, PN-4, SO-5, SO-6
150	Douglas Cope	AM-12, DO-4, PN-2, PN-4, SO-5, SO-6
151	Shawn Larkin	AM-12, DO-4, PN-2, PN-4, SO-5, SO-6
152	Bruce Hayes	AM-12, DO-4, PN-2, PN-4, SO-5, SO-6
153	Ken Hayes	AM-12, DO-4, PN-2, PN-4, SO-5, SO-6
154	Tyson Symanowski	AM-12, DO-4, PN-2, PN-4, SO-5, SO-6
155	Kevin Symanowski	AM-12, DO-4, PN-2, PN-4, SO-5, SO-6
156	Dave Helland	AM-12, DO-4, PN-2, PN-4, SO-5, SO-6
157	Bob Waller	AM-12, DO-4, PN-2, PN-4, SO-5, SO-6
158	Ted D. Dilse	AM-12, DO-4, PN-2, PN-4, SO-5, SO-6
159	Chad Nelson	AM-12, DO-4, PN-2, PN-4, SO-5, SO-6
160	Matthew Kammerer	AM-6, PN-5, PN-7
161	Carter County Commissioners	AM-3, SA-5, SA-19
162	Fulton Castleberry	AM-5
163	Bismark Aero Center (Bob Simmers)	AM-3, SA-19
164	Brosz Engineering Inc (Gary Brennan)	AM-5, DO-3, SA-19, SO-5, SO-7
165	Larry Nelson	DO-4, SA-7
166	Jack Dalrymple	DO-3, DO-4, GE-5
167	Larry Gebhardt	AM-3, AM-4, AM-6, AM-12, DO-3
168	Montana Petroleum Association (David A. Galt)	AM-5, AM-6, AM-12, AM-20, AM-21, BI-3, SA-7
169	Wagner Law Firm (Michael L. Wagner)	AM-6
170	Delbert Dinstel	GE-2, GE-16, PN-2, PN-3, SA-1, SA-7, SO-15, SO-24
171	Dean & Delia Johnson	GE-2, GE-3, LU-3, SA-1, SA-7, SA-19, SA-21, SO-5, SO-15
172	James H. Bowers	AM-3, GE-2, PN-2, SA-19

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Letter Number	*Author*	*Comment Codes*
173	Exec Air Montana (Dan Norhton)	AM-6, GE-2, SO-5
174	Executive Air Taxi Corp (Craig Goeden)	AM-6, AM-20, AM-21, SO-5, SO-7, SO-8
175	Vicki Danhof	AM-6, AM-17, SA-1, SO-5, SO-6
176	Unused	
177	Helena Airports District Office (David S. Stelling)	AM-3, AM-13, LU-2, SA-7, SA-19, SO-2, SO-5, SO-6, SO-7, SO-8, SO-10, SO-26
178	Leland Blatter	GE-5, PN-2, SA-11
179	William Hurd	AM-6, GE-2, PN-2, PN-3, SO-26
180	Robert D. Lipscomb	AM-6, GE-3, GE-5, GE-6, SA-11, SA-21, SO-5, SO-6, SO-7, SO-8, SO-10, SO-24
181	James Booth	GE-2, SA-1
182	Bob Wiese	AM-1, AM-3, SA-1, SA-7, SA-19
183	Unused	
184	Bailey J. Egan	AM-3, GE-3, GE-5, PN-3, SA-5, SA-1, SA-6, SO-1, SO-4, SO-7, SO-8
185	Unused	
186	Virginia Haenhe	BI-4, GE-2, SA-5, SA-6, SO-8
187	Unused	
188	Wayne and Susan Nelson	BI-4, SA-1, SA-5, SA-6, SA-8, SA-18, SA-19, SA-21, SO-8, SO-10
189	True Drilling, Inc (John Campbell)	GE-5, SA-7, SA-21, SO-5, SO-7, SO-24
190	Frank Stoltz	AM-19, GE-2
191	Air Dakota Flite (Charles Q. Lindquist)	AM-5, AM-12, CM-4, SA-1, SA-7, SA-8, SA-18, SO-2, SO-5, SO-17- SO-26, SO-28
192	Douglas G. Grant	BI-4, SA-1, SO-5, SO-9
193	Rod Kelly	AM-5, SO-10, SO-11
194	Jeff Faught	AM-3, AM-5, SA-1, SA-8, SO-10
195	Mountain Air Insurance Services (Ken Brion)	AM-6, SO-10
196	Airport Association of North Dakota (Timothy J. Thorsen)	AM-1, AM-3, AM-5, AM-12, SA-1, SO-2, SO-7, SO-8, SO-10, SO-26, SO-28
197	David & Benjamin Kragnes	AM-6, SA-7, SO-2, SO-5
198	Sylvia Lambert	GE-2, SA-9, SO-13
199	Roger Meggers	GE-3, SO-10, SO-14, SO-24
200	Robert J. Miller	AM-3, SA-3, SA-7, SO-7, SO-10, SO-13
201	Roger Meggers	AM-3, GE-5
202	Robert Shropshire	AM-6, AM-21, SO-5, SO-10

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Letter Number	*Author*	*Comment Codes*
203	Montana Pilots Association (Scott Newpower)	AM-6, PN-2, PN-6, SA-21, SO-5, SO-10, SO-17
204	Forrest D. Lanchbury	AM-12, DO-4, PN-2, PN-4, SO-5, SO-6
205	Bismark Air Medical (Frank Appert)	AM-6, SA-19, SO-5
206	Bismark Airport (Gregory B. Haug)	AM-3, AM-5, AM-6, DO-4, PN-3, SA-19, SO-5
207	Darin Meggers	AM-3, DO-3, PN-2, PN-3 SA-1, SA-20
208	Chuck Christman	GO-2, SA-19, SO-5, SO-6, SO-11
300	Aircraft Owners and Pilots Association (Melissa McCaffrey)	AM-3, AM-5, AM-6, AM-34, PN-5, SO-26
301	Bureau of Land Management (James A. Albano)	Extension Request to FAA
302	Department of the Interior (Elaine Raper)	AM-3, AM-6, AM-12, AM-26, AM-27, AM-33, PN-2, SA-1, SA-5, SA-7, SA-19, SA-27, SO-5
303	Governor of Montana (Steve Bullock)	AM-1, AM-3, AM-5, AM-6, AM-12, DO-3, DO-4, PN-2, PN-3, SA-4, SA-7, SA-18, SA-19, SA-25, SO-2, SO-5, SO-10, SO-17, SO-26
304	Unused	
305	North Dakota Stockmen's Association (Jason Zahn)	AM-3, BI-1, BI-2, BI-4, SA-5, SA-6, SA-9, SO-2, SO-5, SO-11
306	Unused	
307	Fallon Medical Complex	SA-19, SO-5
308	David Niemi	GE-2, SA-6, SA-8, SA-9, SO-16
309	Forest Service (for Daniel J. Jiron)	AM-12, AM-32, AM-33, BI-8, CU-2, CU-5, SA-5, SA-6, SO-9, SO-27
310	Terry D. Welander	AM-6, PN-3
311	Southwest Healthcare Services (Becky Hansen)	SA-1, SA-5, SA-18, SA-19
312	US Senate - North Dakota (John Hoeven)	AM-3, AM-6, AM-21, SA-15, SA-19, SO-28
313	Experimental Aircraft Association (Jonathan Harger)	AM-1, AM-3, AM-6, AM-12 AM-34, PN-5
314	Baker Municipal Airport (Roger Meggers)	AM-3, SA-1, SO-10
315	Federal Aviation Administration (Dr. John Witucki)	AM-1, AM-5, AM-6, AM-12

Comment and Response Matrix

Code	Description	Response
AM = Airspace Management		
AM-1	Concern about coordination between the Air Force and the FAA for the recall of military aircraft from the airspace as necessary in a timely manner.	As explained in DEIS and the FEIS Section 1.5, the FAA is a cooperating agency and will make decisions regarding airspace establishment. FEIS Section 2.3.1 describes mitigations associated with the scheduling of the airspace. The Air Force will establish procedures acceptable to the FAA to recall military aircraft from the airspace prior to the Air Force operating in the proposed Low MOAs. Military aircraft would be recalled in a timely manner for a number of reasons such as IFR arrivals and departures to airports within the airspace, as well as to support emergencies.
AM-2	Concern about impacts from increases in military air traffic from Ellsworth AFB to the proposed airspace.	As described in FEIS Section 2.5.2, the increased size availability of a local training airspace would allow an increase in training activity; however, total flight operations would not be expected to exceed those analyzed and published (12,000) in the 2008 Ellsworth AFB Air Installation Compatible Use Zone (AICUZ) Study, which is available on the Ellsworth AFB website (http://www.ellsworth.af.mil/shared/media/document/AFD-090428-076.pdf).
AM-3	Concern for the lack of radio and radar coverage and communication. Can the Air Force work with the FAA to place radio and radar equipment? Concern regarding the uncertainty of low-level flights.	FEIS Section 4.1 acknowledges the limitations of radio communication and radar coverage within the airspace. FEIS Section 2.3.1 describes the scheduling of the airspace. The Air Force acknowledges that limited radio and navigation coverage exists in many of the areas proposed for the PRTC and is committed to not schedule low MOAs until adequate communication to withdraw a training aircraft is established. To partially address this concern, the Air Force will coordinate with FAA to establish procedures to announce to other aircraft when military aircraft enter or exit training airspace below 12,000 feet MSL and to monitor other aircraft transmissions when operating below 12,000 feet MSL during non-LFE training. The Air Force and FAA will continue coordination to enhance the situational awareness of aircraft operators as to whether PRTC low altitudes MOAs (airspace below 12,000 feet MSL) are active. This may include practices for use of existing data, equipment, and procedures as well as integration of advancements in software and/or equipment.

Comment and Response Matrix

Code	*Description*	*Response*
AM-4	Concern that not all of the airports and airfields are identified in the Draft EIS-particularly the Black Hills Airport. Concern that not all of the registered aircraft are accounted for in the Draft EIS data and that not all of the flights are accounted for in the analysis.	FAA sectional aeronautical charts for Cheyenne and Billings, which encompass the proposed airspace, were used to identify public airports and private airfields under the proposed airspace. Airports or airfields which were not recognized on FAA charts are not included in the analysis. DEIS Section 3.1 included public airports, including the Black Hills Airport, and private airfields. Airport operations reported to the FAA are included in the impact analysis.
AM-5	Concern that the airspace will impact airport access and the setback distances are not adequate to support major airports on the edge of the airspace. Suggestions to expand the setback distances or apply setback distances to airports under the airspace.	FEIS Section 2.3.1 explains the mitigations incorporated to adjust MOA boundaries, activation of PR-1A and PR-1C High MOAs and ATCAAs only during LFEs, distance setbacks for other commercial airports, and setbacks on a Victor airway to support access and transit of the airspace. MOA and ATCAA scheduling, setback distances allow for preferred civil aviation climb or descent rates. As described in FEIS Section 2.3.1 and in accordance with FAA Order 7400.2K, the Air Force will avoid private airfields by 1,000 feet AGL and 1NM radius and public airports by 1,500 feet AGL and three NM radius.
AM-6	Concern the airspace is a large area that will be blocked off to civilian aircraft access and will impact general and commercial aviation. Concern the size of the airspace and proposed times of use are excessive for Air Force purposes. Suggestions for additional review and coordination with communities and agencies.	DEIS Sections 1.2 and 1.3 described the reason for the airspace to provide the best training for aircrews, and FEIS Section 4.1 acknowledges that the airspace will impact general aviation and commercial aviation. As described in FEIS Section 2.0, the full extent of the proposed airspace would be active for LFEs. During non-LFE times the Gap MOAs/ATCAAs would not be active. FEIS Section 2.3.1 explains that the ATCAAs would be capped at FL260 and that advance scheduling of airspace and announcement by NOTAM of MOA activation would allow near real-time information to be available.
AM-7	Is the Air Force going to fly lights off at night? This would prevent VFR access.	The proposed airspace does not include lights out night training in the existing or proposed MOAs.
AM-8	Do you fly with transponders or use methods to electronically see other aircraft?	Bomber aircraft have transponders. B-1 aircraft do not have equipment to electronically see other aircraft.
AM-9	Is this going to become restricted airspace?	This proposal does not include the creation of restricted airspace. The Air Force is only considering the creation of Military Operations Areas and Air Traffic Control Assigned Airspace as described in FEIS Sections 2.4 through 2.7.
AM-10	Comment response code not used.	

Comment and Response Matrix

Code	Description	Response
AM-11	Concern that the proposed activities would be more appropriately conducted in a Restricted Area.	There is no proposal for restricted airspace, and B-1s currently train in the Powder River MOAs and associated ATCAAs. DEIS Section 1.3 explained why the local MOA and ATCAA airspaces are needed, and DEIS Section 2.3 presented the detailed alternative screening process for the airspace. DEIS Section 1.2 explained that training locations with restricted airspace would continue to be used for specific military training missions.
AM-12	How will people know when the airspace is hot? How much notice will be given? How will it be scheduled? The Air Force has taken all the flexibility at the expense of civil aviation. The NOTAM system is inadequate. Requests for prior notice of LFEs or training flights in specific areas.	FEIS Section 2.3.1 explains that there would be airspace advance scheduling and 2-hour NOTAM activation allows near real time information. The NOTAM system is the way FAA communicates with civil aviation. Quarterly LFE exercises of one to three days would be scheduled at least 30 days in advance. IFR flights would be accommodated by using the stacked MOAs. Pilots who elected to not fly see-and-avoid through a scheduled airspace or were required to fly weather IFR or other IFR could see an inability to obtain unrestricted access as an adverse impact. The Air Force will continue to coordinate with FAA to support procedures to announce to other aircraft when military aircraft enter or exit training airspace below 12,000 feet MSL and to monitor other aircraft transmissions when operating below 12,000 feet MSL during non-LFE training. The Air Force and FAA would continue coordination to enhance the situational awareness of aircraft operators as to whether PRTC low altitudes MOAs (airspace below 12,000 feet MSL) are active. This may include practices for use of existing data, equipment, and procedures as well as integration of advancements in software and/or equipment.
AM-13	Concern for the inability to fly IFR while the MOA is activated to conduct cloud seeding operations. Would like the Air Force to train in PR-3 in morning block.	FEIS Section 4.9.3.1.2 describes cloud-seeding coordination requirements. The Air Force would coordinate with the North Dakota Atmospheric Resource Board to establish procedures whereby Air Force training requirements and weather modification operations can be mutually compatible.
AM-14	Concern aircraft are flying below 500 feet and people are being 'buzzed'. What kind of enforcement is available?	The B-1 has an altitude setting capability which established terrain following at specific altitudes. The terrain-following capabilities are tested prior to B-1 launch to ensure that the aircraft fly at the set altitudes. As described in DEIS Section 1.4, low-altitude proficiency training for terrain-following flights would occur down to 500 feet AGL. Should an aircraft be reported as flying below the authorized altitude, recent aircraft data can be reviewed to determine deviations and appropriate corrective actions can be taken.

Comment and Response Matrix

Code	*Description*	*Response*
AM-15	Concern people's buildings are being used as targets.	As described in FEIS Section 2.3, the Air Force avoids low-level overflight of ranches and residences as noted in the Powder River Training Complex Briefing Guide, 14 February 2011, which is required reading for every military user of the Powder River MOA prior to each flight.
AM-16	Concern that the proposal makes provisions for Victor airways which are being phased out in favor of point-to-point navigation. Proposal needs to consider point-to-point navigation impacts.	Civil aircraft regularly use GPS for point-to-point navigation. GPS point to point VFR could continue to fly see and avoid. Training in an active MOA would be adjusted to support IFR transit and IFR arrivals and departures to airports under the proposed airspace. The Air Force and FAA would continue coordination to develop procedures to handle those nonparticipants (i.e., aircraft not participating in MOA training) operating IFR entirely within the PRTC while simultaneously supporting the expeditious completion of the training flight and the return of the affected airspace to the NAS.
AM-17	There is no discussion of Remotely Piloted Aircraft.	There are no proposed remotely-piloted aircraft (RPA) associated with PRTC action. No RPA aircraft would be based out of Ellsworth AFB. The RPA personnel based at Ellsworth AFB operate RPA remotely through satellites.
AM-18	Comment response code not used.	
AM-19	The DEIS does not consider other aircraft in the area such as hot air balloons, paragliders, and other small aircraft. It also does not discuss other users who do not reside within or adjacent to the proposed airspace.	DEIS Section 4.1 explained that other light aircraft and paragliding occurs within the area. Frequently, such recreational activity occurs during weekends when B-1s would not normally be training. DEIS Section 4.1.3.1.3 described the airports on the periphery of the proposed PRTC. DEIS and FEIS Section 3.1 contain FAA-documented air traffic use through the airspace during the times the proposed airspace would be active. This includes local flights and transient users who do not reside in, or adjacent to, the proposed airspace. As noted in FEIS Section 4.1, all flight activity, including FAA IFR information, public airports and private airfields, was used to explain potential impacts. Section 4.9 considers other users of the airspace.

Comment and Response Matrix

Code	Description	Response
AM-20	Will corridors be open 24 hours a day to allow VFR and IFR traffic? Suggestions for non-military corridors are created separate by altitude for different classes of aircraft use.	FEIS Section 3.1.3.4.1 describes the Victor airways and explains that Victor airways would be avoided during day-to-day training and be open 24 hours a day to allow IFR traffic. VFR traffic could use the Victor airways or fly see-and-avoid in an active MOA. During LFEs, from one to three days per quarter for up to ten days per year, Gap MOAs and ATCAAs would be activated an estimated four hours per day. IFR traffic could not be routed through an active MOA. The high and low MOAs would permit IFR routing by adjusting training aircraft operations in the airspaces.
AM-21	Concern that IFR traffic would not be permitted through the airspace when active. Concern that commercial and GA traffic would have to avoid the airspace while it is active and have to re-route to destination. The corridors do little to mitigate the impacts to airports and GA.	FEIS Section 2.3 explains that the proposed ATCAA ceiling is lowered from FL600 to FL260 and that there would be airspace advance scheduling and NOTAM activation to allow for near real time information. The NOTAM system is the way FAA communicates with civil aviation. Section 4.1 explains that IFR and VFR traffic can operate on the Victor airways. VFR can fly see-and-avoid through an active MOA. IFR traffic could not fly in an active MOA. The Air Force would work with ATC to adjust operations to accommodate IFR traffic. IFR flights would be accommodated by using the stacked MOAs for training aircraft. Quarterly LFE exercises of one to three days would be scheduled at least 30 days in advance. The Air Force will continue to coordinate with FAA to support procedures to announce to other aircraft when military aircraft enter or exit training airspace below 12,000 feet MSL and to monitor other aircraft transmissions when operating below 12,000 feet MSL during non-LFE training. The Air Force and FAA would continue coordination to develop procedures to handle those nonparticipants (i.e., aircraft not participating in MOA training) operating IFR entirely within the PRTC while simultaneously supporting the expeditious completion of the training flight and the return of the affected airspace to the NAS.
AM-22	Wants to ensure the airspace approved is charted.	FEIS Section 1.6 explains that FAA will make decisions regarding airspace establishment. The FAA will be responsible for charting the approved airspace in accordance with FAA processes (see FEIS Section 2.12) and applicable regulations.
AM-23	Comment response code not used.	

Comment and Response Matrix

Code	*Description*	*Response*
AM-24	Aircraft avoidance area above 2,000 feet above the Little Bighorn Battlefield National Monument is voluntary.	At the request of the National Park Service, the Little Bighorn Battlefield National Monument will be avoided by low-level flights (below 5,000 feet AGL) from one hour before to one hour after posted hours of operation and at other times as arranged. Supersonic flight would not be authorized in the proposed PR-1C airspace to reduce even remote possibilities of sonic booms at the National Monument.
AM-25	Why is the Air Force training with countermeasures particularly in the context of the current conflict and Al Qaeda's capabilities?	B-1 and B-52 aircrews train with all capabilities of the aircraft to be prepared for all contingencies. FEIS Section 2.8 describes the need for realistic training with countermeasures and Section 2.8.5 describes the countermeasures.
AM-26	Would like to see more stratification in the MOAs to create more flexibility.	As presented in FEIS Table 2.5-1, the Air Force and FAA have stratified the MOAs and created eight MOAS in PR-1 to create flexibility for transit of the area.
AM-27	How many aircraft will train simultaneously during LFEs and non-LFE training? Will there be limitations to the number of military aircraft occupying the airspace at one time? What types of aircraft will train in the airspace?	As described in FEIS Section 2.4.3, during normal training periods, there would be one to two aircraft training in each MOA complex for a total of four to eight aircraft training in the four MOA complexes. During LFEs, there would be approximately 20 aircraft training for two two-hour periods per day for one to three days per quarter up to 10 days per year. As discussed in FEIS Section 2.8, transient (occasional) users of the training areas include B-1s and B-52s from other bases; B-2s from Whiteman AFB; RC-135s from Offutt AFB; F-15s, F-16s, F-22s, and other fighters, tankers, and other aircraft various bases typically from the surrounding area.
AM-28	Comment response code not used.	
AM-29	Comment response code not used.	
AM-30	Do the aircraft carry ammunition?	Ammunition would not be carried for training in the proposed PRTC. Defensive countermeasures (chaff and flares) would be carried in the proposed PRTC as described in Section 2.8.5 of the FEIS.
AM-31	Airspace use figures are inaccurate.	Airspace use figures are derived from FAA IFR data, airport reports of operations, and airfield numbers of based aircraft. The airspace use numbers have been updated to 2013 reports and are accurate.
AM-32	Would like to see using AGL unless necessary to use MSL.	Variations in ground elevation under the airspace make using only AGL impractical. Altitudes are defined in accordance with FAA Order 7400.2. MSL, AGL, and FL are explained in Section 2.4.2 of the FEIS.

Comment and Response Matrix

Code	Description	Response
AM-33	Concern for coordinating firefighting or reconnaissance activities during fire season. Would like avoidance measures for fire traffic established June to September for no low-level flying training. Would DoD schedulers be able to reserve a 3-4 hour time slot in the late morning/early afternoon to facilitate VFR fire reconnaissance flights? This would support fire reconnaissance and response.	FEIS Section 2.3.1 describes mitigations incorporated in the proposal. The Air Force will work with tribes, individuals, and others to establish reasonable seasonal avoidance areas. The Air Force commits to expanding the current Memorandum of Understanding for routine fire reconnaissance flights as is done in the current Powder River airspace and the current Memorandum of Understanding. The Air Force would coordinate with BLM to update the Memorandum of Understanding to include the proposed PRTC. As suggested in Letter 3056 from the BLM at Miles City, the updated Memorandum of Understanding may be a part of a larger Memorandum of Understanding.
AQ = Air Quality		
AQ-1	Would quantities of fuel used for proposed training change air quality in Eastern Montana?	Section 4.4.3 of both the DEIS and FEIS provide analyses of potential air quality impacts that would occur from the project alternatives within all areas, including Eastern Montana. Appendix K includes the supporting air emission calculations. The results of the analyses determined that air emissions from each project alternative would produce less than significant air quality impacts to all areas of the project region, including Eastern Montana.
AQ-2	Need to study the effects of the increased number of planes that will use the area. Sulfur has been shown to modify cloud properties.	Sulfur oxides generated from the combustion of aviation fuels can convert to sulfates and sulfuric acid in the atmosphere, which can then take the form of cloud condensation nuclei and promote the development of both liquid cloud particles and ice crystals. Alternative A would generate small increases in SO_2 emissions compared to existing conditions – an increase of about three tons per year (see Table 4.4-1 of the DEIS and FEIS). These emissions would be spread over about 27,000 square miles of atmosphere and therefore would be adequately diluted to the point that they would not result in substantial changes to cloud formation at any locality.
AQ-3	Because of Air Force training in the area, air quality is not as good as it once was. The proposed actions will greatly increase air pollution. The only air sampling currently done within the existing training areas is the Crow Indian Reservation in Montana. How much will air emissions increase from existing levels due to increased Air Force activities in the area.	While the Lame Deer PM_{10} site is the only air monitoring station overlain by the proposed PRTC, due to its rural nature, the project region for the most part has very good air quality, as described in Section 3.4 of the DEIS and FEIS. Regarding the impact of proposed training activities to ambient air quality, please see the response to comment AQ-1 from letter 1048.

Comment and Response Matrix

Code	Description	Response
AQ-4	What is the justification for activation of the MOA/ATCAAs beyond the LFEs – this will require rerouting hundreds of flights per day around the airspace. The excess fuel associated with these altered flight trajectories and associated increased emissions do not appear to be addressed in the EIS.	The modified alternatives proposed in the FEIS no longer include the use of airspaces above FL260. Air emissions above FL260 would not degrade air quality. This lower airspace ceiling would minimally affect the routes of commercial airlines in the future and therefore would not result in an increase in emissions from future commercial airlines operations within the project region.
AQ-5	Concern about the potential emissions of toxins from the proposed aircraft trails and their effects on human health.	Section 4.4.3 of both the DEIS and FEIS provides analyses of potential air quality impacts that would occur from the project alternatives within all areas, including the Northern Cheyenne Reservation. The results of the analyses determined that air emissions from each project alternative would produce less than significant air quality impacts to all areas of the project region. In addition, Section 4.4.3 of both the DEIS and FEIS concluded that potential emissions of toxic air contaminants generated by the project training would result in less than significant impacts to public health at all locations within the project region.
AQ-6	The EIS should perform a Prevention of Significant Deterioration (PSD) increment consumption analysis for the Northern Cheyenne Reservation to determine the significance of air quality impacts from the proposed training activities.	The federal PSD requirements only apply to major stationary sources of emissions and not mobile sources, such as the project aircraft. Therefore, the air quality analysis in the EIS did not rely on the requirements of the PSD regulation to determine the significance of project air quality impacts. However, the air quality analysis in the EIS uses the Montana and National Ambient Air Quality Standards (NAAQS) as criteria to determine the significance of project air quality impacts. One of the main objectives of the PSD regulation and increment consumption analysis is to also ensure that proposed major stationary sources do not contribute to an exceedance of a NAAQS. PSD is addressed in Section 3.4.2 of the DEIS and FEIS and the relationship of PSD to the Northern Cheyenne Reservation is addressed in Section 4.4.3 of the FEIS.

Comment and Response Matrix

Code	*Description*	*Response*
AQ-7	Analyze the cumulative impacts of the proposed action to visibility on and near the Northern Cheyenne Reservation as well as acute visibility impacts from individual jet contrails.	Determination of the significance of an activity on visibility in a federal Class I area such as the Northern Cheyenne Reservation is typically associated with evaluation of stationary source emissions. Nevertheless, Section 4.4.3 of the FEIS has been revised to include an evaluation of cumulative impacts to visibility within the Reservation from the project. The results of the analysis determined that the minimal increases in emissions from the project would not substantially contribute to cumulative visibility impairment within the Reservation. Individual aircraft exhaust trails are composed of particulate matter and organic compounds that dissipate quickly and would not have a lasting effect on visibility. Water vapor from project aircraft emissions that would occur within the higher and coldest altitudes of the atmosphere also could develop into ice crystals and could form contrails. These contrails also would dissipate quickly and would not have a lasting effect on visibility within the Reservation. Therefore, the project would not produce significant impacts to acute visibility within the Reservation or any other portion of the project region.
BI = Biological Resources		
BI-1	Animals acclimate to noise and continue producing as under normal conditions.	As explained in both the DEIS and FEIS Sections 3.6 and 4.6, B-1 aircraft have been training in what constitutes PR-2 for several decades. There is no demonstration or claim that this training has affected birthrates or animal reproduction under the airspace.
BI-2	Concern that noise and vibrations will impact animal's fertility and ability to reproduce.	As explained in FEIS Section 4.6.3 and in cited scientific studies, close, loud, sudden noises combined with a visual stimulus produce the most intense reactions for livestock and wildlife. However, given the infrequency of low-level overflight and sonic boom effects at any given location under the airspace, noise and startle effects are unlikely to reach the level at which it would affect animals' ability to reproduce.

Comment and Response Matrix

Code	Description	Response
BI-3	Concern on the impact to Sage Grouse and may cause it to be listed as endangered.	FEIS Section 3.6.3.3 explains that the greater sage grouse is currently a candidate species. Section 4.6.3 explains that human surface activity has been shown to disturb sage grouse leks. Infrequent random overflights or rare sonic booms during ten days of LFEs would not be the type of noise that has been demonstrated to affect sage grouse leks. FEIS Section 2.8.5 quantifies the distribution of chaff and flare residual materials. Such a concentration would not be expected to impact the greater sage grouse.
BI-4	Concern of the startle effect on animals and that livestock and wildlife will not acclimate to the noise. Livestock and wildlife could be startled leading to injury or weight loss or cause wildlife to take refuge in other areas or to be driven from a Reservation. Concern for negative impacts during sensitive cattle operations such as branding, calving, or shipping in the spring and fall. Requests to avoid overflight of homes and corrals.	FEIS Section 2.3.1 (4b) presents mitigations and explains that the Air Force would continue the current practice of establishing reasonable temporary avoidance areas when notified by potentially affected individuals. This process is identified in FEIS Section 4.8.3.1. FEIS Section 4.6 describes the startle effects on animals, including threatened and endangered and other special status species. Low-level overflights may elicit a temporary behavioral response in wildlife, such as a change in posture or running a short distance; however, studies have also shown rapid habituation after initial responses in species such as pronghorn, elk, and bighorn. There is no evidence that overflight activity as proposed would drive animals away from a region such as a Reservation. Under the current use of Powder River training airspace ranching and recreational activities including hunting occur with minimal disruption. Overflights may affect but are not likely to adversely affect threatened and endangered species. FEIS Sections 4.6 and 4.9 describe startle effects upon domestic and ranch animals. Although infrequent, startle effects to individual animals could be an adverse impact. As described in Section 4.9 in the event of damage there is an established procedure for claims which begins by contacting Ellsworth AFB Public Affairs.
BI-5	Concern with chaff and flare residual materials in pastures near birthing livestock. Suggests chaff and flares are not released at 2,000 feet AGL when cattle and sheep are lambing.	FEIS Section 4.3 explains that chaff dispersion is projected to be 0.00377 ounces per acre annually. Chaff rapidly breaks down and becomes indistinguishable from soil. Section 4.6 explains chaff and flare effects and notes that any contact with chaff or flare residual materials would be highly unlikely. Chaff and flare plastic, Mylar, and/or paper residual materials can be deposited anywhere on the ground. As described in Sections 4.3 and 4.7 these residual materials could annoy people finding and identifying them, but there would be no physical effect on any animals, including birthing animals.

Comment and Response Matrix

Code	Description	Response
BI-6	Concern migration patterns will be disrupted. Suggestion for a mitigation measure to limit low-level operations in Powder River 4 during spring and fall bird migration.	FEIS Section 2.3 explains the mitigation measure for Modified Alternative A includes no PR-4 or Gap C Low MOA. Alternative C does not include PR-4 low level overflights. Modified Alternative B includes a PR-4 and Gap C Low MOAs, in which noise impacts would be slightly more intense under the PR-4 MOAs as stated in FEIS Section 4.2.3.2. In other areas, flights at altitudes below 3,000 feet AGL, where most birds migrate, would be random and occur approximately twice per day for 15 to 20 minutes for each mission requiring low-altitude training. There is no reason to believe that this infrequent activity would in any way disrupt migration patterns. FEIS Sections 3.3.3.4 and 4.6.3 address bird strike hazards and potential effects on migratory bird species or migration patterns including along the Central and Mississippi flyways
BI-7	Shadehill Reservoir, an important waterfowl refuge and staging and over-wintering area for ducks and geese, has been omitted from maps showing surface water.	As a result of the scale of the maps used to present the PRTC and the size of Shadehill Reservoir, the surface water map in the DEIS did not specifically call out the reservoir. The location of that reservoir has now been identified on FEIS Figure 3.5-2.
BI-8	Would like seasonal avoidance areas or other conservation measures to minimize impacts to federally listed threatened, endangered, or candidate species, particularly to reduce impacts to endangered whooping cranes, greater sage-grouse, and Sprague's pipit. A full analysis on direct and indirect effects from chaff and flare exercises on threatened and endangered species should be considered.	FEIS Section 2.3.1 explains that the mitigation measure for Modified Alternative A includes no Low MOA under PR-4 or Gap C, where the possibility of affecting whooping crane is greatest. Modified Alternative C also does not include PR-4 low level overflights or a PR-4 and Gap C MOAs. Modified Alternative B does include PR-4 and Gap C Low MOAs, in which noise impacts would be slightly more intense than currently as stated in FEIS Section 4.2.3.2. It would be possible to define avoidance measures in consultation with USFWS to avoid impacts on the whooping crane should Alternative B be selected. In other areas, flights at altitudes below 3,000 feet AGL, where most birds migrate, would be random and occur approximately twice per day for 15 to 20 minutes for each mission requiring low-altitude training. Sprague's pipit and greater sage grouse, both candidate species for federal listing, are potentially present over fairly broad areas under proposed project airspace. Analysis of the potential for overflight effects on avian species in Section 4.6.3 of the FEIS indicates a low possibility of adverse effect on these species from the proposed action or alternatives. Section 4.3 of the FEIS explains that chaff dispersion is projected to be 0.00377 ounces per acre annually. Chaff rapidly breaks down and becomes indistinguishable from soil. There are multiple studies which have not found either direct or indirect effects of chaff or flares

Comment and Response Matrix

Code	Description	Response
		on biological species (see FEIS Appendices C and D).
BI-9	Sprague's pipit has been added as an ESA candidate species since the publication of the Draft EIS and needs to be addressed under the Threatened, Endangered, and Other Special Status Species section of the EIS. Sensitive plant and wildlife data for wildlife species at the Little Bighorn Battlefield National Monument and Custer National Forest is incomplete. Recommend preparing a Biological Assessment/Evaluation.	A discussion of Sprague's pipit as an ESA candidate species has been added to FEIS Sections 3.6.3.3 and 4.6.3.1 and included in Tables 3.6-4 and 4.6-1. Information on sensitive plant and wildlife species at the Little Bighorn Battlefield National Monument and portions of Custer National Forest lying underneath airspace that would be used by the project has been reviewed, and Tables 3.6-4 and 4.6-1 have been updated with this information. The updated EIS analyses of Threatened, Endangered, and Other Special Status Species conclude that project elements "may affect but are not likely to adversely affect" threatened and endangered species. The Air Force submitted the updated analysis dated 30 May 2014 (FEIS Appendix E) to the USFWS and received their concurrence as noted in their letter to the Air Force dated 27 June 2014 found in Appendix E of the FEIS.
CM = Cumulative		
CM-1	The Keystone XL Company plans to install a 36-inch high-pressure pipeline though Harding County.	FEIS Chapter 5.0, Cumulative, includes the pipeline. There is no ground construction associated with the proposed changes in airspace. FEIS Section 2.3.1 explains flare release altitude limitations and overflight avoidance of construction and mining sites where sensitive electronics could be affected. It would be almost impossible for chaff, flares, or electronic emissions to impact any pipeline.
CM-2	Would like more discussion regarding threat emitters or other ground assets. Request for information on how additional NEPA analysis would be conducted on the future emitters and notification of whether emitters would be placed within the Little Bighorn Battlefield National Monument viewshed.	The proposed PRTC has no new ground assets. As explained in FEIS Section 2.5.7, new ground-based threat emitters are not part of the proposed action. FEIS Section 5.1 explains that threat emitters, if sited, would have separate NEPA evaluation.
CM-3	Concern the full impact of the proposal will not be known for several years and that it may be too late to mitigate any impacts once they are known.	As explained in FEIS Section 3.8, the existing Powder River MOAs have a somewhat greater proportion of rangeland and smaller proportion of agricultural land than the entire potentially affected area. Most land use types are represented under existing airspace and have effectively been overflown for decades by B-1 training aircraft at the same altitudes proposed for the expanded airspace. The only differences are tribal land and designated urban land which are not under existing MOAs (See FEIS Section 3.9.).

Comment and Response Matrix

Code	Description	Response
CM-4	Southeast Montana is being considered for wind energy development with new wind farms on high ridges and plateaus. Future wind turbines may be considered in project's planning phase.	Existing and potential wind farms are considered throughout the analysis, including FEIS Sections 3.8, 3.9, 4.8, and 4.9. Existing wind farms are mapped and avoided, and future wind farms, when approved, would also be mapped and avoided. (See FEIS Appendix J for lighting.) The proposed action would not inhibit the development of future wind farms or other industrial land uses. (See FEIS Section 4.8.)
CU = Cultural Resources		
CU-1	Some towns in the document are misclassified as ghost towns.	All ghost towns beneath the airspace were reviewed; some were found to include permanent resident populations, but are still classified ghost towns. These are noted in Table 3.7-4 of the FEIS.
CU-2	Concern for disruption of the use or character of cultural, sacred, and historic sites (including newly listed sites such as the Evangelical Lutheran Trinity Church) and activities and protection of those sites and activities, including protecting landscapes, soundscapes, and scenery. Suggests consultation with all tribes and reservations to which Little Bighorn Battlefield National Monument is highly significant. Suggests additional definition of undertaking to allow a survey to be conducted. Concern the analysis does not include impacts to the North Cave Hills, South Cave Hills, or Slim Buttes cultural landscapes in Harding County, SD.	Following consultation regarding the proposed action with ACHP, SHPOs from MT, WY, ND and SD, Crow Tribe, Northern Cheyenne Tribe, Standing Rock Sioux Tribe, Cheyenne River Tribe, FAA and NPS, the Air Force created a modified PRTC proposal ("Modified Alternative A"). The "Programmatic Agreement among 28th Bomb Wing, Ellsworth Air Force Base, the State Historic Preservation Offices of Montana, North Dakota, South Dakota and Wyoming, and the Advisory Council on Historic Preservation Regarding the Proposed Development, Implementation and Operation of the Powder River Training Complex" (FEIS Appendix N) is among consulting parties comprised of signatories (28 BW, SHPOs from MT, ND, SD and WY, and the ACHP) and invited signatories (FAA, NPS, and Crow Tribe). The Cheyenne River Sioux Tribe, Northern Cheyenne Tribe and Standing Rock Sioux Tribe have also been invited to sign, but have not yet elected to do so. The modified alternative and the Programmatic Agreement address areas of avoidance, modes of flying, and procedures for notification regarding special avoidance areas or times for sensitive resources and other communications. Some locations under the ATCAAs and the Gap MOAs would never see low level overflight or, at most could see LFE low level overflight one to three days per quarter up to 10 days per year. Although Section 106 consultation has concluded for the purposes of the EIAP, the Air Force will continue to consult with the tribes and other stakeholders. FEIS Section 3.7 explains consultation conducted by the Air Force, including Government-to-Government consultation. The Section also includes newly listed sites. FEIS Section 4.7 explains the stipulations agreed to in the Programmatic Agreement. FEIS Section 2.3.1 explains that the Air Force will also work with individuals and organizations to identify sensitive noise areas and periods of avoidance.

Comment and Response Matrix

Code	*Description*	*Response*
CU-3	Concern the Native American lands are being given more concessions such as avoiding cultural and religious activities.	Modified Alternative A describes changes in airspace use that address cultural resources concerns expressed by all stakeholders, not just Native Americans. FEIS Section 3.7 explains that Native American lands have a special relationship requiring Government-to-Government consultations. The Programmatic Agreement described in CU-2 stipulates avoidance, minimization and mitigation procedures available to the signatories, including not only the tribes but the ACHP, the SHPOs and others. Potential environmental consequences to public, private, and tribal lands are all addressed in the FEIS. (See FEIS Section 4.8.)
CU-4	Would like economic relationship with the Air Force.	The Air Force is willing to explore opportunities to enhance economic relationships with tribes.
DO = Description of Proposed Action and Alternatives		
DO-1	Would like more clarity on the proposed flying levels of the alternatives.	FEIS Sections 2.5-2.8 describe each alternative's altitudes and estimated time at altitudes for training. Section 2.4 presents the scheduled MOA times and altitudes. Section 4.9 explains the average number of low-level overflights. An average of six to nine low-level overflights of any given location, depending on alternative, is seen as an unavoidable adverse impact. Information would be made available on airspace use for training.
DO-2	Would prefer Alternative B or some variation of the preferred alternative that excludes low-level flights-specifically to avoid low-level flights over Little Bighorn Battlefield National Monument, interference with emergency response aircraft flights over the Ashland Ranger District of the Custer National Forest, and least impact to Greater sage grouse in Wyoming and Montana.	FEIS Section 2.3.1 explains mitigations to reduce potential effects on the Little Bighorn Battlefield National Monument. Section 4.3 explains that military training would be halted in the affected airspace due to any ground safety emergency that involves a life-flight. Section 4.8 explains land use impacts. Section 4.6 explains overflight effects on the greater sage grouse.
DO-3	Would prefer the floor no lower than 5,000 feet AGL and no supersonic flight.	Chapter 1.0 of the FEIS explains the purpose and need for the airspace, the requirement for training down to 500 feet AGL, and the need for realistic battlefield tactics at supersonic speeds during one to three days of quarterly LFEs. Chapter 2.0 of the FEIS describes the alternatives and estimated time airspace would be scheduled for training. MOA segments and multiple MOA have been included to allow for IFR transit.

Comment and Response Matrix

Code	Description	Response
DO-4	Would prefer the floor no lower than 10,000 to 15,000 feet MSL, particularly in new MOAs.	Chapter 1.0 of the FEIS explains the purpose and need for the airspace, the requirement for training down to 500 feet AGL, and the need for realistic battlefield tactics at supersonic speeds during one to three days of quarterly LFEs. Chapter 2.0 of the FEIS describes the alternatives and estimated time airspace would be scheduled for training.
DO-5	Alternative C would have less impact on the economy and quality of life, as well as bird migration routes including the endangered whooping crane.	FEIS Section 2.3.1 explains the mitigation measure for Modified Alternative A includes no PR-4 and Gap C Low MOAs. Modified Alternative C does not include PR-4 low level overflights. Low altitude overflight would be avoided in PR-4.
DO-6	Would like more discussion on Alternatives Considered but not Carried Forward were not further analyzed.	FEIS Sections 2.10 and 2.11 explain selection standards and application of those standards. FEIS Sections 2.10.5.4 through 2.10.5.6 explain the need for training locations that are in close proximity to Ellsworth AFB.
DO-7	Requests the proposed eastern border of PR-4 to be modified so it does not overlap tribal lands.	FEIS Section 2.3.1 explains the mitigation measure for Modified Alternative A includes no PR-4 or Gap C Low MOAs. Modified Alternative C does not include PR-4 or Gap C low level overflights. Tribal lands with PR-4 would not be subject to low level overflights with either of these alternatives.
EJ = Environmental Justice		
EJ-1	Concern the Air Force is discriminating by acknowledging the tribe's various religious, cultural, and traditional activities and are not making the same concessions to other individuals who have voiced opposition. EO 12898 as described in Appendix F of the Draft EIS, essentially insures the fair treatment of all people regardless of race, color, national origin, or income.	DEIS Section 3.7 explained that Native American lands have a special relationship requiring Government-to-Government consultations. Potential environmental consequences to public, private, and tribal lands are all addressed in FEIS Section 4.8. As described in DEIS Section 3.10 and Appendix F of the FEIS, EO 12898 directs that all agencies "To the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions" (available at http://www.archives.gov/federal-register/executive-orders/pdf/12898.pdf). See also response to EJ-2.

Comment and Response Matrix

Code	Description	Response
EJ-2	Concern that low-income (or low population) areas under the airspace will become the location used for this proposal. Impacts of the PRTC would be more heavily felt by the tribal community than other groups.	Both the DEIS and FEIS in Section 1.4 and 1.5 discuss the purpose and need of the Proposed Action, including the selection criteria used to choose the locations for implementing the Proposed Action. Reasonable alternatives, modified as a result of public hearings on the DEIS, public comments received, and extensive consultations and special outreach with the public, agencies, and tribal representatives, are presented in FEIS Section 2.3.1. Analysis of the effects of these modified alternatives is presented in FEIS Sections 3.10, 4.9, and 4.10. Section 3.10 quantifies the minority and low-income population and youth population under the airspace. Any person under the airspace, minority or non-minority, could experience an average of one sonic boom per day during the not more than 10 days per year of LFE training. Individuals under the low MOAs could also experience low-altitude overflights of a training aircraft between 500 feet to and including 2,000 feet above the ground. Low-altitude overflights in low MOAs would result in unavoidable uncertainty, startle, and adverse noise impacts. These impacts would apply equally to any minority or non-minority persons regardless of income or age under any of the low MOAs. Modified Alternatives A and C avoid low-altitude overflight of Native American Reservations, including the Northern Cheyenne Reservation, except for portions of the Crow Reservation. Modified Alternative B does not include low-altitude overflight of the Crow or Northern Cheyenne Reservations but does include low altitude overflight of portions of the Cheyenne River and Standing Rock Reservations. Section 4.10 explains that low-altitude training in PR-1A, PR-1C, and PR-1D MOAs overlie portions of the Crow Reservation that have a minority population in excess of 50 percent. An adverse impact not adequately or acceptably mitigated, which cannot otherwise be avoided, presents the potential for a disproportionately high and adverse human health or environmental effect on that population. Under Modified Alternatives A and C, implementation of the mitigations identified in this EIS, including those developed through extensive consultations and outreach with the affected populations to resolve adverse effects under the NHPA, would adequately or acceptably mitigate adverse impacts to such a degree that they are not significant under applicable standards. Consequently, these modified alternatives in conjunction with specified mitigations would not result in disproportionately high and adverse human health or environmental effects for environmental justice purposes.

Comment and Response Matrix

Code	Description	Response
GE = General		
GE-1	In support of the proposal.	Thank you for your interest and participation in the NEPA process. Your comment has been entered into the record.
GE-2	Not in support of the proposal. In favor of the No Action Alternative.	Thank you for your participation in the NEPA process. Your comment has been entered into the record.
GE-3	Statements that the proposal is unfair, unnecessary, present an unreasonable burden on people affected, and undeserved by the people affected. Concern the Air Force proposal is unjustified for training requirements.	The Air Force appreciates your participation in the public involvement effort for the Powder River Training Complex proposal. The environmental process described in Section 2.12 of the FEIS is designed to include public and agency perspectives for review by decision-makers. Section 2.4 describes the proposal, and Section 1.2 describes the reason for the training requirements. Sections 2.10.4 and 2.10.5 explain the limitations on current training. The screening criteria for identifying alternative training locations are described in Section 2.11.
GE-4	Comment that the Ellsworth Task Force has not volunteered Rapid City to be overflown.	The Air Force appreciates your participation in the public involvement effort for the Powder River Training Complex proposal. Your comment has been included in the FEIS, which will be considered before the Air Force makes a final decision.
GE-5	Concern the Air Force and FAA will disregard the public comments and taxpayers to get what they want and forget the meaning of 'good neighbor'. Statements that the Air Force is not trusted due to denial of negative impacts in the past and lies and broken promises from other government agencies, Concern for too much government interference near food and livestock production. Suggestions for annual meetings between Air Force and citizens to listen to local concerns and give local residents a chance to listen to Air Force concerns.	FEIS Section 2.3.1 describes the mitigations incorporated into the PRTC proposal in direct response to public and agency concerns. This includes advanced notifications to the public of LFEs. The Record of Decision (ROD) will be legally binding. Any and all mitigations contained in the ROD will become the legal obligation of the Air Force. With the execution of the Programmatic Agreement, in particular stipulation #VII, the Air Force would provide a summary report detailing the training activities held and other issues. The Air Force has programs designed for community relations, including the Mid-Air Collision Avoidance program. Under this or another suitable program, the Air Force will consider all requests for meetings in communities beneath the proposed PRTC airspace. The Air Force will monitor the effectiveness of these programs through the mitigation and monitoring program to be established as part of this proposal.
GE-6	Concern the military is trying to instill fear in the American people and looking for wars to fight to get what they want.	The purpose of the proposed PRTC is to provide the best training possible for aircrews. FEIS Sections 2.10.4 and 2.10.5 explain the limitations on current training. The selection criteria for identifying alternative training locations are described in FEIS Section 2.10 and 2.11.

Comment and Response Matrix

Code	Description	Response
GE-7	Questions the sovereignty of the U.S. government for airspace above private property. "Reasonable and ordinary use is the airspace above your property" is often litigated and routinely protected as a property right. Resolution adopted by the Standing Rock Tribe in 2008 states the use of the airspace was reserved for the tribe pursuant to the Treaties of 1851 and 1868 at Fort Laramie.	FEIS Section 1.6 explains that navigable airspace is under the jurisdiction of the FAA.
GE-8	Concern that a live person at the base cannot be reached to handle complaints, questions, or damage claims. Whom do we contact for rapid response? Previous attempts to resolve a complaint have received a poor response or damage claims are not paid.	The Air Force Public Affairs Office is charged with the responsibility of handling public inquiry. FEIS Sections 2.8.5.2 and 3.3.3.2 identify the process for addressing claims.
GE-9	Supports a well-trained military and supports its mission.	The Air Force appreciates your participation in the public involvement effort for the Powder River Training Complex proposal.
GE-10	Can a test-run be done first for feedback before charting the MOAs? Are there any procedures to suspend it or modify it once the airspace is charted if there is a problem?	There is no provision for a test-run of MOAs in the applicable FAA requirements. However, the area under PR-2 has been overflown by B-1 and other training aircraft for many years. FEIS Section 2.3.5 describes the process, after adoption of mitigations to monitor the effectiveness of the mitigations to determine the need, if any, for adjustments.
GE-11	Would like to work together with the Air Force to maintain all missions. Must address the needs of all airspace users. Monitoring and evaluation of the Proposed Action should be ongoing. Previous coordination with stakeholders may have led to additional alternatives but the Air Force was unwilling. Requests for the Air Force to coordinate the development of an alternative.	To the address the needs of all airspace users and other stakeholders, as expressed during public outreach, agency review and tribal consultation, Air Force developed many mitigations, which are listed in FEIS Section 2.3.1. FAA Order 7400.2 states: "Although the FAA must protect the public's right of freedom of transit through the airspace, full consideration shall be given to all airspace users, to include national defense; commercial and general aviation; and space operations."
GE-12	Requests information on the proposal.	Individuals who requested copies of the EIS have received copies. FEIS Section 1 describes the reason for the training requirements and Section 2.2 describes the components of the proposed airspace. FEIS Section 2.10.5 identifies the limitations on current training. The selection criteria for identifying alternative training locations are described in FEIS Section 2.11.
GE-13	Who conducted the studies discussed in the document?	The FEIS provides the list of preparers for the technical analysis in Chapter 7.0, and lists the reference studies used in this analysis as well as the sources of those studies in Chapter 6.0.

Comment and Response Matrix

Code	*Description*	*Response*
GE-14	Do not support non-LFE portion of the proposal. LFE use of the airspace appears manageable but non-LFE use impacts a large volume of airspace on a daily basis and will put burden on hundreds of civil aviation and non-DoD flights every day.	As described in Chapter 1.5 of the FEIS, the Air Force needs additional airspace for realistic, high-quality, local training in addition to LFE training. The Air Force worked closely with the FAA to address impacts to commercial traffic. FEIS Section 2.3.1 describes the mitigations to address public and agency concerns.
GE-15	The footnote for Table 3.2-3 should include "Federal Aviation Administration Advisory Circular, FAA AC-91-36D)."	FAA AC-91-36D recommends no overflight below 2,000 feet AGL over the Little Bighorn Battlefield National Monument. A mitigation has been incorporated into the proposal (see FEIS Section 2.3.1).
GE-16	Would like a discussion on BRAC commission voting to retain Ellsworth AFB and its B-1 fleet without determining its current airspace could meet its mission needs.	A response is unnecessary because the comment raises a concern which is outside the scope of the proposed action nor does the comment address the adequacy of the DEIS or the merits of alternatives discussed in it. The BRAC Commission report can be found at http://www.brac.gov/finalreport.html.
LU = Land Use		
LU-1	Concern the quality of life, privacy, and integrity of the land would be impacted. Wants the integrity and stewardship of the land and quality of life maintained.	FEIS Sections 3.8 and 4.8 explain the existing land use and potential consequences, and Sections 3.9 and 4.9 explain the social and economic relationship of the people, communities, and land. Section 4.9 describes the estimated average extent of overflight at low altitudes and the mitigations are described in Section 2.3. Section 4.8 describes the consequences to different land uses, including private and public lands. Some individuals expressed the perspective that any low level training would be an adverse impact.
LU-2	Concerned about the sudden overflight and noise impacts to the serenity of the land and people's way of life including recreation. Permanent avoidance areas may be needed.	FEIS Sections 3.2 and 4.2 explain the existing conditions and noise consequences. Section 4.9 describes the estimated average extent of low-level overflight and potential startle effect. The Air Force has incorporated mitigations, including establishment of reasonable temporary or seasonal avoidance areas or other measures identified in Government-to-Government consultation with affected tribes (see FEIS Section 2.3). Some individuals see military training and related startle or noise impacts as unacceptable to their quality of life and an adverse impact.

Comment and Response Matrix

Code	Description	Response
LU-3	Concerns the proposal will damage or eliminate ranches/farms and the ranching/farming lifestyle.	FEIS Section 4.8 explains that B-1 training aircraft have overflown ranches and farms under the existing Powder River A and B MOAs (which are essentially PR-2) for decades. The ranching/farming/hunting lifestyle continues under this airspace and, in many ways, the ranches and farms are comparable to, or the same as, ranches and farms under the proposed additional airspace. FEIS Section 4.9 explains that the average number of low-level overflights per year would be approximately six to nine. This level of training activity could cause annoyance but, based upon the experience under the existing MOAs, would not significantly impact ranches, farms, or the ranching lifestyle. Individuals under the proposed airspace could see sudden overflight startle impacts as a significant impact.
LU-4	Crop land acres have not been adequately identified in the analysis. Does not account for crop acres coming out of the Conservation Reserve Program (CRP).	FEIS Section 3.8 lists agricultural land area from available GIS data under the existing Powder River MOAs and under each proposed MOA. Section 4.8 explains why the proposed PRTC would not adversely affect land use under the airspace.
LU-5	Concern of losing prime hunting areas.	FEIS Section 4.8 describes the importance of hunting land use under the proposed airspace. Section 4.9 explains an average of six to nine low-altitude overflights could occur per year in any given location under a low MOA. Prime hunting areas are located under the existing Powder River A and B MOAs (essentially the same as PR-2) where B-1s have been training for decades. Section 4.8 explains that low-altitude training and hunting coexist throughout the west.
LU-6	The land use numbers are not shown on the maps and can't see on the maps how much acreage is included in the area.	In FEIS Section 3.8, Table 3.8-2 presents land use numbers calculated using geographic information systems. GIS data do not always coincide; however, the overall land use numbers presented in the report represent the best available information.
LU-7	Property is under the current airspace or overflown by aircraft near Minot. No observable negative impact. Ranchers have requested no-fly zones during sensitive times for livestock with a phone call to Ellsworth AFB.	FEIS Section 4.8 explains that aircraft have overflown what is effectively the proposed PR-2 for decades. Section 2.3.1 explains that the Air Force will continue to work with ranchers to establish avoidance areas through identified mitigation measures.
LU-8	Question if the Air Force adheres to county land use plans. Statement that individual county land use plans should be taken into consideration in the EIS analysis.	FEIS Section 4.8.1 explains that PRTC would not place restriction on land use or land use plans. Plans for energy development or related structures which could project into the airspace are considered in Section 4.9. (See also FEIS Appendix J.)

Comment and Response Matrix

Code	*Description*	*Response*
LU-9	Concerned about the visual effects of large aircraft flying over, contrails, and chaff and flare debris.	FEIS Section 4.9 describes the estimated average frequency of low-flying aircraft. Sudden overflight visual and startle impacts from aircraft and rare visual impacts from residual pieces of chaff or flares are adverse impacts. Aircraft emissions associated with the use of proposed airspace would not impact visibility (FEIS Section 4.4.3.1 and Section 5.1.2.1.4). At lower altitudes, individual aircraft exhaust trails can be visually detected for a brief period due to emissions of particulate matter and organic compounds. Below 3,000 ft AGL, these exhaust emissions rapidly dissipate (see FEIS Section 4.4.3.1). Contrails, or condensation trails, are an existing condition above the proposed PRTC airspace. Contrails are visible water vapor trails from aircraft engines associated with specific meteorological conditions and produced by high-altitude aircraft overflight. Commercial overflights of the four-state region are the primary contributors to these temporary artificial clouds. Overflight of military training aircraft could create condensation trails depending on flight altitude and meteorological conditions. Although contrails could be seen as an intrusion into an otherwise clear sky, such contrails, whether formed by commercial or military aircraft overflight, would not have an adverse effect upon tribal or other lands under the proposed airspace. By eliminating military flights above FL260 the Modified Alternatives would greatly reduce the potential formation of contrails. Effects of the visual intrusion of PRTC training activities on historic properties are addressed in FEIS Section 4.7.2.1.
NA = Native American		
NA-1	Concern the consultation with the tribal governments will be labeled simply a fiduciary responsibility. There is no guarantee that comments will be implemented.	Ellsworth AFB has conducted Government-to-Government consultations with tribal governments and explained all aspects of the proposed airspace changes. Over the course of the past six years, Ellsworth AFB has consulted with tribal governments in compliance with Section 106 of the NHPA, and invited the tribes to be signatories to a Programmatic Agreement that includes stipulations specifying measures that resolve tribal concerns. The Air Force will also continue to consult with the tribes on a Government-to-Government basis.

Comment and Response Matrix

Code	Description	Response
NA-2	Separate and private hearings were conducted at the reservations and comments were not submitted specifically to aeronautics commission. Concern the tribal governments comments will not be made available or included in the Final EIS.	All written comments and transcripts received on the DEIS are included in the FEIS. (See Section 2.12). The FAA is a cooperating agency (see Section 1.6) in this EIS and has participated in the public hearing process. The FAA reviewed the EIS and related appendices and, subsequent to the Air Force Record of Decision (ROD), the Air Force anticipates that the FAA will adopt the FEIS, issue its own ROD and then publish the new airspace in the Billings Sectional Aviation Chart.
NA-3	Concern the tribal government is not recognized as having a legal or constitutional relationship with the United States.	Ellsworth AFB has made special efforts to conduct Government-to-Government consultations with tribal governments as was described in DEIS Section 3.7. The obligation for federal agencies to engage with Native American tribes on a Government-to-Government basis is based on federal, statutes, executive orders (EOs), regulations, and policies. These include NHPA of 1966, the Native American Religious Freedom Act, Presidential Memorandum on Government-to-Government Relations (April 29, 1994), EO 13007 (Indian Sacred Sites) and EO 13175(Consultation and Coordination with Indian Tribal Governments), and DoD Instruction 4710.02 (DoD Interactions with Federally Recognized Tribes). These consultations, between Ellsworth AFB and the tribes, have included explanations of all aspects of the proposed airspace changes, and have resulted in some of the changes made in Modified Alternative A. As described in FEIS Section 4.7, the Air Force has executed a Programmatic Agreement that stipulates measures that resolve adverse effects to historic properties, religious ceremonies and important tribal events under the PRTC (refer to Appendix N). Furthermore, the Air Force will continue to consult with the tribes on a Government-to-Government basis.
NA-4	The importance of the Native American ceremonies and religion is not adequately identified or analyzed in the Draft EIS. Military interference with and encroachment of sacred rights and religious practices is offensive, distracting, disrupting, and disrespectful. Ceremonies take place throughout the year-not just spring and summer. Suggestion for further consultation with affected tribes including tribes which conduct ceremonies at Little Bighorn Battlefield National Monument.	DEIS Section 3.7 explained the importance of ceremonies and Government-to-Government consultation. FEIS Sections 2.3 and 4.7 explain the provisions of the Programmatic Agreement, which includes avoidance areas and times, and specifies that when Native American ceremonial and religious sites are identified, the Air Force will consult to determine reasonable avoidance altitudes and times. Further consultation has resulted in the mitigations described in FEIS Section 2.3.

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Code	Description	Response
NA-5	Suggests mitigations for no training during ceremonies throughout tribal homeland and over sacred grounds. Suggests no low-level overflights or sonic booms over Standing Rock Indian Reservation from June-August.	FEIS Sections 2.3 and 4.7 explain that during Government-to-Government consultations, the Air Force explained that when Native American ceremonial and religious sites are identified, the Air Force will consult to determine reasonable avoidance altitudes and times. Also, as discussed in FEIS Sections 4.7.2.1, and 4.7.2.3, a "Programmatic Agreement among 28th Bomb Wing, Ellsworth Air Force Base, the State Historic Preservation Offices of Montana, North Dakota, South Dakota and Wyoming, and the Advisory Council on Historic Preservation Regarding the Proposed Development, Implementation and Operation of the Powder River Training Complex" (Appendix N) is among consulting parties comprised of signatories (28 BW, SHPOs from MT, ND, SD and WY, and the ACHP) and invited signatories (FAA, NPS, and Crow Tribe). The Cheyenne River Sioux Tribe, Northern Cheyenne Tribe, and Standing Rock Sioux Tribe have also been invited to sign, but have not yet elected to do so. As explained in FEIS Section 2.3.1, Modified Alternatives A and C include a minimum training altitude of 12,000 feet MSL above the Standing Rock Indian Reservation, Cheyenne River Sioux Tribe, and Northern Cheyenne Indian Reservations. Supersonic training would be scheduled once per quarter for 1 to 3 days for a maximum of 10 days per year. An average of one sonic boom per LFE day could be experienced at any given location under the proposed airspace.
NA-6	Request for more information on the frequency and amount of fuel or chaff dropped and flight time over tribal lands. Suggestion to limit the use of chaff over tribal lands and start using new technologies for invisibility.	FEIS Section 2.3 explains that there is no proposed deployment of ordnance on tribal lands or any other lands under the airspace. The Air Force has identified fuel jettison areas and none are over tribal lands. FEIS Section 2.8 describes chaff and flare deployment as defensive countermeasures and explains the quantity of chaff (0.00377 ounces per acre per year) or flare residual materials (one plastic or Mylar piece per 149 acres per year) which could be randomly distributed anywhere under the training airspace, including on tribal lands. FEIS Section 2.8 also contains information on the frequency of aircraft use of the airspace as part of the Proposed Action.
NA-7	Concern there is not enough respect for the Native American lands and their quality of life.	The Air Force has sought to work with Native American tribal representative to identify sensitive sites. DEIS Section 3.7 explained the importance of ceremonies and on-going Government-to-Government consultation. FEIS Section 4.7 explains that when Native American ceremonial and religious sites are identified, the Air Force will consult to determine reasonable avoidance altitudes and times.

Comment and Response Matrix

Code	*Description*	*Response*
NA-8	Concern the proposal is in violation of treaties, specifically the Fort Laramie Treaty of 1868, for the absolute and undisturbed use and occupation of tribal lands. Suggestions that these treaties include airspace over tribal lands	DEIS Section 3.7 described the Fort Laramie Treaty of 1868. There is no ground construction proposed as part of the Powder River Training Complex. FEIS Section 1.6 explains that the FAA has sole responsibility of navigable airspace in the United States and associated offshore and other areas.
NA-9	Were the meetings with the Native Americans Government-to-Government meetings? If not, why weren't they advertised as public hearings? Thought the purpose of the meeting was for the Air Force to give a presentation and was not going to include public comment or a court proceeding hearing. If a public hearing had been advertised more people would have attended.	Meetings with tribes are conducted on a Government-to-Government basis. Meeting participants are invited at the direction of the tribe. Such Government-to-Government meetings are in addition to advertised public hearings on the DEIS. (See DEIS Section 3.7.) The results of Government-to-Government consultations have been incorporated into the analysis as described in FEIS Sections 4.7, 4.10, and others.
NA-10	Concerned about the sudden overflight and noise impacts to the serenity of the land and Native American way of life. Permanent avoidance areas may be needed.	FEIS Section 2.3 explains the mitigations incorporated to support reasonable seasonal and temporary avoidance areas. Also FEIS Section 4.7.2.3 describes the stipulations of the Programmatic Agreement the Air Force has executed, including avoidance areas, times and dates, and a process for continued consultation as specific concerns arise regarding additional identification of Native American ceremonial and religious sites or other areas of concern. The Air Force will consult to determine reasonable avoidance altitudes and times. See Appendix N for the full text of the Programmatic Agreement.
NA-11	Suggests a Memorandum of Agreement as part of a Government-to-Government relationship between the tribes and the Air Force.	Modified Alternative A incorporates a number of changes in airspace use in response to tribal concerns. Also, as described in FEIS Section 4.7.2.3, the Air Force, SHPOs and ACHP developed a Programmatic Agreement that resolves adverse effects that could result from the proposed action, through stipulations concerning avoidance, minimization or mitigation of adverse effects to historic properties, religious ceremonies and important tribal events under the PRTC. Refer to FEIS Appendix N for the complete and final text of the Programmatic Agreement.
NA-12	History of Native Americans portrayed in the DEIS includes incorrect information. Suggested corrections are provided.	Additional edits incorporated into the EIS in response to specifics provided by the tribes.
NA-13	Concern for illegal dumping of hazardous materials, chemical, nuclear, and other waste is being dumped.	As explained in Chapter 2.0 of the FEIS, no ground construction is included as part of the Proposed Action. Chapter 5.0 of the FEIS explains that threat emitters, if sited, would have separate NEPA evaluation. There are no proposed ground assets and no proposed construction or other wastes.

Comment and Response Matrix

Code	Description	Response
NO = Noise		
NO-1	Concern with the noise increase from aircraft in holding patterns waiting to land.	As described in Section 2.5 of the FEIS, although the sorties may increase from FY2011 activity, total flight operations would not be expected to exceed those analyzed and published in the 2008 Ellsworth AFB Air Installation Compatible Use Zone (AICUZ), which is publically available at http://www.ellsworth.af.mil/shared/media/document/AFD-090428-076.pdf. The AICUZ study, which is incorporated by reference, identifies the noise levels associated with flight operations in the vicinity of Ellsworth AFB.
NO-2	Concern for the disruptive nature of sonic booms and low-level overflights including startle effect and damage to buildings, windows, and other property.	As described in FEIS Section 4.2, low-level overflights and sonic booms would be infrequent. Overflights exceeding 65 dB SEL would occur once on 4 out of 10 days on average. An average of one sonic boom per day could be experienced on the not more than 10 LFE days per year. Startle effects generated by noise would be relatively rare, and the likelihood of significant structural damage from a sonic boom is very low, although it could occur. Any claims from Air Force-related damage would begin by contacting Ellsworth AFB Public Affairs.
NO-3	Concern for the accuracy and scientific integrity of the B-1 aircraft noise predictions. Concern the effects are underestimated. When the B-1s use their afterburners, the noise is greater than reported.	FEIS Appendix I describes the noise models and accuracy of those models. DEIS Section 3.2 described the noise from B-1 afterburner use, and Appendix I, Table I-1, presents the noise level without afterburners. The numbers are measured numbers. FEIS Section 4.8 presents the consequences of SEL noise.

Comment and Response Matrix

Code	Description	Response
NO-4	The noise numbers are misleading and vague because they are averages and generalized. They are not always consistent. No specific discussion is provided as to how thresholds of significance were defined in determining impacts of noise on the resources described in the document. The 55 DNL dB threshold cited in the DEIS does not adequately address disruption of tranquility or disruption of solitude at national parks. No specific discussion is provided as to how thresholds of significance were defined in determining impacts of noise.	Section 3.2 of both the DEIS and FEIS explain that both average and single event level noises are included to provide a complete noise picture to the public, agencies, and decision-makers. FEIS Appendix I explains FAA noise policies. DEIS and FEIS Section 3.2.2 discussed factors involved in defining significance with regards to noise impacts. Neither the Air Force nor the FAA has specific significance thresholds for properties like the Little Bighorn Battlefield National Monument, which call for special consideration in determining noise impacts (see DEIS Section 3.2.2). Noise impacts on such properties are determined based on the context and intensity of the impacts on the resource on a case-by-case basis. FEIS Section 4.2.3 includes specific noise results for the National Monument, using single-event metrics (i.e., SEL and L_{max}) in addition to DNL. In a Programmatic Agreement under Section 106 of the National Historic Preservation Act (see Appendix N of the FEIS), the Air Force and the National Park Service have agreed that the Air Force will partially mitigate the effects of the PRTC on the National Monument (e.g., noise) by implementing specific measures, including a minimum training altitude of 5,000 feet AGL from one hour before to one hour after posted hours of operation.
NO-5	Concern with the increase in noise, including sonic booms and vibrations, with low-flying aircraft and impacts to sleep, hearing, startle effects to humans and wildlife, annoyance, prayer, ceremonies, and other day-to-day activities. Suggestions for limitations set on aircraft noise including restrictions of noise to reasonable hours. Suggestions for analysis to use single-event noise rather than using average noise.	FEIS Section 2.5 describes training periods and the hours when training could occur. After dark flights are required for realistic training. FEIS Section 4.2 describes noise impacts, including sonic booms, and presents the change in average noise levels. FEIS Section 4.2 identifies the calculated number of times per training day when different sound levels would be exceeded. FEIS Section 4.2 also explains that individual aircraft operating at low altitude may have single events as loud as 133 dB sound exposure level (for a B-1 using afterburners at 500 feet AGL). As explained in FEIS Section 4.7.3.1, training aircrew avoid buildings during this fly-up maneuver. Supersonic would be proposed above 20,000 feet MSL for bombers and above 10,000 feet AGL for fighters. FEIS Section 2.8 describes the minimum altitude for supersonic maneuvers. FEIS Appendix I explains noise measures in more detail.
NO-6	Does altitude have a factor in the decibels of noise reaching the ground?	DEIS Section 3.2 and FEIS Section 4.2 provide noise effects based upon aircraft altitude above ground level. This means that an aircraft flying at 10,000 feet MSL above 3,000-feet MSL terrain would have a noise effect comparable flying at 7,000 feet AGL.

Comment and Response Matrix

Code	*Description*	*Response*
NO-7	Are there any ultrasonic magnetic waves involved in sonic booms?	DEIS Section 3.2 and Appendix I of the FEIS explain that sonic booms are created by sound pressure waves, not magnetic waves. There are no ultrasonic magnetic waves involved in sonic booms. The compression of air does result in sound effects beyond those audible to the human ear. Some sounds inaudible to humans can be heard by animals.
NO-8	What would the decibels be at 10,000 feet AGL?	FEIS Appendix I, Table I-1 and I-2 describe the decibel levels for different aircraft types flying at different altitudes AGL. FEIS Section 2.11 presents sonic boom overpressures for various altitudes AGL. FEIS Section 4.2 provides noise effects based upon aircraft altitude AGL. This means that an aircraft flying at 10,000 feet MSL above 3,000-feet MSL terrain would have a noise effect comparable flying at 7,000 feet AGL.
NO-9	There are several different units used to describe noise. Want to see single event sound exposure levels. How do decibels relate to psf? How can we understand the meaning of the sound measurements?	DEIS Section 3.2 explained that different noise measures are used to reflect different noise effects. FEIS Appendix I explains noise measures in more detail and Table I-1 provides typical noise levels for common sounds. Both average noise and single event sound exposure level noise are included in FEIS Section 4.2 to provide a complete picture to decision-makers and the public.
NO-10	Do not want flights over homes or corrals also suggest avoidance areas similar to those given to Native American sacred grounds to include round-up areas, birthing areas, watering holes, etc. Not all the sensitive noise areas have been identified and want assurance all avoidance areas will be respected.	FEIS Section 2.3 explains that the Air Force will work with individuals, tribal governments, and organizations to identify sensitive noise areas and periods of avoidance.
NO-11	Concern for the noise effects associated with Post Traumatic Stress Disorder and other health issues.	FEIS Section 4.2 describes studies conducted regarding performance effects of noise and other noise-related issues.
NP = National Environmental Policy Act		
NP-1	Questions if citizens can vote down the proposal or sue the Air Force. Concern the Air Force can do this without the consent of citizens and is an infringement on citizens' rights. Suggests the Air Force is ignoring the concerns expressed by citizens.	Section 1.5 explains that the FAA has jurisdiction over navigable airspace. FEIS Section 2.10 explains that federal environmental and airspace regulations will be followed in the decision-making process.
NP-2	Concern that comments and objections are not being listened to and that elected officials are not representing citizen concerns. Hope that recommendations will be added in the Final EIS.	FEIS Section 2.10 explains that federal environmental and airspace regulations will be followed in the decision-making process. Section 2.10 also explains the opportunities for public concerns to be incorporated into the decision-making process.

Comment and Response Matrix

Code	*Description*	*Response*
NP-3	Appreciation for the holding public hearings and providing a venue to provide comments and learn more about the proposal.	The Air Force appreciates your participation in the public involvement effort for the Powder River Training Complex proposal.
NP-4	What is the role of the cooperating agency and do they work in our best interest? Suggests that a state law that gives Montana the role of cooperating agency and that the Air Force should coordinate with the state. Statement that as the cooperating agency and final authority, the FAA has the most influence in the decision.	FEIS Section 1.6 of the FEIS explains that FAA is the cooperating agency and will make decisions regarding establishing airspace.
NP-5	How long is the comment period for the Draft EIS? Does the FAA see our comments?	Section 2.12.2 of the FEIS describes the DEIS public comment process and Section 2.12.3 of the FEIS describes the environmental process. The initial comment period opened on August 20, 2010 and was scheduled to end on November 15, 2010, but by request, the comment period was reopened and extended to January 31, 2011, nine weeks beyond the original timeline. Closure of the comment period for the DEIS was described in the public announcements. (See Appendix E.) FAA reviews the FEIS and determines whether to adopt it. Section 1.6 of the FEIS (Section 1.5 of the DEIS) explains that FAA is a cooperating agency and will make decisions regarding establishment of any airspace.
NP-6	Can the Air Force and the FAA cooperating agency provide a commitment that will not limit wind energy projects?	FEIS Section 4.9.3.1.4 discusses towers and FAA requirements for tall structures.
NP-7	If this goes through, can we ensure compliance with the project ROD? Concern the Air Force won't abide by their own rules.	The FEIS and ROD will be legally binding. Any and all mitigations contained in the ROD will become the legal obligation of the Air Force. (See Section 2.10.)
NP-8	How were the meetings advertised? How was the public made aware of the proposal? Concern the meetings were not publicized widely enough or early enough to allow people to attend.	Section 2.12.2 of the FEIS describes the DEIS public comment process and the methods used to advertise meetings. In addition, Appendix E of the FEIS describes the advertising for the 19 public hearings and four Native American meetings held during the public comment period.
NP-9	The language in the document seems vague, such as "expected to", "may be", "approximate", as well as using different units of measure.	DEIS and FEIS language reflects the predictive nature of the analysis conducted to identify potential effects of the action on future conditions. Measurement units in the DEIS and FEIS are similar to those used in other NEPA documents and when possible are consistent throughout the document, but are tied to the type of measurement being made. For example, measurements involving airspace use nautical miles, and measurements of ground areas are reported in acres or square miles. (See also response to NO-9.)

Comment and Response Matrix

Code	*Description*	*Response*
NP-10	What is the process of government consultation? Would like to see other agencies/entities/citizens involved in the comment process and what their comments are. Will a Memorandum of Understanding be created amongst all agencies possibly impacted?	FEIS Section 2.10 explains the NEPA process. DEIS Section 3.7 explained the Government-to-Government consultation. FEIS Appendix E explains other agencies and entities which have been invited to participate in the NEPA process. Appendix E also identifies the public hearing locations and times to support participation by any and all involved parties.
NP-11	This proposal does not follow Air Force Policy Directive 32-70 or EO 11991 in protecting or enhancing the environment. Concern the EIS is swayed towards the needs of the Air Force not for the concern of the environment.	FEIS Section 2.10 identifies the policies and directives followed in the preparation of this EIS. Section 2.11 identifies one of the goals to be reduced environmental conflicts. Section 2.3 provides a list of mitigations.
PN = Purpose and Need		
PN-1	Aircrews need to be combat ready and additional airspace is needed.	The Air Force appreciates your participation in the public involvement effort for the Powder River Training Complex proposal.
PN-2	Why can't you train somewhere else such as Nevada, Utah, the Hays MOA, in deserts, or over water? Why do you need the entire area? Suggests keeping flights in South Dakota and North Dakota. Other planes who want to use the airspace will have to use fuel to get here. Concern there is already enough disruption from military flights and substantial restricted areas already in place. The existing airspace is large enough.	FEIS Section 2.10 describes the training requirements and limitations for B-1 and B-52 aircraft. Section 2.11 explains how the training location alternatives have been identified. Section 2.11 explains that training in other locations is done to the extent possible. Other aircraft are included in LFE training (See Section 2.8). Section 1.0 of the FEIS discusses the purpose and need of the Proposed Action, including the training requirements for the Air Force.
PN-3	Concern that this expansion is not necessary for national security. Suggestion that training be concentrated on ground training rather than aircraft. The Air Force needs to consider how to use America's resources wisely and the potential harm outweighs the benefits. What airspace will be given up?	FEIS Section 1.0 describes the need for a trained military force. Section 2.10 describes the B-1 and B-52 missions for which aircrews need to be trained. Section 2.11 details the training requirements and limitations of existing training airspace. Section 2.11 explains how the training location alternatives were identified. All airspace is reviewed on an annual basis by the FAA and the Air Force to determine its ongoing need and capabilities to meet the training airspace needs. This review process is separate from NEPA.

Comment and Response Matrix

Code	*Description*	*Response*
PN-4	Why is it necessary to fly down to 500 feet (including Native American reservations)? Can they fly at 1,000 feet minimum?	FEIS Section 2.10 describes the low-altitude training associated with the B-1 aircraft. B-1 crews must maintain proficiency in low level employment down to 500 feet AGL to fulfill current and future combat requirements. According to FEIS Section 2.8, approximately 15-20 minutes of a two hour mission would take place below 2,000 feet AGL. The vast majority of this training is currently accomplished at 1,000 feet ATL with a minimum amount of time spent at 500 feet AGL to maintain aircrew proficiency in the unique dynamics of flight at 500 feet AGL. The Standing Rock, Cheyenne River, and Northern Cheyenne Reservations would not be overflown below 12,000 feet MSL under Modified Alternatives A or C.
PN-5	How many days do you need to train in the airspace? Information in the Draft EIS seems contradictory as to whether LFEs would be 10 days or 12 days per year. Thought the airspace would be used for 10 days but Draft EIS says over 200 days.	FEIS Section 2.5 describes the training requirements and presents the proposed scheduled time for the airspaces to be activated for training. Day to day training would be for 240 days per year. LFE training would be up to 10 days per year (of the 240 days).
PN-6	The Bombers have been around a long time. Won't they be replaced soon?	DEIS Section 1.2 explains that the B-1 aircraft continue to be upgraded with multiple advanced technologies to ensure their usefulness and applicability into the future.
PN-7	Suggestion that with today's technology, flight simulators can provide additional training. Existing airspace would be adequate with use of flight simulators. Flight simulators need further discussion.	As explained in FEIS Section 2.11.3.3, sophisticated flight simulators will continue to be used to the extent possible. Even the best simulators lack realism of actual flying and aircrews do not receive the same physical training challenge in simulators as during aircraft flight. Extensive aircrew use of simulators is already included in the flight requirements for the proposed PRTC.
PR = Physical Resources		
PR-1	Would like to see more water and soil data. Water and soil information is inaccurate. pH in MT area is high to very high in Alkaline.	DEIS Section 3.5 mapped soil types and described pH. Almost all (99 percent) of the regional soils have a pH greater than 5.0 (extremely acidic) or less than 8.5 (strongly alkaline). There is no proposed surface construction (See FEIS Section 2.8.6). FEIS Section 4.5 explains that the only feasible soils or water consequences could be from minute particles of chaff. Chaff concentrations are calculated to be approximately 0.00377 ounces per acre per year. (See FEIS Section 2.4.6.3.) The soil pH is nearly entirely outside the range to react with chaff coatings, and the chaff particles rapidly become indistinguishable from silica and aluminum soil elements. No soils or water impacts would be anticipated. (See also FEIS Appendices C and D.)

Comment and Response Matrix

Code	Description	Response
SA = Safety		
SA-1	Concern for mid-air collisions when flying at low levels. What are the safety statistics in the area? What safety measures will prevent mishaps?	FEIS Section 4.3 describes the flight safety of the B-1 and B-52 aircraft, including the Class A accident statistics. These include all aircraft operations, including training below 2,000 feet AGL. The Air Force and FAA would continue coordination to enhance the situational awareness of aircraft operators as to whether PRTC low altitudes MOAs (airspace below 12,000 feet MSL) are active. This may include practices for use of existing data, equipment, and procedures as well as integration of advancements in software and/or equipment.
SA-2	Safety concerns in flying between Billings and Rapid City.	DEIS Section 3.1 explained that Victor airway V86 can be used between Billings and Rapid City, which would be outside the proposed MOA airspace and beneath existing and proposed ATCAAs. IFR or VFR aircraft could use this airway. VFR aircraft could fly see-and-avoid through an active MOA direct between Billings and Rapid City.
SA-3	Safety concerns when rerouting during inclement weather or multiple flights on Victor airways without adequate communication.	DEIS Section 3.1 described Victor airway use during inclement weather flying IFR if MOA airspaces are activated. The stacked and additional MOAs are designed to provide for IFR access and training aircraft temporary relocation out of a specific airspace to allow for IFR transit. FEIS Section 2.3.1 explains that the announcement by NOTAM in advance of MOA activation provides as current information as possible. Pilots who could not fly VFR due to weather or contract requirements, sought to obtain real-time information on a MOA activation, and were not able to obtain such information see the lack of information as an adverse impact.
SA-4	Would like better communication with Denver Center, MNP, and SLC to increase safety. Will ARTCC communication boundaries be simplified?	The communication capabilities within the PRTC region are consistent with established requirements for the National Airspace System. Frequency coverage for aircraft operators will continue as currently established. The existing airspace management procedures used by Denver and Salt Lake Air Route Traffic Control Centers (ARTCC) for controlling PR A/B MOA will be revised and expanded to include Minneapolis ARTCC. Any additional coordination requirements necessary for the management of the PRTC will be added to agreements between the air traffic control facilities and the Air Force. The existing procedures within the Aeronautical Information Manual (AIM) covering contact with air traffic control facilities and details published on charts and other Flight Information Publications (FLIP) should be followed to contact the air traffic control agency responsible for any particular MOA.

Comment and Response Matrix

Code	Description	Response
SA-5	Concern about fires caused by flares and the need to restrict use of flares. Not enough analysis has been done. Extreme fire danger rating is too high; should be lower rating. Need to consider suppression capabilities in regional areas. Please provide an historical comparison. Would like flares dispersed no lower than 10,000 feet.	FEIS Section 2.3.1 describes altitude limitations of flare use and the cessation of use under certain fire danger ratings. FEIS Sections 3.3 and 4.3.3.1.3 describe the different types of flare failures and the potential impacts from flares deployed in fire danger conditions, including the National Fire Danger Rating System and the conditions under which Ellsworth AFB would suspend flare use. Ellsworth AFB mutual aid agreements are also described in that FEIS section. Regional response, including federal agencies, would occur for any fire, including an unlikely flare-caused fire. (See also FEIS Appendix D.)
SA-6	A more thorough discussion on how fires from flares will be handled needs to be addressed.	The FEIS extensively and adequately discusses the potential for fires from any source and how such fires would be handled. FEIS Section 2.3.1 describes altitude limitations of flare use. FEIS Sections 3.3.3.3 and 4.3.3.1.3 describe the different types of flare failures and the potential impacts from flares deployed in fire danger conditions. Section 3.3 explains that fire danger ratings are relative, not absolute, and are location-specific, and that land management agencies estimate fire danger for a given rating area. FEIS Section 4.3.3.1.3 also describes Ellsworth AFB mutual aid agreements with local and regional emergency response agencies, which are activated for any fire, including an unlikely flare-caused fire (See also FEIS Appendix D.)
SA-7	Concern for private pilot's safety when they are flying in slow planes with much faster aircraft in the area, including impact from wind vortices. Similar concerns for high-performance GA flying into 3 NM circle airports and/or flying in thunderstorm conditions.	Training B-1 aircraft would use see-and-avoid as well as electronic capabilities to identify general aviation aircraft approaching the B-1's path of flight. FEIS Section 4.1 explains that see-and-avoid procedures are the responsibility of all pilots, including military pilots. Section 4.9 explains that uncertainty regarding low-level overflight and wake vortices could have the potential to affect low-flying aircraft, including highline patrol, pipeline patrol, and crop dusting aircraft. Section 4.3 describes the potential safety risks associated with military training aircraft and impacts from lack of communication. This safety risk is seen as an adverse impact. Section 4.3 describes training aircraft accident rates and safety concerns where worsening weather would require a VFR flight to go IFR but a scheduled MOA would prevent IFR flight. The stacked and additional MOAs are designed to provide for IFR access and training aircraft temporary relocation out of a specific airspace to allow for IFR transit. GA uncertainty about flying into scheduled training airspace is further addressed in AM-1. The random and unpredictable B-1 overflight which could occur at any given location an average of six to nine times per year or more at or below 2,000 feet AGL was seen by pilots at hearings as an adverse impact. (See

Comment and Response Matrix

Code	Description	Response
		Section 4.9). The Air Force and FAA would continue coordination to enhance the situational awareness of aircraft operators as to whether PRTC low altitudes MOAs (airspace below 12,000 feet MSL) are active. This may include practices for use of existing data, equipment, and procedures as well as integration of advancements in software and/or equipment.
SA-8	Concern for pilot's safety while doing frequent wildlife surveys.	DEIS Section 3.1 described the wildlife and wetlands surveys and photography and identifies specific weather conditions and time periods when such surveys would need to occur. Section 4.9 explains the need to coordinate with Ellsworth AFB to deconflict military operations.
SA-9	Concern for safety during recreation and ranching.	FEIS Section 4.8.3 explains land use and recreation impacts and describes startle effects upon domestic and ranch animals. Recreation, including parasailing could occur at specific locations. Often these locations are identified on FAA aeronautical charts. Section 4.8 explains that the Air Force would not normally schedule the airspace from Friday noon through Sunday night to support heavy use recreational activities. Recreation can also include camps for youths and adults. The Air Force will work with ranchers and others to identify seasonal avoidance areas. (See Section 2.3.) Section 5.0 discusses recreational cumulative effects.
SA-10	Aircraft and bird strike safety concern.	FEIS Section 4.3 explains bird-aircraft strike risk and actions taken to reduce risks.
SA-11	Concern for safety if training includes flying lights out.	Training would not be with lights out in the proposed PRTC MOA airspace.
SA-12	Concern for the danger of flares on wells and gas pipelines.	FEIS Section 2.8.5, Section 4.3.3.1.3, and Appendix D explain flare release altitude limitations of 2,000 feet AGL. Flares burn out in 500 feet or at 1,500 feet AGL. It would be extremely unlikely that a burning flare would strike the ground at all (see Section 4.3.3.1.3) and even more unlikely that a still-burning flare could fall at any specific location, such as a well.
SA-13	Can chaff and flare use be limited to winter months to avoid peak fire season?	PRTC training requirements are necessary during summer months, but the Air Force would discontinue flare use when the fire rating is very high or extreme. FEIS Section 2.8 describes chaff and flare use, including flare release restrictions. Chaff does not burn and does not pose any fire risk.

Comment and Response Matrix

Code	Description	Response
SA-14	Concern of the health risks of ingesting the chaff and flare debris or from dud flares.	FEIS Section 2.8 and Section 4.3.3 describes the chaff and flare residual materials. Proposed chaff deployment would result in an estimated average of 0.00377 ounces of what is effectively soil per acre per year. Chaff and flare plastic or paper pieces have never been recorded as ingested by animals (see FEIS Appendices C and D). Appendix C explains that airborne chaff does not abrade to respirable particles. During controlled tests, animals rejected eating concentrations of chaff. Chaff fibers are dispersed in the air and upon contact with the ground, break down to become silica and aluminum particles indistinguishable from the composition of soil. The animal fat micro-coating of chaff fibers breaks down when exposed to sunlight. (See Section 4.5.) Section 2.8 describes the extremely low risk of any dud flares (one per three years in the entire airspace).
SA-15	Concern for safety during cloud-seeding operations or agricultural applications.	FEIS Section 4.1 explains that military training pilots would be briefed where weather modification activity is planned. Information on this weather modification activity would need to be coordinated with the Air Force and the industry. Air Force would use see-and-avoid procedures to work with weather modification activities. (See also responses to SO-2 and SO-28.)
SA-16	Concern with use of countermeasures interfering with radar. How will the 60 NM chaff deployment restriction be applied?	Aircrew pre-flight briefings (see FEIS Section 2.10.4.4) identify avoidance areas and distances for deployment of defensive countermeasures. FEIS Sections 2.3 and 2.8.5.1 describe the chaff deployment restriction relative to FAA radars. Weather radars have the ability or identify and distinguish chaff. FEIS Section 4.3.3.1.2 discusses the deployment of chaff after receiving clearance from FAA Frequency Management Authority.
SA-17	Concern pilots are showing off and flying recklessly.	FEIS Section 2.10 describes the detailed activities required for pilot training and briefings in advance of missions. Pilots are training as they are expected to perform in combat and are not flying recklessly or showing off.
SA-18	Most medical flights are above 10,000 feet and may be operating at FL180 to FL250.	FEIS Section 2.3 explains that medical flights would be given priority. Section 4.1 recognizes that medical flights typically are above 10,000 feet MSL. The MOA stratification is designed to permit IFR transit, including emergency flights.

Comment and Response Matrix

Code	*Description*	*Response*
SA-19	Concern there isn't adequate communication capabilities when medical or other emergency flights are needed. How will they be given priority?	FEIS Section 2.3 explains that medical flights would continue to be given priority, as they are expedited currently in the existing Powder River MOAs. FEIS Section 4.1.3.1.4 notes that the Air Force currently immediately shift aircraft or end training in the airspace to accommodate emergencies. Also Section 2.3 identifies that MOA segments are designed to permit IFR transit, including for emergency flights. The stacked and additional MOAs are designed to provide for IFR access and would allow training aircraft temporary relocation out of a specific airspace to allow for IFR transit. FEIS Section 4.1.3.1.4 describes the lack of radio coverage and communication within the airspace. Section 2.5 describes the scheduling of the airspace.
SA-20	What are the response measures if an aircraft crashes?	DEIS Section 3.3 described the response measures if an aircraft crashes.
SA-21	Concern pipelines won't be checked frequently enough for leaks due to inability to access the airspace.	FEIS Section 2.5 presents the proposed schedule for training airspace activation. Pipeline checks could always be performed below 500 feet AGL or when training airspace was not scheduled. As with any temporary avoidance area, when informed of an activity, the Air Force would work with the entity to avoid the area and/or altitude.
SA-22	Concern for increased heart and other health problems for those who live under a flight path.	There is no particular flight path for aircraft training within the airspace. DEIS Section 3.2 described the random nature of flight training activity throughout the airspace. FEIS Section 4.9 describes the calculated six to nine annual average number of overflights for any given location within the airspace, although specific locations could be overflown more or less frequently. Individuals overflown may be annoyed, but there would be no flight paths with individuals regularly overflown.
SA-23	Concern for the sonic boom's effect on pipelines.	FEIS Section 4.2 describes the overpressure from sonic booms. All pipelines are constructed to withstand substantially greater pressures than could possibly be generated by a sonic boom.
SA-24	Concern of increased risk and inability to avoid towers when training or overflight damage to wind machines.	DEIS Section 3.3 explained that towers are mapped and lighted. Training aircraft identify and avoid all towers during flight operations. Permanent avoidance areas are established for towers. No damage to tall structures or wind machine operations would occur (see Section 3.3.3.3).

Comment and Response Matrix

Code	Description	Response
SA-25	Concern the additional time pilots will be in the air trying to get around an active MOA will increase safety risks.	Pilots can transit an active MOA using see-and-avoid or receive IFR priority to arrive or depart an airport under an active MOA. FEIS Section 4.3 explains that general aviation unable or unwilling to transit an active MOA using see-and-avoid, unable to communicate for IFR flights, and unwilling to exercise ground hold or reschedule during the time the MOA would not be active could potentially expend up to 4 hours of additional travel time either in ground delay and/or re-routing around an active MOA. If a pilot chose to re-route and fly the additional time, there would be no quantifiable safety effect associated with a non-quantifiable estimate of whether or not a pilot would elect to re-route, ground hold, fly IFR, or fly see-and-avoid. FEIS Section 4.1 also explains that communication capabilities would be available prior to training in a low MOA. VFR pilots unwilling to fly see-and-avoid, ground hold, or reschedule could see any additional flight time as an adverse impact.
SA-26	Concern chaff and flare use will create airborne FOD hazards.	There has not been a recorded instance of chaff or flare plastic or paper residual materials damaging an aircraft, even in extensive use training ranges such as Nevada Test and Training Range or Utah Test and Training Range. Chaff fibers, thinner than a human hair, rapidly disperse in the air. Plastic and paper pieces (described in FEIS Appendices C and D) fall to the ground as described in FEIS Section 2.8.
SA-27	Concern for the impacts from Chaff and Flare use on the environment, air quality, and people below. Concern that additional study needs to be done to determine the effects of chaff on animals and humans. Will the Air Force provide chaff and flare education to fire investigators?	FEIS Section 2.8 describes the lifecycle of chaff and flares. Section 4.8 describes the chaff and flare impacts, including residual materials which fall to the ground. FEIS Section 4.6 describes the extent of distribution of such residual materials. FEIS Appendix C explains that long-term studies to identify chaff have demonstrated that chaff breaks down quickly to particles of aluminum and silica, which are the most common elements in the soil. The degraded chaff particles are effectively indistinguishable from existing soil particles. FEIS Appendix D provides expanded details on flare type, usage, and impacts. As described in Section 2.8 and Section 4.3 of the FEIS, the Air Force will work with local fire departments under the proposed airspace to educate them on chaff and flare deployments and residual materials.

Comment and Response Matrix

Code	Description	Response
SA-28	The analysis assumes chaff will be distributed evenly throughout the airspace, is this fact or will it be concentrated within routine training routes? Can the amount of chaff deployed be quantified?	FEIS EIS Section 2.8.5 describes the quantity of chaff deployed and chaff distribution. Chaff is not limited to any specific area. It is used in response to air- and/or ground-based threats. Winds at deployment altitude would disperse chaff fibers which are thinner and lighter than human hair. Aircraft training flights and chaff distribution would be random and not localized.
SO = Socioeconomics		
SO-1	This will decrease home/ranch values. If the military is going to take our land, we should be compensated for it.	As described in FEIS Section 4.9, the presence or absence of training airspace over existing ranches and farms is not considered in land appraisal value within the ROI. (See also SO-19.)
SO-2	Spraying crops will be limited or impacted by low-altitude training overflights or wake vortices which will have an economic impact on our crops. Would like mitigations during crop spraying months.	FEIS Sections 4.3.3 and 4.9 explains the safety elements associated with wake vortices and crop-spraying aircraft. Section 4.9 describes the average overflight of any given area. Potential safety risk to agricultural application aircraft is an unavoidable adverse impact. Economic concerns related to agricultural uses are addressed in FEIS Section 4.9.3.1.2; impacts to crop-dusting etc., are discussed in Section 4.8, Land Use.
SO-3	Concern the tax base will go down when property tax goes down impacting the regional area.	As described in FEIS Section 4.9, the presence or absence of training airspace over existing ranches and farms is not considered in land appraisal value within the ROI.
SO-4	The quiet and serene environment is part of the value of the land.	FEIS Section 4.2 explains noise consequences. FEIS Section 4.9 describes the estimated average number of times per year a location could experience low-level overflight. Section 4.1 explains that individuals under the existing Powder River A and B MOAs (proposed PR-2) have been startled by low-altitude training aircraft. During hearings, individuals expressed the concern that even infrequent low-altitude overflights, and the uncertainty of such overflights, would have an adverse impact; that impact would be unavoidable.
SO-5	Concern for the economic impact to the areas that become off limits to pilots, including medical teams.	No areas under the proposed MOAs would become off-limits to civilian pilots. FEIS Section 4.9 explains that emergency flights will be given priority. Different MOA segments facilitate IFR flights through activating or deactivating different MOAs (See Section 4.1.) Section 2.5.1 explains the schedule for flight training. If a MOA or ATCAA were scheduled, civilian aircraft seeking to fly IFR in the airspace or change from VFR to IFR due to weather would contact ATC and the Air Force training aircraft would temporarily use a different MOA. To support IFR flights. Economic concerns about flying VFR through active MOAs are addressed in Section 4.9.3.1.2.

Comment and Response Matrix

Code	Description	Response
SO-6	Concern for the economic impact to businesses, such as during LFEs, due to people not able to or want to fly to the area.	The Air Force and FAA would continue coordination to develop procedures to handle nonparticipants (i.e., aircraft not participating in MOA training) operating IFR entirely within the PRTC while simultaneously supporting the expeditious completion of the training flight and the return of the affected airspace to the NAS. The Air Force does not propose to schedule PRTC during weekends or holidays, which are high GA use. Increased civil aircraft flights at times, such as the beginning of hunting season, would function as described for IFR and VFR flights (see Section 4.1.3.1 for review of IFR and VFR civil flights). Section 2.5 describes the LFE activity and hours when LFE operations would occur. As described in Section 4.1, civil aviation could schedule around the quarterly LFEs conducted 1 to 3 days a quarter, for not more than 10 days per year. During an LFE there could be a period of 2 to 4 hours per day of training. This would not be expected to have a significant impact upon businesses in the area. Hunting and other forms of recreation coexist with military training under the existing Powder River MOAs. Normal flights could occur during LFE days when the airspace was not active. AM-1 addresses the overall need for communication and coordination. For noise effects on hunting see Section 4.9.2. Effects to reservations are discussed in the Cultural (Section 4.7) and Environmental Justice (Section 4.10) sections.
SO-7	This will increase fuel consumption, increasing costs to private pilots and commercial airlines when they have to fly around the active MOAs. GPS and NexGen radar make Victor airways obsolete.	Civil aircraft flights above FL260 would not be affected by the proposed PRTC. FEIS Section 4.1 explains that there could be increased fuel consumption for civil aviation if a pilot did not schedule around the times of the NOTAM-announced activated airspace, chose not to fly see-and-avoid, could not fly in an inactive MOA segment, or decided to fly IFR around an active MOA. If a pilot chose not to do any of the above actions, an up-to-4-hour delay or re-routing could be seen by civil aviation pilots as an adverse impact (see also response to SO-6 and SO-9). When training airspace was not activated, a pilot's use of GPS for direct VFR flights would not be affected.
SO-8	This will cause long delays which will increase costs to civil aviation.	FEIS Section 4.9 explains the extent of delay which could be anticipated if GA elected to not fly see-and-avoid during the time period when a MOA was scheduled, were unable to fly IFR, or were unwilling to fly IFR under ATC direction, Table 3.1-7 presents the estimated daily civil operations within the airspace during proposed scheduled training hours. Delays of 2 to 4 hours for those who elected not to fly VFR see-and-avoid and could not fly IFR could be seen as an adverse impact.

Comment and Response Matrix

Code	Description	Response
SO-9	Concern tourism, including hunting and recreation, will decrease when MOAs are in use.	FEIS Section 4.8 explains that hunting and recreation regularly occur under the existing Powder River A and B MOAs (proposed PR-2). MOA activation is not expected to impact tourism, hunting, or recreation, as described in Section 4.8. The mitigations described in FEIS Section 2.3.1 explain avoidance elements of the Little Bighorn Battlefield National Monument. The frequency of low level overflight (2,000 feet AGL or below) is estimated to average 6 to 9 times per year at any given location. In the unlikely event that a hunter or game was startled, the EIS notes that the hunter would likely be annoyed. (See FEIS Section 4.8.) FEIS Section 4.9 describes the potential GA flight delays which could occur as a result of GA pilot decisions when a MOA was scheduled. Air Force training operations would be temporarily adjusted to allow IFR arrival and departures to/from airports beneath PRTC (see FEIS Section 4.1).
SO-10	Concern for the economic impact on regional airports, including future development of airports/airstrips.	FEIS Section 2.3.1 describes military training exclusion areas for public airports under the proposed airspace, which generally are a three-nautical mile circle with an altitude of 1500 feet. FEIS Section 4.3 explains that public airports and private airfields dependent on transient air traffic could be impacted. As a consequence, if an individual chooses not to, or is unable to, fly when the MOA is active, local airport users could experience delays of up to 4 hours. Pilots unable to fly IFR and unable or unwilling to fly VFR in an active MOA could experience an up-to-4-hour delay (see FEIS Section 4.1.3.1.3). The Air Force and FAA would continue coordination to develop procedures to handle those nonparticipants (i.e., aircraft not participating in MOA training) operating IFR entirely within the PRTC while simultaneously supporting the expeditious completion of the training flight and the return of the affected airspace to the NAS.
SO-11	Concern for the economic impact this will create on ranchers checking on their animals by plane.	FEIS Section 4.9 describes the average extent of overflight, and Section 2.10 describes the average time when military aircraft would be at altitudes 2,000 feet or below. FEIS Section 2.3 explains that the Air Force would provide for reasonable temporary avoidance when provided information of a ranching activity such as weaning and branding. Ranchers could access NOTAMs to determine when an airspace was active. Individuals who chose not to fly see-and-avoid during the period of a low-level scheduled MOA and could not delay or reschedule their flights to check on animals during the time when the MOA would not be scheduled, see the additional limitation as an adverse impact; that impact is unavoidable.

Comment and Response Matrix

Code	*Description*	*Response*
SO-12	Who do we contact for damage claims? Will claims be handled locally? Ellsworth AFB does not respond to calls.	FEIS Section 4.3 explains that, for example, penned range cattle could be spooked by sudden noise or low-level overflight. FEIS Section 2.12 explains that the Air Force will work with ranchers to establish reasonable avoidance areas. The section also includes the damage claims process which begins by contacting Ellsworth AFB Public Affairs. (See also GE-8.)
SO-13	Concern for the economic impact of animals getting spooked and hurting themselves or others, taking out a fence, reduced fertility, etc. How will we be compensated? Would like mitigation measures in place to avoid round up, birthing areas, finishing enterprises, etc.	FEIS Section 4.3 describes the potential impact to animals and explains that the Air Force will work with ranchers under a variety of circumstances, particularly when provided timely notification, to identify sensitive times and locations to avoid scheduling low-altitude overflight during those times. (See also BI-2.) FEIS Section 4.9 describes the average number of low-level overflight at any given location under the airspace. Low-level overflight is seen as an unavoidable adverse impact without mitigations. FEIS Section 2.12 describes how damage claims would be handled. Mitigations described in FEIS Section 2.3.1 include: "Temporary avoidance areas would be coordinated with ranches to reduce the potential for impact during concentration of range animals for branding, calving, weaning, and/or other ranch operation."
SO-14	This project is too costly. Who pays for it? How is it a fuel savings for the Air Force if transient aircraft train in the airspace from other bases?	As explained in FEIS Section 2.10, the PRTC airspace provides for substantially improved training with available fuel resources.
SO-15	Concern for the economic impact from the inability to perform predator control.	FEIS Section 4.9 describes the average extent of overflight, and Section 2.5 describes the average time when military aircraft would be at altitudes 2,000 feet or below. FEIS Section 2.3 explains that the Air Force coordinate with ranches to identify temporary avoidance areas to reduce the potential for impact during concentration of range animals for branding, calving, weaning, and/or other ranch operation. Ranchers could access NOTAMs to determine when an airspace was active. Individuals who chose not to fly see-and-avoid during the period of a low-level scheduled MOA and could not delay or reschedule their flights during a time when the MOA would not be scheduled, may see the additional limitation as an adverse impact.

Comment and Response Matrix

Code	Description	Response
SO-16	Concern for the economic impact on wool value from chaff or chaff and flare materials.	FEIS Section 2.8 and Appendix C explain that chaff fibers rapidly break down and become the equivalent of soil. Wool processing procedures include methods for cleaning the wool for soil, burrs, or other materials. Chaff particles are indistinguishable from soil, so, in the unlikely event that a chaff particle alighted on a sheep, such particles would be removed along with other materials in the wool cleaning. There is no basis for believing that chaff or flare inert plastic or paper pieces would become attached to sheep or to any other animal. (See FEIS Appendices C and D for relative sizes of the plastic pieces.) The normal procedures for cleaning the wool would clean out any extremely unlikely pieces of chaff or flare residual materials.
SO-17	Concern for the impact of future wind farms, oil and gas development, or communications towers.	FEIS Section 4.9 explains that the Air Force would not oppose the development of wind farms which would not impact military readiness or training. Future wind farms approved by FAA would be mapped for flight avoidance. FEIS Section 4.8 explains that the proposed action would not inhibit wind farm development under the airspace. Sections 4.9 and 5.0 explain that no impacts to oil and gas development or other surface development would occur from aircraft overflights. Section 2.3 explains that an adopted mitigation would be the avoidance of known blasting operations (see Sections 4.9 and 5.0). Communications towers are designed to withstand wind forces substantially in excess of aircraft wake vortices. Towers are mapped and avoided. (See Section 3.3.) The proposed action does not include any Air Force construction projects under the airspace.
SO-18	Concern that low-level or supersonic flights will damage houses or household items or disrupt lives and sleep.	FEIS Section 4.8 explains that vibration from infrequent sonic booms or an average of 6 to 9 low-level flights per year could vibrate bric-a-brac. Section 2.12 describes the Air Force procedure for damage claims. Sudden overflight or sonic booms during LFEs 1 to 3 days once a quarter for up to 10 days per year could be seen as an adverse impact.
SO-19	More analysis needs to be done on impacts on property values. The document only uses appraisers in Montana.	FEIS Section 4.9 explains that MT, ND, SD, and WY state laws were reviewed to determine the appraisal process for property valuation, and appraisers were interviewed in MT. There are no property appraisal procedures or laws that would affect appraisal processes in any location under the proposed MOA (see Section 4.9.3.1.1). MT was used in the example because much of the existing Powder River A and B MOAs overlie MT.

Comment and Response Matrix

Code	Description	Response
SO-20	Feedlots/CAFOs have not been adequately identified or considered in economic impacts.	FEIS Section 2.3.1 explains that the Air Force will work with ranchers and farmers to identify noise-sensitive locations and establish reasonable avoidance areas around those locations when they are in use.
SO-21	EIS should explain how landowners and residents have been affected by past training.	FEIS Section 4.8 explains that B-1 training has occurred in Powder River A and B MOAs (proposed PR-2) for decades. Section 4.9 explains that ranch and farm activities as well as recreational activities, including hunting, all occur under the existing MOAs. Impacts have been avoided when seasonal avoidance areas were identified, for example, by ranchers. There is no quantifiable difference among the economic activities under the existing airspace or the proposed airspace, except that the percentages of ranching and agricultural land uses are somewhat different, and there are no designated urban or tribal areas under the existing airspace. Altitudes and avoidance areas proposed in the Modified Alternatives are designed to reduce effects on these areas. FEIS Section 5.0 describes past, present, and foreseeable actions and discusses cumulative effects.
SO-22	The EIS does not adequately or accurately discuss regional or national economic impacts.	FEIS Section 4.8 explains that B-1 training has occurred in Powder River A and B MOAs (proposed PR-2) for decades. Section 4.9 explains that ranch and farm activities as well as recreational activities all occur under the MOAs. Public airports and private airfields, as well as energy development, are located under the existing training airspace. There is no substantial difference between the ranching and agricultural land uses under the existing airspace and under the proposed airspace, with the exception that the percentages of ranching and agricultural land uses differ somewhat. (See Section 3.8). The differences between the existing airspace and the proposed airspace are that there are no designated urban or tribal areas under the existing airspace. FEIS Section 4.1.3.1.3 explains that since the vast majority of the commercial jet route traffic is above FL260 and could have been significantly impacted by the higher altitude ATCAA flight training activities, proposed ATCAAs above FL260 were removed from the PRTC proposal.

Comment and Response Matrix

Code	*Description*	*Response*
SO-23	Would like property values of homes in metropolitan areas near airports compared to those outside of flight path.	There are no areas under existing or proposed MOAs where noise levels approach those in metropolitan areas near airports. There are no proposed flight paths over any locations. FEIS Section 4.9 explains the random nature of flight activities within the existing and proposed MOAs. FEIS Section 4.2 explains that there are no areas under the proposed airspace where day-night (DNL) noise levels would approach the noise levels where property values are identified as being affected in metropolitan areas.
SO-24	The economic benefits go to South Dakota and North Dakota but not Montana or Wyoming.	Direct economic benefits from a military installation are primarily experienced by the community or communities nearest the installation. In this case, Ellsworth AFB is located in the northwest part of South Dakota. The existing electronic capabilities are located in South Dakota, Wyoming, and Montana. National defense training requirements, not the distribution of economic benefits, drives the physical configuration and location of the proposed action. FEIS Section 1.0 describes the driving forces behind the purpose and need for the Proposed Action.
SO-25	Concerns about base closure.	The potential for base closure is beyond the scope of this action.
SO-26	Concern that flight instruction schools will be economically impacted.	FEIS Section 4.9 describes how regional airports would be avoided during B-1 flight training by a three-nautical mile by 1,500-feet avoidance area. If the avoidance areas do not permit flight instruction, students would not be expected to fly see-and-avoid in an active MOA. MOA scheduling information and announcement by NOTAM of MOA activation would help with planning for flight instruction. If the mitigations in FEIS Section 2.3.1 were deemed to be inadequate for flight instruction, operators could see the random low altitude flights as an adverse impact.
SO-27	Concern if the Sage Grouse is listed as endangered, thousands of people will be put out of business.	DEIS Section 3.6 explained that the greater sage grouse is currently a candidate species. FEIS Section 4.6 explains that human surface activity has been shown to disturb sage grouse leks. Infrequent random overflights or rare sonic booms during LFEs would not be the type of noise that has been demonstrated to affect sage grouse leks.

Comment and Response Matrix

Code	*Description*	*Response*
SO-28	Concern for the economic impact to cloud seeding operations as well as flight safety for VFR and IFR air operations for private and commercial purposes; affecting weather modification operations (cloud seeding), crop spraying, and fire suppression throughout the region	DEIS Section 3.1 recognized that weather modification flights have to respond rapidly to meteorological conditions. FEIS Section 4.1 explains the mitigation measures for potential impacts to other airspace users. These measures would require increased communication between weather modification entities and the Air Force during scheduled MOA periods. Scheduling of airspace, announcement by NOTAM of activation, and effective communication should reduce impacts to cloud seeding operation, crop spraying, and fire suppression. (See FEIS Sections 4.1, 4.8, and 4.9.)
SO-29	Few problems under airspace. One phone call establishes temporary no-fly zone for ranching operations.	DEIS Section 4.8 explained that aircraft have overflown what is effectively the proposed PR-2 for decades. FEIS Section 2.3.1 explains that the Air Force will continue to work with ranchers to establish avoidance areas.
SO-30	Acreage listed in the agricultural table does not seem accurate.	Values in a Section 3.9 table in the DEIS were misaligned by one row. Table has been corrected in the FEIS.

COMMENTS WHICH THE FEDERAL AVIATION ADMINISTRATION (FAA) RECEIVED DURING THE 2014 CIRCULARIZATION PROCESS

The following comment response codes use a format identical to the public comment response process reflected in Appendix G.

AM	=	Airspace Management	EJ	=	Environmental Justice	PN	=	Purpose and Need
AQ	=	Air Quality	GE	=	General	PR	=	Physical Resources
BI	=	Biological Resources	LU	=	Land Use	SA	=	Safety
CM	=	Cumulative	NA	=	Native American	SO	=	Socioeconomics
CU	=	Cultural Resources	NO	=	Noise			
DO	=	Description of Proposed Action and Alternatives	NP	=	National Environmental Policy Act			

1

28 April 2014

Kent M. Wheeler
Department Manager, Operations Support Group, ATO Central Service
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

RE: Powder River Training Complex Military Operations Areas, North Dakota, South Dakota, Montana, Wyoming

Mr. Wheeler,

I am an instrument rated private pilot from central North Dakota. I am writing to comment on the proposed Powder River MOA expansion that will have a large impact on the flying community here in the four states involved. The need for a well-trained military is understood and appreciated, but the problems faced by local aircraft are going to be difficult to deal with. The NOTAM system for identifying active times in the training area might not be the easiest or most accurate way to provide up to date information. The coordination the military must use to plan and execute a training scenario could be expanded to include notifications to the flying community during actual training. Perhaps a dedicated frequency could be established to broadcast the status of the MOA training activity. With today's access to mobile data, a web site could be used to post training activity. Let's not move our military training to the next level without also moving the civilian notification methods to the latest in technology.

AM-12

Radar coverage and communication with air traffic control can be essential for proper separation of aircraft. Many areas across the upper Midwest have limited radar coverage for flight below 8000' MSL. Couple this with ATC coverage by three different centers, Salt Lake, Denver, and Minneapolis, a situation could develop in this training area where civilian and military aircraft would not have the best service for safe operation. Enhancements to these systems should be considered for users of this airspace if the MOA is expanded.

AM-3

I have had B-52's flying within ¼ mile of our farm at 300' AGL in the 1960's, and later an IR training route with many B-52's per day traveling just a few miles south of my runway. These were predictable locations; the routes were only a few miles wide. This proposal, with high-speed aircraft able to operate at 500' AGL and above over a large geographic area, presents an unreasonable restriction on local users of the airspace. Please consider raising the floor of the training areas to 8000' feet which would allow somewhat normal operations to continue for flight training, personal travel, medical flights, and charter air service to the affected areas. Route deviations for me to fly around these areas will add considerable cost and time or make air travel into the affected area impossible for many days of the year.

GE-3
SO-7

1

This expansion of the Powder River Military Operations Area is an unreasonable proposal as presented, and I cannot support it as is. Raising the floor of the training area to allow for somewhat normal activities in the affected areas, and enhancements to the communications and radar systems, would be important steps to gain my support. I am a licensed EMT working with our local ambulance service, so I understand the need for good training. We need a well trained military force, let's give them the tools to train with, but not at the cost of losing our ability to conduct business, provide medical flights, or just travel freely in this large portion of the Upper Midwest.

SA-18
SA-19

Sincerely,

Stephen Robinson

Stephen Robinson

[redacted]

CC:

ND Senator John Hoeven
ND Senator Heidi Heitkamp
ND Congressman Kevin Kramer
ND Governor Jack Dalrymple
ND Aeronautics Commission, Kyle Wanner, Director

2

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: Raise the "Hard Deck" to 2000' AGL from 500' Insure Center Knows when the MOA is Hot

DO-3

SA-4

Signature: [signature] Date: 3-1-2014
Name: Tom Wrobel
Address: [redacted]

3

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: FIND AN UNPOPULATED AERA NOT ONE THAT HAS A LOT OF G.A. AIRPORTS

AM-5
AM-6

Signature: [signature] Date: 3-1-14
Name: Jon Haynes
Address: [redacted]

4

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: THE EXPANSION OF THE POWDER RIVER MOA LARGLY IMPACTS MONTANA AIRPORTS WITH ECONOMIC BENEFITS GOING PRIMARILY TO SOUTH DAKOTA ~~AIRPORTS~~ ECONOMICALLY. THE MONTANA AIRPORTS AND FLYING COMMUNITY WILL BE IMPACTED W/ NO BENEFIT TO MONTANA AIRPORTS

PN-2

AM-2

Signature: [signature] Date: 2/27/14
Name: Cory R. Keste
Address [redacted]

5

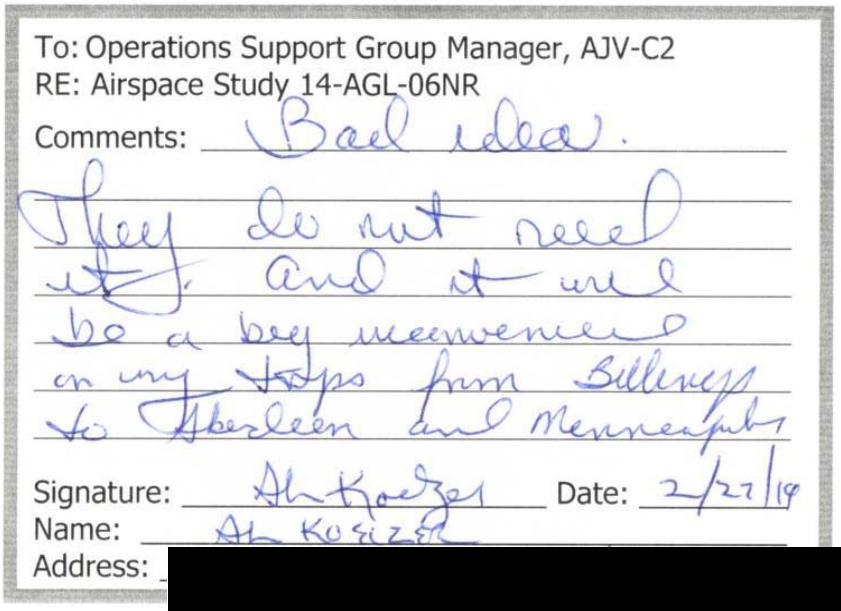
To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: So train ~~to~~ over the desert where no one lives and there is not disruption to GA airports!

AM-6
AM-5

Signature: [signature] Date: 3-1-14
Name: PENNY E HAYNES
Address: [redacted]

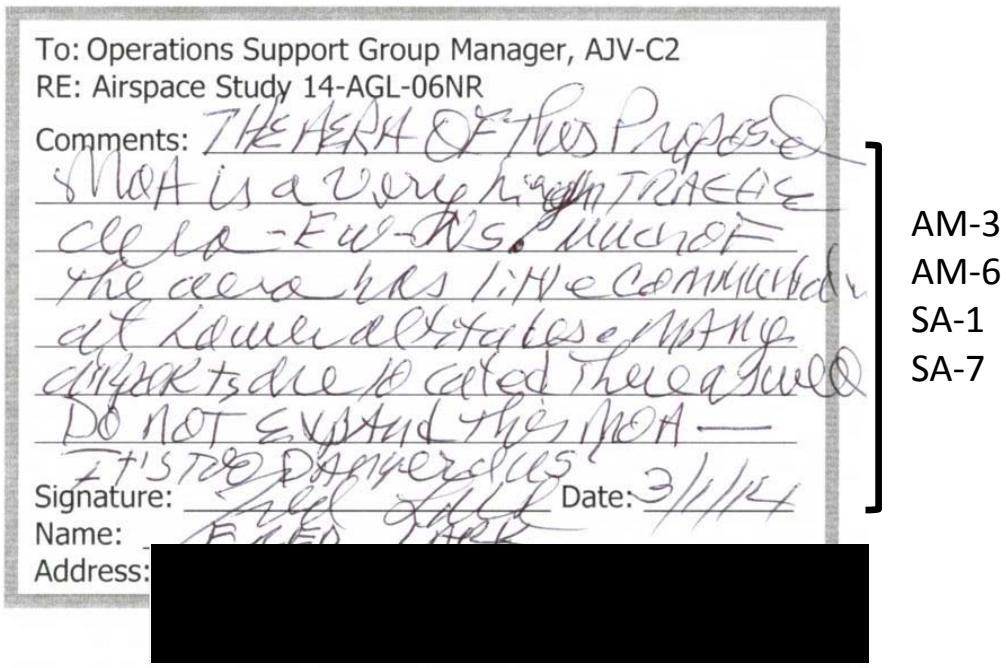
6



To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR
Comments: Bad idea.
They do not need it. And it will be a big inconvenience on my trips from Billings to Aberdeen and Minneapolis
Signature: Al Koeizer Date: 2/27/14
Name: Al Koeizer
Address: [redacted]

PN-2
AM-2

7



To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR
Comments: THE AERA OF THIS PROPOSED MOA is a very high TRAFFIC aera - EW-NS. Much of the aera has little communication at lower altitudes. Many airports are located there as well. DO NOT EXPAND THIS MOA — IT'S TOO DANGEROUS!
Signature: [illegible] Date: 3/1/14
Name: [illegible]
Address: [redacted]

AM-3
AM-6
SA-1
SA-7

8

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: Strongly oppose Powder River MOA expansion

This proposal will decrease safety for the Flying public!

Signature: [signature] Date: 27FEB14
Name: Jeff Kadlec
Address: [redacted]

SA-1

9

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: Not good for Montana - Keep it in S.D. or N.D.

Signature: [signature] Date: 3-1-14
Name: [redacted]
Address: [redacted]

PN-2

10

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

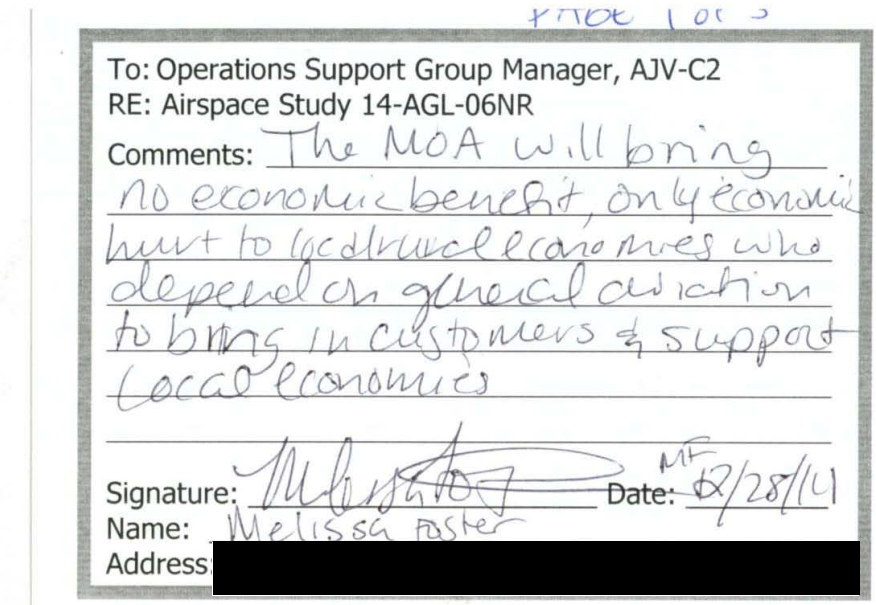
Comments: I am wondering how my charter company will be able to transverse this MOA ~~IFR~~ as I am aware that it is not possible through experience we like to visit family in this peaceful area, so what benefit does this bring to me, or the people local

AM-13

PN-2

Signature: [redacted] Date: 3/24/14
Name: Larry Pearson
Address: [redacted]

11

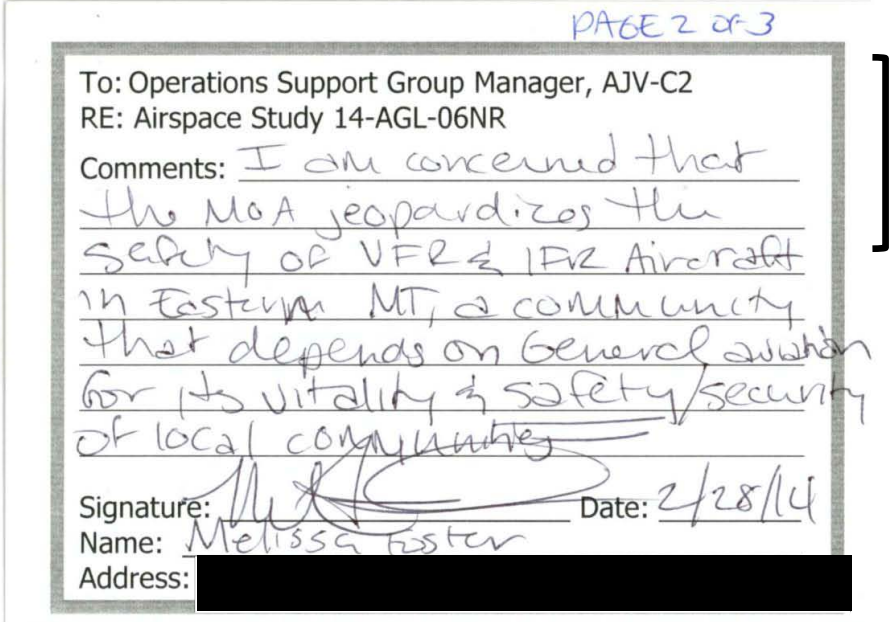


PAGE 1 of 3

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR
Comments: The MOA will bring no economic benefit, only economic hurt to local economies who depend on general aviation to bring in customers & support local economies

Signature: MF Date: 12/28/14
Name: Melissa Foster
Address: [redacted]

AM-6
GE-3
PN-4



PAGE 2 of 3

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR
Comments: I am concerned that the MOA jeopardizes the safety of VFR & IFR Aircraft in Eastern MT, a community that depends on General aviation for its vitality & safety/security of local community

Signature: Date: 12/28/14
Name: Melissa Foster
Address: [redacted]

AM-5
AM-6
AM-21
GE-3
SA-1
SA-7
SO-5
LU-1

11

PAGE 3 OF 3

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: THE MOA is unnecessary
It will do nothing to benefit
Montana. Montana has nothing
to gain, but a whole lot
to lose if the MOA expansion
occurs.

Signature: [signature] Date: 2/28/14
Name: Melissa Baker
Address: [redacted]

PN-2

13

Hi

My name is Jim Davis and I am a fourth generation rancher that helps operate two family owned ranches in northwestern South Dakota. Our two ranches lay within the new purposed expansion area of the Powder River MOA. Please understand my comment isn't to sound non-patriotic or non supportive of our military, but rather shed some light on the negative impact that this expansion is going to have.

I am a pilot and own and operate small aircraft in conjuction with our ranching operation. Being able to operate our aircraft to oversee livestock, conduct animal damage control and provide aid to utility companies after natural disasters is vital to our operation. Most of our tasks are conducted at low levels which puts my life and the lives of many others doing similar activities at an unnecessary risk when these military aircraft are present at these altitudes. The Airforce's environment impact statement manual states that there anti collision tactics are to look and avoid. How can this be done when the B-1 is often flown by itself using a terrain following guidance system when it is conducting low level missions? The only one doing any looking and avoiding is the other aircraft in their way. Even if a midair collision is avoided, the large wake vortices left behind from these large supersonic aircraft create just as lethal of situation as a midair collision itself. These aircraft are very hard to see (by design I am sure) when they are low and below the horizon approaching at over ten miles a minute.

AM-6
SA-1
SA-7
SA-9

Three days out of every quarter the Airforce will conducts LFE's or large force exercises, which puts all types of military aircraft fast and slow and high and low in tight quarters with each other and all other non IFR traffic. Note IFR traffic isn't permitted through these areas when LFE's are being conducted they must be rerouted.

AM-6
AM-20
AM-21
AM-27

The low level high noise maneuvers and increase in traffic not only threaten aircraft but causes chaos in corralled and newborn livestock as well as all types of wildlife. Also the Airforce intends to disperse flares and chaff. This practice is not to be done below 2000 ft AGL but the variation in terrain elevation and mistakes made during tense training moments could result in a real threat for wildfires if these flares were to reach the ground. This could result in extreme property damage and leaving you the land owner the burden to deal with because the Airforce don't intend on putting fire suppression equipment in active areas. Note it is up to the Airforce to determine if drought conditions are extreme enough to stop this practice.

LU-3
BI-4
NO-5
SA-5

Another factor that plays a significant part is the devaluation of personal property. This can be very difficult to put a price on but you can rest assured that land within an active MOA isn't as desirable as comparable property that isn't in a MOA.

In rural areas, prompt medical attention can mean the difference between life and death. Life flights play a critical role when it comes to saving lives. It is unjustifiable for this medical tool to be jeopardized by difficulty in trying to establish a communication bridge with the Airforce before a life flight can be made in to an MOA.

LU-1
SA-25
SA-18
SO-1

13

In conclusion, the economic effect that this is going to have on local airports, rural agriculture, general and commercial aviation, and the medical field within this expansion area is not worth the gain that the Airforce is striving for. The comment period on this very important issue seems as though it is extremely short and should be lengthen to gain valuable input from all it pertains to. Furthermore, what you allow to happen today affects the lives and livelihoods of many others tomorrow. Affecting an airspace from 500 ft AGL to 60,000 ft MSL within a four state area used at the Airforce's discretion and terms just isn't acceptable.

AM-5
AM-6
GE-3
NP-2
NP-5

Jim Davis - Tom Davis

[redacted]

14

RESOLUTION
2010-14

WHEREAS, The United States Ellsworth Air Force Base is proposing an expansion to its Powder River Training Complex, and

WHEREAS, the citizens of Butte County and the Board of County Commissioners support and understand the importance of the training that takes place at Ellsworth, but there is concern regarding safety if the expansion is approved as proposed, and

WHEREAS, the Commission is concerned about the safety of local pilots that regularly fly within the airspace contemplated by the expansion for ranching and agricultural purposes, and

SA-1

WHEREAS, the Commission is concerned that the 500 foot ceiling contemplated by the US Air Force would disrupt the day to day agricultural operations in Butte County, and

SO-2

WHEREAS, the Commission is concerned about the fire dangers that exist when flares are discharged and chaff fibers are released from US Air Force aircrafts, and

SA-5

WHEREAS, the Commission is concerned about the level of advance notification offered by Ellsworth and whether such notification is effective in warning Butte County residents and local pilots of Air Force planes flying over Butte County.

AM-3

NOW, THEREFORE, BE IT RESOLVED that the Butte County Board of Commissioners express concern about the proposed expansion of the Powder River Training Complex within the boundaries of Butte County, as it is the County's responsibility to protect the safety and livelihood of the citizens of Butte County.

SA-1

Dated this 1st day of June, 2010.

Signed: Kim W Kling
Kim Kling, Chairman, Butte County Commission

ATTEST: Elaine Jensen
Elaine Jensen, Butte County Auditor

BUTTE COUNTY SEAL BUTTE COUNTY, S.D.

15

To: Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Dept of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Ft Worth, TX 76137

RE: Proposed establishment of Powder River Training Complex

AM-5
AM-6
LU-3
LU-1

To whom it may concern:

Let's get right to the point. Such a grab of proposed airspace will have a detrimental effect upon General Aviation, IFR traffic, ranching and civilians living under the MOAs.

- Several times per week just my company alone launches our aircraft from Casper, Wy to destinations throughout the Bakken oil reserve area, such as: Dickenson, ND, Williston, ND, Watford City, ND , Minot, ND , Sidney, MT, Glendive ,MT, , and Baker, MT. We will be negatively impacted by the inability to fly IFR through the PRTC.
- We will have to plan all trips to circumnavigate the PRTC, adding to expensive aircraft costs and even more expensive departmental costs.
- The cost of having to navigate around the airspace to the northern destinations will cost an additional $1000 to $1500 per trip, per aircraft.
- Although the proposal does not imply restricted airspace, IFR traffic cannot fly inside an active MOA
- We cannot even go over the top of the MOA due to the ATCAA airspace (which is not published).
- What about all the other IFR traffic and companies doing the exact same thing every week from all around the country?
- Pt 135 companies will suffer crippling effects and some local ones based under or nearby the MOA proposal may be forced into shutdown. That is not promoting aviation.

AM-5
AM-6
AM-20
AM-21
SO-7
SO-8

[redacted]

15

- Ranching, livestock and calving will also be touched. Low level jet traffic and sonic boom will bother livestock and lifestyle.
- Increased fire risk due to flare, chaff and potential military aircraft accidents.
- The Training Complex could impact 95 jobs that generate $3.8 million in economic activity. (from the Montana Economic Impact of Airport Study)
- Will the Powder River Training Complex cost us more by having other military units fly there to train vs Ellsworth training elsewhere? I believe so, and a training complex of this size implies that.

LU-3
BI-4
GE-3
SO-5
SO-6
SO-10

This proposal needs to be stopped and not go forward, for the benefit of all, not just the interests of a few.

Thank you,

Rafe Russell
Corporate Pilot
True Drilling

[redacted]

16

CITY OF Bowman

March 19, 2014

Manager of Operations Support Group
ATD Central Service Center AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

RE: AIRSPACE STUDY 14-AGL-06NR
POWDER RIVER PROPOSED TRAINING AREAS

Dear FAA Manager,

We the undersigned Bowman City Commissioners are very concerned about the proposed Powder River Training Area expansion. Our community and city would be directly under proposed area number three. Bowman is building a new airport to accommodate increased larger turbine aircraft, which is necessary due to the Bakken, Three Forks, Tyler, and Williston oil activities. The proposed training area altitudes, navigation, entry and exit points, etc. will have a definite effect on our local aircraft operations. Other major concerns are the use of flares and dispensing of chaff. It doesn't take much to start a large grass fire in our topography. Will chaff have an effect on livestock or wildlife ingestion along with surface water runoff? We feel a compromise can be made to reduce the impact of the training areas. Some recommendations include raising the area floor from 500' above ground to 8,000' MSL, or limit the 500' AGL restriction to 1 or 2 days a week instead of five days a week, or direct telephone link to a military training office for instant updates, for pilots near the areas. Thank you for your attention.

AM-5

SA-5
BI-5

PN-5, DO-3,
AM-3, AM-12

Respectfully Submitted,

Bowman City Commissioners

/psm

PO Box 12 • 101 First Street NE • Bowman, ND 58623 • 701-523-3309 • Fax 701-523-5716 • bowmanauditor@ndsupernet.com

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To Whom it may concern, March 27, 2014

First, I want to make it clear, I do support, respect, and understand that our Military do need a place to train. But ~~can't~~ aren't there many area's that are better suited that don't have as many impacts on lively-hoods and wildlife, such as the deserts. GE-9 LU-1 GE-3 SO-5 SO-6

I am against any expansion to our area.

We already have a 9000 sq. mile training area that takes up the whole south eastern part of Montana, North eastern Wyoming and a small fraction of Southwestern South Dakota.

Rather than intrude more into our area if it is such a good idea according to South Dakota's senenator John Thune lets use more of South Dakota. Here again we have someone from someplace else imposing their ways and ideas onto us, and they don't have to live with what gets imposed on us and suffer the consequences. Just like the eastern part of the country putting the wolf back into Yellowstone Park. And guess what?, now we here in southeastern Montana have to suffer the problems that the wolves bring us. And guess what else, those eastern people and law-makers have no worrys. PN-2

We ranch in Powder River County at Broadus, Montana. We already are in the middle of the air traffic that exists now.

17

Our area has been seeing more small aircraft lately, because of the gas and oil industries interests. Our local oil field has been upgraded with CO_2 and we have pipelines following the Powder River and highway 59 south. There are pipelines 25 miles east of Broadus in the Hammond, Montana area which runs north and south, towards Baker, Montana and we have another set of pipelines just west of Alzada, Montana.

It has been said that 21 million dollars could be saved annually. I say spread out your air-men to some of your other training complexes and stop trying to take over our local area. PN-2

Montana has already opposed this expansion years ago, our Governor and congress have said NO and still do. NP-2 NA-1

Your expansion plans take in Native American Lands and they have spoken, it is NO. NA-3

Not only do we as ranchers worry about our livestock and our safety, we also are very concerned about our wildlife. Take for example the sage grouse which have been having declining numbers and more pressure has been put on us ranchers in our graging patterns to make room for the birds. The fly overs will cause undo stress on the birds, but the ranchers will get the blame. We don't need that! BI-4 LU-1 LU-3 SA-1 SA-5 SA-17 BI-3 SO-27

More expansion means more air space control, more fly overs, more chances of crashes, more stress on the livestock and wildlife.

17

We have been impacted by fly overs at all hours of the day and night. We have experienced fly overs while working our livestock in our corrals or trailing them to pasture. These big planes fly over and scare the livestock and causes them to run, go thru fences and endanger our family and neighbors who are helping us. We have had our horses break and run or buck with us from the suprising noises when flown over. LU-3 NO-2 NO-5

As you know a safety concern of ours and our neighbors is that in the last 15 years the air force has had 2 planes go down. The first one went down north of Alzada, Mt. in Carter County, Montana. The last one in the summer of 2013 also in Carter County just outside the eastern edge of Powder River County, Broadus, Montana. SA-1 SA-5 SA-6 SA-9 SA-13 SA-20

Both of these crashes scattered debri for miles and most concerning started fires. If these crashes start range fires ~~the~~ will the air force fund more pasture for our livestock and cover all the transporting expenses. Also the flares can cause fires as well.

We also have several ranchers who fly, small planes to check on their livestock and those of their neighbors. They also fly for predator control and there are specific times to do this and they can't be dictated to by the air force as to when they can protect their livestock and property. The extra expansion means more traffic which puts our small planes in danger. SA-1 AM-6 AM-12

17

There have been several meetings over the past few years and although a few people didn't completely oppose it the overwhelming majority have said no, and have given reasons but yet the air force keeps pushing the issue.
So with all do respect, what part of NO EXPANSION don't you understand.

Fruid Ranch Co. LLC
Tracy Fruit

18

Dear: Madam Or Sirs

I am writing to express my opposition to the Air Force's proposal to expand the training airspace for Ellsworth and Minot Air Force Bases; into a larger area of southeastern Montana. To expand the Powder River Training Complex to 28,000 square miles would negatively impact our environment.

Our ranch is located 250 miles from any major medical facility; when seconds count in saving lives, we rely on our EMS Life Flight Services to transport patients 24-7-365 to Rapid City, South Dakota, Bismarck, North Dakota and Billings, Montana. My family has used this service three times in the past. I am also a EMT, our local Medical Facility Life Flight's out one to two patients a month. This expansion would not only affect Life Flight Services, it would also affect 33 Community Airports containing 285 general aviation aircraft that support our daily livelihood. Not counting all the ranch planes on private landing strips. SA-19

I am also concerned that the use of live flare and chaff release could cause wild fires that endanger lives and property. The EIS does not provide a plan for responding to these fires. SA-5

Furthermore, flights that break the sound barrier and fly as low as 500 feet stress area residents, livestock, wildlife and sage grouse. Once again, there is no proposed remediation plan for land and livestock owners in the affected area. NO-5

There is no method to provide safe separation of military and civilian aircraft. Sharing of airspace with low-flying, high-speed bombers and fighters with no radar or communications is a safety concern. Allowing greater then Mach 1 above 10,000' MSL is unsafe when you have VFR traffic in the same uncontrolled airspace. May impact our ability to check livestock, livestock water and day to day ranch activity. SA-1

I can not see how this MOA is of any benefit to Montana, if North Dakota and South Dakota want to support Ellsworth and Minot Air Force Bases move the MOA to North Dakota and South Dakota leave Montana out. PN-2

I appreciate the opportunity to comment on this proposed expansion, please take into consideration the impact it would have on our daily lives.

Sincerely,

Dane Castleberry

[redacted]

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Manager, Operation Support Group, ATO Central Service Center, AJV-C2

Airspace Study 14-AGL-06NR

Department of Transportation

Federal Aviation Administration

2601 Meacham Blvd.

Fort Worth, TX 76137

As a family member of your proposed expansion area I just wish to reiterate some of my past experiences which will become more prevalent if the proposal becomes reality:

1. I have rounded up spooked livestock in the past and spent countless hours fixing the damage to fences and facilities. I have also mended broken legs when possible and shot those that were suffering.

2. I have hauled the riders of spooked horses to the Emergency Room on many occasions and helped with therapy and chores throughout their recuperation.

3. I have spent many a day and night fighting fires that threatened our ranch and our neighbors. Many of these fires were accidentally set through obviation to weather conditions.

Ranch life has enough adversities without our military making them a daily occurrence. This is our community and a small piece of the world which we have to occupy 24-7. You have a 25,000 mile radius to practice your temporary maneuvers along with the best flight simulators which I helped to buy.

As for your proposal, until you have lived in our shoes, **NO THANK YOU**.

BI-4
LU-1
LU-2
LU-3
NO-2
NO-5
NO-10
SA-5
SA-6
SA-9
SA-13

Jessica Wuertzer

[redacted]

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To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

From: Concerned Pilot, SW North Dakota

I am a private pilot, in south west No. Dakota and very concerned about the proposed Powder River Training Areas. As you may know, western North Dakota has gone through a great change, with the oil activities, associated with the Bakken, Three Forks, and Williston formations. New high paying jobs are increasing, populations climbing, air traffic in double digit increases, and many airports upgrading and expanding to meet the needs of these energy companies. In fact, our local airport is moving to accommodate this increased need. Now we may be faced with many altitude, navigation, operational restrictions associated with the proposed Powder River expanded areas!! In our view, we gain nothing (no fuel sales, maintenance income, hangar rent, no income to hotels, restaurants,dealerships, etc.), but we are stuck with the proposed low altitude (500' AGL), navigation, gap, and operational restrictions?? Not to mention flares (fire potential), chaff (surface water, livestock affect), low flying fast aircraft (safety issue) and noise? We feel the areas will deter aviation business (who wants to mess with restrictions), and move our income potential to other airports outside the MOA???

If South Dakota (Ellsworth AFB) wants a larger area, move it to South Dakota!! If North Dakota (Minot AFB) wants an area, go east to the Tiger and Devils Lake MOAs already in place!! Seems like Ellsworth and Minot get the income

AM-6

PN-2

SA-5

NO-1

BI-5

SO-6

PN-2

20

and we in southwest North Dakota get nothing??

I support our men and women in uniform and support training, but there seems to be no compromise to benefit our airport and community??

A few recommendations, I believe, would greatly reduce the training area impacts-

1- area relocation , or make area # 3 a " high area "

2- raise the area (3) floor to something higher than 500' AGL, small aircraft could go under, large aircraft could go over (FL 180)

PN-2
PN-4

3-have a direct telephone line to a military training office to have instant updates for pilots, flying near the areas (other than Flight Service Stations)

AM-3,
AM-12

Thank you for your consideration.

Concerned Pilot

James H. Bragg

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NORTH DAKOTA ATMOSPHERIC RESOURCE BOARD

A DIVISION OF THE NORTH DAKOTA STATE WATER COMMISSION

April 30, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Subject: Comments on the Proposed Establishment of the Powder River Training Complex Military Operations Areas, North & South Dakota, Montana, Wyoming

Dear Sir or Madam:

The North Dakota Atmospheric Resource Board (NDARB), a division of the State Water Commission, is charged with the regulation of weather modification (cloud seeding) activities in the state of North Dakota. Each summer, the North Dakota Cloud Modification Project (NDCMP) conducts airborne cloud seeding operations to enhance rainfall and suppress damaging hail in convective clouds from June through August. Flight operations are conducted 24/7 on an as-needed basis, with total flight hours ranging from 85-145 hours per season. Both project aircraft are based at the Bowman Municipal Airport in Bowman, ND.

The NDCMP currently includes Bowman and part of Slope County (District 1), which lie under the PR-3 expansion of the PRTC and in close proximity to Gaps B and C MOA/ATCAAs. NDARB is concerned that PRTC operations may impair NDCMP cloud seeding aircraft from safely carrying out their missions.

The NDCMP has a significant impact on the local agricultural economy. A 2009 economic evaluation shows that cloud seeding operations in the area affected by the PRTC proposal contribute $3 million annually in additional crop revenues and $9.2 million in gross business volume.

SA-15
SO-2
SO-28
AM-13

PRTC Flight Operations

The draft EIS recognized weather modification and cloud seeding as an affected activity in the proposed PRTC in several sections. The general recommendation for resolution of any conflict between NDCMP and USAF aircraft when the PRTC MOA is active is stated in Chapter 4.9.3.1.2:

900 EAST BOULEVARD AVENUE, DEPT 770, BISMARCK, NORTH DAKOTA 58505-0850
(701) 328-2788 • FAX (701) 328-3696 • TDD (701) 328-2750 • http://www.swc.nd.gov/arb/

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"For non-emergency flights, such as fire reconnaissance, U.S. Fish and Wildlife (USFWS) surveys, Angel flights, and cloud seeding, the pilot could coordinate with Ellsworth AFB to work to deconflict military operations. Weather modification flights need to respond rapidly to cloud formation and other meteorological conditions. Notification to Ellsworth AFB of the seasonable possibility of cloud seeding operations and notification of when and where cloud seeding was occurring would permit the Air Force to deconflict training missions."

Weather modification aircraft operations are primarily conducted under Visual Flight Rules (VFR) below FL180, however, Instrument Flight Rules (IFR) clearance is occasionally requested for "top-seeding" flights, which are typically conducted between FL150 and FL230. The proposal indicates that civil aviation would not be prohibited under VFR conditions even when the MOA is active, and that civil and military aircraft would operate under VFR see-and-avoid rules. IFR flights, however, would be prohibited when the MOA is active, a potentially significant impairment to effective cloud seeding operations.

SO-28
AM-13

This raises a question: Will prior notification of Ellsworth AFB regarding active weather modification seeding flights in PRTC PR-3 deconflict the affected area under an active MOA to the extent that IFR cloud seeding flights are allowed?

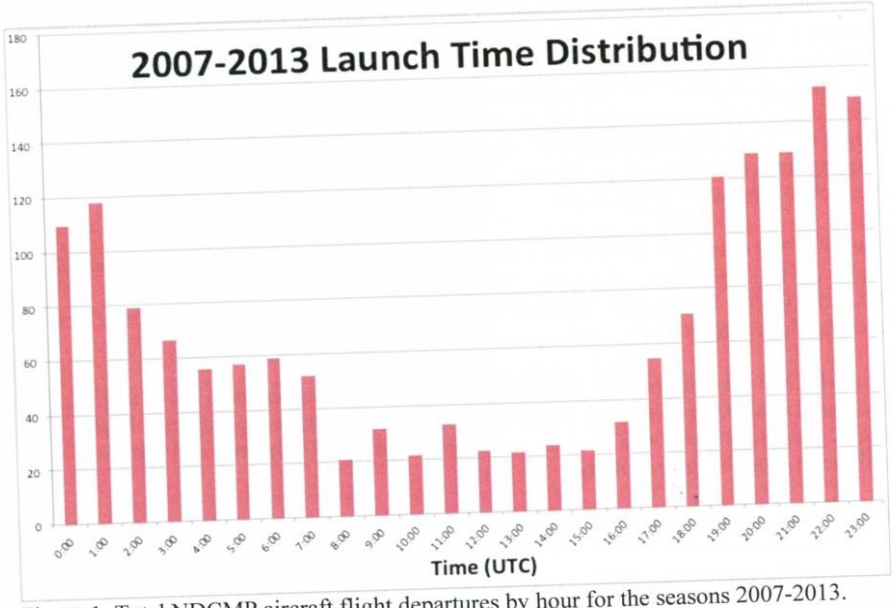

Figure 1. Total NDCMP aircraft flight departures by hour for the seasons 2007-2013.

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The proposed schedule for PR-3 Low/High MOA and PR-3 Low ATCAA is Monday-Thursday, 0730-1200 and 1800-2330 Local, and Friday, 0730-1200 Local. The expected daily use is three hours per day, 240 days per year. This constitutes a significant amount of time where USAF and NDCMP aircraft could be operating simultaneously.

Figure 1 shows that cloud seeding flights have been historically lower in number during the morning hours. This is primarily due to atmospheric stability that sets up overnight into the morning in a normal diurnal cycle. As the day progresses, surface heating begins to destabilize the atmosphere making the onset of convective clouds and precipitation much more likely. One way to significantly deconflict USAF and cloud seeding flights would be for the USAF to use PR-3 primarily during the morning block of scheduled time, as the likelihood of thunderstorms and cloud seeding flights is much greater during the afternoon and evening hours.

Another consideration must include the fact that cloud seeding flight operations are unpredictable, as operations are dictated by weather conditions. As most flights are under VFR rules, there is no filed flight plan. Aircraft fly uncertain routes, altitudes and speeds in order to safely work around and in proximity to convective clouds and precipitation. These unpredictable flight paths may act to increase collision hazards with military aircraft.

SA-15
SO-2
SO-28
AM-13

Radar Countermeasures

The proposal also would involve the use of chaff as a countermeasure to radar detection (as outlined in draft EIS section 2.4.6.1). NDARB operates a C-band (5 cm wavelength) weather radar at the Bowman Municipal Airport to assist with weather detection and cloud seeding flight operations logistics. Chaff fibers of the proposed lengths (0.3 to1.0 inch) are ideal for jamming 5 cm wavelength radar. Thus, it is entirely plausible to suggest that use of chaff during PRTC training exercises would produce high reflectivity radar echoes, which could block or obscure weather echoes from being detected by the Bowman radar. This could have a detrimental impact on cloud seeding flights as effective operations rely on accurate, timely radar information.

Further, prior research (Arnott et al., 2004) indicates that military chaff has very slow terminal fall speeds and can persist in the atmosphere for long periods, deposited many miles downwind. The draft EIS recognizes that chaff can be "detected by improved FAA radars, so to ensure that no chaff cloud interferes with ATC, chaff would not be deployed within 60 NM of airport approach radars." Due to the importance of weather radar information during cloud seeding operations, we would request the USAF provide the same consideration for the Bowman radar as it proposes with FAA radars.

SA-16

The proposed actions by the USAF regarding cloud seeding operations in southwest North Dakota help to mitigate concerns that PRTC activity would severely impair those operations. Further, proposed actions indicate that the USAF is willing to cooperate with existing users of the affected airspace so that all missions can be accomplished. However, NDARB requests further consideration of the aforementioned issues to ensure that this important and long-standing program can continue to be effective.

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Thank you for the opportunity to comment on the proposed establishment of the Powder River Training Complex. If I can provide further information, please feel free to contact me at 701.328.2788.

Regards,

Darin Langerud
Director, NDARB

References:

Arnott, W.P., A. Huggins, J. Giles, D. Kingsmill, and J. Walker, 2004: Determination of radar chaff diameter distribution function, fall speed, and concentration in the atmosphere by use of the NEXRAD radar. *Desert Research Institute*, Reno, NV, 30 pp.

22

April 24th, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV – C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Reference: Proposed Establishment of the Powder River Training Complex Military Operations Areas, North & South Dakota, Montana, Wyoming

The North Dakota aviation landscape has changed dramatically since the previous public comment period regarding the Powder River airspace expansion that took place in 2010. North Dakota's long time staple exports such as sunflowers, wheat, soybeans, corn, and heavy mechanical equipment, have now been joined by petroleum products such as crude oil, biodiesel, and ethanol. The recent oil development has resulted in North Dakota becoming the 2nd largest oil producing state in the country. This is a key reason why North Dakota has the lowest unemployment rate in the nation and the highest rate of population growth since the 2010 Census.

North Dakota's aviation system has proven to be a vital resource for the efficient movement of people and products in support of the state's development. Aviation growth has been evident throughout western North Dakota through large increases in commercial passenger enplanements, airline investments, flight operations, fuel sales, based aircraft, pilot numbers, airport auto parking and car rental needs. The state recognizes aviation's contributions to North Dakota's economic success and quality of life. During the previous legislative session, the State of North Dakota appropriated $60 million dollars over 2013-2015 to assist in the infrastructure development of the oil impacted airports in western North Dakota. A large investment from the Federal Aviation Administration's Airport Improvement Program is also being provided to the western airports in the state.

In review of the current airspace study 14-AGL-06NR, the North Dakota Aeronautics Commission desires to express multiple concerns as listed below.

1. **New Bowman Airport.** A new Bowman airport is currently being constructed to accommodate the demands that exist for aviation in southwestern North Dakota. This new facility will boast a 5700 x 75 foot concrete runway and will be able to accommodate the jet traffic demand that southwestern North Dakota needs. The facility is expected to open in 2015 at a cost of approximately $16 million dollars in federal, state, and local investment. Overlaying this new airport with an MOA that can be activated from 500 feet to FL 180 has the potential to negatively affect the aviation

AM-5

P.O. Box 5020 • Bismarck, ND 58502 • 2301 University Drive, Bldg. 22 • Tel: 701.328.9650 • Fax: 701.328.9656
E-mail: ndaero@nd.gov • Web: www.nd.gov/ndaero

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operations at this new facility. The proposed MOA could also prevent IFR non-emergency related medical flights into and out of Bowman. These outreach life-saving medical services are vitally needed in this rural area and the dependability of air access is important to the city of Bowman and the outlying communities in the area.

SA-19
SO-5

2. **Communications/Radar Concerns.** The lack of low altitude radar coverage and voice communications in this region which shares FAA Air Traffic Control (ATC) responsibilities between Salt Lake, Denver and Minneapolis ATC Centers is a safety concern of the Commission. With the proposal of the 500' AGL military operations, this lack of radar/communication coverage adds to the difficulty of being able to ensure the separation of flight by both military and civilian aircraft. The only communication that currently exists to inform the public of the activity within the MOA is the FAA NOTAM system, which is not necessarily in common use by the typical civilian rancher/farmer. Sharing airspace with low-flying, high speed bombers and fighters, with poor radar and communication services in the area, is a major operational safety concern. Additionally, the allowance for military aircraft to operate at speeds greater than Mach 1 above 10,000' MSL would also be a safety concern to VFR traffic operating in the area.

AM-3
SA-7

3. **Aerial Applicators.** Agricultural aerial application is an important industry in North Dakota as approximately 4 million acres of crops are sprayed annually throughout the state. Multiple aerial applicators base and operate in the region of the proposed MOA expansion. The Federal Aviation Administration requires that aerial applicators fly at least 500 feet above any person or structure when transitioning between fields and their airport. This requirement puts the sprayers in southwestern North Dakota at the same altitude of the proposed MOA expansion where the crews of large, high-speed military aircraft would be concentrating on training and tactical maneuvers.

SA-7

4. **Flight Instruction.** The proposed military operations area expansion would limit the region's ability to produce new pilots. Concerns of special use airspace would keep any prudent student from flying in and around areas where their skills of see-and-avoid would be critically tested.

SO-26

5. **Weather Modification Program.** There is a significant state sponsored and regulated weather modification (hail suppression and rain enhancement) program that is based at the Bowman Airport and has significant operations in this region. A 2009 economic evaluation shows that cloud seeding operations in the area affected by the proposed MOA expansion contributes $3 million annually in additional crop revenues and $9.2 million in gross business volume. The operations of this program would be significantly affected by the proposed MOA expansion as the flight operations of the program are on a 24/7 reaction time. The proposed use of chaff will also affect the radar returns utilized by this program resulting in a detrimental impact on cloud seeding flights that rely on accurate and timely radar information. Cloud seeding flights often require flying in close proximity to the clouds and at times may dictate the need for an IFR clearance. Since IFR flights are not permitted in an active MOA, the Powder River Training Area expansion also increases the risk of negatively affecting flight operations of this program.

AM-13
SA-15
SO-28

22

6. **Economic Impact of General Aviation.** The aviation economic impact for the southwest region in North Dakota has been calculated at $189 million a year with 1,152 direct employment jobs attributed to aviation. This information is provided from a federally funded Aviation Economic Impact Study in 2010. Since that study was completed, there has been a surge of oil exploration which has increased all types of general aviation aircraft traffic directly into this region. The proposed enlargement of the MOA would increase the direct operating cost of business aviation due to the extra miles needed to be flown to avoid active airspace. Flight paths for transient aircraft will need to change to avoid the active MOA and will result in the loss of productive time for the business and the passengers.

SO-7

7. **Impact to Victor Airways.** The proposed MOA expansion will impact Victor Airways that are utilized by commercial air carriers and cargo companies that provide revenue generating air service to the western portion of the state. In particular, the commercial service access to Dickinson and Williston could be impacted.

AM-5
SO-7

8. **Impact to UAS operations.** North Dakota was recently approved by the Federal Aviation Administration to become one of the six designated UAS test sites in the United States of America. One of the deciding factors of this designation was the fact that the state of North Dakota has a large amount of open and unrestricted airspace. The proposed MOA expansion would have an impact to any UAS research that could be proposed for southwestern North Dakota. Future commercial UAS operations in the southwest portion of the state could also be impacted by this proposed MOA.

AM-5
SO-7
(UAS are VFR aircraft)

After reviewing the concerns of the North Dakota aviation community as listed above, if the Federal Aviation Administration deems that the Air Force has officially justified the need for an expanded MOA; then the North Dakota Aeronautics Commission requests that the FAA and Air Force review the possibility of raising the ceiling of the proposed MOA airspace in southwestern North Dakota from 500 feet MSL to a minimum altitude of 8,000 feet MSL. This altitude change would allow aircraft operations in the area to operate under the proposed MOA without a cumbersome degree of mitigation being needed and many of the concerns listed above being addressed.

If the Federal Aviation Administration deems that the Air Force has officially justified the use of all of the current proposed airspace, altitudes, and amount of time in which the airspace will be utilized, then the North Dakota Aeronautics Commission proposes that these mitigations need to be in place before the FAA allows the Powder River MOA expansion to be approved.

PN-4

1. **Develop a Memorandum of Understanding with the North Dakota based Weather Modification Inc.**

    - An agreement with the Air Force and this state sponsored program should be in place to mitigate any negative impacts that the MOA would have to this operation.

AM-13

22

2. **Install adequate radar/communications equipment and ATC procedures that would allow IFR aircraft to be able to utilize areas within the activated MOA's.**

    - Adequate radar/communications equipment installation and a development of Memorandum's of Agreements with the Air Traffic Control Facilities is needed to allow IFR traffic to operate in and around activated MOA airspace.

AM-3

3. **MOA Activation Notice Enhancements**

    - The only communication that currently exists to the public to learn about the activation of MOA airspace is the FAA NOTAM system. An enhanced communication methodology needs to be developed to ensure that the public is better aware of which airspace is activated during certain times. Below are some examples of recommended communication enhancements:
        - Local Unicom frequencies utilized similar to an ATIS or AWOS that an aircraft can tune into to listen to updated MOA information.
        - A phone number for the public to call with a recorded message stating all new updates for MOA airspace utilization.
        - A website page that is continually updated with information regarding MOA airspace activation.
        - A 24/7 phone number for the public to call to reach a person if they have any questions regarding the MOA airspace utilization.

AM-12

4. **Efficient Airspace Utilization Plan**

    - A plan needs to be in place that details the activation and deactivation airspace process that the Air Force will utilize with cooperation from Air Traffic Control. This plan would ensure that the airspace is only active when needed for military training operations.

AM-6, AM-12

5. **Continual Review of Airspace Needs**

    - It is recommended that a sunset provision be in place and the utilization and justification of the Military Operations Airspace be reviewed every 3 years to ensure that the airspace need is still present for all sectors of the Powder River Military Operations Area. If it is determined that airspace is no longer needed for current missions, it would then be requested that the airspace be released back to the flying public.

PN-3

22

The North Dakota Aeronautics Commission understands the need for military operations areas and the continual training of airmen within the Air Force. The overall goal of the Commission is to work towards the prevention of any negative impacts to the North Dakota aviation community. This proposed expansion is complicated, unprecedented and has the potential to impact a very large area of North Dakota and the United States. The North Dakota Aeronautics Commission will continue to assist the Air Force, the FAA, and the aviation industry in working to develop a safe and efficient airspace plan for future military training needs.

Sincerely,

Kyle C. Wanner
Director

Jay B. Lindquist, Hettinger
Chairman

Cindy Schreiber-Beck, Wahpeton
Member

Maurice Cook, Bismarck
Member

Kim Kenville, Grand Forks
Member

Warren Pietsch, Minot
Member

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Baker Municipal Airport Commission [redacted]

Manager, Operations Support Group, ATO
Central Services Center, AJV-C
Airspace Study 14-AGL06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

April 24, 2014

To whomever it concerns:

The proposed expansion of the Powder River MOA is a highly politically motivated action by Senator John Thune of South Dakota. Why does a South Dakota congressmen have so much influence over Montana airspace?

Where was the outcry when Montana's Glasgow AFB was closed and Great Falls AFB severely cut back?

The USAF says they want to "share" airspace. 240 days a year from 0600 to 1130 and 1800 to 2330!! They want the "best" times when most of our civilian aviating is accomplished. The hours need to be reversed!!! How can the FAA justify military takeover of 35,200 square miles of our civilian airspace, 240 days per year. Current MOA's are operated as "HOT" as scheduled, even with very limited or no military operations in progress.

PN-3
GE-3
AM-6

The USAF needs this airspace for one thing, SAVE ELLSWORTH from planned DOD closure. It's not about budgets. If it is, why are B-1's from Ellsworth currently training at the Billings Logan International Airport in Billings, MT, over 200 miles away, when they have a civilian airport (KRAP) with Class D airspace 7 miles from their base, Ellsworth AFB.

GE-16

I have been monitoring and documenting the current SUA's that are currently in use. They are activated "HOT" almost all day, every weekday. Why? There may or

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Baker Municipal Airport Commission

[redacted]

may not be military aircraft using the MOA's, but never the less are they remain active. Civilian IFR traffic is re-routed at a high cost to operators. This does not even show all the military operations in the ATCAA's.

AM-5
AM-6

Over $30 million FAA ADAP have been spent on Baker Municipal Airport and a newly constructed airport in Bowman, ND. The USAF cannot justify PR 3 to the FAA when this money has been spent to enhance safety of corporate jet traffic into these airports. KBHK even has a grooved runway surface for the jet traffic for their safety. This is an unusual accomplishment for an airport that does not have scheduled air carrier service. WE NEED THIS AIRPORT!!! With over 500 IFR civilian operations per year to KBHK, PR 3 would severely curtail the usage of these two airports. Flight training will not be able to be conducted safely at these airports. Continental Resources estimates $70,000 per year per aircraft, as well as unnecessary delays. This proposed expansion, especially PR 3, cannot be allowed with the current and future of the oil & gas industry that underlie this area.

AM-1
AM-5
AM-5
AM-12
AM-21
SO-5
SO-10
SO-17

The USAF's Powder River Training Complex Executive Summary, dated August 2010, and does not address the Oil & Gas industry that now produces 10% of the current United Sates consumption. North Dakota is now the second largest oil production state in the nation. It has surpassed Alaska in production. This needs to be address for the PR 3 area to be implemented.

SO-17

The BLM has also expressed many concerns about fires, etc. Comments were submitted to the USAF during the EIS comment period, but were never addressed either.

SA-5
SA-6

Comments submitted under the USAF EIS are not available to the public as this is supposedly a non-rulemaking proposal ??? Really??? 35,200 square miles of Civilian Airspace? !! Further, I think this whole process has been tainted by continuous negotiations & lobbying by the USAF, National Guard, and others. The USAF has provided misinformation (no civilian IFR traffic below FL180) and made

NP-2

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Baker Municipal Airport Commission
P.O. Box 1037 • Baker, MT 59313 • 406-778-7108

false statements just to get this behemoth expansion in place. Lack of time, non-acceptance of electronic comments, and constantly changing circumstances & scenarios have severely limited public comments. — NP-2

The USAF has left no options for me under what they call three "reasonable alternatives" as PR 3 MOA is not listed as an alternative. WHY? The only proposal I can recommend is the No-Action Alternative as the USAF did not give me any other choices to save our airport. — GE-2, NP-11

Here is what can be done if the military really needs this Ellsworth AFB for its 14 aircraft, 11 of which are currently flyable. — BI-1, PN-2, PN-3, PN-4, SA-1, SA-7, SA-9, AM-1, LU-1, LU-2, LU-3, SO-4

1) Remove Area PR3

2) Install ground based radar and communications for FAA Center Air Traffic Control to provide ATCAA's only when the military actually has aircraft in this airspace.

3) No low altitude, less than FL180, during the LFE's as they pose an extreme hazard to persons, property, livestock, & industry. LFE's are totally unjustified over populated areas.

4) Powder River MOA must be eliminated if Ellsworth AFB is closed.

I am enclosing letters from current and former congressmen opposing this expansion. This expansion is totally un-justified and needs to be eliminated, or at least severely reduced in size. LFE's do not belong over populated areas, livestock, and Montana's serene ranches.

Roger D. Meggers
KBHK Airport Manager
[redacted]

23

Baker Municipal Airport Commission
P.O. Box 1037 • Baker, MT 59313 • 406-778-7108

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Roger D. Meggers
KBHK Airport Manager
[redacted]

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Office of the
Perkins County Finance Officer

100 E Main Street
PO Box 126
Bison, SD 57620
605-244-5624
605-244-5613
Fax: 605-244-7289
pkaud@sdplains.com

Sylvia Chapman
Finance Officer

Paulette Fero
Deputy Finance Officer

Paula Kopren
Deputy Finance Officer

March 12, 2014

Manager, Operations Support Group
ATO Center AJV-C2 Airspace Study 14-AGL-06NR
Dept. of Transportation Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Dear Sir:

The Perkins County Board of Commissioners instructed me to forward you a copy the resolution which the Perkins County Board of Commissioners passed on November 3, 2010. This resolution is in opposition to the expansion of the Powder River Training Complex within the boundaries of Perkins County.

Thank you for your consideration of the stand which the Perkins County Commissioners have taken.

Sincerely,

Sylvia Chapman

Sylvia Chapman
Finance Officer

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RESOLUTION 2010-16

WHEREAS, Whereas, the United States Air Force has announced the expansion of the Powder River Training Complex to encompass Perkins County, South Dakota and its surrounding area; and

Whereas, Perkins County consists of many patriotic citizens that support our military forces with their personal sacrifice and moral support; and — GE-9

Whereas, the expansion of the Powder River Training Complex would adversely affect air traffic in and around Perkins County; and — AM-5, AM-6

Whereas, the interruption of air traffic for any specified period of time will undoubtedly cause negative economic impact and potentially cause disruption to predator control efforts; and — SO-7, LU-3

Whereas, wind development and any other types of tower development may be stymied by the expansion of the Powder River Training Complex; and — NP-6, SO-17

Whereas, Perkins County derives its economic base and existence from agriculture, including the production of livestock and management of thousands of acres of grassland that could be endangered by the increase risk of fire; and — SA-5

Whereas, agricultural producer's property values will likely suffer from the military activity that will take place in many cases five hundred fifty feet above their property, cause noise, inconvenience and a breach of quiet enjoyment of their property; and — SO-19, NO-5

Whereas, the private property rights of area landowners will be infringed upon by the expansion of the Powder River Complex Expansion; and — GE-7

Whereas, other private property owners are compensated when the government devalues property and are deemed a taking; and — SO-19, GE-7

Whereas, the Air Force has alternatives for training exercises and the expansion of the Powder River Complex is not necessary; and — PN-2

Whereas, the Powder River Expansion will adversely affect the County of Perkins, its residents with sonic booms, littering of metallic chaff and firing of flairs above our grasslands, lakes and communities, all causing a reduction in property values and interruptions in commerce; and — PN-2

Whereas, Perkins County proposes that all citizens share in the negative impact of military training areas and not limit such training areas to only rural areas; and — EJ-2

Whereas, rural areas are known for providing the military with the best and brightest soldiers and that rural citizens from across this nation are often known for stepping up and fighting the wars of the United States of America; and — GE-9

Whereas, several adverse environmental affects will be experienced by the Powder River Training Complex Expansion and thus in violation of federal environmental law and — NP-11

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NOW, THEREFORE, BE IT RESOLVED, that the Perkins County Board of Commissioners strongly oppose the expansion of the Powder River Training Complex within the boundaries of Perkins County, and feel that it is the County's responsibility to protect the safety, livelihood and way of life of the citizens of the County. GE-2

Dated this 3rd day of November, 2010

PERKINS COUNTY

Norman Miles, Chairman

Mike Schweitzer, Commissioner

Willard Ottman, Commissioner

James Gochenour, Commissioner

Willis Kopren, Commissioner

COUNTY FINANCE OFFICE SEAL PERKINS COUNTY, SOUTH DAKOTA

ATTEST:

Sylvia Chapman, Finance Officer

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To: Manager, FAA Airspace Study 14-AGL-06NR March 10,2015

From: Bowman County Airport Authority

Subject: Proposed Powder River Training Area Expansion

We am very concerned about the negative impact from the proposed Powder River expansion.

1- Economic Growth Impact- The companies involved with OIL, coal, natural gas, wind charger energy,etc., will have to alter flight operations into our local airport. Bowman is building a new airport to accommodate larger aircraft associated with the Bakken and Three Forks oil formations. The proposed military areas will have many airspace , altitude, and operational restrictions, which will divert these company plans to other airports, outside the training areas. This impact will trickle down, affecting the economic bottom line for the new local airport, fuel sales, maintenance, hangar rent, etc. Also affected would be local hotels, small businesses, restaurants, etc.

AM-1
AM-5
AM-21
SO-5
SO-6
SO-8
SO-9
SO-10

2- Bowman Community operations- Many small rural hospitals rely on medevac and lifeflight operations to Bismarck for emergency care. These operations in military areas require undue flight time, extra navigation, corridor entry and exit points, altitude restrictions, etc., where timing is essential for care.

SO-5
SA-19

3- North Dakota Atmospheric Board- Bowman and Slope counties utilize Weather Modification program for hail suppression and rain enhancement. Timing is critical with these operations, and the military area restrictions

AM-13
SA-15
SA-18
SA-19

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would greatly limit the effectiveness of these aircraft to operate at the precise time.

4- Fire Fighting Operations- Our community uses aircraft with rural fire departments, to assist in scouting, positioning of fire vehicles and equipment,etc. The use of military flares (burnt or duds) is a major concern to these rural fire departments. — AM-33, SA-5, SA-6

5- Wildlife Management- Our community has an abundance of wildlife. Hunters from all across America fly here to hunt. The Game and Fish Dept. utilize aircraft in their wildlife management programs. Restrictions will have an economic impact on hunting lodges, B & B's, hotels, restaurants, taverns, etc. — LU-5, SO-9, SO-15

6- Aerial Applicator Operations- North Dakota leads the country in honey production. These sensitive areas, along with wind charger towers, and new cell phone towers, require crop dusters to fly higher, in transit. These operations would be in the 500' above ground restricted airspace, which could pose a safety hazard. — LU-4, SO-20, SO-28

7- Livestock Production- Producers are already affected by dust pollution, with the increased oil truck traffic. Another concern will be military chaff dispensing . Will this have an effect on animal or wildlife ingestion or contamination of surface water supplies? — BI-5, SA-14

8- Renewable Energy- Up to 130 wind charger sites have been proposed in our area. Will these towers affect the military radar signals? Again, lower flying

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aircraft will have to avoid these sites or fly higher. The higher altitude will be in the 500' above ground restricted airspace, which will be a safety hazard. — SA-24

Economic growth and development, along with agricultural commodity production are essential for the survival of many southwestern North Dakota communities. The expanded Powder River training areas would greatly impact the growth potential and well being of our local community. — SO-2, SO-5, GE-3, LU-1, SO-4

Considering the above items, I hope some modifications could be made to the Training areas. Some recommendations include:

A- Make use of present military areas in North and South Dakota. — PN-2, PN-4, AM-3, AM-12, AM-21

B- The 500' above ground restriction to be used 1 or 2 days/ week instead of 5 days/ week.

C- Raise proposed area floors from 500 feet to 8000 feet.

D- Provide a direct telephone/ web contact to the Air Force training center to give instant updates to pilots flying near the training areas.

We thank you for your attention and hope these recommendation will be considered to reduce the impact.

Bowman County Airport Authority Supervisors:

Rodney Schaaf Bob Morland John Soreide Andy Mrnak

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BOARD OF COUNTY COMMISSIONERS
MEADE COUNTY, SOUTH DAKOTA
1300 Sherman Street STE 212
Sturgis, South Dakota 57785
Tel 605.720.1625
Fax 605.720.1633
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Alan Aker
Chairman
Bob Bertolotto
Commissioner
Robert Heidgerk
Vice Chairman
Galen Niederwer
Commissioner
Linda Rausch
Commissioner
Jerry Derr
Commission Assis

March 27, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

RE: Air Space Study 14-AGL-06NR

To Who It May Concern: :

We are writing to express the following concerns regarding the PRTC:

We oppose flight restrictions which would negatively affect the operations of local airports and individual farmers and ranchers who fly to check cattle and crops, and other commercial, emergency, and recreational fliers. AM-5 AM-6 SO-5

The USAF has failed in the past to timely indemnify farmers and ranchers for damages they caused. We feel the risk of fires from flares and chaff may be significant and it's a matter of when, not if, an accident will occur. The area in question contains productive farm and ranch land, but is sparsely populated, which means the volunteer firefighters have limited resources. SA-5

We are concerned about low-level flights under 500 feet, which may or may not be supersonic. If the USAF would create a means in which damages would be mitigated immediately, it would ease our concerns. AM-14

We thank you in advance for your time and attention to this matter. If you have any questions, please feel free to contact our office. GE-9

Best regards,

Alan Aker, Chairman
Meade County Board of Commissioners

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TO: Manager, Airspace Review April 1, 2014

FROM: Scott Bachmeier

SUBJECT: Proposed Powder River Expansion

Dear Manager;

I am very concerned about the proposed Powder River Military area expansion plan. I am very interested in the expansion impact on our area wildlife and livestock! The propose plan has many altitude restrictions, which will impact many aviation activities. North Dakota Game & Fish Dept. use aircraft in their wildlife management programs, to track various deer, antelope, birds, cats ,etc. BI-4 PN-4 SA-8

Hunting is big business here, will these restrictions impact hunters that fly into our local airports? Will this impact trickle down to the hunting lodges, hotels, cafes, stores, etc.? Aircraft are also used in fire fighting by our local rural fire departments. Will this impact affect that ability to direct fire fighting equipment to control grass fires? We don't need more fire potential like flare drops here! LU-5 AM-33 SA-13

Other concerns are low altitude fast flying aircraft mixing with small aircraft, oil companies schedules being impacted by area restrictions, aircraft medical doctors schedules impact, and crop duster operations. SO-17 SO-2 SA-18

Please consider some recommendations- PN-2

1- move areas to existing military areas

2-raise training floors higher than 500 feet above the ground AM06

3- limit the LOW altitude to 1 day per week - Thank you for your time

Scott R. Bachmeier

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TO: Manager, Airspace Study, Operations Support Group

FROM: Rural Fire Department , Bowman, North Dakota

SUBJECT: Powder River Training Areas

Many local Rural Fire Departments are very concerned about the proposed Powder River training expansion areas. Our community has undergone great changes associated with the Bakken and Williston Oil activities. New high paying jobs are increasing, populations growing, air traffic increasing, with local communities trying to keep up with demand in services.

Rural fire departments, hospital and clinic staff, ambulance and EMT staff, and Emergency Response offices are impacted by these increased needs.

Now we may be required to do more with the Powder River Area which is Area #3 overlying our community! The potential for aircraft mid airs or crashes is real, with the proposed 500 foot altitude restriction. Also fire potential is a concern, with flare dropping operations. How will these area restrictions impact local health services, such as med-i-vac and life flights to transport patients to larger facilities? Some recommendations could greatly reduce these impacts include: 1- NO area #3, or a " high area" designation, 2- raise area floors to 8000 feet, 3- 500 feet restriction 1 day/ week instead of 5 days.

SA-1

SA-5

SA-19

PN-2

Thank you for your attention.

Bowman, North Dakota Rural Fire Department

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Manager, Operations Support Group, ATP Central Service Center, AJV-C2

Airspace Study 14-AGL-06NR

Department of Transportation, Federal Aviation Administration

2601 Meacham Blvd.

Fort Worth, TX 76137

Powder River MOA Proposal

We are writing to address the concerns we have for the Powder River "Military Operations Area" (MOA) Airspace Proposal that has been submitted to the Federal Aviation Administration by the US Air Force. They are requesting approval that will quadruple the size of the already existing MOA. The expanded MOA if approved and when active will reduce the maximum operating flight altitude to 500 feet for non-military aircraft. Because of these restrictions, several airports in the area such as Bowman, Elgin, Hettinger and Mott airports will have highly restricted operations. The proposal we would like to make is that the base altitude of the MOA should be raised to at least 8,000 feet so that general aviation, business aviation, and commercial flights can still safely occur. If the proposal doesn't change, and it is adopted as written, business and medical flights may not even be allowed to operate in this area, which would greatly affect the quality of care for medical patients in that part of our state in a time of greatest need. Both the Bowman and Hettinger communities have medical facilities that rely on access by medical specialist from larger metropolitan areas that fly in to those communities to provide medical care and consultations. Without those flights, health care will suffer.

AM-6

SO-5

In addition, should adjustments not be made to the proposal, there are considerable safety concerns that should be addressed. Because of the poor radar and communication services that exist in the area, VFR (visual flight rules) general aviation flights would face major safety concerns sharing airspace with low-level, high-speed bombers operating in close proximity. Business and general aviation would be forced to spend additional time and monies to avoid the MOA. Flight training in this area would be highly discouraged. IFR (instrument flight rules) flights into and out of the area would not be allowed. Weather Modification in the area would be eliminated because of their "last minute" requirements to treat weather for increased rainfall and hail suppression. Aerial applicators transitioning between airports and farm fields would be utilizing the same airspace as the military aircraft, but without the safety blanket of radar or communications since their reliability in that area does not exist. Livestock operations in the area will have noise disturbance issues with low level high speed supersonic aircraft operating in the area at Mach 1 speeds.

AM-3

SO-36

SO-28

SO-2

Our other suggestions for change to the proposal prior to it being approved would include:

- A "memorandum of understanding" between the US Air Force and weather modification companies during the months of their operation of June through August, allowing for their operations.

SO-28

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- An installation of adequate radar/communications and ATC procedures which would allow IFR aircraft to utilize the area when the MOA is active.
- A series of enhancements for "notification of activation of the MOA" to the general public such as announcements over a local Unicom frequency, a public phone number to call for MOA information, along with a website that includes updates on airspace activation and deactivation.

AM-3

- The airspace needs an Efficient Airspace Utilization Plan agreement between the military and Air Traffic Control to ensure activation only during military training operations.

AM-1

- A provision should be in place whereby the Military Operations Airspace should be reviewed every 3 years to make sure the designated airspace is still needed. If the airspace is no longer needed it should then be released back to the flying public.

We realize that it is important that military flight crews have secured airspace for flight training purposes. Please consider the suggestions we have made so as to make a safer operating environment for all the aircraft traffic that is affected by the application of this proposal. Thank you for your time to read our concerns and for considering the changes we have suggested.

Respectfully,

Rod Brekken, Chairman – North Dakota Aviation Council

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WRITTEN COMMENT SHEET
Power River Training Complex

The air force says they need this new area for there training—But at who's expense? The air force says lots of thing but most statements are for there benefit and what not to real life, and how it effects us living under the fly zone.

We are worried and scared of what lies ahead of us that live under the fly zone. We have heard that they say one thing and lots of time they do different, and we that live here have to adjust to the situation. Oh they have gotten lots of comments and hearings on the matter, but attending the meetings and hearing you walk away with the feeling that they don't care and that they are going to get there way come high water. **GE-5**

We have been under the fly zones and they do scare cattle, and people. Especially in the middle of the night some flies over you are awaken out of a good sleep, then it takes for ever to go back to sleep, which is not good for the body. **NO-5**

The value of our property goes down and if we did want to sell, who would want to buy it {your property} if you lived under a fly zone. **SO-1**

The increase of the fire danger with them using the flares would increase greatly. They say they would monitor if in a drought area, mainly August. But we can have a drought season from June----September. **SA-5**

The speed the flares fall to the ground is unreal, up to 100 mph, and if they don't ignite and hit a person are any kind of livestock, or even wild life it would not be good. And this is acknowleded in the Air Force impact statement.

Even in there impact statement they say the dud flares are rare, but extremely dangerous. So why take a chance. Then they say if you fine a dud flare you have to call them and they will take care of it. Who has the time for all of this. **SA-27**

Also they can deploy chaff, and the inch long aluminum coated silica and these tiny fiber strands drift to earth and get into our stream, lakes,water tanks, in our grasses and our hay and we feed our livestock , .WE ALL KNOW THAT ALUMINUM CAUSES ALL TIMERS. AND THE TINY FIBERS COATED WITH SILICA CAUSES CANCER. We know what you folks think that it will not happen and it's not a danger to us, livetstock or the eviroment. We don't want to take the chance on this our life is important to us and our families. **SA-14**

What you folks are planning to do is destroying a way of life in the small rural towns and areas, and we don't like that, **LU-2**

Our airports will be in trouble, and there are comments that out of the area, state fliers will not come to here and have to cope with your low flying planes. Our medical air lift **AM-5**

30

has said the same thing, so now you are endangering our lives, because we can not be air lifted out of here. I don't think we should be put in this kind of situation. SA-19

Our little towns are having trouble staying afloat now, and this will just cause an other hardship upon us all.

There have been things that the EIS did not make any comment concerns on what the conception rate{rebreeding } of livestock and wild life would be, also the concern of the contamination of the sheep's wool by filaments{cancer causing agent in the chaff}. Again our lively hood is at stake. BI-4 BI-5 SO-16

We that opposes this expansion is said to be non-patriotic which would not be the truth. We support our troops and there efforts, but not at our expense of our lively hood. GE-9
Facts we have learned: B-1 was developed as a long-range super-sonic bomber with low-level capabilities, but why does it have to tested at 500 ft.
The B-1 top speed is 830 mph,----13.84 miles per minute----1218 feet per second---4 seconds per mile.

THIS MOA BELONGS IN THE DESERTS OR OVER OPEN-WATER NOT WHERE THERE ARE PEOPLE, FARMES, RANCHES SMALL TOWN, AIRPLANES, AND VALUAVLE RRESOURCES. WE ARE IMPORTANT TO. PN-2

WE HAVE BECOME A TARGET FOR EVERYTHING THAT NOT GOOD
WE SUGGEST NO-ACTION ALTERNATIVE

Mrs. J. Robert Rusley

[redacted]

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POWDER RIVER TRAINING EXPANSION PLAN

I J. Robert Rusley would like to make a comment on this new plan. I live 35 miles southeast of Baker, Mt.,& 35 northeast of Ekalaka, Mt and 42 miles northwest of Camp Crook S..D. I have dealt with low flying bombers before and all they did at that time was spook our livestock and they would run and tear down fences and then we had miss matched mothers, and we had to take time and get calves back with the right mother. This all takes time and cost money. Who is going to pay the bill for damages? Then in a short period of time a other bomber comes over, and in the middle of the night , It's not good at all for human and animals---But who cares? I don't think the Air Force Cares at all. SO-13 SO-12

I like to tell you folks in the spring we spray for weeds & noxious weeds in the fields and of course we have aerial spraying also for grasshoppers, well now just when can we hire a aerial sprayer to come and do these things for us, cause you and your plans has put a end to that.. Sounds like our life has to change just because of your big plans, I think it is time for you folks to think about something more then yourself. SO-2

It seems like our local airports can just shut down because of you folks and your plan. So we have to plan our HEART ATTACKS, STROKES, ACCIDENTS ON THE FARMS AND RANCHES, WHICH CAN HAPPEN. Also there have been a OIL RIG FIRE/ ACCIDENT and we know that some of the PIPELINES CAN HAVE AN EXPLOSION and then they fly in oil and gas representatives. OH YES THR AIRPORTS OR CLOSED BY THE AIR FORCE. SO-5 SO-17
And how would your family feel when they would not be able to

fly a love one out for medical help, We should not be put in a bad situation just because of where we live, and for your war game combats training. There is the deserts and lots of ocean, and it would not bother anyone that we know of, just a few more miles for your bombers to go to practice. PN-2

I know the bombers will be releasing flares and you know that the flares have aluminum and that causes all timers, and the fibers that are coated with silica can cause cancer. We care but your actions tell us different. Also the chances of it starting a fire is pretty great, especially if it's dry. Now we have a fire, and in these area we depend on a aircraft to guide the ranchers and fire trucks into the fires, and this sure can save on how fast a fire can travel . SA-14 SA-12

I just read that the environmental impact report conducted for the expansion has not been released which raised a question why the Air Force chose to move forward on the planning of the expansion. Seems like you folks put the cart before the horse. But maybe that is the way you do business, along with the government.

We strongly suggest that you keep the training area as is, or move it to the desert, or ocean.

We say NO TO THE AIR FORCE TRAINING EXPANSION PLAN.

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For a change think of the hardships you are putting the people and little communities in this area in.
We have not asked for any of this inconvenience, but seems like when you folks don't care you can just walk over the top of us and our little towns.

We do thank you for the opportunity too make our feeling known, and we will be lucky if you read any of this, but this is how we feel

LU-3

Robert Rusley

[redacted]

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POWDER RIVER TRAINING EXPANSION PLAN

I would like to ask the Air Force are you planning on making these little towns and communities new GHOST TOWNS. Boy it sounds like that is what you all are setting out to do. Your expansion is going to effect 33 communities and there airports, and at lease 285 general aviation aircrafts. This will effect there livelihood and you all think this is O.K. to do this to the people and the business in the area. **LU-2 SO-10**

You folks quoted that: Plans for the Powder River Training area that currently spans South Dakota, Wyoming and Montana to be expanded into an 18-million acre bomber training complex that would sprawl over southwest North Dakota, Wyoming, and Montana. U.S. Air Force crafts from Minot Air Force Base and Ellsworth Air Force Base in Rapid City would utilize the area for exercises five days each week and 10 to 12 days of the year, host large force exercises across the stretch. In other words playing war games without actual combat.

Listed below is just a few of the things this expansion will destroy and change:

1, There is lots of farmers & ranchers depend on air spraying for weeds in crops and noxious weeds. Remember we only have 93 days in a year in order to do these projects.

2, Now our little towns have to spray for mosquito in the summer so maybe we might not get West Nile & die. Spraying does help with mosquito control, but remember we only have 93 days. Hope the mosquito gets bad on the right day. **SO-2**

3. The oil companies & pipeline companies arrive at our local airports for meeting and check on production in gas & oil. With it closed they will have to go else where and drive back. Also planes go up to check pipelines for leaks & spills, and when they can not fly things go unnoticed, and a lot of damage can happen real quick. Sounds like you folks really don't care. **SO-17**

4. Air ambulance will not be able to land. So I guess if we are to have a hearth attack, stroke, an accident, are something else tragic we got to plan it in you 93 days that the air ambulance could come in... I wonder if we could sue the air force for the loss of a loved one, because the air ambulance could not land. How would you feel if you could not get a love one flown out for emergency help. And heaven help that this would never happen, but an oil rig burns, or a pipeline explosion, and there has been some in the pass, & no air ambulance, no oil field representative can fly in, for emergency shut in on a well site and it will be a big mess. Why because our airports are shut down except for 93 days. **SA-19 SO-5**

5. And we know that the flares have aluminum in them and that causes all timers, and the tiny fibers coated with silica causes cancer. And there is always a a possibility that they could cause a fire, and of course no planes can fly to locate fire and direct fire trucks, which is bad to, because we depend on the planes in the air to guide people & fire trucks into the fires **SA-14**

When it comes to ranches we have had problems in the past with the low flying air **SA-5**

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crafts, the livestock are really restless when the low flying aircraft are in the area, they spook, run and young calves get separated from there mothers and through the fences, and it takes time and money to repair fences and to gather and get them in the right spots. Horses have been cut by barbwire from being scared by the low loud flying aircrafts, and have broken down corral walls. **BI-2 BI-4**

So I say that your expansion is sure will cause lots of problems and heartache, but seems like you folks really don't care, and who is going paid for the problems that the air force is causing us, can we send you the bill **GE-8**

We the people in this area I think just wants to be left alone, and let us live on the precious land that the Lord gave us to live on and to make a living . We also like our little towns & communities. Have the regular things that is offered to people that his not in the fly pattern. **LU-1 SO-4**

We strongly suggest that you folks take your practice area to the deserts. The snakes, and other desert animals might not care but we do care. **PN-2**

WE SAY NO TO THE AIR FORCE TRAINING EXPANSION PLAN.
PLEASE CONSIDER OTHER PEOPLE FOR A CHANGE **GE-2**

We do thank you very much for having the opportunity to makes our feelings known.

Wilma Rusley

[redacted]

Wilma Rusley

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R-CALF United Stockgrowers of America
P.O. Box 30715
Billings, MT 59107
Fax: 406-252-3176
Phone: 406-252-2516
Website: www.r-calfusa.com
E-mail: r-calfusa@r-calfusa.com

April 28, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

RE: Comments on Proposed Establishment of Powder River Training Complex Military Operations Areas North & South Dakota, Montana, Wyoming

The Ranchers-Cattlemen Action Legal Fund, United Stockgrowers of America (R-CALF USA) appreciates this opportunity to provide comments on the Proposed Establishment of Powder River Training Complex Military Operations Areas North & South Dakota, Montana, Wyoming (PRTC expansion). The comment period for the PRTC expansion was extended to May 3, 2014.

R-CALF USA is a non-profit association that represents thousands of U.S. cattle and sheep farmers and ranchers in 43 states, along with numerous state and local cattle association affiliates. R-CALF USA's membership consists primarily of cow/calf operators, sheep producers, cattle backgrounders, and feedlot owners. Various main-street businesses are associate members. R-CALF USA works to sustain the profitability and viability of the U.S. cattle industry, the largest segment of U.S. agriculture.

On August 4, 2008, R-CALF USA submitted comments to the United States Air Force (USAF) regarding the first proposed PRTC expansion. In our comments, we explained how the PRTC expansion would likely disrupt the business operations of approximately 11,054 cattle ranches within the proposed region and we urged the USAF to consider other training options that would not interfere with so many vital food-producing businesses.

Our comments explained how low flying military aircraft, including those that generate sonic booms or shockbursts, can adversely affect the health and productivity of livestock, cause the destruction of livestock handling and containment equipment (e.g., fences and corrals), create safety hazards to ranchers and their employees, and cause the destruction of forage and other property due to fires.

The current PRTC expansion proposal does not address the concerns R-CALF USA raised on behalf of its rancher-members in 2008. The PRTC expansion proposal still appears to cover the same geographical area, it still proposes military flight altitudes as low as 500 feet above ground level (AGL) and supersonic flight above 10,000 AGL, and it still allows the deployment of chaff and flares that can cause damaging fires to prairie lands and forested lands alike.

LU-3

SA-5

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R-CALF USA's 2008 comments also revealed that the approximately 11,054 ranching operations within the proposed PRTC expansion area generated approximately $886 million in annual cash receipts in the mid 2000s, and they likely generate more than that today.

LU-3

R-CALF USA believes it is unnecessary for the USAF to disrupt so many vital food-producing businesses, whose cash receipts are critically important to the economic well being of the entire area under consideration, when there are far less populated expanses in the more arid areas in the southwest that can be used for military exercises.

For convenience, below is an excerpt from R-CALF USA's 2008 comments that provide greater detail regarding our ongoing concerns for the PRTC expansion. The exhibits that accompanied the original comments are excluded here but are available upon request.

Excerpts from R-CALF USA's 2008 Comments:

I. The Region Affected by the Proposed PRTC Expansion is Unique and Vitally Important to the Overall Viability of the United States Cattle Industry.

Montana

Based on information provided by the USAF during an informational meeting held in Miles City, Mont., on July 28, 2008, the proposed expansion of the Powder River Training Complex (PRTC) would include the following Montana counties: Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone, along with the Crow Reservation and the Northern Cheyenne Reservation.

According to the 2002 Census of Agriculture (latest data available), these eight Montana counties support 3,141 individual ranching operations that control 11,809,155 acres of pastureland used for livestock production.[1] On Jan. 1, 2008, there were 585,100 head of cattle and calves held on ranches in these eight counties.[2] Cash receipts from the sale of livestock and livestock products in these eight counties were over $270,645,000 in 2005 (latest data available).[3]

North Dakota

Based on information provided by the USAF during an informational meeting held in Miles City, Mont., on July 28, 2008, the proposed expansion of the Powder River Training Complex (PRTC) would include the following North Dakota counties: Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope and Stark, along with the Standing Rock Reservation.

According to the 2002 Census of Agriculture (latest data available), these 10 North Dakota counties support 3,120 individual ranching operations that control 4,614,974 acres of pastureland used for

[1] *See* Table 8. Farms, Land in Farms, Value of Land and Buildings, and Land Use: 2002 and 1997, 2002 Census of Agriculture – County Data (Montana), U.S. Department of Agriculture, National Agricultural Statistics Service (hereafter "USDA-NASS"), Attached hereto as Exhibit 1 ("Pastureland, all types"), pp. Montana 263-270.
[2] *See* All Cattle & Calves, Inventories by Counties, Jan. 1, 2008, Montana, USA, USDA-NASS, attached hereto as Exhibit 2.
[3] See Cash Receipts from Sale of Principal Product & Government Payments by County, Montana, USA, 2005, USDA-NASS, attached hereto as Exhibit 3 (Cash receipts from Big Horn County are omitted from this report).

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livestock production.[4] On Jan. 1, 2008, there were 445,000 head of cattle and calves held on ranches in these 10 counties.[5] Cash receipts from the sale of livestock and livestock products in these 10 counties were $174,661,000 in 2006 (latest data available).[6]

South Dakota

Based on information provided by the USAF during an informational meeting held in Miles City, Mont., on July 28, 2008, the proposed expansion of the Powder River Training Complex (PRTC) would include the following South Dakota counties: Butte, Corson, Hardin, Lawrence, Meade, Pennington, Perkins and Ziebach, along with the Standing Rock Reservation and the Cheyenne River Reservation.

According to the 2002 Census of Agriculture (latest data available), these eight South Dakota counties support 3,141 individual ranching operations that control 8,749,836 acres of pastureland used for livestock production.[7] On Jan. 1, 2008, there were 529,000 head of cattle and calves held on ranches in these eight counties.[8] Cash receipts from the sale of livestock and livestock products in these eight counties were $291,036,000 in 2006 (latest data available).[9]

Wyoming

Based on information provided by the USAF during an informational meeting held in Miles City, Mont., on July 28, 2008, the proposed expansion of the Powder River Training Complex (PRTC) would include the following Wyoming counties: Campbell, Crook, Sheridan and Weston.

According to the 2002 Census of Agriculture (latest data available), these four Wyoming counties support 1,652 individual ranching operations that control 7,249,640 acres of pastureland used for livestock production.[10] In 2006, there were 272,000 head of cattle and calves held on ranches in these four counties (latest data available).[11] Cash receipts from the sale of livestock and livestock products in these four counties were $149,357,000 in 2006 (latest data available).[12]

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[4] *See* Table 8. Farms, Land in Farms, Value of Land and Buildings, and Land Use: 2002 and 1997, 2002 Census of Agriculture – County Data (North Dakota), USDA-NASS, attached hereto as Exhibit 4 (data obtained under "Pastureland, all types," pp. North Dakota 260-266.
[5] *See* Livestock: Inventory, North Dakota by County, Current Year, USDA-NASS, North Dakota Field Office, attached hereto as Exhibit 5.
[6] *See* Farm Income, Cash Receipts from Farm Marketings and Government Payments: North Dakota, 2006 and 2005, USDA-NASS, North Dakota Field Office, June 2008, at 95, attached hereto as Exhibit 6.
[7] *See* Table 8. Farms, Land in Farms, Value of Land and Buildings, and Land Use: 2002 and 1997, 2002 Census of Agriculture – County Data (South Dakota), USDA-NASS, attached hereto as Exhibit 7 (data obtained under "Pastureland, all types," pp. South Dakota 271-279.
[8] *See* All Cattle & Calves, South Dakota Jan. 1, 2008, USDA-NASS, attached hereto as Exhibit 8.
[9] *See* Farm Income, Cash Receipts from Farm Marketings and Government Payments: South Dakota, 2005- 2006, USDA-NASS, South Dakota Field Office, attached hereto as Exhibit 9.
[10] *See* Table 8. Farms, Land in Farms, Value of Land and Buildings, and Land Use: 2002 and 1997, 2002 Census of Agriculture – County Data (Wyoming), USDA-NASS, attached hereto as Exhibit 10 (data obtained under "Pastureland, all types," pp. Wyoming 224-226.
[11] *See* 2006 Campbell County Agriculture, USDA-NASS, Wyoming Field Office, Sept. 2007; 2006 Crook County Agriculture, USDA-NASS, Wyoming Field Office, Sept. 2007; 2006 Sheridan County Agriculture, USDA-NASS, Wyoming Field Office, Sept. 2007; and Weston County Agriculture, USDA-NASS, Wyoming Field Office, Sept. 2007, attached hereto as Exhibits 11, 12, 13, and 14, respectively.
[12] *See id.*

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Montana, North Dakota, South Dakota and Wyoming

The 30 counties in the four states affected by the proposed PRTC expansion are each counties with significant livestock production. Together, these counties represent an integral component of the U.S. livestock industry that helps to ensure the United States remains largely self-sufficient in the production of red meat – an important factor in maintaining the nation's food security.

As revealed by the foregoing data, these 30 counties support 11,054 individual ranching operations that control 32,423,578 acres of vital pastureland used for livestock production. These counties maintain approximately 1,831,100 cattle and calves, which represent more cattle and calves than are maintained in the entire state of either Wyoming or North Dakota, and is more than twice the number of cattle maintained in the entire state of Utah, a state where the USAF currently conducts training operations.[13] The annual cash receipts from livestock production in these 30 counties are approximately $885,699,000.

Based also on the foregoing data, the average cattle herd size per ranch in this 30-county region is approximately 166 head per ranch. This average size of the U.S. beef cow herd is only approximately 43 cows per herd.[14] Thus, the herd sizes in this 30-county region, which largely consist of beef cattle, are roughly four times larger than the national average herd size. Moreover, as a result of the ongoing exodus of U.S. cattle operations,[15] there remains only approximately 78,360 beef cattle operations in the entire United States with herd sizes larger than 100 head.[16] Thus, based on the approximate number of cattle operations (ranches) discussed above, and presuming they are all beef cattle operations, this 30-county region represents as high as 14 percent of United States cattle herds that are larger than 100 head.

These factors indicate that many, if not most, of the ranches within this 30-county region are of sufficient size to be considered economically viable cattle operations, which are becoming rare in the United States. These factors further suggest that many, if not most, of the ranches within this region depend exclusively on the production of cattle for their livelihoods. Together, these factors demonstrate that this 30-county region is unique in its ability to sustain economically viable cattle operations and demonstrate just how important the livestock production within this 30-county region is to the overall viability of the United States cattle industry.

The principal concern of R-CALF USA is that the proposed PRTC expansion could result in the disruption of this 30-county region's ability to continue maximizing livestock production. Below are a number of factors associated with the proposed PRTC expansion that could result in a reduction of livestock production within this 30-county region – an outcome that would adversely affect the profitability and viability of the thousands of independent cattle operations within the region.

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[13] See Cattle and Calves: Number by Class, State, and the United States, Jan. 1, 2007-2008, Cattle February 2008, USDA-NASS, at 2, attached hereto as Exhibit 15 (the states of North Dakota, Wyoming, and Utah have approximately 1,810,000, 1,320,000, and 850,000 cattle and calves, respectively).
[14] *See* January 1 [2008] Cattle Inventory Down Slightly, Cattle, USDA-NASS, attached hereto as Exhibit 16 ("Beef cows at 32.6 million"); *see also*, Beef Cows: Number of Operations by State, United States and Puerto Rico, 2006-2007, Farms, Land in Farms, and Livestock Operations 2007 Summary, USDA-NASS, February 2008, at 19, attached hereto as Exhibit 17 (There were 757,900 beef cow operations remaining in the U.S. in 2007).
[15] *See* Number of All Cattle and Beef Cow Operations United States, 1988-2007, Farms, Land in Farms, and Livestock Operations 2007 Summary, USDA-NASS, February 2008, at 14, attached hereto as Exhibit 18.
[16] *See id.* ("Cattle and Calves: Number of Operations and Percent of Inventory by Size Group, U.S., 2006-2007).

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II. The Potential for the Proposed PRTC Expansion to Disrupt Livestock Production is Significant.

The training activities proposed for the PRTC expansion include high-speed and low-level flights involving multiple aircraft, supersonic flights, and deployment of flares and chaff. The high-speed and low-level flights and supersonic flights bear the potential to create stress in livestock. Anecdotal evidence presented by ranchers attending the July 28, 2008, informational meeting in Miles City, Mont., suggest that in the existing PRTC, and in other regions were military flight training is conducted (e.g., Nevada), ranchers experienced property damage (e.g., cattle stampeding through corrals and fences) and low conception rates attributed to the training exercises. The increased potential for fires resulting from flare deployment, which could potentially wipe-out the production capabilities of one or more independent ranching enterprises for an entire production season, is also a significant concern.

SO-13
BI-4
SA-5

Given the unique importance of this 30-county region to the overall viability of the U.S. cattle industry, the USAF should scientifically and quantitatively evaluate the potential that the following risks would potentially occur, and the frequency at which they would potentially occur, over an extended period of time before any further consideration of the proposed PRTC expansion.

The risk to livestock health

In addition to general stress that would be expected to result from livestock being startled from the sudden appearance, noise, and airwaves of high speed, low-flying aircraft, the USAF should conduct a study to determine the specific impact that shock bursts caused by supersonic flight would have on livestock health. A researcher in the United Kingdom, now deceased, recently attracted international attention with his theory that aircraft-induced shockbursts may have contributed to the outbreak of transmissible spongiform encephalopathies (TSEs) in the United Kingdom and Canada.[17] Though this theory is not currently accepted by the scientific community as the most likely cause of TSEs, it is not clear that it has been scientifically disproven either. A 2003 study by Harvard University acknowledges the researcher who formulated the theory, thus substantiating the researcher's credibility.[18] Studies to determine the potential health impacts to livestock from aircraft-induced shockbursts should be conducted before subjecting the livestock-dependant, 30-county region to such activity.

Risk to Livestock Productivity

Livestock would likely be most susceptible to increased stress caused by increased aircraft activity during ovulation, conception, and calving, all of which are events that directly impact the productivity of a livestock operation. In addition, increased stress may have a more generalized impact on livestock feed conversion. In other words, subjecting livestock to periodic stressors may reduce the ability of livestock to efficiently convert feed to pounds of gain, which is a key determinant of a livestock operation's profitability. Importantly, the U.S. Government Accountability Office (GAO) explained that "[c]attle have the longest biological cycle of all meat animals."[19] Thus, the extended time

BI-1
BI-2

[17] *See* Radioactive metals, Sonic shockbursts and the Ferrimagneto-Prion theory on the origins of TSEs, Mark Purdey, Somerset, UK, July 2003, attached hereto as Exhibit 19.
[18] *See* Evaluation of the Potential for Bovine Spongiform Encephalopathy in the United States, Joshua T. Cohen, et al., Harvard Center for Risk Analysis, Harvard School of Public Health, Revised October, 2003, at 17, 133 (citations to a 1996 research paper by Purdey).
[19] Economic Models of Cattle Prices, How USDA Can Act to Improve Models to Explain Cattle Prices, U.S. Government Accountability Office (formally the General Accounting Office), (GAO-020246, March 2002, at 30.

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needed to breed, birth, and grow cattle would necessitate an extended study period to fully evaluate the potential risks to cattle productivity resulting from the proposed PRTC expansion.

Risk to Livestock Fences, Facilities, and Livestock Handlers

Stampeding livestock can destroy fences, corrals, and other facilities resulting in injury to both livestock and livestock handlers. As mentioned above, anecdotal evidence suggests this already occurs in existing training sites. The USAF should quantitatively determine the expected frequency and intensity of these risks to both livestock and livestock handlers. SO-13

Risk of Fires from Flare Deployment or Aircraft Accidents

Even if the risks of fire from flare deployment or from aircraft accidents are low, the consequences of such a risk could be extremely high. Any fire in the 30-county region could potentially destroy the grazing potential for prime grazing lands for an entire growing season, resulting in severe financial consequences for affected ranches. SA-5

III. Conclusion.

For the reasons set forth above, R-CALF USA believes the potential risks associated with the proposed PRTC expansion are likely substantial and could significantly impact the important livestock production enterprises within the affected region. R-CALF USA urges the USAF to consider other options with which to achieve its training objectives that would not subject this important livestock production region to potential risks that are known to exist, but which have not yet been scientifically quantified.

Sincerely,

Bill Bullard
CEO, R-CALF USA

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To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: I AM IN OPPOSITION TO EXPANSION OF THIS MOA INTO MONTANA.

Signature: Carl A Bolick Date: 03/01/2014
Name: CARL A BOLICK
Address: [redacted]

GE-2

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To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: I dont think I like the idea of this policy. Now the present administration is going to cut the armed forces to Less then befor the 2nd world war so I dont think we should be increasing the MOA.

Signature: Dale Edlund Date: 2-28-14
Name: DALE EDLUND
Address: [redacted]

PN-3

35.1

No issues

March 6, 2014

Mr. Kent M. Wheeler
Manager, Operations Support Group
ATO Central Service Center, AJV-C2
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

RE: Request for comment period extension for airspace study 14-AGL-06NR, the proposed Powder River Training Complex MOA

Dear Mr. Wheeler:

EAA (the Experimental Aircraft Association) is the world leader in recreational aviation. With an international membership of more than 180,000 people in more than 100 nations, EAA brings together pilots, aircraft owners, and aviation enthusiasts who are dedicated to sharing *the Spirit of Aviation* by promoting the continued growth of aviation, the preservation of its history and a commitment to aviation's future.

EAA requests a 90-day extension to the public comment period for airspace study 14-AGL-06NR regarding the proposed establishment of the roughly 28,000 square-mile Powder River Training Complex military operating area (MOA). We believe that the original 50-day comment period, which is slated to close on April 3, 2014, is inappropriately brief given the enormous scope and size of the proposed MOA.

We believe that a 90-day comment period extension will allow potentially affected stakeholders the opportunity to become properly educated about the proposed airspace designations, analyze their findings, and prepare meaningful, informed commentary for the FAA.

Thank you in advance for your consideration for this important manner. If you should have any comments or questions regarding EAA's request, please do not hesitate to contact me directly at [redacted]

Respectfully Submitted,

Jonathan Harger
Government Advocacy Specialist

[redacted]

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RESOLUTION OF THE ADAMS COUNTY COMMISSION

April 14, 2014

Whereas, the FAA has put forward a proposed expansion to the Powder River Military Operation Area that would include a substantial portion of the State of North Dakota, including the County of Adams;

Whereas, the proposed expansion would have an effect in Adams County and other surrounding counties that are adverse not only to the operation of air ambulance service, charter and general aviation, in and through Adams County, as well as an adverse effect to livestock and farming operations along with general quality of life; **LU-1 SA-19 SO-4 SO-5**

Therefore, It is hereby resolved that the Adams County Commission resists and urges the FAA to deny the request for the expansion of Powder River Military Operation Area in to the State of North Dakota and specifically over Adams County, North Dakota. **GE-2**

Chuck Christman, Chairman of Adams County Commission

Kathy Vliem, Commissioner

Gene Seamands, Commissioner

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Essential Air Service Task Force [redacted]

April 28, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth TX 76137

Dear Manager:

The Montana Essential Air Service (EAS) Task Force consists of representatives from Montana's five eastern essential air service communities located in; Sidney, Glendive, Glasgow, Wolf Point and Havre. As you know, EAS communities receive scheduled air service under contract between the US Department of Transportation and an interested air carrier. The current air carrier provides direct service from each community to Billings. Under previous EAS contracts the US Department of Transportation chose a carrier that provided service to Denver, CO. These contracts are historically for a two-year period and given the history of the service, the potential exists for a future air carrier to be selected and provide service to Denver.

If this occurs, these routes would be impacted as direct routes to Denver transition through the proposed MOA. Any disruption in air service to these communities is unacceptable. These scheduled flights are, in most cases, the only form of public transportation available. Essential Air Service plays a key role in local communities by attracting and retaining businesses that depend on commercial air service and in health care by enabling our citizens to easily access sophisticated healthcare that is often absent in rural communities. AM-5

Other concerns with the proposal include: the impact to Montana's six public-use airports and private airstrips that underlay this expansion; the negative economic impact to these airports and communities; safety – there is no method to provide safe separation of military and civilian aircraft; lack of communication and radar availability; and the large proposed expansion and times of use appear excessive and unsupported. SO-5 AM-3

For these reasons, the task force opposes the expansion of the Powder River Training Complex. Adding additional time and expense to any air carrier or general aviation operator is not acceptable. In these volatile economic times and current state of the aviation industry, I urge you to reject the proposal, adopt the "no action alternative," and not interrupt commercial or general aviation activity in southeast Montana.

The task force values and appreciates our United States military forces. We thank you for your service to this great country.

Sincerely,

John Rabenberg

John Rabenberg
Chairman

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Manager, Operations Support Group
ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Boulevard
Fort Worth, TX 76137

April 27, 2014

RE: PRTC Expansion

FAA Personnel:

I am sure that by now you have received several comments on the PRTC expansion encompassing parts of North and South Dakota, Wyoming, and Montana. I would like to add my name to the list of "dissenters" who do not want this expansion to happen! In my opinion, this PRTC expansion is unjustified, senseless, wasteful, and could cause several problems for general aviation underlying the proposed expansion, and also livestock producers and residents in general. **GE-2**

Some of the concerns of the locals relate to the ability of the air ambulance to fly into the MOA while it would be active. Our rural areas depend greatly on this service. Another concern relates to the safety of general aviation aircraft flying VFR into the active MOA. Perhaps ALL aircraft flying in this proposed expansion should be equipped with ADS-B In and Out avionics? **SA-19 SA-1 SA-7**

Other concerns relate to business jets frequenting the local municipal airports, due to a very active oil producing region. If these small business jets are flying in from Oklahoma or Texas, they would surely be in the required IFR flight range above 18,000 feet MSL. How would they be able to fly into the PRTC if it is active? **SO-10 AM-21**

The local FBO/Baker Air Service located in Baker, Montana flies an extensive pipeline and oilfield inspection program several times per week. Their concern is not only safety related, but also the ability for their pilots to initiate a GPS approach to the BHK airport due to deteriorating weather conditions. Would this be allowed in an active MOA? **SO-17 SA-7**

Livestock producers in the region have expressed concerns regarding their animals getting "spooked" from the noise of the low flying military jets. Other livestock producers have stated the noise could also disrupt the breeding and conception ability of their cattle and other livestock. **BI-2 BI-4**

Now, I don't want to ramble on and make this letter of comment longer than necessary. Being a private, VFR rated pilot myself, I supposed I would be concerned for safety reasons if I was flying my airplane on a pleasure flight in an active MOA. I have made several flights in the present PRTC MOA without any problems, though. We, as pilots, are responsible to "see and avoid", are we not? **AM-20 AM-21 SA-25**

Some of the concerns mentioned above are legitimate, although some are possibilities, OR could happen, OR might happen. Who knows? I recall the saying "Hope for the best, but prepare for the worst". With that in mind, if the FAA does consider approving the expansion of the PRTC MOA, I would like to see a "trial run", or "testing period" to see what problems might occur. Have some concerned ranchers confine a large group of cattle in a corral or next to a barbed wire fence, and have a B-1 bomber fly over the cattle at 500 feet AGL at their normal speed. If the cattle do get "spooked", that is indeed a concern. Have one of the local hospitals schedule a medical flight from either Billings, MT or Bismarck, ND into any local airport within the PRTC expansion while it would be active. This would be a good way of detecting any time-related problems to get that air ambulance where it is needed, rather than wait to see if a problem would arise after the "ink has dried" on the approval. **GE-10 BI-2 BI-4 GE-10**

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In closing, I am sure that none of the Senators or Representatives from Montana approve of this expansion. It doesn't seem right that with all the politics involved with this PRTC expansion, only a handful of people could disrupt the lives of thousands by giving consent for this training area to expand! Maybe the residents of the lands underlying the expansion should be given a chance to "vote" if they do or don't approve. Senator John Thune (South Dakota) appears to be a large supporter of the expansion. Because he resides in and represents South Dakota, not Montana, or Wyoming, or North Dakota, he should consider expanding the training area into eastern South Dakota. They have a lot of farm ground and fewer livestock! **PN-2**

I could go on and on about the negative aspects of this expansion, but I am sure you already have an "earful". I just wanted to say "I hope it doesn't happen". But if it does happen, I don't plan to quit flying my Cessna. Other pilots have stated they won't fly into Baker Municipal when there is an active MOA in force. I suppose they will also have to quit flying into the higher traffic airports like Dickinson and Williston, North Dakota, and maybe Gillette, Wyoming. I don't know if any military training jet aircraft flying over my farming and ranching operation would be troublesome or cause a financial problem, BUT, I do hope a possible expansion would not be financially burdensome for the FBO operators it could affect! **GE-2** **SO-7** **SO-8**

With Regards,

Jerry Lang

Jerry Lang

[redacted]

39

To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

From: Concerned mechanic and pilot, SW North Dakota

I am an aircraft mechanic , also a pilot in Bowman, N. D. & very concerned about the proposed Powder River Training Areas. As you may know, western North Dakota has gone through a great change, with the oil activities, associated with the Bakken, Three Forks, and Williston formations. New high paying jobs are increasing, populations climbing, air traffic in double digit increases, and many airports upgrading and expanding to meet the needs of these energy companies. In fact, our local airport is moving to accommodate this increased need. Now we may be faced with many altitude, navigation, operational restrictions associated with the proposed Powder River expanded areas!!

In our view, we gain nothing (no fuel sales, maintenance income, hangar rent, no income to hotels, restaurants,dealerships, etc.), but we are stuck with the proposed low altitude (500' AGL), navigation, gap, and operational restrictions?? Not to mention flares (fire potential), chaff (surface water, livestock affect), low flying fast aircraft (safety issue) and noise? I feel the areas will deter aviation business (who wants to mess with restrictions), and move our income potential to other airports outside the MOA???

SO-24

AM-5
SA-5
BI-5
SA-14
SA-1

If South Dakota (Ellsworth AFB) wants a larger area, move it to South Dakota!!

If North Dakota (Minot AFB) wants an area, go east to the Tiger and Devils Lake MOAs already in place!! Seems like Ellsworth and Minot get the income

PN-2

39

and we in southwest North Dakota get nothing??

I support our men and women in uniform and support training, but there seems to be no compromise to benefit our airport and community??

A few recommendations, I believe, would greatly reduce the training area impacts-

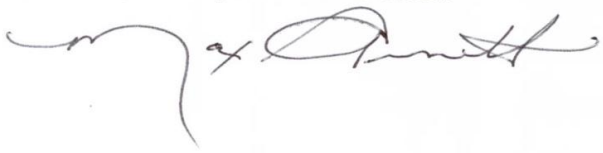
1- area relocation , or area # 3 a "high area" — AM-6

2- raise the area (3) floor from the 500 foot above ground restriction to 8000 feet. — SO-28

3- if need the 500 feet restriction, use it 1 day/week instead of 5 days/ week. — PN-4

4- A direct telephone or web contact, to military training center, for instant Updates, for pilots flying near the proposed areas. — AM-3

Thank you for your consideration.



40

April 27, 2014

Airspace Study 14-AGL-06NR
Kent M. Wheeler
Department Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Mr. Wheeler,

It has come to my attention that you are proposing to take control of half of the airspace I am so fond of. It is my understanding that the Powder River Airspace will quadruple in size and become the largest MOA in the country. Although these three states involved do not have a high voter density, I'd like to make you aware that this is not quite a desert. Your airspace is covering many vibrant communities. At a minimum, I'd hope you would consider leaving us the surface airspace below 6000' where ever possible so we can continue to function. **GE-2**

In addition to my understanding that the MOA covers 3 states, it also covers 3 ATC's. ATCs that are not able to provide service to this area at low altitude. As only we know, they have difficulty dealing with each other. If this project goes through I think an ATC should accompany it to make the air space safe at the altitudes below 8000' where current ATC services are not readily available. While this request may be bold, it is not as bold as your proposed MOA. **AM-3**

The next issue is avoidance of aircraft. I don't know if you have been passed in a Cessna 172 by a fighter at nearly 600 knots but I have. I didn't see him coming, didn't see him leaving, but I did see him streak by with a closure rate of 700 knots. Had I not been warned, I would not have seen anything. At a minimum you might consider giving us ADS-B support for the taking of our public airspace. **AM-8 SA-1**

We also need an updated mechanism to determine if these MOA's are hot. In the world of text messages and instant access to the web we need a method to check out our access to these areas instantaneously. If you might consider this I'd also ask that you contract AOPA or EAA or some such organization that is competent in these processes to do the work. Having logged on to your websites it is evident you have a lot to learn in regards to user interfaces, ease of access, etc. **AM-12**

Many of us make a living in aviation and I see a negative impact on this. This could be remedied by raising the floor of the airspace and if that is not possible I's suggest a deserted location to have low altitude airspace available. **PN-2**

Being in the medical field I have concerns about medical access to these areas. Clinics need to be staffed and patients need to be transported. We already have issues in these regards which include airspace and weather. I'd ask you not to add to that burden. **SA-19 SO-5**

Thanks for your time.

Bob

Robert Roswick

[redacted]

41

To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

From: Concerned Student Pilot, SW North Dakota

I am a student pilot in southwestern North Dakota & very concerned about the proposed Powder River Training Areas. As you may know, western North Dakota has gone through a great change, with the oil activities, associated with the Bakken, Three Forks, and Williston formations. New high paying jobs are increasing, populations climbing, air traffic in double digit increases, and many airports upgrading and expanding to meet the needs of these energy companies. In fact, our local airport is moving to accommodate this increased need. Now we may be faced with many altitude, navigation, operational restrictions associated with the proposed Powder River expanded areas!! In our view, we gain nothing (no fuel sales, maintenance income, hangar rent, no income to hotels, restaurants,dealerships, etc.), but we are stuck with the proposed low altitude (500' AGL), navigation, gap, and operational restrictions?? Not to mention flares (fire potential), chaff (surface water, livestock affect), low flying fast aircraft (safety issue) and noise? I feel the areas will deter aviation business (who wants to mess with restrictions), and move our income potential to other airports outside the MOA???

If South Dakota (Ellsworth AFB) wants a larger area, move it to South Dakota!! If North Dakota (Minot AFB) wants an area, go east to the Tiger and Devils Lake MOAs already in place!! Seems like Ellsworth and Minot get the income

SO-24
PN-4
AM-6
AM-12
SA-5
SA-6
BI-5
LU-9
SA-14
SA-1
SA-7
AM-6
SO-9

41

and we in southwest North Dakota get nothing??

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A few recommendations, I believe, would greatly reduce the training area impacts-

1- area relocation , or area # 3 a "high area" — AM-6

2- raise the area (3) floor from the 500 foot above ground restriction to 8000 feet. — SO-28

3- if need the 500 feet restriction, use it 1 day/week instead of 5 days/ week. — PN-4

4- A direct telephone or web contact, to military training center, for instant Updates, for pilots flying near the proposed areas. — AM-3

Thank you for your consideration.

42

Subject: Powder River MOA Expansion

To whom it may concern:

My letter is to express a few of the concerns I have about the proposed expansion of the MOA.

I am a pilot and have flown this airspace for 45 years. In this time I have had the discomfort of facing military aircraft and having to use evasive actions to avoid midair contact. This would not have been good for either one of the aircraft involved. If this expansion happens it will probably be the end of my flying career, just is not worth the risk. **SA-1**

This comment is also the feelings of many of the private pilots that I have visited with. This then creates a problem with our local economy, less aircraft, less personnel to handle the aircraft, less taxes paid, less salaries paid, and the list only gets bigger when we look at the big picture. **SO-5**

Another huge hit for land owners is what does this do to their land values? **SO-1**

This part of our country has many families who have bought ranches and farms in this area, the big reason being is the quiet and solitude that we are fortunate have and very much want to have it remain as it is today. **SO-4**

Our family has been here for 100 years. We have practiced good management of the land and its resources. We have also been very concerned with how the wild game animals are taken care of. We provide and promote game friendly environments. We also plan to see more habitats for endangered species on our land. I would like to know if anyone can tell me how the noise environment that will come with this MOA is going to affect our plan to provide for endangered species and animals that are already here? An answer would be much appreciated and expected. **BI-3** **BI-8**

SAFETY ISSUES:The increased airspace use and big numbers of aircraft operating is going to be a problem. From where we live I have personally witnessed the smoke columns from explosions of two B-1 bombers that have crashed. It is a given that this kind of wrecks and explosions will happen again. The only question being is when and where is it going to be? In someone's home, or maybe in the middle of one of the many small towns that are in this proposed area, we can only hope it does not happen but we can well bet that the chance of this happening is very real. **SA-1** **SA-20**

42

EXTENDED TIME FRAME PLAN:
There is one matter that never seems to come to lite in this airspace grab and its future plan.
Nowhere has it been provided for anyone to know what is the long term goal with this expansion.
5 year?
10 year?
15 year?
We all can be assured that the Airforce has goals and long term usage plans for the huge airspace that they are wanting to burden so many people with. I believe that there are so many plans with this proposal that the average person cannot comprehend and would be shocked to know about.

PN-3

Lastly I feel infringed upon! Raise havoc with our way of life, financially damage businesses in the area covered. And the list gets very long.

LU-1
SO-4
SO-1

My only hope and concern is that before this is implemented that we have someone involved who has some of the good old "COMMON SENSE" and takes a hard look at many of the issues that are being presented to you.

Sincerely,
John Tronstad

John Tronstad

[redacted]

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To: Manager Operation Support Group

I hereby writting to express my concerns on the proposed expansion of our current MOA's and proposed Powder River MOA's.

This would not be good for North Dakota or myself because I'm flying through this area and do not like the restriction and limitations it imposes. AM-6 AM-20 GE-14

I presently fly VFR but am training for my IFR and this would affect safety on VFR flights and IFR flights would be vectored around these area to exta cost imposed to oneself, which I'm not in favor of. AM-20 SA-7 SA-25 SO-7

Looking at the areas expanding the existing Powder River A/B MOA's to half of the existing size to not hinder a direct route from Bismarck to Gilette Wy. is the only thing I would agree to. The rest of the additional MOA I am not in favor of. AM-20 AM-16

The best thing to do is leave it as is with No Change. GE-2

Signed Mike Cahoon [redacted]

44

April 1, 2014

Airspace Study 14-AGL-06NR
Kent M. Wheeler
Department Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Mr. Wheeler,

As a pilot based in the Bismarck, North Dakota area, I am opposed to the expansion of the Powder River MOA. I frequently fly through the proposed area and would be inconvenienced with this expansion. **GE-2** **SO-8**

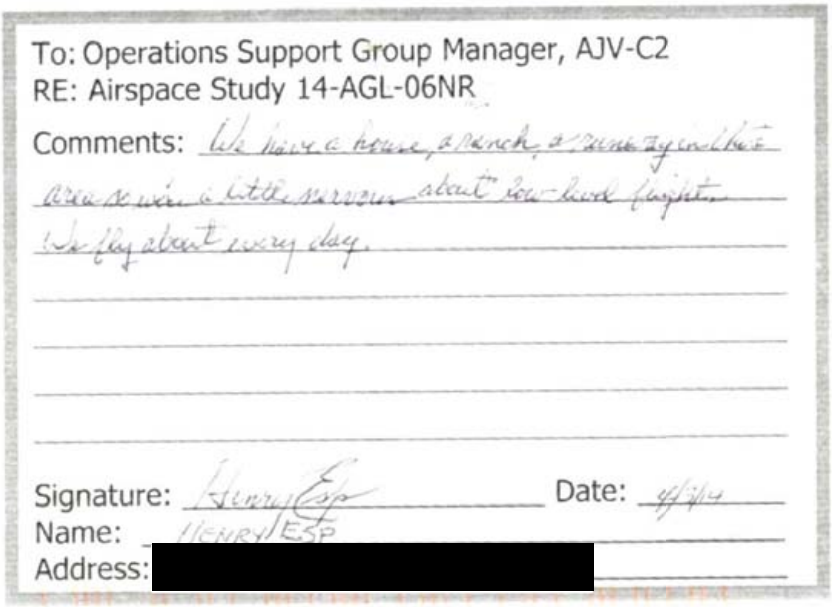
This proposed expansion would cover about 28,000 square miles, expanding the present Powder River MOA by 4 times and be the largest terrestrial training airspace in the continental U.S. This will require other pilots and me to fly extra miles, incurring extra expense and loss of time to accommodate the Air Force. This proposal is for 240 days per year, so if approved, the odds are strong that I will be forced to avoid the area on a regular basis. **SO-8**

In the proposal, there is a comment under the heading "Miscellaneous"-"No restrictions will be imposed on nonparticipating Visual Flight Rules (VFR) aircraft." While there may be no restrictions, it certainly would not be safe to operate within the MOA without some type of radar guidance to see and avoid. It can be difficult spotting aircraft that do not exceed 100 knots, much less military aircraft that are capable of supersonic flight that may be at 500 feet to avoid detection in the practice area. **SA-1** **SA-7**

I believe I understand the need for training, but it would seem the travel to Nevada referred to in the proposal would be a time for pilots and crews to practice evasion tactics as they would if they were on a real bombing mission. **PN-2**

Marc Taylor
[redacted]

45



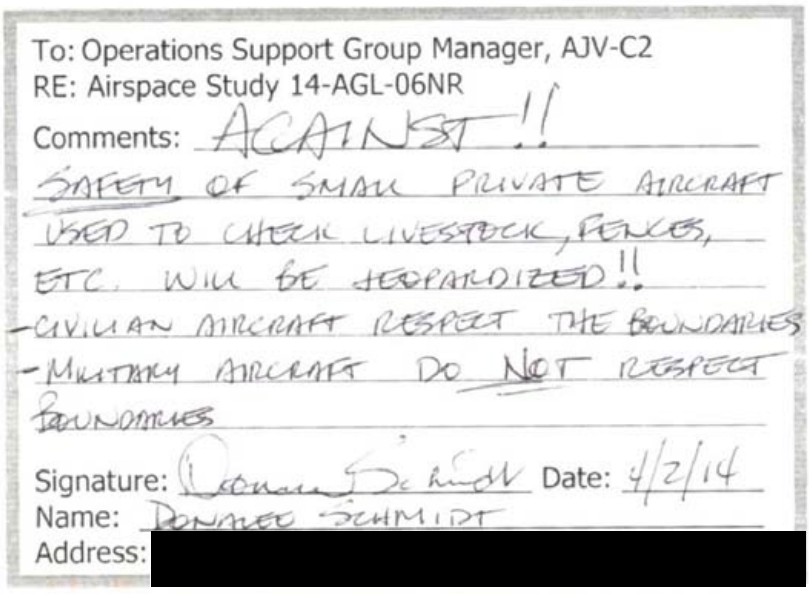
To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: We have a house, a ranch, a runway in that area so we're a little nervous about low-level flight. We fly about every day.

Signature: Henry Esp Date: 4/3/14
Name: HENRY ESP
Address: [redacted]

AM-6
AM-5
AM-4
SA-1
SO-11

46



To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: AGAINST!!
SAFETY OF SMALL PRIVATE AIRCRAFT USED TO CHECK LIVESTOCK, FENCES, ETC. WILL BE JEOPARDIZED!!
-CIVILIAN AIRCRAFT RESPECT THE BOUNDARIES
-MILITARY AIRCRAFT DO NOT RESPECT BOUNDARIES

Signature: Donalee Schmidt Date: 4/2/14
Name: DONALEE SCHMIDT
Address: [redacted]

GE-2
SA-1
SA-8
SO-11
GE-7

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April 14, 2014

Manager, Operations Support Group
ATO Central Service Center, AJV-C2
Airspace Study 14-AGL=06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Dear Sir or Madame:

I am writing to you in regards to the expanded fly zone here in the western Dakotas and eastern Montana. While I am aware of the Air Force's need to train for national security purposes, I have been unable to get much information about the implementation procedures that could impact the local pilots. — GE-9

As you know, this is an area where local pilots/ranchers fly frequently to protect their livestock against predators. The local pilots have safety concerns and feel these concerns are not being taken into consideration at the administrative level. If unsuspecting pilots are caught up in the wake of the fighter jets' paths, the results could be deadly. If the expanded fly zone is approved, will the local pilots be advised of the training schedule so they are able to avoid coming into contact with Air Force jets? Will the Air Force be diligent about adhering to the schedule and advising the local pilots of any changes made to the schedule? These pilots have every right to fly and protect their livelihood, and there is absolutely no reason for them to be endangered or killed. However, at this point, they feel they have no voice (what the government wants the government gets). — SA-1, SA-7, AM-12, SA-3, AM-20, GE-14

PN-3, SO-14 — Additionally, it has been reported that expanding the fly zone will save the Air Force over $20,000,000. This seems to be a half-truth at best. The money may be saved, but it will not be returned to the taxpayer. It will simply be spent on something else. — SA-25, SO-5

With the information I have at this point and without assurances by the Air Force that our local pilots are not at risk, we can only say **no** to the proposed expanded fly zone. — SO-11, GE-2

Sincerely,

William M. Brindley
Sarah Brindley

Bill and Sarah Brindley

48

UNITED ENERGY
CORPORATION

April 15, 2014

Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Attention: Manager, Operations Support Group, ATP Central Service Center, AJV-C2

I have twice now been briefed on the proposed expansion of the Powder River MOA. We were last night shown the large area that is being proposed. Conceptually the area being taken is massive and is an overreach/overstretch. GE-3

United Energy Corporation and its affiliates use this airspace in western North Dakota regularly in the five planes we operate and if the proposed space is taken we will have reduced use of it causing us delays and additional costs reaching our destination. We are oil and gas producers and marketers of crude oil and natural gas. We have three single engine planes and two jets a Challenger 300 and a Citation Jet CJ-4. We are actively involved in the Bakken Shale Oil Play in Western North Dakota and realize the proposed North Dakota MOA airspace will severely hamper north south air traffic heading to the Bakken from points south. This is not only our planes but many others as well. . Huge volumes of traffic from places like Denver-Dallas-Tulsa-Oklahoma City-Houston and other southern points are going into places like Watford City-Dickinson-Stanley-Tioga, Williston and Bowman, North Dakota. Also Sidney-Plentywood- Baker and Glendive, Montana will be adversely impacted as well if this proposal is enacted. This proposed area would severely impact this air travel. The Bakken is the largest oil play in world and this space take blocks air transportation traveling to and from the south. It will be a real problem for the oil and gas industry which is already stressed to the limits with too much going on in to small of a space. SO-17 AM-5 AM-6

My second point is that in this part of North Dakota I often operate our smaller planes at lower altitudes VFR. The radar coverage there is minimal at lower elevations and it is not set up for prudent oversight of the space for safety purposes. AM-3

My recommendation is to eliminate the North Dakota part of the take completely.

Loren R. Kopseng
President & CEO

[redacted]

49

RICHARD BELGRAD, M.D.
[redacted]
March 29, 2014

Manager, Operations Support Group
ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Ft. Worth, TX 76137

Dear Sir/ Madam:

This letter is in reference to the Air Force's proposal to expand the Powder River Basin airspace training area. As a physician long interested in Indian welfare and as a Montana resident, I strongly oppose extending low and medium level training flights over the entire Northern Cheyenne and most of the adjacent Crow Indian Reservations. My step-son is an Air Force officer and pilot. We have visited him on base and have experienced mid- and low level practice runs. The noise is ear-shattering, particularly with low runs at the 500 ft. level.

There are elderly, children, and livestock scattered throughout this area, as well as sometimes religious ceremonies. Their air quality has been Class I. It is cruel and inhuman, in my opinion, to subject these quiet places to training noise, air pollution, and the risk of an air crash. These people already have enough problems and deserve, at least, the sanctity of peace and quiet.

Thank you,

Richard Belgrad, M.D.

NA-1
NA-2
NA-7
NO-2
NO-5
NO-10
NA-4
NA-5
AQ-1
AQ-5
NO-1
NO-5
SA-1
SA-20

50

Manager, Operation Support Group, ATO Central Service Center, AJV-C2

Airspace Study 14-AGL-06NR

Department of Transportation

Federal Aviation Administration

2601 Meacham Blvd.

Fort Worth, TX 76137

I am a pilot, landowner and livestock owner in western South Dakota in the proposed Powder River Training expansion area. We currently have all the stress we need from weather, markets and government regulations and we do not need more infringement upon our safety and property from concentrated extreme military operations.

The social and economic cultures of this area have been and will be dependent upon the freedoms to navigate and operate without undue stresses from outside forces. Your proposal will subject the occupants and businesses of this area to new hardships which may be the demise of private industry and occupation as has become the norm on most military training facilities.

Many of the counties within the proposed area have comprehensive social and economic plans for the future preservation of their cultures and this proposal will be contradictory to their efforts. Do you believe sacrificing the culture along with their toils to feed a nation is worth expanding the playground for our military?

SO-22

Each year our federal government acquires more land so my suggestion would be to make use of some of the remote federal holdings with minimal impact upon our citizens.

PN-2

Jeffrey Meyer

[redacted]

51

Bowman
COUNTY DEVELOPMENT CORPORATION

PO Box 1143
13-1/2 East Divide
Bowman, ND 58623
bowcodev@ndsupernet.com

701.523.5880

March 7, 2014

Manage, Operations Support Group
ATO Central Service Center, AJV-C2
Airspace Study 10-Agr-6NR
Department of Transportation
2601 Meacham Blvd.
Fort Worth, TX 76137

Subject: Powder River Training area expansion

Dear Sir/Madam,

On behalf of the Bowman County Development Corporation, I am writing to voice my concerns about the Powder River Training Complex proposed by the US Air Force that would cover Bowman County, North Dakota. Our community and city would be directly under the proposed area number three. Energy, Bakken and Three Forks oil formations, is big business in our community and flight operations associated with these energy companies would be directly affected by the proposed training area altitude and navigation restrictions. A new airport is being built to accommodate the larger turbine aircraft, flying for these energy companies.

AM-1
AM-5
AM-20
AM-21
SO-8
SO-17
SA-23

Our recommendation if the Powder River training complex is going to be expanded would be to raise the floor for the flights from 500ft to 8,000ft. Another recommendation is to limit the 500' AGL floor limit to 1 or 2 days/week instead of the proposed 5 days/week. Our final recommendation is to provide a telephone contact to military training headquarters for instant updates for those flying near the areas. These items would greatly reduce the impact of our operations, and hope to be considered by your office. If you have any questions, please contac me a[redacted]Thank you.

AM-6
SO-28
PN-4
AM-3

Sincerely

Teran Doerr, Executive Director
Bowman County Development Corporation

www.bowmannd.com

52

February 18, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Dear Sir,

I am writing to oppose the proposed MOA expansion indicated above. I fly a Cessna 172 and a Beachcraft Baron 58 for my business. My airplanes are based out of Dickinson, ND (DIK). This proposal will have a negative impact on aviation activities. AM-6

Sincerely,

Jody Hoff
[redacted]

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February 25, 2014

Dr. John Witucki, AJV-C23
Department of Transportation
Federal Aviation Administration
ATO Central Service Center, Operations Support Group
2601 Meacham Blvd.
Fort Worth, TX 76137
(817) 321-7734

Dear Dr. Witucki,

REF: Proposed Establishment of Powder River Training Complex Military Operations Areas ND, SD, MT & WY: Airspace Study 14-AGL-06NR

As a private pilot using these airways, this letter is to express our objection to the establishment of this training area.

These 'hot areas' will increase costs and time due to circumventing this area.

GE-2
SO-7
AM-20
SA-25

Kind Regards,

Robert Hamlin
CEO

[redacted]

ASI-INDUSTRIAL.COM

J:word\2014\PowderRiverTrainingComplex 02252014

Page 1 of 1

54

Greetings Roger- as an Air Force vet, retired Delta Airlines Pilot, and small aircraft owner for 35 years, I have deep concerns about the newly proposed Powder River training complex. I 'm chairman of our local airport board, and in the process of relocating to a new airport with 5700 x 75' concrete runway. This project is in response to OIL activity in our area (bakken, three forks, and williston formations. The 500' above ground restriction is going to kill everything we are working for! We will be directly under proposed area 3 (500'agl to 18000'). I feel we can handle the flares & chaff issues, which farmers, ranchers, rural fire depts, & wildlife managers are against. We can also live with the large force exercises 10 days a year, but have great concerns about 500'AGL. It affects everything from corporate, pleasure, flying clubs, pilot training, medivac, and crop dusters, not to mention IFR inbound & outbound traffic. I wonder how much my farm would be devalued if I ever decide to sell?? Our recommendations are few & easy- If Ellsworth AFB wants a bigger area, put it in So.Dakota. If Minot AFB wants a closer area, go east to 2 moa's already in place but not being used. Raise the floor to 8000' (which would solve 90% of issues over night). Use the 500' restriction 1 day/ week instead of 5 days. Thank you for your attention & hope the " powers to be " will consider our recommendations.

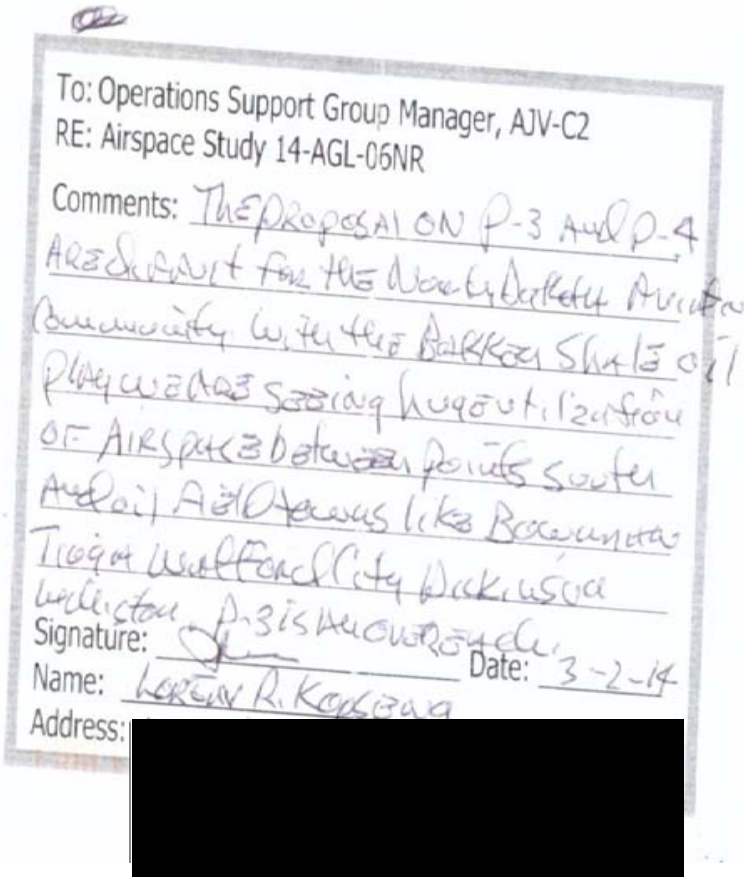
Sincerely, Rodney Schaaf- Bowman

AM-6
AM-5
SO-5
PN-2
PN-4

55

Transcript Public Comment 14-AGL-06NR: Loren R. Kopseng

The proposal on P-3 and P-4 are diff[c]ult for the North Dakota Aviation Community. With the Bakker Shale oil play we are seeing huge utilization of airspace between points [south] and oil afld to was like Bowan Tioga Watford City Dickinson Williston. P-3 is all over eadi.



To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: The Proposal on P-3 and P-4 are difficult for the North Dakota Aviation Community with the Bakker Shale oil play we are seeing huge utilization of airspace between points south and oil afld to was like Bowan Tioga Watford City Dickinson Williston. P-3 is all over eadi.

Signature: [signature] Date: 3-2-14

Name: Loren R. Kopseng

Address: [redacted]

AM-6
SO-5
SO-7

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RECREATIONAL AVIATION FOUNDATION
[redacted]

March 4, 2014

Manager, Operations Support Group
ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Dear Folks,

This letter is in regards to the proposed addition to the Powder River MOA in S.E. MT. The Recreational Aviation Foundation which is composed of nearly 6000 members from across the U.S., as well as 12 foreign countries stands in opposition to the expansion of this airspace into the state of MT. GE-2

Expanding the MOA will put a heavy burden on the general aviation population in this part of the state. MT is a state that relies heavily on general aviation and hindering the ability to easily traverse the state, including the airspace in question, is not feasible. The state of MT looks to be a good partner with the military, but we feel our state has given its share and more. GE-3, AM-5, SO-5, SO-7, PN-2

We strongly urge you to look elsewhere for this desired airspace.

Thank you,

John McKenna, President
Recreational Aviation Foundation

The RAF Mission:
"Keeping the legacy of recreational aviation strong by preserving, maintaining and creating public use recreational and backcountry airstrips nationwide."

57

3-4-14

Manager, Operations Support Group
ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR

I oppose the expansion of the Powder River MOA, Based on safety issues to both Aviation and landowners. FAR 91.119 Minimum safe Altitudes, Para (d), (2) states an aircraft may not operate below 500 ft. above the surface. This creates a see and avoid for both Military and other aircraft, It will Kill someone. Who takes the blame if this happens? GE-2 PN-4 SA-1 SA-7 AM-14 SO-12

The speed and noise levels of Military Low level aircraft, cause undo stress on landowners and their livestock. SA-7 NO-2 NO-5 BI-1 BI-2 BI-3 LU7

A B-1 crashed in the existing MOA (2013) the crew survived, how about the property owner? SO-12 SA-20

Propose an MOA in So. Dakota or No. Dakota and see how much opposition you get! SO-24

Sincerely
Gary J Martin

[redacted]

58

Manager, Operations Support Group Feb 21,2014

ATO Central Service Center, AJV-C2

Airspace Study 14-AGL-6NR

Dept. of Transportation

Federal Aviation Administration

2601 Meacham Blvd.

Fort Worth, Tx 76137

Subject: Powder River training area expansion

From: Talbot township, North Dakota

We the undersigned township supervisors are greatly concerned about the Powder River training area proposed expansion. We are in OIL country, Bakken , Three Forks, and Williston formations, and would be directly under Area 3. Flight operations associated with these energy companies would be directly affected by the proposed altitude and navigation restrictions. **SO-17 AM-6**

We hope some of the following recommendation could be incorporated into the training areas.

1- Raise the floor limit (500' AGL to 8000'MSL) **DO-3 PN-4**

2- Limit the 500' AGL restriction to 2 days/ week instead of 5 days/ week

3- Telephone direct line to a training office to get updates to area use by pilots **AM-3**

Thank you for your attention.

Sincerely: Talbot Township Supervisors

59

March 10, 2014

Manager, Operations Support Group
ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR

RE: Powder River MOA Proposed Expansion

As a commercial pilot, both fixed-wing and helicopter, born and raised in this region and having lived here my entire life, I am deeply concerned about the future of General Aviation (GA) as a whole, both professionally and recreationally. AM-6

Setting the cost of flight training, insurance, and fuel prices aside, General Aviation, through dozens of unwarranted product liability lawsuits that brought the aircraft manufacturing industry to its knees in the mid-1980's, was the first nail in the coffin and the industry has yet to recover. Couple that to the average age of the GA fleet—40 years and counting—and we are now witnesses to more intense Airworthiness Directives (ADs) that will almost certainly guarantee the grounding of certain aircraft models in the distant future, another nail.

Before September 11, 2001, our primary regulating body was the FAA. Today, in addition to the FAA, we have the DHS as well as the EPA systematically pounding multiple nails in the GA coffin through unwarranted regulations that is creating a very hostile environment towards an industry that has long been the brunt of so much unnecessary abuse through excess and error.

The proposed Powder River MOA expansion, if approved, will pound yet another nail to an already extremely fragile GA economy, once again, both professionally and recreationally. I suspect it might even instill fear in some of the less experienced pilots who will avoid the entire MOA training complex like the plague. SO-5 SO-6 SA-7

AM-9 My biggest fear regarding this possible takeover is future blocks of the airspace turning into Restricted Areas. It may sound far-fetched, but I never thought it could come to this. SO-26

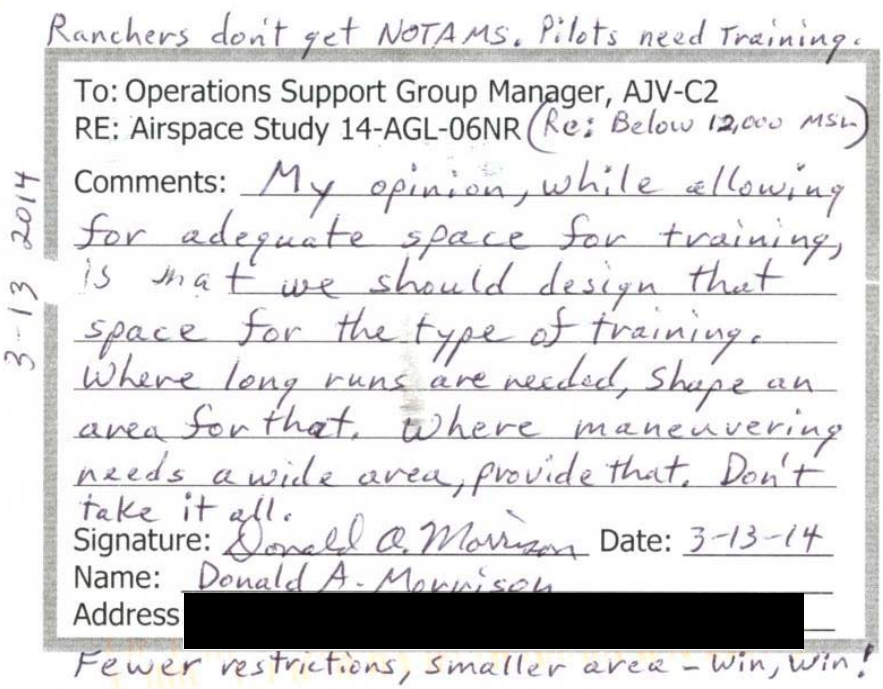
If we give it up, we will *never* get it back.

Yours truly,

Craig Stebbins

Craig Stebbins
[redacted]

60



Ranchers don't get NOTAMS. Pilots need Training.

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR (Re: Below 12,000 MSL)

Comments: My opinion, while allowing for adequate space for training, is that we should design that space for the type of training. Where long runs are needed, shape an area for that. Where maneuvering needs a wide area, provide that. Don't take it all.

Signature: Donald A. Morrison Date: 3-13-14

Name: Donald A. Morrison

Address [redacted]

3-13 2014

Fewer restrictions, smaller area - Win, Win!

PN-1
PN-2
PN-3

61

Pennington County Board of Commissioners
Pennington County Courthouse • 315 Saint Joseph St., Ste 156
Rapid City, SD 57701 • Phone: (605) 394-2171
www.pennco.org • commissioners@pennco.org

March 24, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

RE: Proposed Powder River Complex Expansion

Dear Sir or Mam,

The Pennington County Board of Commissioners fully supports the proposed Powder River Training Complex to meet the airspace training needs of today's Air Force. This expansion is critical for our nation's security as well as the safety of our military men and women. Finalizing the expansion of the current training airspace is vital to maintaining our military readiness and is important to the state of South Dakota and the County of Pennington alike. GE-1

The expansion, initially proposed in 2008, is intended to allow military aircrews to plan and conduct realistic training scenarios directly applicable to current operations and potential conflicts in the future. To be able to train realistically, more space is needed to practice the kinds of engagements our Airmen expect to see in combat. This will increase the likelihood of successfully accomplishing the combat missions. PN-1

As the final step, we sincerely appreciate the FAA seeking public comment before making the final decision. We support the Powder River Training Complex and respectfully request the FAA expedite its approval.

Sincerely,
The Pennington County Board of Commissioners

Lyndell Petersen

Lyndell Petersen, Chairman

LP\hh

Ken L. Davis – District 1 • Nancy Trautman – District 2 • Don Holloway – District 3 •
Lyndell Petersen – District 4 • Ron Buskerud – District 5
Office Manager - Holli Hennies • Commission Assistant - Jessica Love

62

Milton L Amsden

[redacted]

March 28, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-05NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Boulevard
Fort Worth, TX 76137

RE: Powder River Training Complex 2014

Dear Sirs:

I am writing in support of the Powder River Training Complex; as a student at Powder River County District High School in the early 1940's, B-17 flew over our school. We were very proud of them – thrilled to see them. What little discomfort they would cause is very little compared to the value the training would be to our Air Force.

I am a part of a military family and am very proud of what has been accomplished over the years by all of our armed forces.

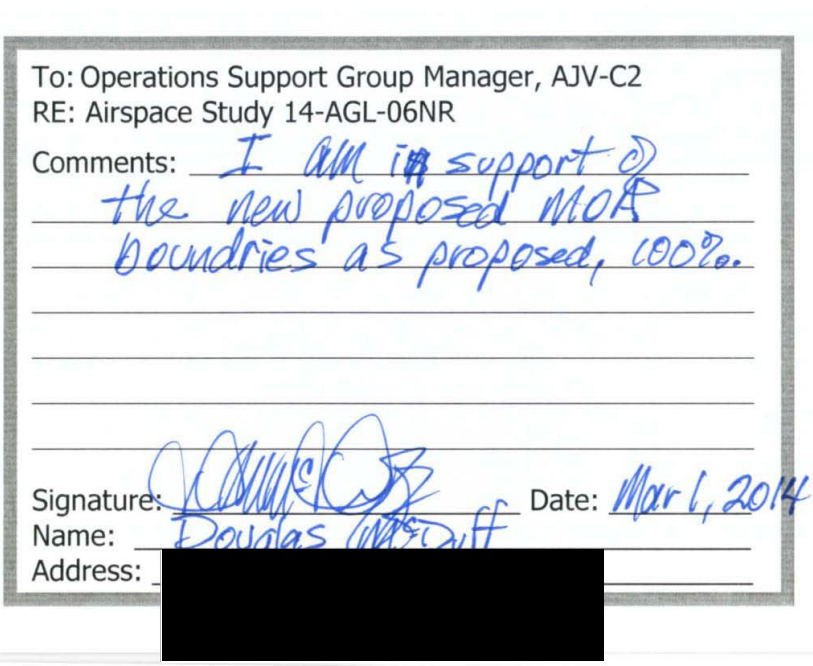
Again, I am very much in favor of the Powder River Training Complex.

GE-1

Yours truly, Milton L Amsden

Milton L Amsden MAYOR OF Blondus Montana Powder River County USA

63



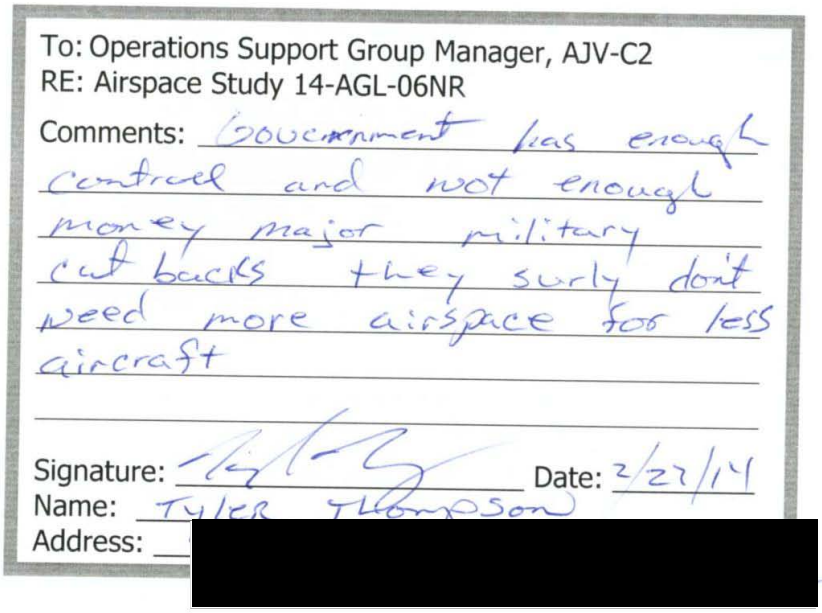
To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: I am in support of the new proposed MOA boundries as proposed, 100%.

Signature: [signature] Date: Mar 1, 2014
Name: Douglas [illegible]
Address: [redacted]

GE-1

63.1



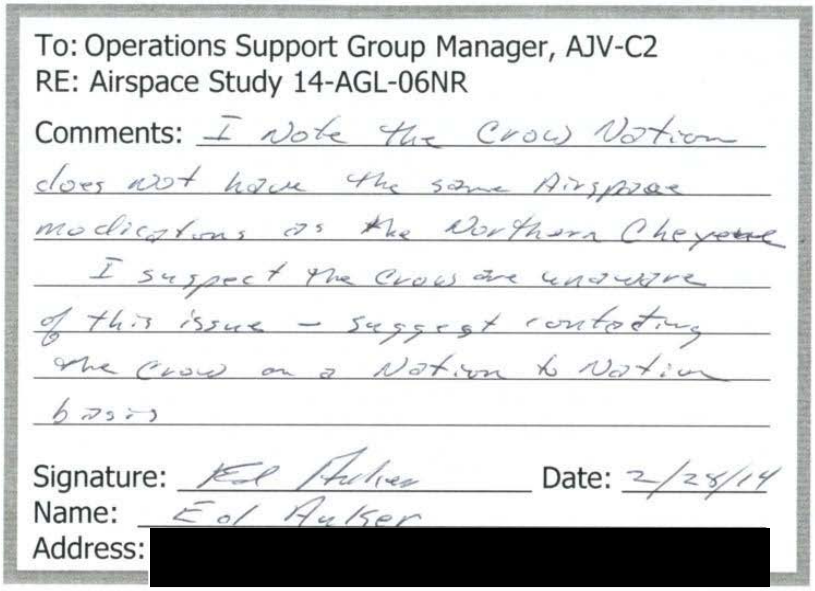
To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: Government has enough control and not enough money major military cut backs they surly dont need more airspace for less aircraft

Signature: [signature] Date: 2/27/14
Name: Tyler Thompson
Address: [redacted]

GE-2
PN-3
PN-6

65.1



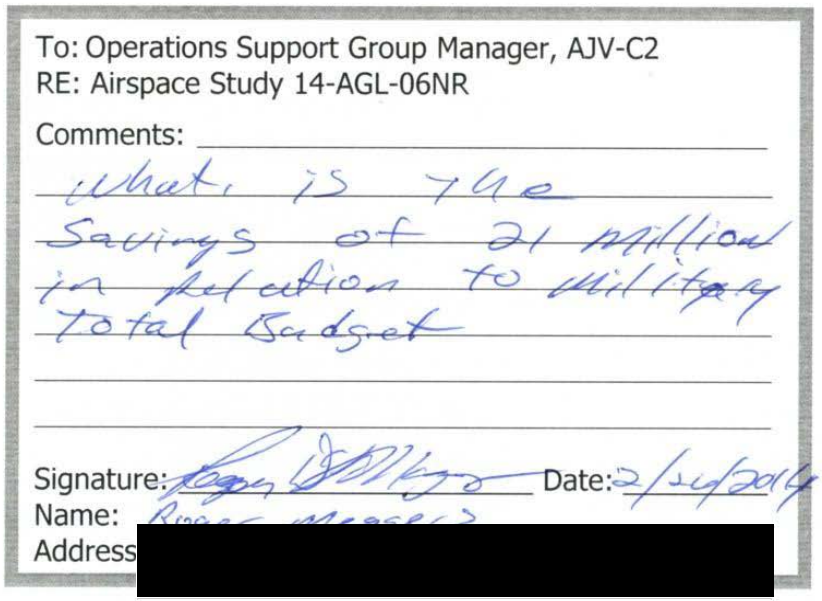
To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: I note the Crow Nation does not have the same Airspace modifications as the Northern Cheyenne. I suspect the Crows are unaware of this issue - suggest contacting the Crow on a Nation to Nation basis

Signature: Earl Aulker Date: 2/28/14
Name: Earl Aulker
Address: [redacted]

NA1

65A



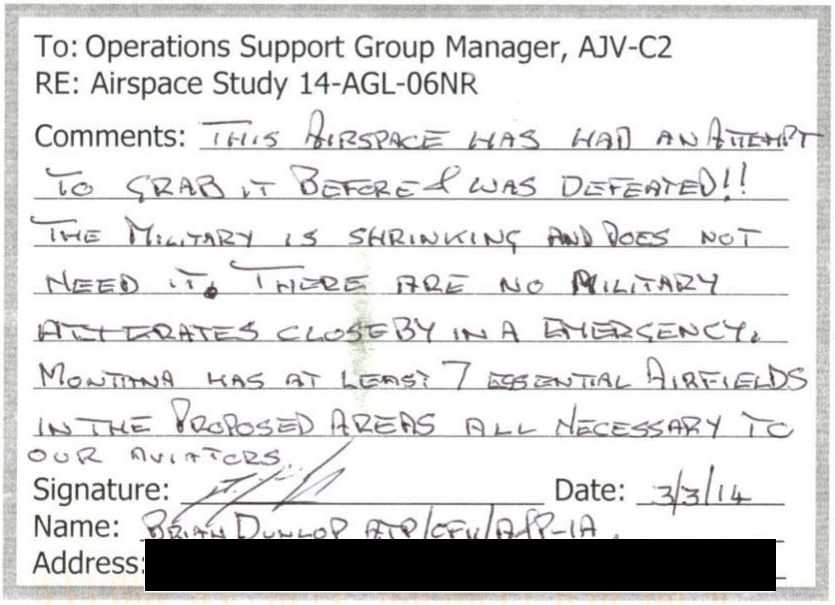
To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: What is the Savings of 21 million in reduction to military total Budget

Signature: [redacted] Date: 2/24/2014
Name: [redacted]
Address [redacted]

NOT W/IN SCOPE OF EIS

66



To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: THIS AIRSPACE HAS HAD AN ATTEMPT TO GRAB IT BEFORE & WAS DEFEATED!! THE MILITARY IS SHRINKING AND DOES NOT NEED IT. THERE ARE NO MILITARY ALTERNATES CLOSEBY IN A EMERGENCY. MONTANA HAS AT LEAST 7 ESSENTIAL AIRFIELDS IN THE PROPOSED AREAS ALL NECESSARY TO OUR AVIATORS.

Signature: [signature] Date: 3/3/14

Name: BRIAN DUNLOP ATP/CFII/AGI-IA

Address: [redacted]

PN-3

DO-1

AM-5
SO-9

68

Kent M. Wheeler, Manager
ATO Central Service Center, Operations Support Group
2601 Meacham Blvd.
Fort Worth TX 76137

Subject: Airspace Study 14-AGL-06NR

Dear Mr. Wheeler,

The North Dakota Aviation Council is a member group comprised of the:

- Airport Association of North Dakota
- North Dakota Agricultural Aviation Association
- North Dakota Association of Aviation Museums
- North Dakota Business Aviation Association
- North Dakota Experimental Aircraft Association
- North Dakota Flying Farmers
- North Dakota Pilots Association
- North Dakota Professional Aviation Mechanics Association

The membership of the North Dakota Aviation Council is comprised of the chairmen and vice-chairmen of each represented group. As a council, therefore representing all these entities, we request a 90-day extension to the comment period slated to close on April 3, 2014 for the Proposed Establishment of the Powder River Training Complex as referenced in the above mentioned airspace study.

We feel comments to this proposal should be allowed to be submitted via email and that the proposal should be available on the FAA website.

We feel the physical size of this proposal makes it necessary for an extension in time of the comment period in order for affected users to better understand the complexity of the proposal.

We are hopeful that there will be an extension of the comment period for 90 days to allow for a more concise public review which will allow all of the members of the aviation associations and the public the ability to provide more relevant comments to this huge proposal.

Please respond to this request for an extension at least a week prior to the deadline and Thank You!

Respectfully,

Rod Brekken, Chairman
North Dakota Aviation Council
[redacted]

69

TransCanada
In business to deliver

March 18, 2014

Manager, Operations Support Group
ATO Central Services Center, AJV-C 2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

RE: Expansion of Powder River MOA

With respect to Airspace Study 14-AGL-06NR, concerning the proposed expansion of the existing Powder River MOA, the "Fact Sheet" indicates the likelihood of "significant negative impact to Montana's economy (including oil exploration in the area)".

TransCanada has proposed to construct and operate its "Keystone XL Pipeline" system through a portion of the proposed area; specifically the area identified at "PR2". We would like to better understand the anticipated impacts of the proposed MOA expansion on the construction and operation of our proposed oil pipeline. Can you provide or identify the location of an impact study associated with the Powder River MOA expansion?

CM-1
SO-17
SA-12
SA-21
SA-23

[redacted]

Sincerely,

F.J. (Rick) Perkins
TransCanada Keystone XL Project
[redacted]

70

March 12, 2014

Kent M. Wheeler, Manager
ATO Central Service Center, Operations Support Group
2601 Meacham Blvd.
Fort Worth TX 76137

Subject: Airspace Study 14-AGL-06NR

Dear Mr. Wheeler:

The States of Montana, North Dakota and Wyoming, representing over 10,000 pilots, requests a 90-day extension to the comment period slated to close on April 3, 2014 for the Proposed Establishment of the Powder River Training Complex as referenced in the above mentioned airspace study.

The size and complexity of this proposal necessitates this request for extension in order for the States and our local airspace users to adequately analyze and provide comments to this proposal.

The States also request the FAA make this proposal readily available on its website and that comments be allowed to be submitted via email.

The States look forward to an extension of the comment period to allow for a thorough public review and to allow our aviation communities and public to provide relevant comments to this colossal proposal. Please respond via email with your decision by March 26, 2014.

NP-5
NP-8

Sincerely,

Debbie Alke
Administrator
MDT Aeronautics

Kyle Wanner
Interim Director
ND Aeronautics

Dennis Byrne
Administrator
WYDOT Aeronautics

[redacted]

cc: Debbie Alke, Administrator, MDT Aeronautics
Kyle Wanner, Interim Director, ND Aeronautics
Dennis Byrne, Administrator, WYDOT Aeronautics

71

Meadow SD
March 29- 2014

To who it May Concern:

As A livestock Producer And A pilot I Strongly Oppose The Proposed Powder River Training Complex expansion.

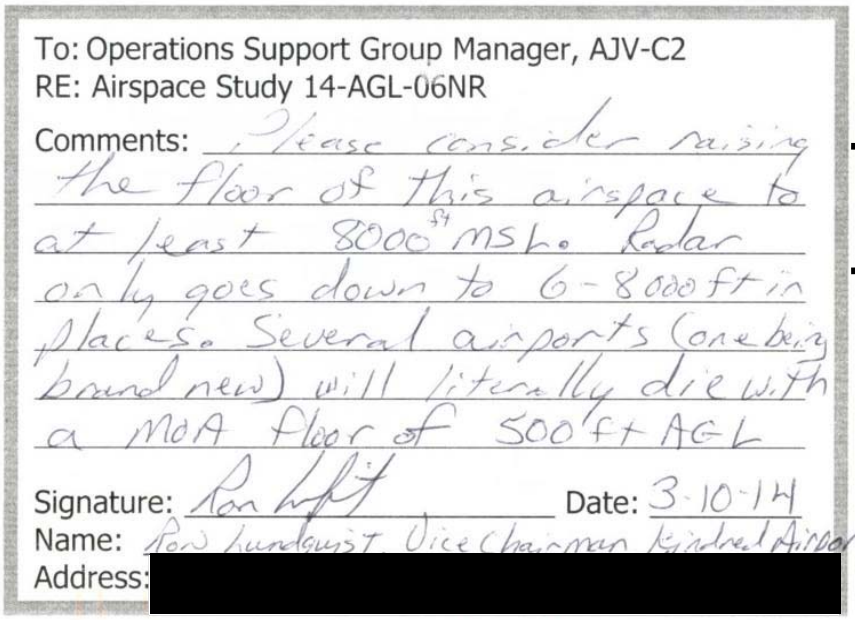
GE-2

Sincerely

Lee Lemagrow

[redacted]

72



To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: Please consider raising the floor of this airspace to at least 8000 ft MSL. Radar only goes down to 6-8000 ft in places. Several airports (one being brand new) will literally die with a MOA floor of 500 ft AGL

Signature: Ron Lundquist Date: 3-10-14
Name: Ron Lundquist Vice Chairman Kindred Airport
Address: [redacted]

DO-3
PN-4

AM-3

AM-1
AM-21

73

Robert Hollister
[redacted]

Manager, Operations Support Group, ATO
Central Services Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Re: Airspace Study 14-AGL-06NR

Dear Manager:

The proposed expansion of the Powder River MOA is unacceptable from a safety standpoint. Use of many million dollars worth of general aviation airports would be limited by this MOA. There is no corridor being proposed which would give civilian pilots a safe route when the proposed MOA is active.

There should be specific airways open to each of the FAA funded airports at ALL times. Supersonic flight should not be allowed below 18,000 feet in any MOA where communities are located and ALL supersonic flight should be made aware of to the Salt Lake and Denver Centers.

PN-2

The "Hays" MOA in Northeastern Montana could be an alternative for the proposed Powder River MOA with less than 30 additional minutes flight. This would impact far fewer communities and airports. If 30 additional minutes is too far maybe the Air Force should send aircraft to the decommissioned Glasgow Air Base for temporary duty and training. This old base is underutilized and could be re-opened with some of the savings touted by the Powder River MOA.

AM-12
SA-1
SA-7
SA-25
SO-5
SO-7
SO-8
AM-1
AM-12
AM-20
SO-8
NO-2
NO-5

Sincerely,

Robert Hollister

Cc: Governor Steve Bullock
Senator John Tester
Senator John Walsh
Representative Steve Daines

74

Bowman COUNTY

BOARD OF COMMISSIONERS

104 First Street NW, Suite One • Bowman, ND 58623 • Phone: 701-523-3130

Manager, Operations Support Group

Feb. 25, 2014

ATO Central Service Center, AJV-C2

Airspace Study 14-AGL-6NR

Department of Transportation

2601 Meacham Blvd.

Fort Worth, Tx 76137

Subject: Powder River Training area expansion

Dear Sir/Madam;

We the undersigned Bowman County Commissioners are very concerned about the proposed expansion of the Powder River training areas. Our community and city would be directly under the proposed area number three. Energy, Bakken and Three Forks oil formations, is big business in our community and flight operations associated with these energy companies would be directly affected by the proposed training area altitude and navigation restrictions.

SA-7
SA-21
SO-7

A new airport is being built to accommodate the larger turbine aircraft, flying for these energy companies.

AM-1
AM-5
SO-10

We recommend that the training floor be raised from the proposed

Pine Abrahamson • Bill Bowman • Rick Braaten • Lynn Brackel • Kenneth Steiner

74

Bowman COUNTY

BOARD OF COMMISSIONERS

104 First Street NW, Suite One • Bowman, ND 58623 • Phone: 701-523-3130

500' above ground to 8000' MSL. Another recommendation is to limit the 500' AGL floor limit to 1 or 2 days/ week instead of the proposed 5 days/ week. Final recommendation is to provide a telephone contact to military training headquarters for instant updates for those flying near the areas. These items would greatly reduce the impact of our operations, and hope to be considered by your office. Thank you for your attention.

DO-3
PN-4

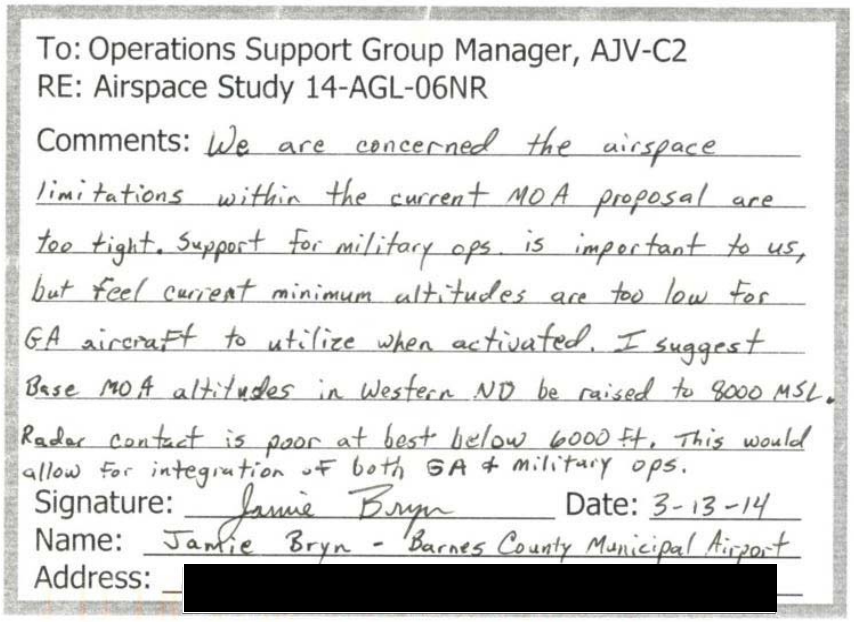
AM-3

Respectfully submitted,

Bowman County Commissioners

Rick Braaten
Lynn Brackel
Bill Bowman
Kenneth Steiner
Pine Abrahamson

75



To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: We are concerned the airspace limitations within the current MOA proposal are too tight. Support for military ops. is important to us, but feel current minimum altitudes are too low for GA aircraft to utilize when activated. I suggest Base MOA altitudes in Western ND be raised to 8000 MSL. Radar contact is poor at best below 6000 ft. This would allow for integration of both GA & military ops.

Signature: Jamie Bryn Date: 3-13-14
Name: Jamie Bryn - Barnes County Municipal Airport
Address: [redacted]

SA-1
SA-7
PN-4
DO-3
DO-4

76

Aviation Organizations of Montana
[redacted]
March 10, 2014

Manager, Operations Support Group, ATO
Central Services Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Boulevard
Fort Worth, Texas 76137

Re: Proposed Expansion of Powder River MOA

Dear Manager:

The Aviation Organizations of Montana oppose the expansion of the Powder River MOA. There are approximately 1500 citizens represented by the Aviation Organizations of Montana. The Aviation Organizations of Montana (hereinafter AOM) includes the following: Montana Experimental Aircraft Assn, Montana Aerial Applicators Assn, Montana Antique Airplane Assn, Montana Aviation Trades Assn, Montana Flying Farmers, the Montana 99s, Montana Seaplane Assn, Montana Community Airport Assn, Montana Pilots' Assn, Montana Aircraft Owners and Pilots Assn, and the Montana Airport Managers Assn.

First, our opposition to this proposal is based on safety. Access for emergency medical flights is not set out in the proposal. Given the vastness of Montana and the area this proposed MOA would cover, this presents a huge problem. No conscientious flight instructor would send a student pilot on a flight when this area is active. **SA-18 SA-19 SO-5**

Second, while this proposed MOA is active the air space is available to civilian pilots; however, there is no radar or method of communication for those civilian pilots. Montana is the fourth largest state in the nation and many pilots travel for medical, business, family, and educational reasons. These pilots fly because it is the most efficient means of traveling long distances. **AM-3 SA-4**

Third, this proposed MOA impacts airport operations in and around Ashland, Baker, Broadus, Colstrip, Hardin and 40 plus private airstrips in Montana. This area is bigger than some Eastern States. **AM-4 AM-21 SO-21**

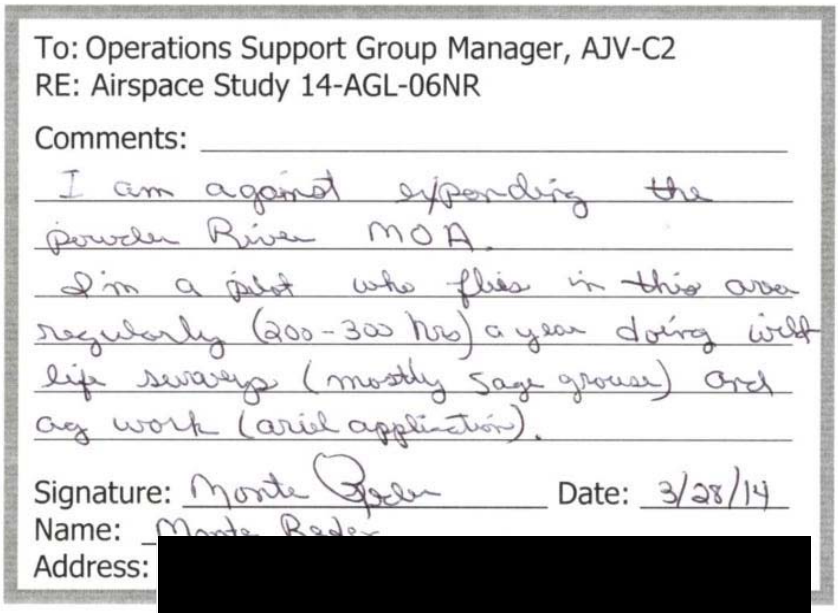
GE-3 Fourth, this proposed MOA limits Montana citizens ability to check dams, pipelines or irrigation systems, livestock, crops, fire fighting, and road conditions (this list could go on and on). In general, this proposed MOA would impose unfair economic and freedom restrictions. **SA-7 SO-11**

Sincerely,

Marilyn Hollister

Marilyn Hollister, Secretary

77



To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments:

I am against expanding the Powder River MOA.

I'm a pilot who flies in this area regularly (200-300 hrs) a year doing wildlife surveys (mostly Sage grouse) and ag work (aerial application).

Signature: Monte Ryder Date: 3/28/14

Name: Monte Ryder

Address: [redacted]

SA-8
SA-15
SO-2
SO-20
SO-28

78

Please do not expand the powder River MOA, Im a private pilot the people in this area need the air space. we also raise lots of cattle ut & Arizona has lots of space that no body lives & hardly any cattle or deer live. You state the cost is much more traveling to these Remote Area's, But what is it going to cost us here in Eastern montana

And How many lives will be in danger, please spend the money And time to go to these remote States

thanks Everett Mitchell &
Viola Mitchell

AM-6

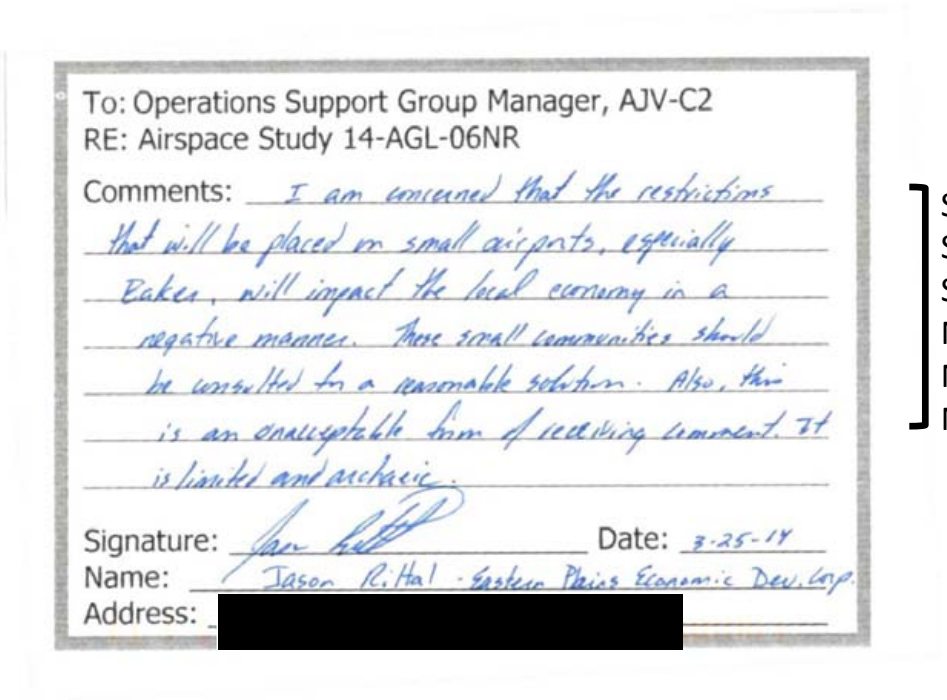
PN-2

SO-7
SO-8
SO-17

SA-1, SA-9

PN-2

79



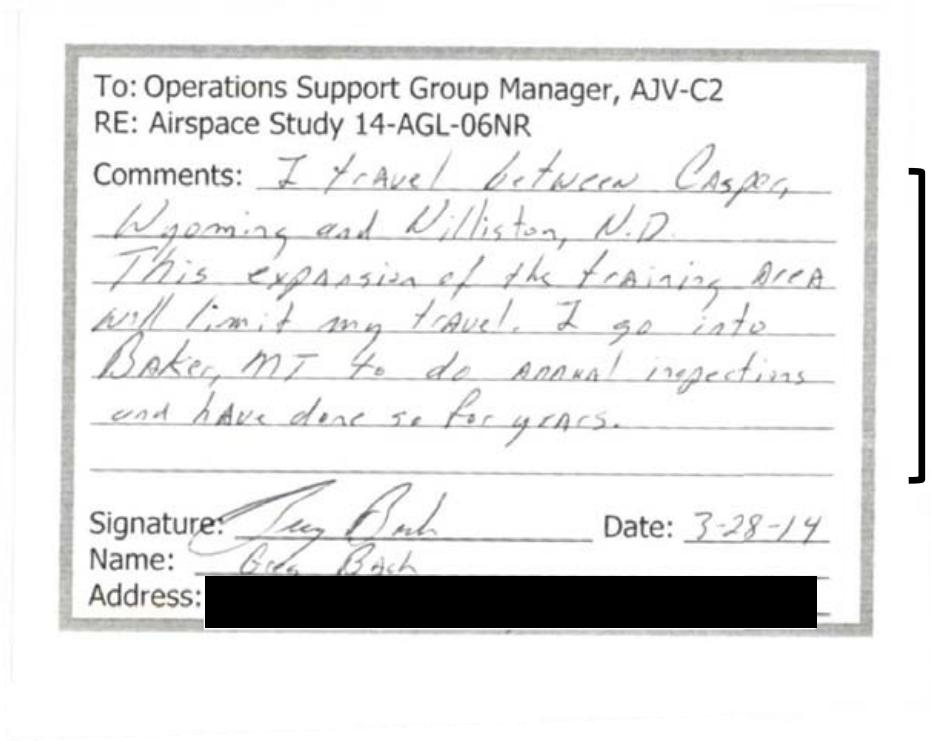
To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: I am concerned that the restrictions that will be placed on small airports, especially Baker, will impact the local economy in a negative manner. Those small communities should be consulted for a reasonable solution. Also, this is an unacceptable form of receiving comment. It is limited and archaic.

Signature: [signature] Date: 3-25-14
Name: Jason R. Hall - Eastern Plains Economic Dev. Corp.
Address: [redacted]

SO-5
SO-10
SO-22
NP-2
NP-5
NP-8

80



To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: I travel between Casper, Wyoming and Williston, N.D. This expansion of the training area will limit my travel. I go into Baker, MT to do annual inspections and have done so for years.

Signature: Greg Bach Date: 3-28-14
Name: Greg Bach
Address: [redacted]

AM-6

81

CITY OF Bowman

March 19, 2014

Manager of Operations Support Group
ATD Central Service Center AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

RE: AIRSPACE STUDY 14-AGL-6NR
POWDER RIVER PROPOSED TRAINING AREAS

Dear Manager of Operations Support Group,

As the President of the City Commission of Bowman, North Dakota, I strive to maintain economic growth, improve community infrastructure, and improve the wellbeing of our citizens. As you may know, our community has undergone great changes associated with Oil, (Bakken, Three Forks, Tyler, and Williston Basin formations.) New high paying jobs are increasing, populations growing, new home sales, and new businesses starting up. In fact, our local airport is moving to accommodate this increased need and service!

To me, the many restrictions associated with the proposed Powder River training areas, 500 feet altitude, navigation, gaps, and operational issues, will deter economic growth, which will have a great impact on our city and community. Please consider some recommendations:

1 – Use existing areas already in place
2 – Make our area a "high training area" with regard to altitude
3 – Raise the area floor to 8,000', to accommodate low air traffic
4 – If you need the 500'restriction, use it 1 day a week

PN-2
PN-4

Thank you for your time and consideration.

Sincerely,

CITY OF BOWMAN

Lyn James
President
/psm

PO Box 12 • 101 First Street NE • Bowman, ND 58623 • 701-523-3309 • Fax 701-523-5716 • bowmanauditor@ndsupernet.com

82

To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

From: Concerned Pilot, SW North Dakota

I am a private pilot, in south west No. Dakota and very concerned about the proposed Powder River Training Areas. As you may know, western North Dakota has gone through a great change, with the oil activities, associated with the Bakken, Three Forks, and Williston formations. New high paying jobs are increasing, populations climbing, air traffic in double digit increases, and many airports upgrading and expanding to meet the needs of these energy companies. In fact, our local airport is moving to accommodate this increased need. Now we may be faced with many altitude, navigation, operational restrictions associated with the proposed Powder River expanded areas!! In our view, we gain nothing (no fuel sales, maintenance income, hangar rent, no income to hotels, restaurants,dealerships, etc.), but we are stuck with the proposed low altitude (500' AGL), navigation, gap, and operational restrictions?? Not to mention flares (fire potential), chaff (surface water, livestock affect), low flying fast aircraft (safety issue) and noise? We feel the areas will deter aviation business (who wants to mess with restrictions), and move our income potential to other airports outside the MOA???

If South Dakota (Ellsworth AFB) wants a larger area, move it to South Dakota!! If North Dakota (Minot AFB) wants an area, go east to the Tiger and Devils Lake MOAs already in place!! Seems like Ellsworth and Minot get the income

SO-24
PN-4
AM-6
AM-12
SA-5
SA-6
BI-5
LU-9
SA-14
SA-1
SA-7
AM-6
SO-9

82

and we in southwest North Dakota get nothing??

I support our men and women in uniform and support training, but there seems to be no compromise to benefit our airport and community??

A few recommendations, I believe, would greatly reduce the training area impacts-

1- area relocation , or make area # 3 a " high area " — AM-6

2- raise the area (3) floor to something higher than 500' AGL, small aircraft could go under, large aircraft could go over (FL 180) — SO-28

3-have a direct telephone line to a military training office to have instant updates for pilots, flying near the areas (other than Flight Service Stations) — PN-4, AM-3

Thank you for your consideration.

Concerned Pilot

Terry DeHaas

83

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: I Am AGAINST the expansion of the Powder River MOA. I am a pilot and plane owner fly out of Baker MT and Bowman ND Airports. I will be dangerous to mix private and military Planes at low levels. It will Also have A very negative impact on operation at the NEW Bowman ND airport.

SA-1

AM-5

Signature: [signature] Date: 3-19-14
Name: David Helland
Address: [redacted]

84

MARCH 20, 2014

TO whom it may concern;

This is to inform you of my opposition to the proposed Powder River MOA.

As a concerned pilot and member of the Forsyth, Montana Airport Board I see major conflicts between military air traffic and General Aviation operations in this Area! AM-6

I feel we already have plenty of space already in Nevada and Utah to conduct these military Low Altitude training routes. PN-2

Ranchers and Local pilots will be Adversley affected by these proposed routes. SO-11

Thank you,

Dennis White

85

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: I do not believe the government needs more air-space. Another concern of mine is that they can now by Notam make an MOA a restricted area. I think this is just one more step for removing G.A from the skies

GE-3
PN-3
AM-9
AM-6

Signature: Mike Choat Date: 3-20-14
Name: Mike Choat
Address: [redacted]

86

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: BASED OUT OF KGCC, I FLY 500'-1000' WITH A SMALL PLANE DOING WATER SURVEYS ON RANCHS INTO SE MT, NW SD & SW ND, I ALSO FLY TO ND FOR BUSINESS AT HIGHER ALTITUDES, VFR QUITE REGULARLY. TIME & WEATHER ARE CRITICAL TO MY OPERATIONS, SO I CAN NOT 'WAIT' TO DO THESE FLIGHTS AT OTHER TIMES. "I OPPOSE THIS EXPANSION!"

AM-1
SA-7

Signature: Steve Barbour PRIVATE PILOT Date: 3-26-14
Name: STEVE BARBOUR
Address: [redacted]

87

WEATHER MODIFICATION
INCORPORATED

March 24, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Ref: Airspace Study 14-AGL-06NR

Weather Modification, Inc. is the primary contractor providing specially-modified aircraft and pilots for the North Dakota Atmospheric Resource Board (NDARB) cloud seeding project each summer. The ND Cloud Modification Project (NDCMP) runs from June 1 through September 1 each year, with options to extend through the end of September if growing conditions and forecast weather merit. This project is sponsored and primarily financed by the individual counties that make up the two current target areas of the NDCMP, with the State of North Dakota providing some matching funds, project meteorologists, weather radar support, and overall project management through the ARB. The two project target areas (Districts 1 and 2) together cover 10,425 square miles – nearly 15% of the State's total area.

District 1 is comprised of Bowman and portions of Slope Counties with buffer zones on the northern and eastern sides, in the southwestern corner of ND. This area is completely overlaid by the proposed PR-3 Low and High MOA's and the GAP B and C MOA's. Airborne cloud seeding activities have been operational in this District 1 target area since 1961. The objective of the program is to provide relief from damaging hailstorms while also producing enhanced rainfall amounts during the growing season.

WMI's contract with the ARB to provide aircraft and pilot services for District 1 cost the taxpayers of Bowman and Slope counties about $161,000 for the recent 2013 summer season. As an indication of the value received for this expenditure, a 2009 study commissioned by the ARB showed that this program produces from **98 to 138-1 gross economic impact** resulting from the increased agricultural production that the program allows. This is a huge impact, $15-20 Million, for the citizens of southwestern ND.

As part of our contract with the ARB, WMI bases two cloud seeding aircraft in Bowman, ND to serve the District 1 target area. These aircraft, sometimes supplemented by some of the six other WMI aircraft from the northern District 2 area, operate around 130 flight hours per season depending upon weather conditions. Operations are conducted 24/7, with the crews on call

[redacted]

87

WEATHER MODIFICATION
INCORPORATED

during the entire season ready for immediate launch. Flights generally last around 2 hours, with the entire flight track normally contained within the District 1 area unless a diversion is required.

Figure 1 (below) shows a map of District 1 with all 2010 operational flight tracks plotted; blue is District boundaries and buffer zone areas, black is flight tracks while not seeding, green / yellow / red are flight tracks during seeding activities.

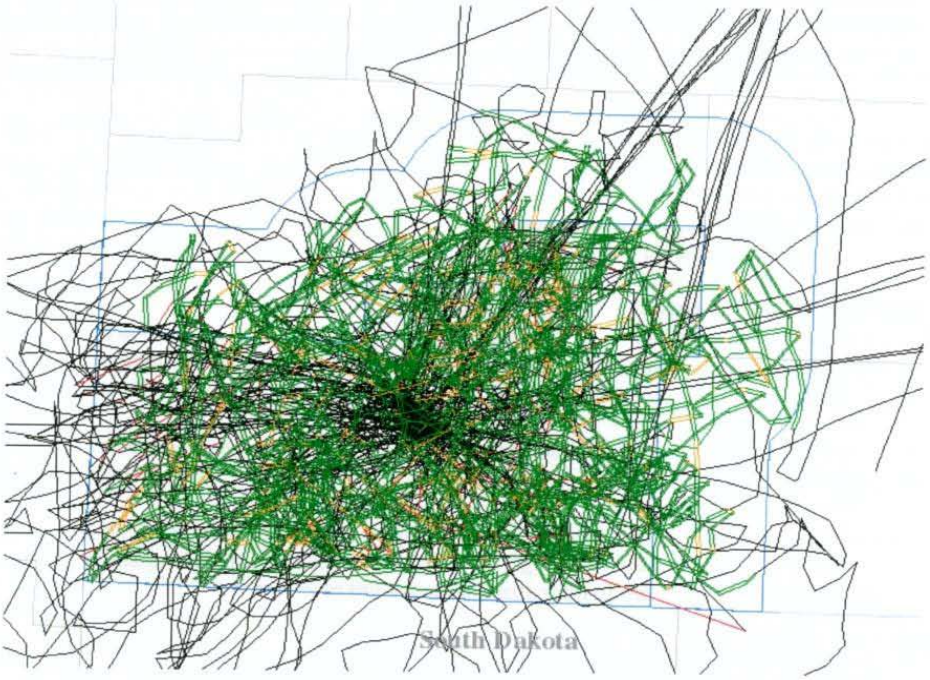


Fig. 1: Summer 2010 NDCMP District 1 cumulative flight tracks

This graphic shows the unpredictable routes that the seeding aircraft fly during operations, as their flight paths are dictated by the thunderstorms around which they must operate. While seeding takes place only to target storm cells that will impact the District, the aircraft must also work around the storms to gain access to the proper areas of the storm cells for effective seeding. Safe operations around severe and cumuliform weather cells also require that the aircraft crews be able to escape the storm if lowering visibility or other storm growth were to

[redacted]

87

WEATHER MODIFICATION
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trap them, precluding a visual return to their base at Bowman. Also note that approximately 30-40% of these flights take place during nighttime hours.

While most of the seeding flights are conducted near the thunderstorm cloud bases under visual flight conditions (VFR), about 15% of District 1 seeding flights are conducted at "cloud top" (in and around the tops of the growing cumulus areas at altitudes between 15–23,000 ft) under instrument flight rules (IFR). And some flights that start as VFR operations become IFR flights when conditions deteriorate. This means that for effective and safe flight operations the WMI aircraft MUST be able to operate under IFR in this area, as well as the surrounding area if needed to skirt the severe weather.

"Cloud top" seeding flights dispense their seeding chemicals using ejectable flares, which can fall up to 3000' while burning for 40 seconds. Some topseeding flights will also utilize pellets of dry ice dropped from the aircraft. Seeding aircraft at cloud base use fixed "generators" mounted on the wingtips, which burn the chemical mixture to release a fine plume of seeding material. The base aircraft will also use flares, which are fixed to wing racks and burn in place.

Communications with ARTCC (Salt Lake Center, and to the east Minneapolis Center) are usually not possible at lower altitudes (generally below 8000' MSL) and must be facilitated using the FSS remote communication outlet at the Bowman airport, or by relay through passing higher-altitude aircraft nearby.

This raises several operational and safety issues that could be adversely impacted by the expanded MOA areas.

1. While the WMI seeding aircraft do mostly operate VFR, by necessity they do not fly a pre-planned route, speed, or altitudes. VFR flight plans are not filed as the route, altitude, duration, and even the eventual destination of the flight are all unknowns when the aircraft is launched. Where the storms go, so must go the airplanes. While the WMI aircraft are always coordinating with each other they are not going to fly predictable flight paths, which could increase collision hazards with military aircraft during MOA operations.

2. When the WMI aircraft are called to operate as IFR flights for certain mission parameters, they will need to be able to do so immediately. Thunderstorms do not occur at preplanned times, and this means that the WMI crews have little advance notice when they are called to fly. Even the best forecasting cannot accurately predict the exact onset and timing of thunderstorm formation or movements, and even though the WMI aircraft are guided by the NDCMP ground based weather radar at the Bowman airport this does not afford extra time at the start of storm formation. Therefore while

SO-28

[redacted]

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WEATHER MODIFICATION
INCORPORATED

the original draft EIS mentioned coordination with Ellsworth AFB to "deconflict" the airspace, WMI aircraft would need that to happen very quickly. We simply are not in a position to plan ahead.

3. As already pointed out, when the weather conditions deteriorate making it unsafe to remain VFR, WMI aircraft will need to be able to "airfile" IFR flight plans and transition to those plans IMMEDIATELY. This is a safety of flight issue; to operate safely around severe weather means that all options must be available to the WMI aircraft crews. Since the only reason they will be flying around the thunderstorms is to protect crops and property for the taxpayers in the target area, they must be able to "stick with it" as long as possible before they must abandon the area. When the weather in the target area is clear, WMI aircraft will not be operating unless transiting between storms or bases.

SO-28

Simply stated, the WMI aircraft must be afforded every opportunity to operate in the area of the proposed PR-3 MOA without undue delays or prohibitions on IFR flights, and in a safe manner without added collision hazards while operating in an already potentially hazardous flight environment. Coordination with Ellsworth AFB would of course be welcome but "deconfliction" of the airspace cannot be delayed for any appreciable amount of time. Procedures, remote communications outlets, dedicated contacts, and operational protocols must be put in place that will allow these operations in a timely manner.

Weather Modification, Inc. has been safely operating in and around severe weather conditions around the globe with our aircraft since 1961 without an injury accident. We pride ourselves in providing a safe and reliable service to our customers, and those same customers – in this case, taxpaying citizens of the State of North Dakota - deserve the freedom to be protected from the hailstorms and drought that threaten their livelihoods.

Thank you for the opportunity to again provide comments regarding this matter.

Hans Ahlness
Vice President – Operations
Weather Modification, Inc.

[redacted]

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Baker Municipal Airport Commission

[redacted]

RECEIVED
MAR 27 2014
BY:

Kent M. Wheeler
Operations Support Center Group
ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, Texas 76137

March 24, 2014

RE: 14-AGL-06NR

Dear Mr. Wheeler;

The Baker Municipal Airport (KBHK) will be very negatively affected by the proposed expansion of the Powder River Military Operation Area. We are opposed to any such expansion and recommend the "No Action" proposal be accepted. There is not adequate justification for this massive expansion. Low level operations are not justified. Doctrine for Modern Warfare, as stated by the USAF in the Background section of this proposal, says that the weapons can be deployed from well beyond visual range with great precision. The USAF should fly to the un-occupied desert for these type of missions. It would create hazards to people and property if done over this area. — GE-2, AM-6, PN-2

We have spent close to $20 million in ADAP fund on this airport since 1988. In 2010, we extended & resurfaced our runway 13/31. New "state of the art" LED airport lighting was installed & the runway surface grooved. We are in the process of developing new VNAV approaches for both runways 13/31. It would be a shame to place the restrictions of this proposed MOA over this airport. We would probably lose our only FBO that has served this community for over 35 years continuously. IFR traffic would not be able to use our airport while the MOA is active, proposed 240 days/ yr. — AM-5, AM-21

We do not have ATC communications or radar below 8,000 to 10,000 MSL. This would severely limit transient operations at KBHK. This would result in loss of jobs and revenue to this energy rich area. I have enclosed documents for your review on how important this energy rich area is becoming. — AM-3

Citing data from 2007-2008 Montana Economic Impact of Airports Study, this MASSIVE expansion would jeopardize 95 jobs that generate over $1.5 million in payroll, $3.8 million in economic activity, in the communities that underlay this behemoth!! 39 airports and 285 aircraft will be very negatively impacted by this expansion. — AM-5

This proposal is in direct conflict with KBHK Airport, Airport Influence Area Zoning Regulations. These regulations were designed and implemented to protect this airport and its airspace. There are no provisions for IFR flights in/out of KBHK, using the new VNAV Instrument Approaches that are currently being developed for KBHK. 2000 AGL with 3 mile radius is not adequate for IFR operation, IAF's, intersections, etc. of the instrument approaches. How could flight school operate safely at this airport? — SO-26

88

Baker Municipal Airport Commission

[redacted]

The oil & gas industry is the largest employer in Fallon County. Currently, the State of Montana collects over $50 million in oil & gas production taxes in Fallon County, over $20 million returned locally. Denbury Resources is the largest oil producer in Montana. They currently pay millions in taxes to Fallon County! Denbury Resources is the #2 taxpayer in the State of Montana! Denbury currently uses KBHK on a continuous basis, sometimes with multiple operations daily. I have been advised that Denbury will no longer use Baker Municipal Airport if this airspace is expanded as proposed. They operate under FAR Part 135 and will not be able to comply with FAA Regulations to continue operations.

AM-5

Highland Partners operates a Cessna Citation XLS in this current airspace on almost daily basis. The cost of these operations will increase by $70,000 per year alone by implementing this airspace expansion. This expense is for just one of its aircraft. This group of companies own and operate four jets, used to service this area. The also contribute heavily to public taxes.

These are just two of many current operators that use this airport on an almost daily basis. We have over 5,000 operations annually at this airport. Typical flights are transition through this area between KCPR, KGCC, KISN, KDIK, KSDY, & KBPP. There will be many airspace conflicts and increased costs to general aviation.

KBHK is considering annual airshow performances. How would we even be able to have a simple airshow without the undue hardships associated with an active MOA. I am very proud of this small GA airport as it has served the area well. It has been well-maintained and expanded to meet current and the future needs of this area.

In 2008, Fallon County constructed and 8,000 square foot heated hangar for transient aircraft. We will construct another 12,000 square foot hangar this summer for local GA aircraft. We expect to be reimbursed for these cost as well as airport construction costs if this proposal goes forward, as we cannot operate this airport safely.

We will also have a new BLM SEAT "Fire Base" this summer, with up to 4 aircraft based here.

SO-10
SO-17

Baker's current population exceeds 2000 people and is rapidly growing. A 600 person "man camp" has already been constructed in Baker, MT and is ready for Keystone P/L construction when it goes. 2600+ people in one city alone under LFE's!!

Please, here these concerns and don't make KBHK go away!

Roger Meggers, Baker Municipal Airport Manager

89

Department of Transportation
FAA
2601 Meacham Blvd.
Fort Worth, TX. 76137

RE: Airspace Study 14-AGL-06NR
(Powder River MOA Expansion)

Dear Sirs;

I am a pilot based out of Aberdeen, SD. I fly my plane off a grass strip on our farm and do almost all my flying to the west. I have a business in Lemmon SD and a daughter in Bozeman, Mt., with flying friends in Spearfish and Belle Fourche.
I fly low and slow, my plane is a bush plane with a seaplane prop and large tires. The 500' low altitude base would put military planes on a collision course with my normal cross country flying altitude of around 1000' AGL and when we are backcountry flying between friends ranches or remote strips we stay in that 100' to 500 ' AGL level.

I want to support our troops and I want them to have all the advantages possible but I notice large increases in the size and scope of MOA's. Case in point, is the expansion taking place in Alaska. The most disturbing things that directly affect my flying are the low level altitudes, (500') and the days and hours of use, (240 days in the Powder River 1-4)
Correct me if I am wrong but I cannot recall seeing MOA Areas being dissolved once they are established, so apparently, once established they remain.

AM-21
PN-4
PN-5

In conclusion, this expansion will adversely affect my access to flying areas, my current direct to method of cross-country travel and the altitudes that I presently utilize. More specifically the travel to and from my business, daughters home and friends Ranches will be affected.

AM-20
AM-21
SO-11
SO-13
SO-15
SO-20

I see that comments received before April 3rd will be considered before final action is taken and that the proposal may change in light of comments received.
I hope this is true.

Sincerely Yours

Tom Barber – Pilot and Airplane Owner.

90

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: This MOA EXPANSION SEEMS TO be A Really BAD deal for NON-MILITARY AVIATION IN SOUTH WEST ND. This would SEEM TO PUT very TIGHT RESTRICTIONS on The Ceiling That we could operate at.

Signature: Michael Olawson Date: 15 Apr 2014
Name: MICHAEL OLAWSON
Address: [redacted]

AM-6

91

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: The proposed Powder River MOA will impose undo hardship on several public airports including Bowman, ND as well as commercial flights.

Signature: Muriel Halvorson Date: 4/15/14
Name: MURIEL HALVORSON
Address: [redacted]

AM-5
AM-6

92

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: Do not expand MOA Powder River as it will cause undue hardship to me and my family. My favorite is to hunt deer peacefully in this area and will not be beneficial to anyone.

Signature: [redacted] Date: 2/28/14
Name: Roger Foster
Address [redacted]

LU-5

93

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: I am concerned about the proposed Powder River MOA expansion and that it will be a negative economic impact to the State of Montana. Several airports in Southeastern Montana have undergone several improvements and benefits would be lost under the proposed MOA expansion.

Signature: [redacted] Date: 3-1-2014
Name: Nathan Schroht
Address: [redacted]

AM-5

94

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: I AM OPPOSED TO THE PROPOSED EXPANSION DUE TO THE FOLLOWING REASONS:

1) THERE IS NO ECONOMIC BENEFIT TO MT
2) THERE IS NEGATIVE ECONOMIC IMPACT TO MT
3) SAFETY CONCERNS EXIST FOR IFR & VFR

Signature: [signature] Date: 2/28/14
Name: Tim Conway
Address: [redacted]

SO-24
SO-5
SA-1

95

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: THIS IS NOT A SAFE ENVIRONMENT FOR AIR TRAFFIC. PLEASE RE-ASSESS THE IMPACTS TO THE MT AERONAUTIC COMMUNITY

Signature: [signature] Date: 2/28/14
Name: TYLER S. REED
Address: [redacted]

SA-1

96

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: I oppose the MOA
EXPANSION BASED ON
SAFETY

Signature: [redacted] Date: [redacted]
Name: EDGAR J MARTIN
Address [redacted]

SA-1

97

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

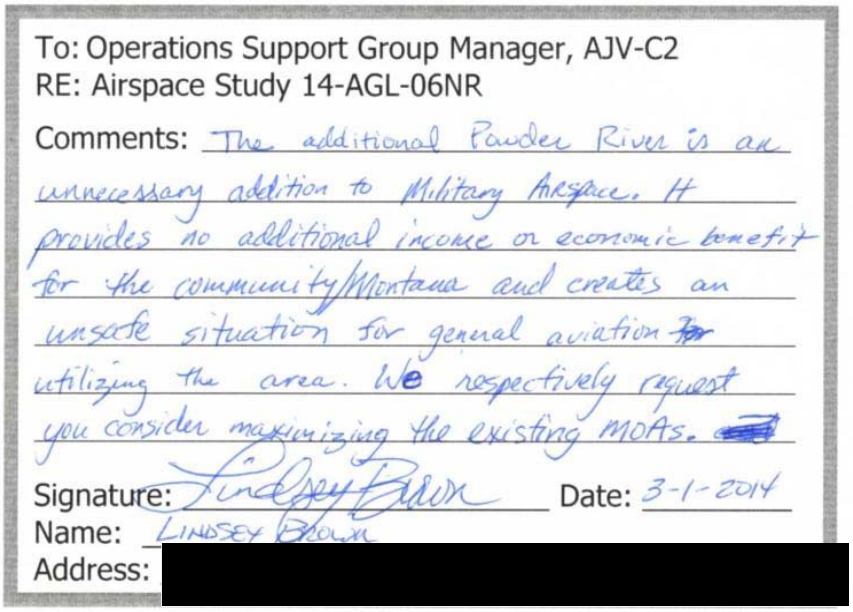
Comments:

SO MUCH FOR SMALL
ACFT OPERATIONS
NO,

Signature: [redacted] Date: 3/1/14
Name:
Address:

SA-1

98



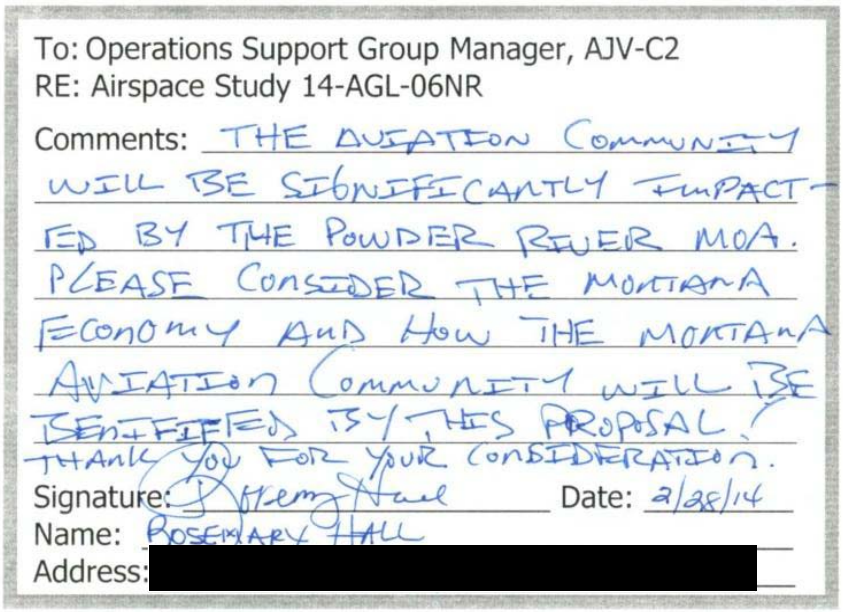
To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: The additional Powder River is an unnecessary addition to Military Airspace. It provides no additional income or economic benefit for the community/Montana and creates an unsafe situation for general aviation ~~for~~ utilizing the area. We respectively request you consider maximizing the existing MOAs.

Signature: [signature] Date: 3-1-2014
Name: LINDSEY BROWN
Address: [redacted]

PN-3
SO-24
SA-1

99



To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: THE AVIATION COMMUNITY WILL BE SIGNIFICANTLY IMPACTED BY THE POWDER RIVER MOA. PLEASE CONSIDER THE MONTANA ECONOMY AND HOW THE MONTANA AVIATION COMMUNITY WILL BE BENEFITED BY THIS PROPOSAL. THANK YOU FOR YOUR CONSIDERATION.

Signature: [signature] Date: 2/28/14
Name: ROSEMARY HALL
Address: [redacted]

AM-6
SO-24

101

Jim Sheffels
[redacted]

April 22, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2

Airspace Study 14-AGL-O6NR

Department of Transportation

Federal Aviation Administration

2601 Meacham Blvd.

Fort Worth, TX 76137

Dear Sir,

I am opposed to expansion of the Powder River MOA. In flying to the East from Great Falls, many times I have had to detour around the present Hays and Powder River MOA's – not so easy to do especially in adverse weather conditions. Keep in mind, MOA's when hot are the same as restricted areas for many operations.] AM-9

It would seem more important to eliminate some of the present MOA's especially with the elimination of the F15's at the Great Falls Airport and the uncertainty of many military installations remaining open.] PN-3

Keep in mind, MOA's are a considerable inconvenience for the General Aviation Community. Who are one of the largest users of these areas. We don't need Montana, North Dakota and South Dakota to become like the Southwest where restricted areas seem to dominate.] PN-2

Thanks for your consideration.

Jim Sheffels

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April 23, 2014

Airspace Study 14-AGL-06NR
Kent M. Wheeler
Department Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Mr. Wheeler,

Our local EAA chapter EAA 1008 met on Saturday, April 19th. During our business meeting, a vote was taken, directing me as President of the chapter to draft and send a letter opposing the proposed Powder River expansion. Our chapter has 51 active members in the Bismarck-Mandan (North Dakota) area.

As a pilots based in the Bismarck, North Dakota area, we are opposed to the expansion of the Powder River MOA because of the impact it will have on the pilots in central and south west North Dakota.

1) The proposed area will pose a huge safety issue. The proposed area has limited radar coverage, which means that you are proposing we fly by "see and avoid" methods. We suggest "see and avoid" is impossible when we are talking about aircraft that fly at the speeds the aircraft for the proposed MOA will be flying at.

2) The proposed MOA also involves (3) three ATC's-Minneapolis, Denver and Salt Lake. Again, we believe this can quickly escalate into a safety issue. One ATC may feel radar coverage is adequate, then hand the flight to the next ATC that believes the radar is not adequate and expect the flight be conducted using reporting points for tracking because the radar coverage is inadequate.

AM-3

3) The EAA 1008 believes pilots need training-military, commercial and general aviation. However, this proposal will increase the costs for pilots in the Bismarck Mandan area. Pilots flying in the western portion of North Dakota will be expected to use the corridors to traverse the MOA, assuming it is a day which has not been NOTAMD as hot and may not be able to penetrate the area. It will make it near impossible to conduct pilot training for pilots located within that area. Ironic the local communities may well lose the ability to train pilots, because the military wants the area for training. And it will have a significant impact on both private pilots and companies (charter and businesses) that regularly conduct flights in the proposed area.

AM-21

4) Any flight that will travel to or from the Bismarck area (or flights to or from communities located within the proposed MOA) to the west-south west will be near impossible to plan, because there is not and apparently would not be a "calendar" that would show when a "Hot" NOTAM might be (proposed days of use) indicating the MOA was hot. How would a pilot in this area plan a trip that needs to pass through or into the MOA? Realistically, pilots from this area would have to plan to fly around the MOA, where it is possible. As an example, when I personally make a trip to Ft. Smith, Montana for a fly fishing excursion, if the current Powder River MOA is

AM-21

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hot, it is such a minor deviation the deviation is not measureable in flight time. However, should this proposal be enacted, I don't feel flying to Ft. Smith is even an option, since I will not know if the area is flyable (MOA NOTAM'D as hot) or if I have to drive which is a significant time difference (driving vs. flying). Because of the difference in travel time, I would have to arrange to take additional time off from work. As second example is, if I were to conduct an "Angel Flight" (moving people in need to a medical facility, for example), it is considered a "compassion flight" which is non-emergency. The flight is not possible under the rules as I read them, since they are conducted under IFR rules, but are non-emergency

AM-21

5) There are members of the EAA 1008 club that also have financial interests that will be impacted. The businesses we are involved with are located within the proposed MOA. We use our aircraft to make the most of a day, not spend the time driving. As an example, if I were to drive to one of our stores located within the purposed MOA (Bowman, ND), I can figure more or less 2 ½ to maybe three hours. I can fly there in less than an hour. So, if this proposal passes, I lose a half of day of productivity. I am certain the other members can cite similar costs that will be incurred.

SO-7

6) Aside from the impact on the EAA 1008 members, this proposal will cripple the medical communities within the proposed area. Smaller communities depend on medical professionals being flown in and out to assist the personnel, particularly emergency room personnel. These flights are non-emergency so they would or could conflict with the MOA procedures. You are asking these communities to take a financial hit and give up local medical treatment in the name of improved military training efficiency.

SA-19

7) Realistically, what is being proposed would be similar to me asking you to drive outside the Dallas Ft Worth area each day to work (240 days, around, not through) because the Army wants the road to train drivers on, but the Army is not sure which days or which roads they will use until 24 hours before the use. Obviously the populations affected are different, but the impacts would be similar. You could use the road, but since the area has been designated as a MOA, which happens to be active, your insurance may not cover you and you would be responsible for avoiding a tank, etc. traveling within that area. Do you think this would affect the businesses and citizens within that area?

Finally, this proposed expansion would cover about 28,000 square miles, expanding the present Powder River MOA by 4 times and be the largest terrestrial training airspace in the continental U.S. This will require non-military pilots to fly extra miles, incurring extra expense and loss of time to accommodate the Air Force. This proposal is for 240 days per year, so if approved, the odds are strong that General Aviation pilots will be forced to avoid the area on a regular basis. EAA 1008 chapter is opposed to this proposal.

AM-6
AM-20

Marc Taylor, President

[redacted]

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Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Powder River MOA Expansion

I am writing concerning the expansion of the Powder River MOA. I fully support our military, Ellsworth Air Force base and the need for proper training of our armed forces. However, the proposed expansion of the Powder River MOA, mostly into Montana airspace, provides no benefit to the State of Montana, its aviation industry or its citizens.

Data from the 2007-2008 Montana Economic Impact of Airports Study concludes that this massive expansion of the MOA will jeopardize 95 jobs that generate over $1.5 million in payroll and $3.8 million in economic activity, in the communities that reside under the proposed MOA. The proposed expansion will have a significant negative impact on Montana's economy, including oil exploration, ranching, fixed base operators and related businesses. SO-24

There is no method to provide safe separation of military and civilian aircraft. Sharing the airspace with high speed, low flying bombers and fighters with no communication or radar is a legitimate safety concern. The USAF "lights out" night operations currently approved for the Powder River MOA, there is no way for a civilian VFR aircraft to see and avoid a unlit military aircraft at night. Allowing speeds greater than mach 1 above 10,000' MSL is unsafe when you have VFR civil traffic in the same uncontrolled airspace. The approved use of chaff and flares for training may also affect livestock and increase the potential for wildfires. The proposed MOA may also negatively impact emergency medical transport flights that are vital to this area, ranchers from checking on equipment and livestock from the air, as well as pipeline patrols and wildlife management operations. SA-1 AM-7 BI-5 SA-7

Currently IFR traffic is not allowed into or above an active MOA, this would significantly hinder all aircraft operations. Flight training at all underlying airports and in fact the entire region would be hampered because no prudent instructor would allow their student to fly into an active area.

The Gap MOA's are supposed to provide for navigation between active MOA's, however with only 3 Gap MOA's any aircraft may have to significantly deviate from their course in order to utilize these Gaps. Requiring such deviations would increase costs to those operators, in addition during any Large Force Exercises the Gap MOA's would be unavailable to civilian aircraft. AM-20

I am all for aviation and I am one that would love to see a B1 bomber flying at 500 knots 500' above the ground. But this proposed expansion is not good for Montana, the people or the economy.

Sincerely,

Lucas Locke
[redacted]

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April, 2014

Mgr. Operations Support Gp.

ATO Central Service Center, AGV-C2,

Airspace Study 14-AGL-06NR

DOT, Federal Aviation Admin.

2601 Meacham Blvd.

Fort Worth, TX 76137

RE: EXPANSION OF POWDER RIVER RANGE!!

TO WHOM AND EVERYONE CONNECTED WITH THIS PROPOSED MILITARY EXPANSION!!

The Draft EIS needs to hear and listen to those in this area who would be affected by such an expansion. We do not want low flying fighter planes and aircraft with all the noise they make flying over our ranchers and their cattle and oil workers of all capacities including drilling rigs. Not to mention even the rural roads with their traffic—more than once many have been frightened out of their wits by these low flying practice planes as it is without expanding it to cover more area and more frequency!! LU-2

Also it is of great concern for our airport traffic—not only the local flyers but also for the business professionals who fly in here with their personal jets. This would not be a safe environment for our air traffic. SA-1

There are a lot of places that are desolate and very sparsely populated. Wouldn't it be far better to choose a place of that vacant and useless terrain? PN-2

We certainly want to register our objection to this expansion being in our area!

Thank you for taking the time to hear me out.

Sincerely, Everett Mitchell

Viola Mitchell

P.S.
The Air Ambulance service in & out of Baker would have to be eliminated! Please do not do this in the Baker MT area.

105

NBAA

April 20, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14.AGL-06NR
Department of Transportation
Federal Aviation Administration
Fort Worth, TX 76137

To Whom It May Concern:

Founded in 1947 and based in Washington, DC, the National Business Aviation Association (NBAA) is the leading organization for companies that rely on general aviation aircraft to help make their businesses more efficient, productive and successful. The Association represents more than 10,000 companies and provides more than 100 products and services to the business aviation community, including the NBAA Business Aviation Convention and Exhibition (BACE) - the 5th largest trade show in the United States and largest civil aviation show in the world.

NBAA appreciates the opportunity to provide comments on Airspace Study 14.AGL-06NR - the USAF's Powder River Training Complex (PRTC) proposal. NBAA objects to the proposal due to the tremendous operational impact on our members. Covering parts of four US States approximately the size of South Carolina, these combinations of MOAs form a "brick wall" in the sky for all IFR traffic at or below FL 180, a substantial amount of air traffic that supports commerce in all four States down to local community level.] AM-21

NBAA is appreciative and supportive of the necessity for the USAF to "train like they'll fight" and realizes that an environment that allows for that within the NAS is essential for the protection of our United States. In order for the USAF to continue to be funded to accomplish their wartime missions, a robust and viable tax base must continue to be fostered in the United States to provide tax dollars for the military. One of the key sources of tax dollars and overall economic growth (GDP) in the US has been, and continues to be, the civil aviation sector. At the end of day, a balance needs to be found between military training/preparedness and the needs of civil operators to operate efficiently to meet the needs of their business models. In addition, non-participating military/State aircraft are impacted by all SUA/ATCAA activations and the military is responsible to be good stewards of tax payer dollars in support of those missions as well.] GE-5

This proposal has the potential to incur financial damages to many of our member flight departments through extra fuel cost, added wear on airframes due to reroutes and, in some cases, the potential loss of business by not being able to operate at all in support of their business model or customer needs. Below is a typical impact provided to NBAA by one of our Part 135 members:] SO-7

Round trip from Bismarck (KBIS) to Sheridan, WY (KSHR) in a King Air C90 today in current airspace:

KBIS - KSHR Direct (normal flight plan)
1:41 min / 929 lbs fuel
KSHR - KBIS Direct
1:23 min / 797 lbs fuel

Total for Round Trip (Direct) : 3:04 min / 1726 lbs fuel

Using the proposed MOA airspace:
KBIS-DPR-ECS-KSHR via Dupree VOR DPR and New Castle ECS
2:05 min / 1120 lbs fuel
KSHR-ECS-DPR-KBIS
1:47 min / 996 lbs fuel

Total for Round Trip (via revised routing around MOA) : 3:52 / 2116 lbs fuel

[redacted]

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So in this scenario, for a single flight this operator incurs **48 extra minutes** and **390 extra lbs fuel**. The revised routing around the MOA will add **29% more miles (166 NM total)**. This NBAA Member would fly this or similar routings approximately 76 times a year based on historical flights.

This translates into almost 60 more gallons of fuel this operator has to buy (at almost $6/gallon), and 48 extra travel minutes for passengers to get to and from their destination. It will also increase the price of the charter by approximately $880 extra. As these flights are typically booked well in advance, this operator needs to be able to provide its customers an accurate quote for the flight. Not knowing which sections of the MOA will be active in the future makes this difficult and forces operators to assume a "worst case scenario."] AM-21

Should the FAA still approve the proposed airspace, NBAA requests the following mitigations be put in place prior to formal charting:

- The "Gap MOAs" should not be charted but rather activated by NOTAM] AM-6
  - Gap MOAs are proposed to be activated only during the LFEs and not scheduled for normal day-to-day military training
  - LFEs are proposed to occur approximately 10 calendar days per year for approximately 4 hours per day
  - The result is the Gap MOAs will not be is use for 355 calendar days but yet the fact they are charted on aeronautical charts will result in many pilots potentially assuming they are active "all the time"
  - Activating the Gap MOAs by NOTAM will much better reflect the reality of the airspace
- Provide operational priority for non-participating IFR aircraft operating to or from airports under the footprint of all active MOAs] AM-12
  - Airports such as Baker, MT (KBHK) are active airports that generate significant traffic volume as a result of natural gas and oil exploration in the Bakken formation under parts of Montana, North & South Dakota and Wyoming
    - As such, Baker will suffer potentially harmful economic impacts if operators perceive they cannot operate to or from KBHK when they need to – not when the airspace might accommodate them
  - FAA should give operational priority whenever possible to non-participating aircraft who have filed flight plans to or from an underlying airport at least an hour in advance of planned arrival or departure times
- In a meeting at Ellsworth AFB on March 27, 2014, the USAF verbalized an intent to publish actual use times of each MOA in weekly increments; these times should, in most cases, shave actual active times off the proposed scheduled times of the PRTC MOAs; this will help mitigate the large impact the overall PRTC proposal will have on non-participating IFR/VFR traffic that today transits this airspace unimpeded] AM-6
  - This "intent" should be a requirement levied by the FAA on USAF with the understanding last minute changes due to military requirements may still alter those activation times
- The US government should insure full radio coverage for all airports under the footprint of the proposed MOAs by installing Remote Communication Outlets (RCOs) as needed to insure pilots can contact air traffic control from the ground to receive clearances or close flight plans] SA-19

In summary, NBAA is opposed to this airspace proposal due to the potentially significant and permanent economic impact on our Members who have an operational business need to fly in this airspace. If approved in spite of this impact, we ask all of the mitigations outlined in this letter be fully implemented prior to charting of this airspace.] GE-5

Robert D. Arnold

Director, Air Traffic Services & Infrastructure

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23 April 2014

Darrel Pittman, Past Chairman
North Dakota Aviation Council
2805 Bernell Drive
Bismarck, North Dakota 58503-6409

Manager, Operations Support Group
ATO, Central Services Center, AJV – C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Dear Manager Operations Support Group,

On 17 July 2008, I addressed a letter to Ms. Linda DeVine, I believe the airspace manager 1st AF at that time, a position I once held when briefly with the DOD. She was based at Langley AFB, VA. In that letter I addressed a number of issues connected with the then proposed expansion of the "Powder River Training Complex" (PRTC) Military Operating Area (MOA).

I realize that this new proposal has been changed slightly. I have not changed my views much to be in favor of the revised proposal. I still question the need for further expansion of the PRTC.

. The proposed low level training flights have little, if no radar or communication availability.] AM-3

. The scheduling of such a MOA still leaves a lot to be desired with non-existing real time usage. The actual knowledge of usage is with the air traffic controller working those sectors. That's not acceptable! We need to know real time usage of the airspace, not just a blanket NOTAM!] AM-12

. With the Pentagon proposal of military downsizing, and general aviation increasing, the aviation community has need of more usable airspace.

. Economically it would not enhance North Dakota business. If the airspace was on a NOTAM to be used, commercial aviation would tend to bypass the route in favor of a more friendly environment.] SO-6

. With the Minot AFB partially deployed the need for them to use different airspace is not necessary. They Currently have sufficient airspace in North Dakota.] PN-2

. I feel the claim to cost savings is not real, and out of proportion. If the units need to proceed to Nevada or Utah, that's OK, the air refueling units need training also!] SO-14

. If the FAA feels a need to allow this expansion, some mitigation needs to be accomplished to allow for real time access prior to the implementation of the approval process. Also raising the military operating altitude to a higher altitude, recommend from 500 feet to at least 8000 feet.] AM-6] PN-4

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. Finally, I ask the same questions as I asked last time. Is this airspace expansion really needed, other than to save a base from closure?] SO-25

Respectfully submitted, Darrel Pittman

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April 21, 2014

Manager, Operations Support Group,
ATO Central Services Center AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Gentlemen,

I am responding with my objection of the expansion of the MOA Powder River 1,2,3,4 separated by corridors or GAP MOA's (GAP A, B, and C).

As a business owner of Aerotronics Inc., an aircraft electronics/avionics company in Billings Montana, I am seriously concerned for the negative effects of the unreasonable and unacceptable expansion of the MOA to encroach on Montana even more that it currently exists. Through my 39 years of relationships with Montana customers, ranchers and fellow business owners all through the area from Rapid City to Gillette to Sheridan to Billings to Dickinson North Dakota and back to Rapid City I have found every one of my customers and friends in this area very worried and even more so bewildered by the notion of the addition of the added imposition of the military upon the airspace, land and land owners through this area.

I read the military explanation of the effects the military proclaims and I cannot help but believe they are living in some kind of a fantasy world. As the military experts proclaim the reasons for this huge expansion and the need for 240 days of training, for 10 hours a day plus another 10 days of a total no-fly zone, consistently I find myself in conversations with ex-military pilots that have a very different view of actual uses of the airplanes in combat versus training for this area and they all question the notions claimed in the proposal of the military. It is very interesting to me that each of these individuals is in agreement with the negative impact of this decision on the aviation businesses as well as commercial and private pilots through this area. It is difficult for me to question the military of their actions as I am a supporter of all of their combat efforts and ability to protect our country on the other hand I am questioning their reasoning for this expansion Doesn't it seem odd that the military study doesn't list any potential negative aspects to any of their operations as if they have not fully evaluated the situation?

PN-5

The personal use and business use of airplanes through this MOA area is going to have a severe and negative impact on those aircraft owners to continue to find use for their airplanes. Each of our customers from each of the cities mentioned and the underlining areas will have to negotiate their way through or around it to come for their aircraft maintenance and equally as important to conduct their daily business within or near this zone. Unlike the statistics reported by the military, I can guarantee that the majority of these aircraft are non-turbo charged aircraft traveling under 10, 000 feet using VFR flight rules and therefore will be in direct threat to safe operations. As normal business hours are Monday through Friday during the day then these general aviation operations have no relief for 240 days per year plus the full 10 days of the no fly zone operation. From aviation commercial standpoint, these corporate or Part 135 operations will be limited in operations which will definitely affect the traffic

SA-25

AM-20

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through this area and result in reductions in needs for ground service and fuel operations and the result will be job loss. (Not a popular subject these days!)

Our estimated negative impact of loss of revenue would exceed $500,000.00 annually by business going to other avionics and maintenance facilities in Wyoming or other surrounding states. The impact will have over 3 million dollars of negative impact in the Billings economy just from our business losses. Equally, with the loss of business I would then have to reevaluate the employment status of our trained staff members currently working here. AM-20

As the national media has announced to the world the Baken region is the most active petroleum region in the world and is growing at an enormous rate, it is true that the aviation traffic directly through this area is going to be impacted negatively in every one of the 240 days that the area would be 'hot'. At a time when the dependency of energy is critical, then the military is determined to undermine the efforts and success of what the commerce can provide in oil independence and especially loss of jobs that the administration and most all of America is trying to sustain. It is understandable that the military does not seem to understand the impact as none of them live here, have to earn a living here nor will ever set foot on this land in their lives and so not to have a nickel in it makes it simple for them to impose their whim on an enormous part on Montana. Perhaps if they did have a nickel or dime in each gallon of fuel they burned when they crossed the Montana border they would consider another way to train closer to home or in a more practical manner. SO-22

From my rancher friends, they voice concerns for the noise and the negative reaction on their herds and wildlife. I am keenly aware of the numerous documented and proven private and government studies of how the birth rates for cattle, big game and small game are changed when there is an ever changing disruption of their habits. Is this a study that was ignored by the military in their analysis? I would guess as fragile as the bird and water fowl populations are that they too would be in jeopardy. BI-4

Which brings up a point, I am quite curious why the environmental groups have not been haunting your doorstep with their banners proclaiming the known negative effects of the noise, chaff, pollution and annoyance to the game of this area. BI-5

Lastly, I have been in the aviation industry for over 41 years and it is hard to believe that the FAA is being so complacent over the potential of high rates of incidents with general aviation aircraft mixing it up with the military operations. From my 41 years aviation experience, the FAA I know is very possessive of their airspace and it seems like they have been told to stand down on this issue. Is there a fox in the hen house?

I am in opposition of the proposed expansion of the MOA into the State of Montana due to the negative results we are going to be forced to endure. The reasons stated by the military and the area they find necessary to condemn for their expansion is unacceptable.

Sincerely,

Steven Vold
President
Aerotronics Inc.
[redacted]

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Bowman County Airport Authority 2014

March 21, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGI-6NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Re: Proposed Powder River MOA

Dear Federal Aviation Administration:

The Bowman County Airport Authority in the strongest possible way recommends that the FAA deny the expansion of the Powder River MOA.

We believe that the proposed expansion should be denied based on the following reasons, but not limited to only those reasons:

1. New Airport – We are in the final stages of completing our new airport. We began the process of locating and evaluating possible sites starting approximately 10 years ago. Our area has been growing and our old airport did not meet the needs of businesses and other users. We completed the EA in 2010 and received the Finding of No Significant Impact. All dirt work has been completed and surfacing and electrical contracts have been awarded. Construction crews began working this week, with a completion date of October 15, 2014. We will relocate late this year or early next year to our new location (KBWW) 4.5 miles east of the original location (KBPP). This expansion will adversely affect our new airport. We will be in the middle of PR-3 with no corridors or access during active MOA activities.
2. Safety – Local pilots or transient aircraft that still choose to transit the airspace will be at risk of mid-air collisions, near misses or air currents that threaten safety. There is no radar coverage or communications at low altitudes that would otherwise enhance safety. VFR flights are vulnerable to those conflicts. See and avoid is not much of any option when a B-1 bomber is closing at 600/mph.] AM-3
3. IFR Flights – IFR flights within the MOA would be significantly diminished. As stated above our new airport is designed with GPS approaches with lower decision heights. That effort would significantly restricted by the MOA. We would see less traffic resulting in less fuel sales and overall lower economic activity in the area.] AM-21] SO-7
4. Weather Modification - Bowman and Slope Counties in North Dakota are home to the longest active weather modification program in the world. They "seed" clouds by releasing silver iodide both above and below thunderclouds. The airplane below the thundercloud is typically VFR and at or below 6,000msl. The airplane above is on an IFR flight plan at whatever altitude is required to get on] AM-13

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top. This program has dramatically lowered hail insurance premiums for area farmers. They can't plan the mission, it is dictated by the current weather. Bowman Airport has radar that is employed and the meteorologist makes the call to go. If the MOA is active they will be severely restricted in their ability to "seed" the cloud resulting in increased damage to crops and property in the area.

5. Emergency Flights – Even though the Air Force indicates that they will give priority to emergency flights this is a major concern. Medical flights from our area to a tertiary medical facility go to 4 major areas, Bismarck, ND to the northeast through the MOA, Rapid City, SD to the southeast through the MOA. Dickinson, ND to the north through the MOA, and to Billings, MT to the west through the MOA. Flights in all directions will have to be conducted through the MOA. SA-19
6. Health Care Professionals – As a rural area we are served by incoming and outgoing medical professionals who provide service on a regular basis. These are not emergency flights, but rather regularly scheduled flights into and out of our area. These flights will be compromised as they will not want to schedule regular flights that may or may not be able to be completed if the MOA is active. SO-5
7. Wildlife monitoring – Hunting and wildlife are integral parts of the economy in southwestern North Dakota. Federal and state wildlife agencies regularly fly to survey wildlife.
8. Predator Control – Predator control is vital to ranchers to protect their livestock. State sponsored predator control agents and other contract pilots use the airspace regularly.
9. Firefighting/fire scouting – Prairie fires are a fact of life on the prairie. Local firefighters/pilots guide firefighters on the ground to fires and to enhance the safety of the firefighters. AM-33
10. Ag Applicators – Ag applicators regularly use altitudes in excess of 500 feet going to and from target field and to avoid towers and other obstacles. SA-7
11. Flares, Chaff & Sonic Booms – The use of flares & chaff are of particular concern to area ranchers. Fires that might result from improper use or weather conditions would destroy valuable pasture and grass land. Sonic booms will scare livestock and residents. BI-5 BI-4
12. Economic Impact – The largest reason to deny this expansion is the adverse effect it will have the region's economy. This part of the Great Plains has seen out-migration for several decades. In the last 10 years that trend has reversed. Energy (particularly oil) development has exploded. The biggest reason for relocating and lengthening our airport is to accommodate the increased traffic that we are experiencing with oil companies visiting the local oil fields. Hunting traffic is another. In the fall of the year, hunters from all parts of the country converge on southwestern North Dakota to hunt pheasant, deer & antelope. The ability to land in Bowman and stay in Bowman attracts them. If they have to land elsewhere, we will lose that business. Bowman also has several farm implement dealers that serve a large trade area. The airport receives a large amount of traffic to get parts at those dealers. Clearly the MOA will affect all of those business, and other ventures adversely. SO-6 SO-9 SO-10

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...n County Airport Authority 2014

13. Radar Coverage – Southwestern North Dakota lacks adequate radar coverage from ATC. To establish radar contact you must get several thousand feet above ground to be seen by ATC. It would help considerably to avoid mid-air collisions if radar coverage were to be expanded.
14. Communication Gap – Southwestern North Dakota is located in another gap area in communications. A climb of 5,000 feet or more is required to communicate with center. A local connection to flight service exists, but not center. Improving the communication in the area would help to mitigate this concern.

AM-3

The above list of concerns is not intended to be exclusive. Our opinion is that there are more reasons to be opposed to this expansion than to support it.

Our area is growing. We have worked hard to build our economy and reverse the trend of out-migration. We have made progress. But, this expansion will clearly set us back in our efforts. If America is to succeed, rural America can't be left behind. Please deny this expansion of the Powder River MOA.

Sincerely,

Rodney Schaaf, Chairman

Eugene Miller, Vice-Chairman

Andy Mrnak, Member

John Soreide, Member

Bob Morland, Member

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LEWISTOWN MUNICIPAL AIRPORT

Jerry Moline, Airport Manager
[redacted]
[redacted]

April 22, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Dear Sir;

The Lewistown Municipal Airport is adamantly opposed to the expansion of the Powder River MOA.

It would not be beneficial to our Airport, our community, or the flying public which we serve.

Please reconsider your actions.

GE2

Sincerely,

J. H. Moline

Jerry Moline. Airport Manager

JM:jr

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April 18, 2014

Airspace Study 14-AGL-06NR
Kent M. Wheeler
Department Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Mr. Wheeler,

As a young pilot just getting started in the Bismarck, North Dakota area I am opposed to the expansion of the Powder River MOA expansion. This proposed expansion covers most of the area that I would travel through and would be highly inconvenient.

The proposed area will increase the size of the Powder River MOA by at least four times. This would make it the largest over land training area in the continental United States. This will make me, and other pilots have to fly more miles to get around this area and it will significantly increase the costs that we incur. With a significant increase in cost, myself and other pilots will not be able to appreciate the joy of flying to a lot of destinations. Not only would the costs increase, but there would be a lot of places that I could no longer go because I would not have enough fuel in reserves to make it around the MOA and still get to the next closest airport.] AM-6] SO-7

I do know that there is a section in the "Miscellaneous" that states "No restrictions will be imposed on nonparticipating Visual Flight Rules (VFR) aircraft." As I understand there will be no restrictions on these aircrafts, but I can honestly say that it is going to be almost impossible to see and avoid aircraft that do not have radar guidance and would make it extremely dangerous to those pilots and the military. This danger will be increase with the military at 500 feet and at supersonic speeds to practice detection avoidance, for that is a very common height for nonparticipating VFR aircraft to be flying.] AM-3] AM-14

As an employee and a member of the Agricultural community, the proposed MOA would negatively impact the production of many farmers. The aerial application business is not only a necessity but in most years the only way that farmers can get their fungicides, herbicides, or pesticides applied. In raising crops, some are very susceptible to disease and bug infestation. The window to get these issues under control is extremely narrow and if the aerial sprayers cannot fly in that area during that window, an entire area can lose their crop/s for that year in a matter of a day.] SO-2

I think that I understand the importance for training, but I would hope that the travel to and from Nevada was more than just a flight for the crew aboard that aircraft. I would hope that they are practicing evasion tactics or simulating emergency issues to better prepare them for what they could face in their career as bomber pilots.] PN-2

Christina Craine
[redacted]

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To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR
Comments: I feel this jeopardizes safety & should not be continued.

Signature: [signature] Date: 2/27/14
Name: Andrew Galen
Address: [redacted]

SA-1

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To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR
Comments: Unsafe conditions to continue with current plan of operation

Signature: [signature] Date: 2/28/14
Name: Daniel Sorenson
Address: [redacted]

SA-1

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To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: I can't schedule my flights to meet your schedule It is a long way to getting around The proposed area. Don't expand into Montana

SA-12
PN-2

Signature: Karen Frank-Plumlee Date: 3/1/2014
Name: KAREN Frank-Plumlee
Address: [redacted]

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To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: Fairgrounds Airpark (Hardin MT) FØ2 will be closing approx July 14 A New airport is being built about 3 NM west of FØ2. It does not yet have a designator Please reconsider the western boundary of PRIA + PRIC — I share most of safety concerns you have no doubt heard before

AM-6

Signature: Ed Aukes Date: 2/27/14
Name: Ed Aukes
Address: [redacted]

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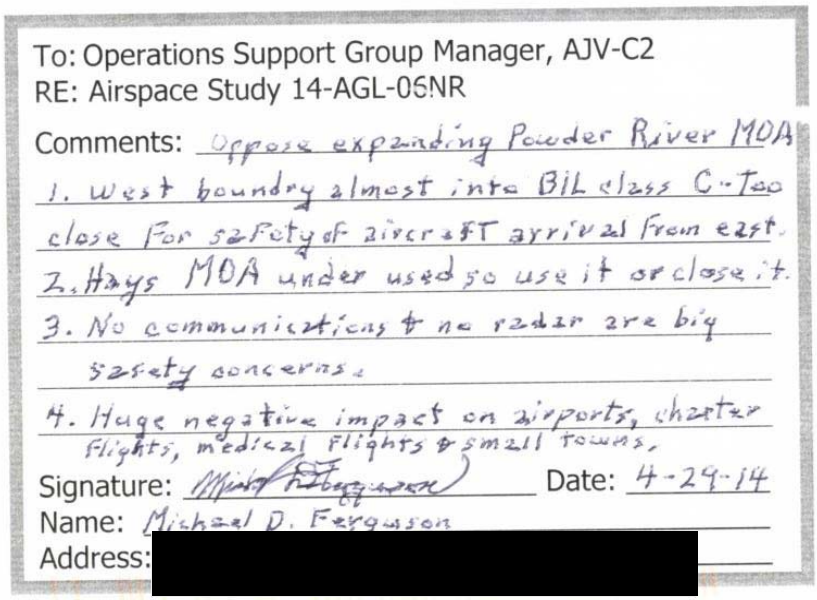

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: Oppose expanding Powder River MOA

1. West boundry almost into BIL class C-Too close For safety of aircraFT arrival From east. — AM-5
2. Hays MOA under used so use it or close it. — PN-2
3. No communications & no radar are big safety concerns. — AM-3
4. Huge negative impact on airports, charter flights, medical flights & small towns. — SO-6, SO-9, SO-10

Signature: [signature] Date: 4-29-14
Name: Michael D. Ferguson
Address: [redacted]

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Amidon, ND
April 27, 2014

to:
Manager, Operations Support Group
ATO Central Service Center
AGV-C2 Airspace Study
Dear sir or madam!

I am concerned about the Air Force's proposed expanded training area that would affect our area.

Sen. Heidi Heitkamp says, "We need to make sure our military has the capabilities to protect our nation but a strong effort needs to be made to limit the impact of this ~~impact of this~~ potential expansion on North Dakota Communities and businesses."

Our greatest loss would be the loss of peace and quiet which is one of the reasons we live here on our land. Western ND already has the impact PN-2

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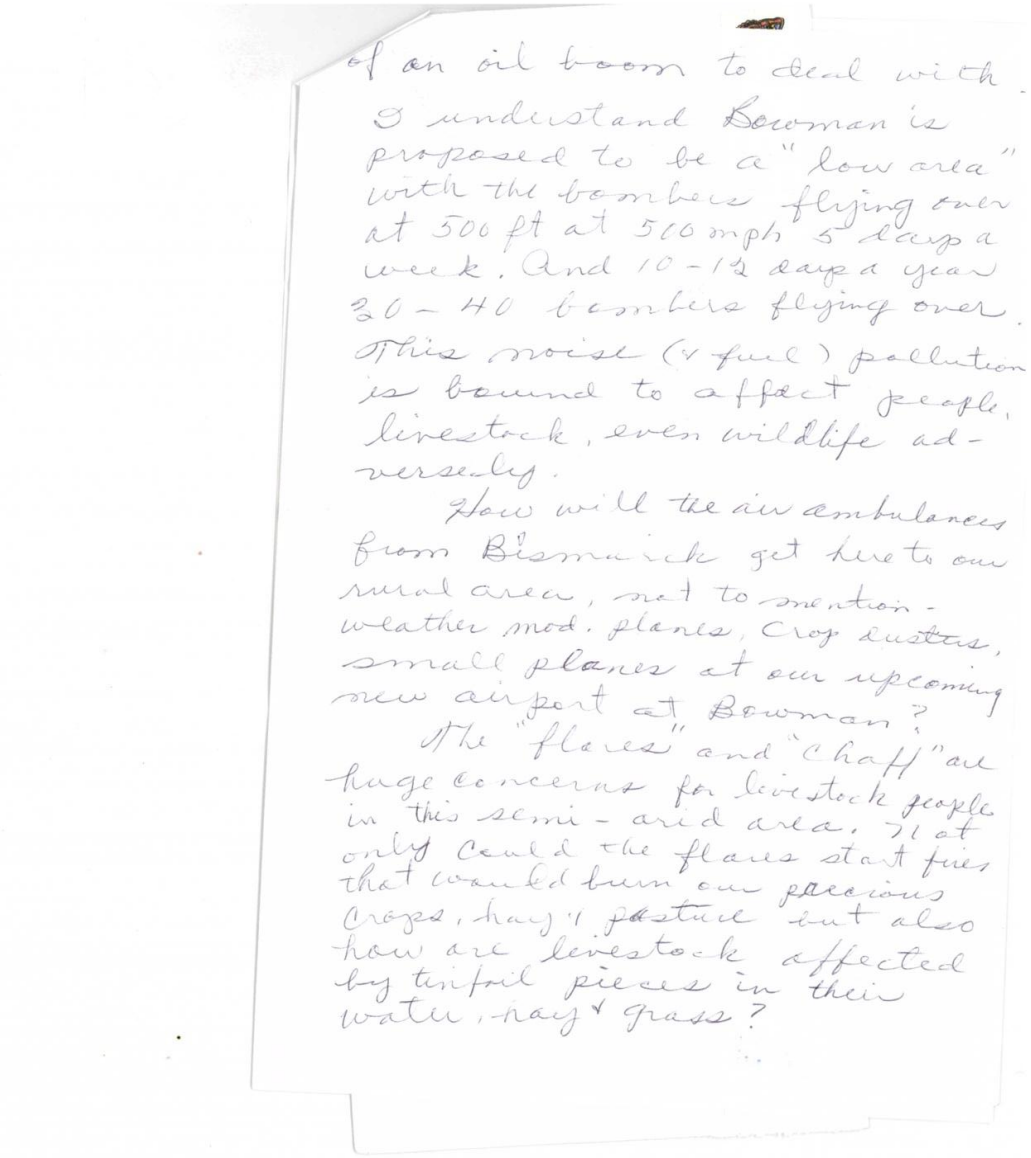

of an oil boom to deal with.
I understand Bowman is proposed to be a "low area" with the bombers flying over at 500 ft at 540 mph 5 days a week. And 10-12 days a year 20-40 bombers flying over. This noise (+ fuel) pollution is bound to affect people, livestock, even wildlife adversely. AM-14 AM-27 BI-4

How will the air ambulances from Bismarck get here to our rural area, not to mention - weather mod. planes, Crop dusters, small planes at our upcoming new airport at Bowman? SA-19

The "flares" and "chaff" are huge concerns for livestock people in this semi-arid area. Not only could the flares start fires that would burn our precious crops, hay & pasture but also how are livestock affected by tinfoil pieces in their water, hay & grass? BI-5

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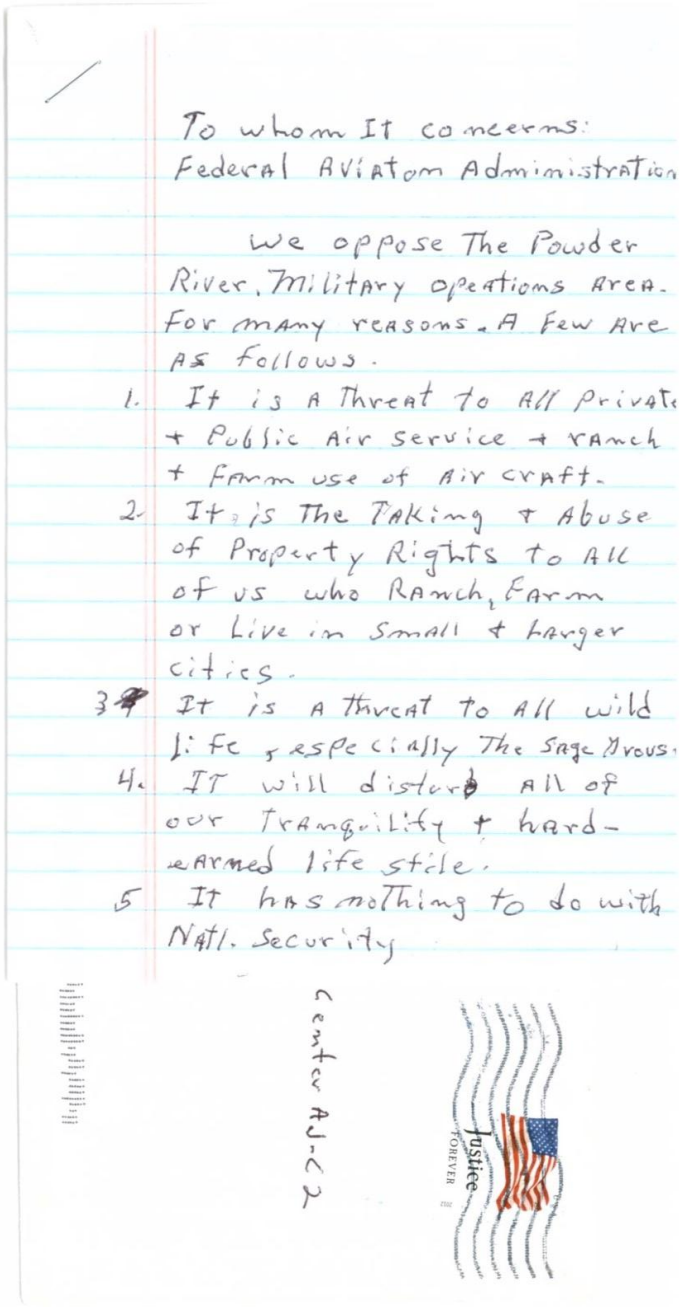
Five days a week we will hear these planes roaring over us (including at least 3 nursing homes). Please do not include this quiet place in your plans.

Chuck Hagel says a large drawdown in military is coming. Hopefully, the Powder River training area will be enough.

Sincerely,
(Mrs.) Betty Mill

117



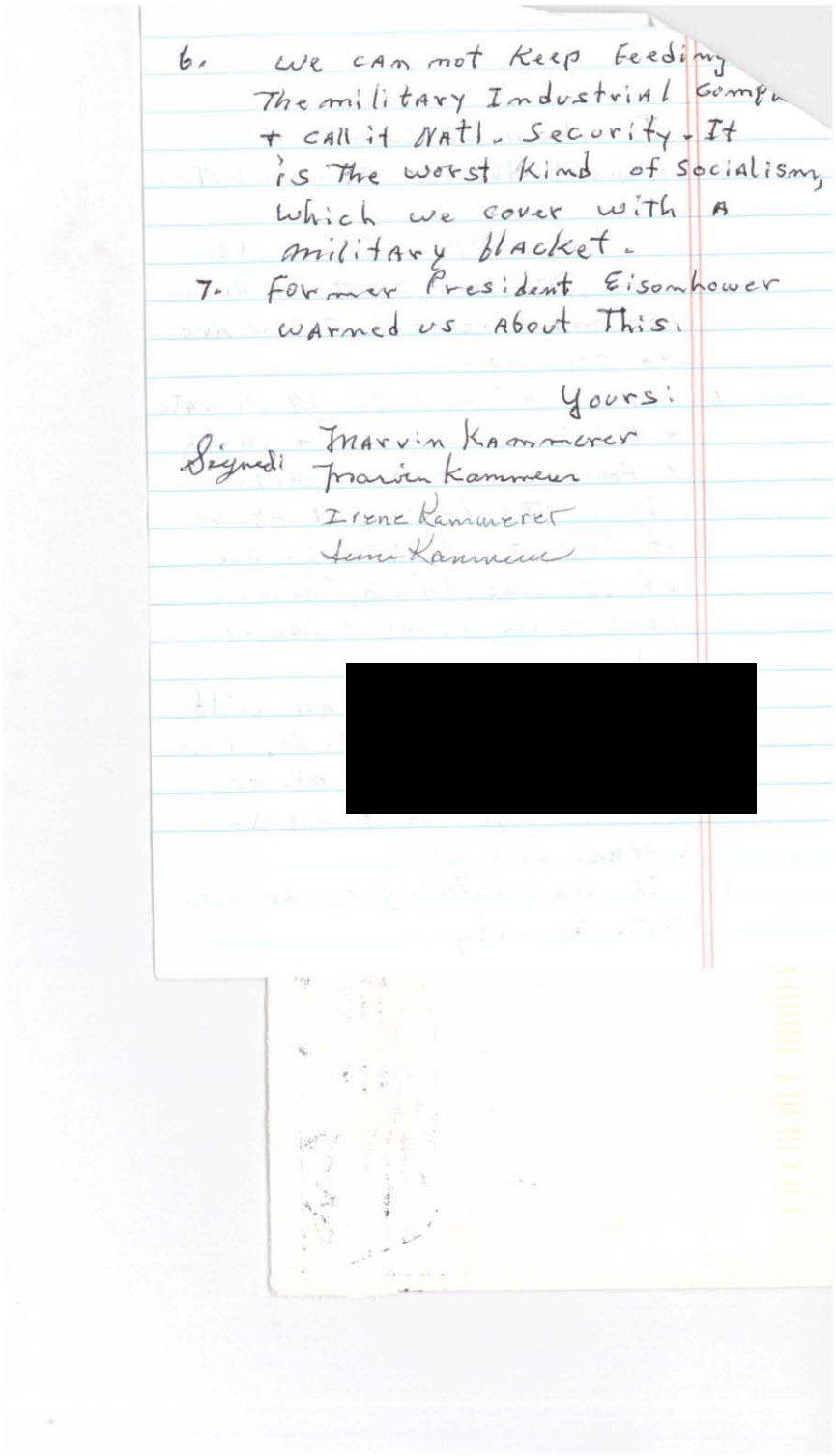
To whom It concerns:
Federal Aviatom Administration

We oppose The Powder River, Military operations Area. For many reasons. A few Are As follows.

1. It is A Threat to All Private + Public Air service + ranch + farm use of Air craft. — AM-6
2. It is The Taking + Abuse of Property Rights to All of us who Ranch, Farm or Live in Small + Larger cities. — LU-3
3. It is A threat to All wild life, especially The Sage Grous. — BI-3
4. IT will disturb All of our Tranquility + hard-earned life stile. — PN-3
5. It has nothing to do with Natl. Security — PN-3

center AJ-27

117



6. We can not keep feeding The military Industrial Complex + call it Natl. Security. It is the worst kind of socialism, which we cover with a military blacket.
7. Former President Eisenhower warned us about this.

Yours:

Signed: Marvin Kammerer
Marvin Kammerer
Irene Kammerer
Jane Kammerer

[redacted]

118

TO: Manager, Operations Support Group- Airspace Study Mar 31,2014

FROM: Gene Davis

SUBJECT: Powder River

As an area rancher, I am very concerned about the proposed Powder River training areas expansion! From what I read and hear, there are many restrictions for my ranch and community. Many years ago, the B-52's had a low altitude run over my ranch, with many issues when working with my livestock!! Low altitude aircraft and noise created many problems for us. It's difficult enough herding livestock, now throw in noise and something unusual!! So now it looks like I'll have to put up with this headache again? BI-4

So why does the military need to have an area 4 times bigger? Why do they have such a low altitude floor, 5 days a week? Seems to me, that training could be done in areas east of Minot AFB, already in place! If Ellsworth AFB wants closer areas, put it in South Dakota! Simply raise the area floor to reduce the impacts! Or limit the real low altitude restriction to 1 day each week!! PN-5 PN-2

I support the military, but feel a compromise must be made between all impacted parties. Please consider some recommendation above before making a final decision. Thank you for your attention.

Concerned rancher and citizen

Gene D. Davis

[redacted]

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Manager OSG
Dear Sir's
In response to the military proposal to expand their "practice range" in eastern Montana, I would like to express my opposition to that.
At one time we had an Air Force practice bombing range here in Rosebud County Montana and they flew right over the ranch. Some of that flying was VERY low and scared the live stock as well as us humans. To have anything of that nature here again would NOT be right. It is very dangerous for a person on horseback to have a plane suddenly pop over a hill right on top of you ,so to speak, and the horse explode under you. It can be bad for anyone but for kids it would be a disaster. SA-9

Please DO NOT allow such a thing to happen .

Omer Krueger
Omer Krueger
[redacted]

120

3-27-14

To Whom It May Concern:

I live ~~on~~ NW of Buffalo, S.D on a ranch of 35,000 Acres. My husband and several of our neighbors fly small aircraft (Super Cubs) etc on our ranches to check our livestock all the time.

We ask that you consider raising the fly zone to at least 3000' above ground to protect all those flying in this area. These small planes would have no chance of surviving if one of your military planes flew above them. Please consider our requests & keep your fly zones away from our livestock & wildlife.

Thank you - Cindy Painter

DO-3

SA-7

BI-4

[redacted]

120.1

3/27/14

To Whom It May Concern:

We would hope you will raise the Fly Zone to at least 3000' Feet above the ground. I am a private Pilot who operates a Super Cub. and if I get in your Vortex it will kill me. Your military Planes will make me crash and I won't even see you guys coming. Also all the wildlife and Livestock will be terroized by these ~~found~~ loud Noises.

DO-3

SA-7

BI-4

Thanks for your consideration
Joe Painter owner
of Painter Ranch

[redacted]

121

3/27/14

To whom it may concern,

I am requesting you raise the Fly Zone to at least 3000 feet above ground. My dad is a private pilate who flies a Super Cub, I also have several neighbors who fly small planes as well!! this will be extremely dangerous for our livestock including young calves, cows, horses, and baby colts. The noise will make them run right through barbed wire fences. the livestock isn't my greatest concern because the wind force could make my dad and neighbors wreck at any time. These are serious concerns, please take into consideration the lives of these people and animals! We are also working on safe areas for sage grouse, who are nearly endangered The fly zones will ruin their habitat.

DO-3

BI-4

BI-3

thank you for your considerations!
A very concerned daughter and livestock owner.
~ Joey Painter

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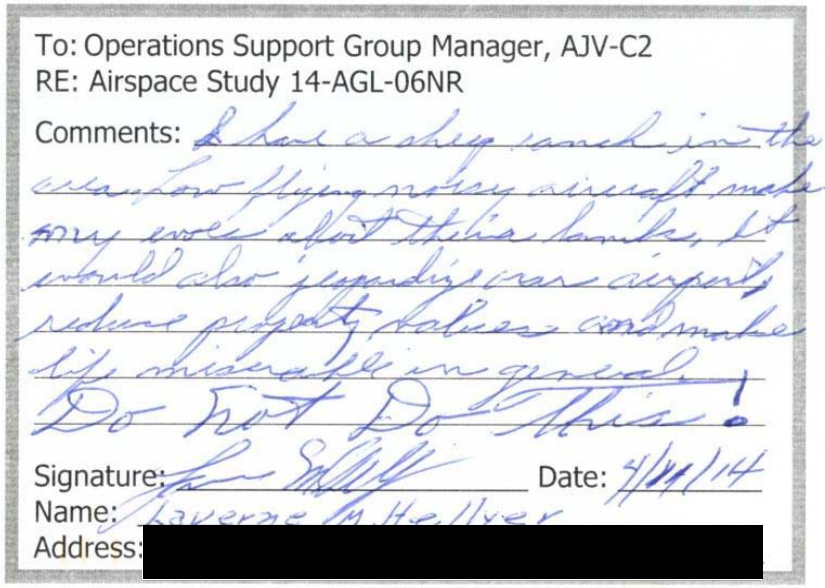

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: I have a sheep ranch in the area. Low flying noisy aircraft make my ewes abort their lambs, it would also jeopardize our airport, reduce property values and make life miserable in general. Do Not Do This!

Signature: [signature] Date: 4/14/14
Name: Laverne M. Hellyer
Address: [redacted]

NO-2

SO-1

123

April 2014

ATTN: To Whom It May Concern

RE: Expansion of Powder River Range

To all concerned and involved, please take a moment to read what I have to say about the proposed expansion of the Military Powder River Range. The Draft Environmental Impact Statement (Draft EIS) needs to hear area ranchers, farmers, oilfield workers, and private and commercial pilot's concerns from low flying Air Force jets in training missions over the proposed area. I do not think that those who were opposed to this expansion 6 years ago have changed their mind. Impacts on the health of livestock and/or any animals from jets passing over at less than 500 feet at high speeds, creating extremely loud noise range from being scared to death to being affected in a negative way for the rest of their lives. I remember working in the oilfield for Shell Oil in the mid 1980's and everyone that lived around this area knew about the flight paths that were used at low level flights, so when I and the crews would be working in these areas we always tried to get mentally ready for the unexpected shrill of a jet flying very low and so fast that in the blink of an eye you'd miss it and it would still badly scare everyone that was working on that location. I heard of many times over the years of persons on the ground working getting the crap scared out of them, sometimes so badly they would turn and run into something because they were thinking something had blown up, due to our work being rather dangerous already. This makes for a much less safe working atmosphere, because all attention is not on the task at hand and it makes for jumpy, nervous people, and is hard on the heart. This would not be much different for livestock. Effects are loss of weight, heart attacks, and sometimes aborting the unborn. What kind of price does the Air Force put on this kind of activity? The military has enough of a range now for super low flight training. I have witnessed several times jets in these areas flying lower than 500 feet. If you need more range then keep your jets above 12,500 feet and maybe you will get more folks to agree to your expansion. The wars in the recent past have been fought from altitudes higher than that so they don't get shot out of the sky from civilians with surface-to-air launchers, and probably will continue to be. I am a private pilot who enjoys flying when I take the time out of my busy schedule of working in the oilfield (for the past 35 years) and helping get the crude out of the ground and shipped to refineries that make the fuel your jets operate on. We in the Baker, MT area would be almost shut down and would have to move outside the proposed expansion area if it passes. We need our airport open to the public for air ambulances to be able to fly directly into Baker, lives are at stake! There has to be a better solution to just bullying into the area and telling us that we have to put up with what we get from the military or governors from South Dakota/North Dakota and not get to vote or work together to find a solution that all can live with, some kind of middle ground.

BI-4

AM-14

SA-19

Thanks for your ear,

Dennis Twedt

Baker area manager

Mitchell's Oil Field Service Inc. / Wood Group PSN (a worldwide company)

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RCD 3/14/14

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth Texas, 76137

Dear Sir/Madam,

I am Anita Lee, I have lived on this farm with my husband Kenny for 43 years. I would like to explain what air space means to us.

We raise wheat, corn, sunflowers, and millet. Starting the first of September, Kenny, and our son Rick, will spray all of the ground that is to be planted to winter wheat. They usually use ground sprayers with Roundup (name of chemical). Ground sprayers are self-propelled, or pulled by tractors and roll on the ground. Ground rigs are safer than spraying with air planes but they still have to watch weather conditions very carefully. The wind must be from the right direction to protect neighboring fields, trees and pastures, and not be over 20 miles per hour. The temperatue must be between 50 and 85 degrees. In South Dakota, this is a challenge. The spraying is almost all done between 5 am and noon. By noon, the wind is usually too strong and sometimes the temperature is too high. Also, they must have several hours before a rain, so the chemical can be absorbed before it washes off. If the ground is muddy, they must hire a 'crop duster', which means a spray plane.

In this area, winter wheat should be planted between September 10th, and the end of October. The ground must be sprayed before the wheat is planted to kill the weeds. If it is not sprayed, the weeds will take all the moisture and the wheat will not come up. They can't spray the weeds after planting because Roundup will kill the little wheat plants. They plant about 2500 acres of winter wheat and it is always a grueling task to get it all done on time. Any day that they can't spray adds to the stress. Wheat must be planted by the end of October to qualify for crop insurance. Crop insurance is necessary for our financial security and peace of mind. Also, most lenders will not loan money to operate on, if the farmer doesn't have insurance. (They want to be sure of getting their money back.) If wheat is planted earlier, there is more damage from grass hoppers and crop diseases. Since winter wheat is the biggest and best crop for this area, we need our air space from September 1st till October 31st.] AM-33

Obviously a jet will not hit a ground rig and kill the pilot, but wing vortices can move the chemical to the neighboring field or trees. Since any spraying operation must avoid wind over 20 mph, a passing plane would disperse the chemical onto the wrong field and kill alfalfa, grass, etc. This would be like having a low flying jet pass over a car being painted. Suddenly, your beautiful red paint is all over your neighbors' cars, houses, windows, etc. Chemicals can't be 'removed' like paint.] SO-2

International regulations require commercial airlines to be separated by 6 nautical miles to protect them from wing vortice interference. This is conservative since research has shown that wing vortices move about 90 knots per hour and remain about 10 miles behind the plane. **Small aircraft are supposed to stay at least 1000 feet below other aircraft.** Vortices stay longer in calm winds and dissipate faster in

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higher winds. Ag sprayers only work in calm to light wind conditions. Since the Air Force claims to be flying at 500 feet AGL, (and current residents of the Powder River MOA say it is more like 100 feet), clearly the wind vortices will be a problem for agricultural chemical application. SA-7

April brings us to the time when the winter wheat must be sprayed to kill the spring weeds. This is the most difficult spraying operation, and when many farmers who usually use ground rigs have to call crop dusters. This is the time when spring rains often make the fields too muddy to drive through. There is about a 2-week window when this has to be done. If it is sprayed too early, weeds will sprout up after spraying and choke out the wheat. If it is prayed too late, the wheat will be damaged. This time span is sometime in April through May. It varies with the maturity of each field. This varies because of planting time, weather, location, etc. If it is not done, the crop will be poor, or lost completely. We need our air space in April and May.

April through June also brings the chemical application for the spring crops (spring wheat, corn, millet, sunflowers, safflower, oats, etc.) This is just like the fall spraying for winter wheat.

Some years, because of extra rainfall, the winter wheat must be sprayed again before harvest. This is usually done with a plane, so that the mature heads are not knocked off the wheat. This is done in July and August. Sunflowers are also sprayed in the late summer to kill insects. Sunflowers must be sprayed by air because they are too tall for a ground sprayer.

Alfalfa can be sprayed from April through September to kill insects. This brings us around to September again when we start spraying the winter wheat ground. Farmers spend as much time on their spray rigs as ranchers spend on their horses.

The north west corner of South Dakota raises 5 to 7 million bushels of winter wheat a year. This is a million loaves of bread a day. North Dakota raises more wheat than South Dakota. This doesn't count all the other crops. Cattle is the number one commodity to come from this corner of the state. The average farmer puts about $200,000 a year into the local economy and pays about $20,000 in state and local taxes. There are about 3,500 farms in this corner of South Dakota. My numbers only apply to the north west corner of South Dakota, covered by this training area. I do not have the Agricultural Statistics books from the other three states, so I left them out.

This is a little idea of the number of people in the world who will go hungry if you take our air space. I hope you plan to reimburse us for our lost income and reimburse the state, counties and cities for the lost tax revenue and sales.

I think everyone understands the danger to humans and animals when livestock are confined and spooked by low-flying aircraft. Spring calving and lambing runs from January through June. Fall calving and lambing runs from June through December. The Air Force has promised not to fly over us during calving and lambing. We can assume that was an empty promise, or they really don't understand agriculture. Do they really think everyone calves (lambs) the same time, and works with livestock only a few days a year? SO-13

We think this is more important than making 12 to 24 B-1s travel to Nevada to train.

Another concern is the way damage claims are handled. I have spent some time studying how damage claims are handled in other MOAs and I have found they are usually not handled. The EIS stated several times that claims would be handled out of the Ellsworth Public Affairs Office, and gives a phone number. I dialed that number to see what happened. I got an answering machine. I gave my home and cell phone number and requested a call back. That was 4 years ago and I have still not received my call. That is about the way other MOAs handle claims, according to the reports I have read. At the EIS GE-8

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meetings, the Air Force speakers talk about how few damage claims they receive. I can certainly believe that. They don't pay claims, so people just give up.

Crop damage, like I described above is not covered by any type of private insurance. This is another reason that we **can not farm in a MOA**. A fair way to handle claims is to turn them over to local authorities. Whether it be the Sheriff, or County Commission, they should be handled by an elected County official. If, as the Air Force claims, there will be no damage, this should not be a problem. If there is a problem, the fifth amendment says "*nor shall private property be taken without just compensation.*"

This brings me to my final point. The Constitution gives the Government the right to condemn and take private property, by eminent domain, for use my the military. However, the property owner must be **paid** a fair price for that property. We have heard nothing about compensation for the taking of our ability to farm our land.

Thank you!

Anita Lee

Anita Lee

[redacted]

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Glenn Gay
Gay Ranch, Inc.
[redacted]

March 27, 2014

Manager, Operations Support Group, ATO Central Services Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Adminstration
2601 Meacham Blvd
Fort Worth, TX 76137

RE: Airspace Study 14-AGL-06NR

Dear Sirs,

I am opposed to the expansion of the Powder River Training Complex MOA.

I own and manage a cattle ranch that is located under the proposed PRTC MOA. The low flying aircraft and sonic booms will be detrimental to my livestock and wildlife due to increased stress levels. We will lose the peace and tranquility that Eastern Montana is famous for. BI-4

I fly private aircraft to check on the livestock and operations of my ranch. My slow flying aircraft and the high speed military aircraft are not compatible in the same airspace. This will cause serious safety issues for both. SA-9

The US Air Force has plenty of existing airspace for training. Any perceived savings will be more that offset by negative economic impacts due to the expansion. I find it interesting that Ellsworth AFB and Rapid City, which will have the greatest positive economic benefit from this expansion, are not in the expansion area. Modern air warfare is changing dramatically but I doubt the B-1 and B-52 are the future of air warfare. SO-21

Sincerely,

Glenn Gay

Glenn Gay

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Wade Sikorski

[redacted]

March 28, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Boulevard
Fort Worth, TX 76137

Dear Sir or Madam:

This is a comment on the expansion of the Air Force training ground in southeastern Montana. I live on a ranch between Baker and Ekalaka, well within where the Air Force is proposing to train bomber crews. Our ranch has had bombers fly over it before, mostly B-52s, however I distinctly remember several times that B-1's have flown over. It is an entirely different experience. The B-52s are as slow as they are ugly. You can get used to them. But I can't imagine ever getting used to the B-1s.

It happened over a decade ago, but I still cringe at the memory of when a B-1 flew directly over my house. I was going blissfully about my business out in my yard when I suddenly heard a roar that quickly grew impossibly loud, and then it got even louder. It felt like an explosion going off over my head. I saw perhaps a brief flash of something going past, maybe a flicker of a shadow on the ground, and then it was over. The difference between being buzzed by a B-52 and a B-1 is that you can figure out what is happening to you with a B-52. You simply can't with a B-1. It happens so quickly, you haven't a clue. It is an incredibly unpleasant experience, scaring you damn well out of your wits.

People, livestock, and wildlife might be able to become accustomed to B-52s. It simply isn't possible for B-1s. More likely, the startle response from every flight will make the next one worse. I expect that livestock and wildlife will stampede when the training flights begin, breaking down fences and injuring themselves. Livestock will gain less weight, and wildlife will have problems reproducing and putting on enough weight to survive the winters.

BI-4

I'm told that it is my patriotic duty to support the Air Force's efforts to train bomber crews. I might otherwise be sympathetic to this argument, but the horrible fact is that the most likely use of the bomber crews' skills will be to secure the oil fields of the Middle East. That is obviously what happened in both Iraq wars. The invasion of Afghanistan and our later involvement in Pakistan are also both derived from American entanglement in the politics of Middle East oil. We have spent trillions of dollars on wars in the Middle East fighting for oil, a cost that has not ever appeared at the gas pump, but has been added to the national debt, cutting deeply into money that could be spent on environmental protection, education, welfare, and research.

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I just can't bring myself to support wars for oil like these. I think that it is immoral not only to risk American lives in them but also to kill much larger numbers of non-Americans in them as well. Not only that, fossil fuels are disrupting the climate. We need to quit using them. The consequences will be severe if we don't. I have been following what climate scientists are projecting, and if they are right and if we continue business as usual much longer, I can say with considerable confidence that my family simply won't be able to grow a crop here in Montana by the end of the century. Nothing, at all, if the temperatures go over 10°F, as some climate models say they could. This is really bad news for everyone else because everything south of us will be worse off. A severe food crisis is coming with climate change, possibly before even midcentury.

As a result, continued reliance on fossil fuel is undermining national security. We shouldn't be wasting our resources securing Middle East oil; we should be using them to get off of fossil fuel.

It is entirely possible to do this. I am in the process of putting up a 2,000 watt solar panel system for my house that should zero out my electric bill. It is going to cost me $3,000, with tax credits. (I have a very efficient passive solar house.) I am installing it myself, and I don't have to get a permit, so my costs are lower than what others would pay. As a result, I expect to pay it off in 6 years, and then I should have free electricity for at least 20 years. (The warranty on my panels is for at least 80% of their original output at the end of 25 years.) If I doubled the size of my system, I would get enough additional electricity to drive a Nissan Leaf, an all electric car, 10,000 miles a year. If it replaced a car that got 20 mpg, it would eliminate the need for 500 gallons of gas every year. And if a gallon of gas costs $3, it would replace $1500 of fossil fuel costs a year. In other words, my solar panel system would pay for itself in 2 years replacing gas from the Middle East, and I would be able to drive my electric car 10,000 miles a year for free for at least 20 years after that.

The point of this is, we don't need to train bomber crews how to bomb the Middle East. We don't need to risk the lives of Americans in oil wars in the Middle East, and we don't need to kill anybody who lives there. We could much better insure the security of America by switching to renewable energy. And if we did that quickly, as an added benefit, we wouldn't have face the probability of being involved in wars over food in a couple of decades when the climate changes and everybody in the world blames us because we were too dumb to quit using fossil fuels.

We need to change our energy policy, not train bomber crews to fight in the next war over oil.

Sincerely,

Wade Sikorski

Wade Sikorski

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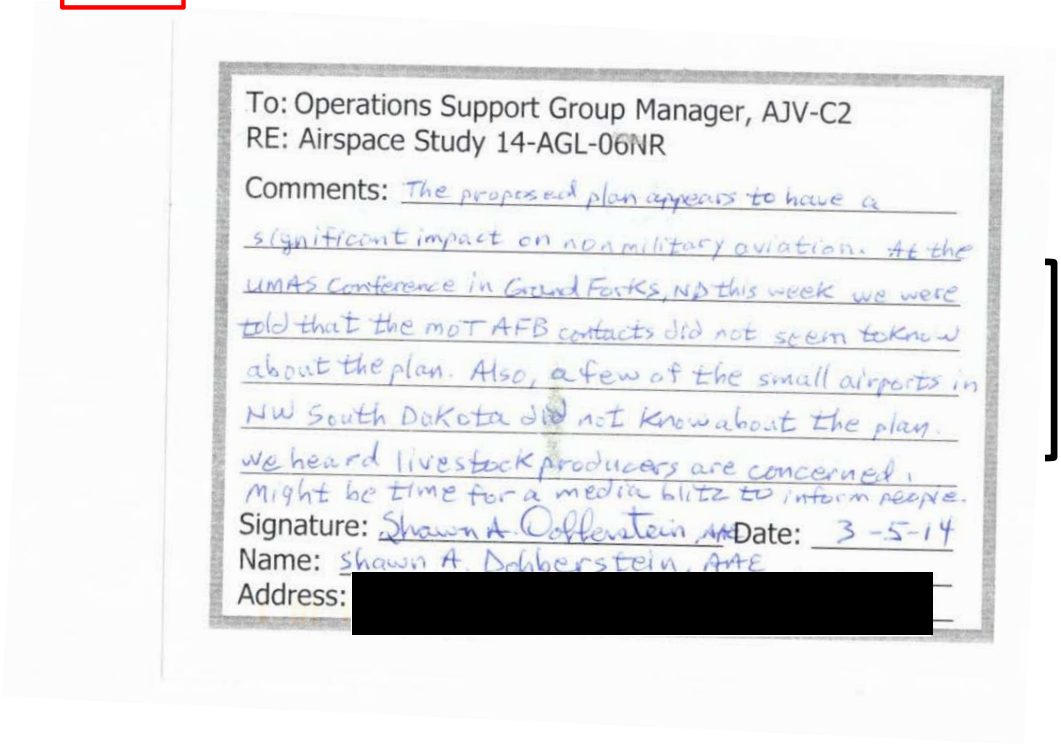

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR

Comments: The proposed plan appears to have a significant impact on non military aviation. At the UMAS Conference in Grand Forks, ND this week we were told that the MOT AFB contacts did not seem to know about the plan. Also, a few of the small airports in NW South Dakota did not know about the plan. We heard livestock producers are concerned. Might be time for a media blitz to inform people.

Signature: Shawn A. Dobberstein, AAE Date: 3-5-14
Name: Shawn A. Dobberstein, AAE
Address: [redacted]

NP-8

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To: Manager, Airspace Study 10-AGI-6NR Feb. 20,2014

From: Rodney Schaaf

Subject: Proposed Powder River Training Area Expansion

I am very concerned about the negative impact from the proposed Powder River expansion.

1- Economic Growth Impact- The companies involved with OIL, coal, natural gas, wind charger energy,etc., will have to alter flight operations into our local airport. Bowman is building a new airport to accommodate larger aircraft associated with the Bakken and Three Forks oil formations. The proposed military areas will have many airspace , altitude, and operational restrictions, which will divert these company plans to other airports, outside the training areas. This impact will trickle down, affecting the economic bottom line for the new local airport, fuel sales, maintenance, hangar rent, etc. Also affected would be local hotels, small businesses, restaurants, etc.

SO-5
SO-6

2- Bowman Community operations- Many small rural hospitals rely on medevac and lifeflight operations to Bismarck for emergency care. These operations in military areas require undue flight time, extra navigation, corridor entry and exit points, altitude restrictions, etc., where timing is essential for care.

3- North Dakota Atmospheric Board- Bowman and Slope counties utilize Weather Modification program for hail suppression and rain enhancement. Timing is critical with these operations, and the military area restrictions would greatly affect these operations.

SA-19

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4- Fire Fighting Operations- Our community uses aircraft with rural fire departments, to assist in scouting, positioning of fire vehicles and equipment,etc. The use of military flares (burnt or duds) is a major concern to these rural fire departments.

5- Wildlife Management- Our community has an abundance of wildlife. Hunters from all across America fly here to hunt. The Game and Fish Dept. utilize aircraft in their wildlife management programs. Restrictions will have an economic impact on hunting lodges, B & B's, hotels, restaurants, taverns, etc. NO-5

6- Aerial Applicator Operations- North Dakota leads the country in honey production. These sensitive areas, along with wind charger towers, and new cell phone towers, require crop dusters to fly higher, in transit. These operations would be in the 500' above ground restricted airspace, which could pose a safety hazard. SA-7 AM-14

7- Livestock Production- Producers are already affected by dust pollution, with the increased oil truck traffic. Another concern will be military chaff dispensing . Will this have an effect on animal or wildlife ingestion or contamination of surface water supplies? BI-5

8- Renewable Energy- Up to 130 wind charger sites have been proposed in our area. Will these towers affect the military radar signals? Again, lower flying aircraft will have to avoid these sites or fly higher. The higher altitude will be in the 500' above ground restricted airspace, which will be a safety hazard. CM-4

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Economic growth and development, along with agricultural commodity production are essential for the survival of many southwestern North Dakota communities. The expanded Powder River training areas would greatly impact the growth potential and well being of our local community.

Considering the above items, I hope some modifications could be made to the Training areas. Some recommendations include: DO-3

A- Proposed training areas have a bottom floor of 8000' MSL PN-5

B- The 500' above ground restriction to be used 1 or 2 days/ week instead of 5 days/ week. GE_8

C- Direct telephone link to military operation headquarters in charge of the training areas, to have instant updates as one is flying near the areas.

These items would greatly reduce the impact of our flight operations, and hope they will be considered. Thank you for your attention.

Sincerely:

Rodney Schaaf

Bowman County Airport Board

Rodney Schaaf

[redacted]

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Pg. 1

3-27-2014

Manauger Operations Supt. Group Center
Airspace Study 14-AGL-06MR
Dept. of Transportaton
Federal Aviation Administration
2601 Meacham Blvd.
Ft. Worth, Tex 76137

We Fully Disagree with your Exspansion at Powder River Training Complex.

Our views concerning the Powder River Training Complex-Ellsworth Air Force Base, So. Dakota Exspansion,

We have invested $75,000.00 plus in my Airplane. That might not be much to you but it is to us. Now We won't be able to fly it because the military Only has to give 2 hrs. notice that the airspace is closed & It is one hour Travel time by Car to the airport. Once We get there it will be closed or closed shortly after I get there & ~~are~~ the airspace has closed after we go up the danger of being killed is great. I would loose my whole family. How am I supposed to visually see Jets that fly at Sound Breaking speed from our little airplane. If they fly close at their spee the turbulance will Tear Wings off of my airplane then we are done for. AM-12

You show 240 days of restricted no fly time for me. flying 500 feet above land which will be Rattling the house windows, dishes out of the Cabinets, Scaring our animals, killing my developing chick eggs, devaluching the value of PN-5 BI-4

(over)

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pg. 2

property + that's not counting what the sonic booms will add to the mix. NO-2

Who is going to be responsible for all of the damages + extra costs to us. GE-8

All of the extra noise level will also have an alarming effect on our hearing. NO-5

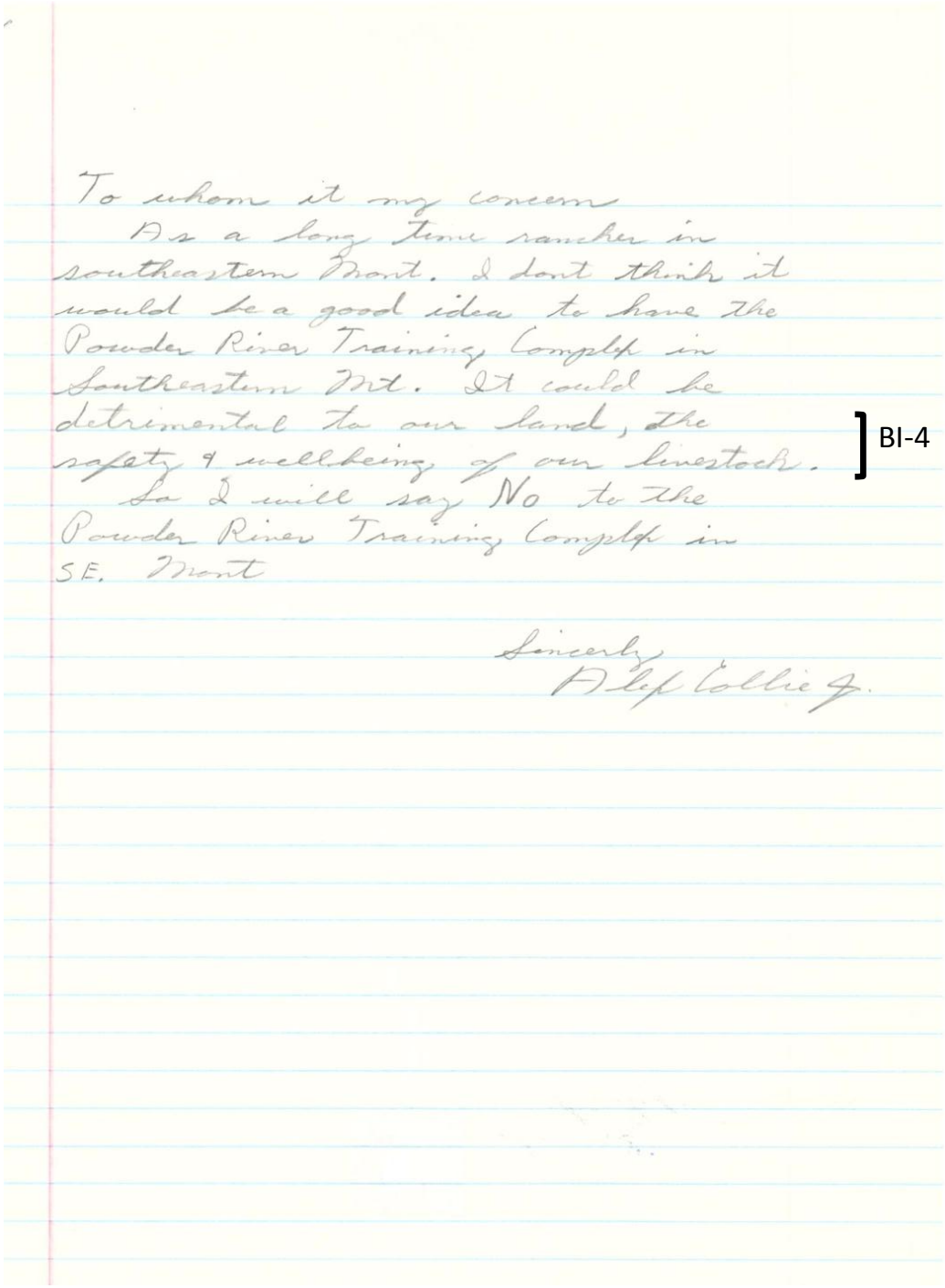
We bought + moved here for peace + quiet + now you all are deciding we are not important enough to have our peace + quiet. We also bought here for retirement + to live off the land freely.

What we would like to know is where are our constitutional rights in all of this? It sure isn't freedom. We are not rich so we cannot use money to get what we want like you can. We want someone on the little peoples side for a change vs big business. We don't have the option to pull upstakes + move to another area.

Ken + Doris Bone

[redacted]

130



To whom it my concern
As a long time rancher in southeastern Mont. I dont think it would be a good idea to have the Powder River Training Complex in Southeastern Mt. It could be detrimental to our land, the safety & wellbeing of our livestock. BI-4
So I will say No to the Powder River Training Complex in SE. Mont

Sincerly
Alex Collier Jr.

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Manager, Operation Support Group, ATO Central Service Center, AJV-C2

Airspace Study 14-AGL-06NR

Department of Transportation

Federal Aviation Administration

2601 Meacham Blvd.

Fort Worth, TX 76137

As rancher in the western South Dakota proposed Powder River Training Complex expansion area, I am adamantly opposed to the further expansion over private property. We use an airplane almost daily during certain seasons for checking cattle and water for our operation. Low level high speed military operations will negatively affect the safety of our operations as well as the composure of our livestock. SA-1 LU-3

The proposed flight use will severely restrict local air travel for repairs and supplies for our ranch. Because of the terrain and remoteness of western South Dakota private operators are required to reach altitudes much higher than the proposed military training altitudes to contact flight control for departures and arrivals to their property and local airports. AM-6

We also have private applicator and hunting FBOs in this area which would be subject to undue hardships resulting from military operations. AM-5

In conclusion we already have enough restrictions and stress navigating the current MOAs in this country and it is getting tougher each year to keep our operations profitable without the additional physical and emotional stress that will originate from this proposed expansion.

Austin Risty

[redacted]

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Slope County Commissioners
Michael Teske · Mike H Sonsalla · Scott Ouradnik
PO Box NN
Amidon ND 58620
701-879-6276

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth TX 76137

March 28, 2014

RE: Powder River Training Complex Expansion

Dear Sirs:

We are writing to voice our objection to the expansion of the Powder River Training Complex. We realize that the Air Force needs to be able to train but, believe that there are already less populated areas where that training can be done. PN-2

This training could potentially scare livestock and add to the economic problems of our ranchers. LU-3

The increase in oil production in southwestern North Dakota has greatly increased the amount of commercial and emergency flights. Training of the Air Force should not be allowed to hinder private plane travel in our area. Nor should it increase the possibility of lives being lost because the air ambulance cannot fly or has to delay its flight because of the training. No amount of money saved can pay for a life. AM-6 SA-19

Thank you for taking the time to consider our concerns,

Lorrie Bazalsky, Slope County Auditor
for Slope County, North Dakota Commissioners
Michael Teske, Mike H Sonsalla, and Scott Ouradnik

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Powder River MOA

Manager, Operations Support Group ATO Central Services Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Subject: Powder River MOA

The members of the Havre Flying Club met and discussed the porposal for the Powder River MOA. It was decided that we were not able to see the benefits for allowing the above subject. We do believe that it wil affect general avaiation in a negative way beyond the benefits gained. The air space in question in Montana will have a great economic effect as well. Low level flights will also affect livestock in a negative way. AM-6 BI-4

As for the effects on the Havre Flying Club, it will restrict travel from North Montana to any area to the east. I travel east several times a year to visit family and friends as well as attend aviation events such as Oshkosh air show. Our club has five (5) members at the present time, and we voted to not allow the above subject. AM-6

Your vote to not allow the MOA would be appreciated.

Regards :

Robert H. Breum
Sec/Treas-Havre Flying Club
[redacted]

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Manager, Operation Support Group, ATO Central Service Center, AJV-C2

Airspace Study 14-AGL-06NR

Department of Transportation

Federal Aviation Administration

2601 Meacham Blvd.

Fort Worth, TX 76137

As a private pilot and rancher in the western South Dakota proposed Powder River Training Complex expansion area, I am adamantly opposed to the further expansion over private property. We use an airplane almost daily during certain seasons for checking cattle and water for our operation. Low level high speed military operations will negatively affect the safety of our operations as well as the composure of our livestock. SA-1 LU-3

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We also have private applicator and hunting FBOs in this area which would be subject to undue hardships resulting from military operations. AM-5

In conclusion we already have enough restrictions and stress navigating the current MOAs in this country and it is getting tougher each year to keep our operations profitable without the additional physical and emotional stress that will originate from this proposed expansion. LU-3

Vaughn Meyer

[redacted]

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Bowman
AREA CHAMBER
OF COMMERCE

13 ½ E Divide
PO Box 1143
Bowman, ND 58623
chamber@bowmannd.com
701-523-5880

March 18, 2014

To: Manager, FAA Airspace Study

From: Bowman Area Chamber of Commerce Office

Subject: Proposed Powder River Training Area Expansion

We are very concerned about the negative impact from the proposed Powder River expansion

1- Economic Growth Impact-The companies involved with OIL, coal, natural gas, wind charger energy, etc., will have to alter flight operations into our local airport. Bowman is building a new airport to accommodate larger aircrafts associated with the Bakken and the Three Forks oil formations. The proposed military areas will have much airspace, altitude and operational restricts, which will divert these company plans to other airports, outside the training areas. SO-17 AM-5

This impact will trickle down, affecting the economic bottom line for the new local airport, fuel sales, maintenance, hangar rent etc. Also affected would be local hotels, small businesses, restaurants, etc. SO-6 SO-10

2-Bowman Community operations- Many small rural hospitals rely on Medevac and life flight operations to Bismarck from emergency care. These operations in military areas require undue flight time, extra navigation, corridor entry and exit points, altitude restrictions, etc., where timing is essential for care. SA-18 SA-19

3-North Dakota Atmospheric Board-Bowman and Slope counties utilize Weather Modification program for hail suppression and rain enhancement. Timing is critical with these operations, and the military area restrictions would greatly limit the effectiveness of these aircraft to operate at the precise time. AM-6 SO-28

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4-Fire Fighting Operations-Our community uses aircraft with rural fire departments, to assist in scouting, positioning of fire vehicles and equipment, etc. The use of military flares (burnt or duds) is a major concern to these rural fire departments. AM-33

5-Wildlife Management- Our community has an abundance of wildlife. Hunters from all across America fly here to hunt. The Game and Fish Dept, utilize aircraft in their wildlife management programs. Restrictions will have an economic impact on hunting lodges, B&B's, hotels, restaurants, taverns, etc. SO-9

6-Arial Applicator Operations-North Dakota leads the country in honey productions. These sensitive areas, along with wind charger towers, and new cell phone towers, require crop dusters to fly higher in transit. These operations would be in the 500' above ground restricted airspace, which could pose a safety hazard. SA-7

7-Livestock Production-Producers are already affected by dust pollution, with the increased oil truck traffic. Another concern will be military chaff dispensing. Will this have an effect on animal or wildlife ingestion or contamination of surface water supplies? SA-14

8-Renewalbe Energy-Up to 130 wind charger sites have been proposed in our area. Will these towers affect the military radar signals? Again, lower flying aircraft will have to avoid these sites or fly higher. The higher the altitude will be in the 500' above ground restricted airspace, which will be a safety hazard. SO-17

Economic growth and developments, along with agricultural commodity production are essential for the survival of many southwestern North Dakota communities. The expanded Powder River training areas would greatly impact the growth potential and well being of our local community. SO-11

Considering the above items, we hope some modifications could be made to the Training areas. Some recommendations include:
A-Proposed training areas have a bottom floor of 8000' MSL
B-The 500' above ground restriction to be used 1 or 2 days/week instead of 5 days/week.
C-Direct telephone link to military operation headquarters in charge of the training areas, to have instant updates as one is flying near the areas.
These items would greatly reduce the impact of our flight operations, and hope they will be considered.
Thank you for your attention.

Sincerely,

Chris Johnson, President
Bowman Area Chamber of Commerce

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Office of the State's Attorney

Grant County
Carson, North Dakota, 58529

Jennifer Hauge
State's Attorney
Todd A. Schwarz
Assistant State's Attorney
P.O. Box 196
Carson, ND 58529

Telephone:
(701) 622-3613
Fax:
(701) 622-3717

March 19, 2014

Manager, Operations Support Group, ATO Central Service Center, AJY-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, Texas 76137

Re: Powder River Military Operational Area expansion Airspace Study 14-AGL-06NR

To Whom It May Concern:

I write to express my desire for the FAA to reject the request to expand the Powder River Military Operation Area into the State of North Dakota. I make this request as a private pilot as well as through the office of the Grant County State's Attorney. Enclosed is a copy of a resolution passed by the Grant County Commission also opposing this expansion.

Every one of the county commissioners, as well as I personally, have lived through the days when North Dakota essentially was a military playground. Low level operations were conducted over farmsteads where I and each one of the county commissioners lived. The havoc that it wrecked on livestock production is completely unacceptable. Additionally, since the time of the '70s when many low level flights were disruptive to agriculture, things have changed. Despite the assurances that private pilots, charter pilots, and others may operate in an active MOA, in real practice they are prohibited. The Military Operation Area, when activated, greatly reduces safety for general aviation. Of particular importance to a rural county such as Grant, is the operation of air ambulance service which will not operate in an active military operation area. This, along with the negative effects on the quality of life, livestock, general aviation and other aviation concerns make the expansion of the Powder River MOA highly detrimental and must not be allowed to occur.

BI-4

SA-1

SA-19

If you have any further questions of me, I may be contacted at the above address or telephone number.

Sincerely,

Todd A. Schwarz
Assistant State's Attorney

TAS/jb

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Resolution of the Grant County Commission

March 19, 2014

Whereas, the FAA has put forward a proposed expansion to the Powder River Military Operation Area that would include a substantial portion of the State of North Dakota, including the County of Grant.

SA-19

Whereas, the proposed expansion would have an effect in Grant County and other surrounding counties that are adverse not only to the operation of air ambulance service, charter and general aviation, in and through Grant County, as well as an adverse effect to livestock and farming operations along with general quality of life;

AM-6
BI-4
LU-3

It is hereby resolved that the Grant County Commission resists and urges the FAA to deny the request for the expansion of Powder River Military Operation Area into the State of North Dakota and specifically over Grant County, North Dakota.

Keith Payne, Chairman of Grant County Commission

Bill Koch, Commissioner

Don Roth, Commissioner

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BAKER AIR SERVICE, INC.

[redacted]

RECEIVED
MAR 27 2014
BY:

Kent M. Wheeler
Operations Support Center Group
ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, Texas 76137

March 24, 2014

Dear Mr. Wheeler;

Here are some of my concerns about this massive expansion of the Powder River MOA

Why is the Powder River MOA expansion largely in Montana airspace when it provides no benefits to this state? Who wants it here? Senator John Thune!! To save Rapid City's Ellsworth AFB, which was scheduled for closure in 2005 by the DOD. It is against the law for myself to engage in communications directly with Senator Thune!! He can ruin my livelihood and I cannot even talk to him!!! SO-24

This expansion was supposed to save Ellsworth AFB/USAF $8 million in the 2010 EIS, but now it is magically $21 million this year? Even with this savings, how much more is it going to cost the USAF for additional training hours for crews, other AFB's, etc. to use this airspace? What is the total savings to the total USAF/DOD budget? It will increase the total cost to the military because of more training! I really question this data. The EIS from 2008/2010 is totally out dated and needs to be revised & updated to see these major changes in just a short time. You will then see how ridiculous this proposal is for the area covered by this unjustified expansion. SO-14

If this expansion of the Powder River MOA is allowed, citing data from 2007-2008 Montana Economic Impact of Airports Study, this MASSIVE expansion will jeopardize 95 jobs that generate over $1.5 million in payroll, $3.8 million in economic activity, in the communities that underlay this behemoth!! 39 airports and 285 aircraft will be very negatively impacted by this expansion. Now, do we need to 3 X our numbers as the USAF has done? It will become the largest MOA in the world, larger than the state of South Carolina!! It will be 4 1/2 times the size of the Nation of Israel. The current Powder River MOA is approximately the same size as Israel and they have some of the best pilots in the world! SO-5 PN-3

Page 1 of 7

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The USAF is not being fully truthful about his expansion. During the EIS scoping meetings in 2010, the USAF said that it would have no impact on General Aviation. We could just share the airspace, 240+ days per year & up to 8 hours per day. The USAF said that it would not impact IFR traffic. (All jet traffic and inclement weather operations are conducted under these civil rules) IFR traffic is prohibited in an active MOA by FAR's! The USAF also has "Lights Out" night operations approved for the current PR MOA. I do not know how VFR civil aircraft will "see & avoid" unlit military aircraft at night. The USAF also said it needs this expansion to train in mountainous terrain to simulate Afghanistan operations. There are no mountains in this area! The mountains in Afghanistan have peaks over 24,000 feet high! The USAF is trying to slide this along, using questionable data, to maintain minimal resistance/input form the civilians & general aviation. Why are electronic comments not accepted when we have search related issues on-line? Most other comments are accepted this way. You are just trying to make it difficult!

AM-21
SA-11
PN-2

In the "BACKGROUND" section of proposal 14-AGL-06NR, it states that the "Doctrine for modern warfare" has changed dramatically. If you follow the logic proposed, there is no reason for low-level operations to be conducted as "weapons can be employed form well beyond visual range with great precision". On page ES-14 of the Powder River Training Complex EIS Executive Summary, Dated August 2010, Alternative A, it states that civil aircraft pilots do not rely on IFR below FL180. This statement is simply not true! Considerable traffic is conducted under IFR rules below 18,000 MSL. Many pilots all do not fly jets, turbo-charged, or pressurized aircraft, and are not even able to fly above FL 180. It also states that pilots could fly VFR until outside the MOA then go IFR. FAR Part 135 prohibits such action without radar coverage.

PN-3
AM-21

Ellsworth does not have an impeccable safety record. The have had two B1's crash in the current PR MOA, Sept 1997 & Aug 2013, one with 4 fatalities. The B1B is extremely expensive to operate as it requires about $1 million in maintenance for every 12 hours of flight time. How long will the USAF even be using this antiquated aircraft, given the extreme operational costs? The USAF wants Minot AFB to bring their aircraft to join in the use of this area. It is approximately 5 times the length of flight to the PR MOA as it is for them to use Tiger & Hays MOA that already exist. There are only 65 B1's left and they have not seen combat duty since 2011. The B52's are a Vietnam era aircraft with only 85 still active. They have not seen combat duty since 2001.

SA-20
SO-14
PN-2
PN-3
AM-6

When this airspace is used for RED FLAG operations 10 days a year, pilots from all over the world will be flying in this area, FULL SCALE WAR GAMES!!! This is ridiculous!!! To have this type of operation over populated areas will create extreme safety hazards to the people, residences, & cities that underlay this area, given the safety record of Ellsworth's AFB operations & the B1B. Where is the respect for Montanans?

SA-20

Many things have changed in this energy rich area since 2010. In Baker alone, we have a new multi-million dollar fire station, a brand new motel, and Montana Highway 323 is now completely paved & has significant use tying us to the commerce area of the Black Hills of South Dakota. Oil production is at an all-time high. The EIS from 2008/2010 is totally out dated and

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needs to be revised & updated to see these major changes in just a short time. You will then see how ridiculous this proposal is for the area covered by this unjustified expansion.

The FAA has spent over $15 million on Baker Municipal Airport. KBHK will not survive this expansion. KBHK has new VNAV approaches, scheduled for publication in late summer. How can you even use these when we have 2000AGL-3mile radius airspace protection when the USAF plans to shut us down 240 days a year? SO-10

The main mode of transportation for oil executives, engineers, & personnel to Baker, MT is by private aircraft. Do we really want restrictions placed on their travel to this remote area? Bowman, ND is currently building a brand new airport. Close to $20 million FAA ADAP funds have been spent on this airport. Why? It will not be able to be used to its full potential if this airspace is expanded as proposed. FAA will be held accountable for the waste of tax payer's dollars for this airport's development & construction. SO-17

Some of the current users of KBHK and the surrounding area with jet/tubine powerd aircraft are Denbury Resources, Continental Resources, Hiland Partners, MDU, Edwards Jet Center, Choice Aviation, Richland Aviation, JCam, Denver Air Center, Holiday Stations, Lufkin Industries, & Executive Air Share. Many of our arrival flights from Texas & Oklahoma arrive between 8 AM and Noon, Monday thru Friday, but the USAF says minimal impact if the MOA is active. Proposed hours for MOA scheduling during Monday through Friday are designed to provide times when the MOA would not be activated to support civil aviation. Who came up with this idea anyway? No airport managers in this area were consulted to find when peak IFR traffic times were. Again, not true! This would be the worst time to close our airspace to civil traffic. These impacts are unacceptable. This type of passenger does not choose this mode of transportation to be delayed. Again, this expansion does not belong here, especially PR Area 3! AM-21

According to the latest FAA records, there are currently 54 US registered aircraft in Fallon County, most of them based at KBHK. Included in this number are four jet-powered Cessna Citations (Continental Resources & Trans Western Transportation) that are used by local oil & gas companies to transport people on a regular basis.

Highland Partners operates a Cessna Citation XLS in this current airspace on almost daily basis. The cost of these operations will increase by $70,000 per year alone by implementing this airspace expansion. This expense is for just one of its aircraft. This group of companies own and operate three jets, used to service this area. SO-7

This is extremely costly to these energy related companies and costs our airport fuel sales, tax revenues, & general losses of revenue. Safe operations of these hi-speed aircraft will also be compromised. SO-6

This proposal is in direct conflict with KBHK Airport, as well as other airports, Airport Influence area zoning regulations. These regulations were designed and implemented to protect this airport and its airspace. There are no provisions for IFR flights in/out of KBHK, using the new VNAV Instrument Approaches that are currently being developed for KBHK. 2000 AGL with 3 AM-5 AM-21

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mile radius does not get you even close to IAF's, intersections, etc. of the approaches. In December 2013, I hired a new FAA Certified Flight Instructor. We have also purchased a training aircraft and currently have six primary students. We have a growing list of potential new pilots. How can a flight school operate safely at this airport? AM-21 SO-6

I know that ATC only looked at IFR radar covered traffic when compiling dated. What about all the cruise clearances, flights below 18,000 MSL, etc. that have destinations under this area. We need radar & communications to the surface if this is going to provide a safe flight environment. AM-3

General aviation has a difficult time operating IFR or VFR (with flight following) in this area already because of poor radio communications and lack of ATC & weather radar. It is an area where three ATC Centers meet, SLC, MSP, & DEN. V-120 has an established MEA of 10,000 MSL. Radio communications with ATC are not available until reaching an altitude of 8,000 to 16,000 MSL in this area with radar coverage limited to 10,000 to 18,000 MSL. There is really no data or impact assessment mentioned in the EIS or this proposal about aircraft with destinations into airports covered by this MOA. Increasing IFR traffic by jet powered aircraft into these airport destination is a major concern for scheduling and more important, safety. Jet powered aircraft are unable to operate VFR into KBHK due to operating limitations & insurance requirements. Without communications & radar coverage, this proposal will result in increased mid-air collisions and near miss situations. AM-3 SA-1

The oil & gas industry is the largest employer in Fallon County. Currently, the State of Montana collects over $50 million in oil & gas production taxes in Fallon County, over $20 million returned locally. Denbury Resources is the largest oil producer in Montana. They currently pay millions in taxes to Fallon County! Denbury Resources is the #2 taxpayer in the State of Montana! Denbury currently uses KBHK on a continuous basis, sometimes with multiple operations daily. I have been advised that Denbury will no longer use Baker Municipal Airport if this airspace is expanded as proposed. They operate under FAR Part 135 and will not be able to comply with FAA Regulations to continue operations. SO-17 SO-10

All the letter groups, including AOPA (approx. 400,000 members), EAA (162,000 members) & MBAA (over 10,000 company memberships which earn $5 trillion dollars annually) are fighting together against this expansion. AOPA has labeled it "UNJUSTIFIED" It will become a very hot topic at election time if it moves forward.

There are numerous pipelines that underlay this proposal. How are the pipeline operating companies going to comply with DOT inspection regulations? A considerable part of my livelihood comes from aerial pipeline patrol flights!! Recently, August 2013, when the last B1B from Ellsworth crashed, I was unable to fly one of my routes for over a month. The USAF commandeered the airspace for a 15 mile radius around the crash site by issuing a TFR, no fly zone! This cost ME time & money!! It almost put the pipeline operator in violation of DOT regulations. DOT regulated pipelines are required to be inspected at intervals not exceeding 3 SA-7 SA-21

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weeks, but at least 26 times per calendar year. Methods of inspections include walking, driving, flying, or other appropriate means of traversing the right-of-way. DOT 49 CFR 195.412 "Inspections of rights-of-ways and crossings" SA-7 SA-21

If you sense an angry tone in this letter, you are correct! My livelihood is at stake for something that does not even belong the "BIG SKY COUNTRY" of Montana. I have owned and operated Baker Air Service in Baker MT for over 35 years, since in its inception in May 1978. We currently employ 5 people with plans to add 2 to 3 more positions by the end 2015. If the Powder River MOA is allowed this massive expansion, we will be forced to cut our work force and sell aircraft immediately. It will be impossible for Baker Air Service to continue on its business plan for the future, as there is no way pilot training, charter operations, & transient aircraft can use this airport safely. Most of our operations are beneath this proposed expansion. There is little chance this airport will survive. Baker Air Service will lose up to $1 million in revenue annually in the near future, as this business will be un-able to grow with the energy sector because of the limitations of this proposal. SO-6 SO-10

What will be done to mitigate the circumstances associated with the chaff cloud produced by the military using RR-188 aluminum coated silica on June 4, 2013 in Huntsville, AL. The National Weather Service thought it was a pop-up thunderstorm!! This creates undo stress & concerns to the general public. How will this affect civilian aircraft on-board weather depiction systems? SA-16

What will happen to the animals at private game farms when multiple sonic booms occur in rapid succession during training exercises, ***especially during the LFE's***? Deer, Elk, and other species may be adversely effected. Buffalo will probable stampede through fences & be injured and or killed. Studies have shown that conception rates, under this type of activities, are significantly lower. Have any of these operators been contacted? There are concerns for the Sage Grouse, as they may be adversely affected by increased military traffic, especially the LFE's. This impact has not been fully addressed, because the Sage Grouse core study area is under the existing PR MOA. No studies were conducted before the moa was established. It is a valid concern, as it will have a negative impact to all wildlife. This must be taken it to the US F&W for their assessment of the negative impacts. BI-4 SO-9 SO-27

The cities that lay beneath this airspace will be at risk for public safety. There is no reason to have this type of activity over a city or even residences FAR 91.119 prohibits aircraft operation @ 500 AGL over congested areas. 91.119 (a) Minimum safe altitudes – Can these aircraft make an emergency landing safely if a power unit fails without creating an undo hazard to persons or property on the surface? I see no restrictions in this proposal to identify compliance with FAR 91.119. Two B1's have already had uncontrollable crashes in the current Powder River MOA. SA-20 SO-27

What about IFR operations in uncontrolled airspace? There are no takeoff minimums for aircraft operated under FAR Part 91. Also, FAR 91.177 2 (ii) requires only 1000 feet above the SA-1

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highest obstacle within a horizontal distance of 4 NM of course flown. How safe is that in a "hot" MOA? SA-1

Other FAR's in question FAR 91.117 Aircraft speed. FAR 91.209 Aircraft lights - the current MOA allows "lights out" operations. How does a civilian aircraft see and avoid an un-lit military aircraft at night? FAR 91.303 Aerobatic flight. None of this is addressed in the current proposal. SA-11

These are significant and important factors in the VFR "See & Avoid" concept. I know that the military accepts this responsibility, but when you are dead from a mid-air collision, it really doesn't matter who was at fault! GE-5

I realize that the USAF is above the law, but when their operations are conducted in the same airspace as civil aircraft, there is a direct conflict and safety will be compromised. There will be a significant increase in near miss situations, mid-air collisions, with an increase in fatalities. SA-1

On February 25, 2014, I spoke with a military pilot that had recently flown in Afghanistan about this proposal. He said that there are no restricted areas in this MOA to drop ordinances, so the airspace expansion of this magnitude is not needed to train properly. He also said that "Red Flag" operations should be done over non-populated areas as things can go wrong! He also stated that combat flights do not typically fly less than 6000 AGL as the aircraft will be shot down by ground fire. Why is the floor of this expansion at 500 AGL? There are absolutely no justifications for the 500 AGL operations! I have since spoken with several other ex & current military pilots that agree with these assessments. Also, all of them concur that rules will not be followed, especially with the chaff and flares, as pilots are instructed to succeed on all missions. Do what it takes to get it done! PN-3

After reading through this proposal, I see absolutely no concessions/mitigations in Powder River 3 MOA, despite our previous comments & objections. Senator Max Baucus & Senator Jon Tester both expressed their concerns on the EIS & sent letters of objection to the USAF. Did you even receive the comments? I cannot seem to find them, even though they are considered public information.

Also, the PR MOA 3 is advertised as North Dakota when over half of it is in Montana. Another deception by the USAF. Why are the comment going to FAA Central Service Center when Montana Airspace should be handled by the Western Region? Trying to sneak it through!!! It will cover almost 20% of Montana's airspace in addition to the already existing HAYS MOA! GE-5

This whole expansion is absurd the way it is being handled. Why is this expansion necessary if the military budgets are being cut & troops being sent home? It needs to be killed right now & quit wasting tax payer's dollars on something that does not benefit Montana and will not save a damn dime on the overall military budget. Might save Ellsworth but going to cost more to bring other AFB' to this area, including Minot AFB. Who is the USAF trying to con anyway? You do the math!! GE-3 PN-3

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How many additional things in the future? More airspace, ground troops, etc. Restricted areas next? Drones?? Where are the restrictions?

One major problem is the USAF never flies <500 AGL!! I have to call "bullshit" on this one, as I have witnessed operations below 500 FT AGL several times myself in the existing Powder River MOA. Recently during an open house at Ellsworth AFB, I inquired what the little gauge in the lower RH instrument panel of a B1B Lancer set on "1" was for. It controls the ground proximity flight system. 1 equals 100 Ft AGL, but dial must have "gotten bumped" as the USAF never flies that low! Call any rancher that underlie the current PR MOA and they will tell you of their own experiences. You have that on record, as several of these ranches have made comments! I have one rancher that contacted me about selling his Piper Super Cub because he will never fly it again. He had a very close mid-air with a B1 in the current PR MOA. Kind of sad as this aircraft was purchased by his father as a new aircraft from Piper Aircraft in 1950. Who is going to monitor altitudes? Is the fox going to guard the hen house???

GE-5

SA-1

What about jet fuel smoke toxicity generated at low levels. What are the effects on fish & wildlife with the chafe, flares, & etc? How will it affect commercial radio broadcasts, Satellite TV, Cell phone coverage? What effects on veterans, especially with PTSD, with the increase in flights, sonic booms, flares, chafe, & LFE's? Ft. Meade VA Center, Sturgis, SD lies between Ellsworth AFB & the PR MOA!!

BI-4

Unburned flares & chaff canisters are a concern. What if a small child gets a hold of one of these that has not deployed properly & discharges it? What is going to happen to the kid who takes it to school? Probably be charged with terrorism!!

SA-5

Baker's current population exceeds 2000 people and is rapidly growing. A 600 person "man camp" has already been constructed in Baker, MT and is ready for Keystone P/L construction when it goes. 2600+ people in one city alone under LFE's!!

Bad Data = Bad Decisions

You have some bad data and there are a lot of unanswered concerns here!

We are not getting consistent information & messages from USAF or FAA.

The "No Action" alternative is the only logical decision to this expansion proposal.

I have also enclosed copies of letters from our elected officials for your review on this matter.

In closing, I want to know where to send the bill for my lost revenue if this ridiculous proposal is implemented, as I will not be able to conduct an aviation business safely in this environment.

Roger D. Meggers, President

Baker Air Service, Inc.

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Norma Kraemer

[redacted]

March 7, 2014

Manager, Operations Support Group
ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, Texas, 76137

RE: Proposed Expansion of Powder River MOA

Dear Sirs:

I am opposed to the Air Force's proposed expansion of the Powder River Military Operations Area. It unfairly penalizes other aviation users in the area and land holders under it, while providing no improvement in the Air Force's overall readiness for its missions, which are no longer focused on the Cold War. GE-3

Since 1976, I have been flying general aviation aircraft in this area and it has its own beauties and challenges to piloting. It is an arid environment that is sparsely populated with humans, but those humans that are there are able to make their livelihood coping with the challenges of the area. The Air Force would disturb their ability to make that living, while not compensating them for their loses. SO-5 The proposal to drop chaff and live flares, potentially damaging the environment and starting prairie fires is unacceptable. SA-5

For example, in the last year a B-1 did crash in the current small version of the MOA causing some small fires. It was at least one and a half hours before the Air Force from Ellsworth AFB was able to arrive on the scene. Without the local ranchers responding as the emergency crew, fires could have spread and the crew might have suffered greater injuries. During the era of missiles at Ellsworth AFB they had a helicopter unit that could have responded in a timely manner. Today that does not exist. To expand this area to more than four times it current size puts more people and their property at risk. SA-20

I visited the Air Traffic Control facility at Ellsworth a couple of years ago when this was first proposed. The controllers agreed that there is limited coverage in the area, with radio and radar AM-3

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coverage not really covering anything under 3000' AGL. That means that all civilian aircraft in the area would have no way to keep track of potential hazards in a timely manner. AM-3

When B-52s were based at Ellsworth, I was fortunate to fly along on a mission for the day. It consisted of a variety of exercises, including low-level. They used "oil-burner routes" that were not in a MOA for their low-level exercise. It was disconcerting for the pilots to say to me, "keep an eye out for air traffic while we are at 500 AGL, we will be busy looking at our instruments and not outside the aircraft." Since I was sitting in the IP seat, I was the only one available for visual observations. I assume the lack of looking outside of the aircraft has not changed in the subsequent years. SA-1

The Cold War is over. Even during that period the Air Force was not asking for this huge amount of airspace. They flew smart with areas like the current Powder River MOA and oil-burner routes that were shown on sectional charts. The United States is faced with new challenges in how it prepares for war. As much as I love airplanes, someone needs to tell the Air Force the days of manned aircraft are numbered because the nature of their mission has changed. While the Air Force continues to try to adapt its bomber fleet to meet these new challenges, the costs are not in line with the supposed benefits. The impact on Americans and their property is disproportionately unfair to those who live in the proposed expansion area. PN-3

The FAA's mandate is to promote aviation for all Americans, not the American military. You need to give the Air Force the message that they need to fly smarter, not spend more money. They also need to respect the rights of all Americans.

Sincerely,

Norma J. Kraemer

Norma J. Kraemer

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True Drilling Company
[redacted]

March 24, 2014

Manager, Operations Support Group
ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department Of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Dear Sir:

As a corporate pilot for the True Companies based in Casper Wyoming I am compelled to address my displeasure towards the Powder River Military Training Complex expansion.

Disruption of private and commercial flight operations within, without, and along the periphery of the proposed area will be a reality and not just a possibility.

The PRTC is located to the south and southwest of the largest oil discovery in the United States in many years, additionally subsequent energy discoveries have sprang up within the proposed airspace. Both, private and commercial operators who support the energy industry use this airspace daily performing flights that commence and finish within and outside of the described borders.

With the proposed increase in actual size and usage the PRTC will hamper our operations. While the Air Force touts the benefits of fuel savings it will be the reverse for us and others. An active MOA of this proportion will force companies such as ours to navigate around the airspace to get to our destination. Every flight that proposes to transit or land within will have to sacrifice payload for additional fuel. More flight time, up to 2 hours on a round trip correlates to increased maintenance costs over a chronological period. On time reliability and efficient usage of aircraft are important to an operation such as ours. Our costs are our responsibility and not the taxpayers.

SO-6
SO-7

Corporate aircraft used in the support of companies like ours are an amazing tool if used correctly. A typical flight for us leaves at 7AM and arrive back home 12 hours later. Inside this aircraft you will find varying professionals from engineers to attorneys, the IT folks and field hands up to nine at a time. Without an aircraft this twelve hour day becomes three days, two of travel and one on the job, costly and very inefficient. You can only imagine the costs on a per day basis for one employee. Salary, lodging and meals at a minimum.

Can we just build this extra time into our schedules? NO! We purchase our costly aircraft with specific profiles to be as cost efficient for our needs as possible, operating beyond this profile is a waste and destroys the purpose of purchasing this asset. Can we be more willing to adjust to the active or non active status of the MOA? Historically, the answer is no. Communication from the operating agency the

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Air Force and ATC is poor to say the least. It is very unnerving to be in cruise and when within a few miles of a MOA be told to turn 75 to 90 degrees off course since the MOA has now become active. Would I prefer flying through the MOA VFR? NO. Fuel burns are higher at lower altitudes and passenger comfort is compromised significantly from turbulence. Most of all, flight safety can be challenged. The possibility of a mid air collision is magnified within a MOA and an increase of overall size push's the exposure percentage to a higher level. GE-5

In conclusion I sense that the American public is getting a slick sale in the name of patriotism. We are only a small piece of those who will be challenged. Ranchers will fight with noise issues, lost production of live stock, fires and more. Fixed BASE Operations within the MOA may cease business as an IFR situation will make their airport unusable. Others can be discussed. SO-5 SO-6

Knowing full well if this airspace is established, Bomber wings and fighter wings from throughout the world will now find their way to the Powder River Training Complex completely defying a core principal of the initial PRTC needs as defined by the Air Force and that being savings via reduced fuel consumption while additionally increasing the usage of the airspace magnifying the suffering imposed on flight operations such as ours.

Sincerely,
James Wade Bergslien

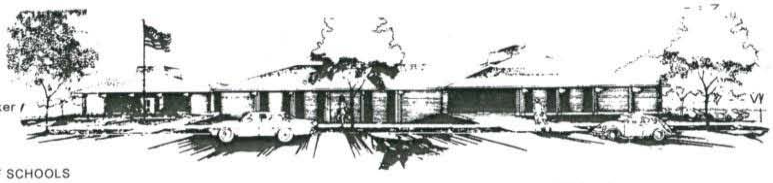
142

...ERS
...e 778-7107
Deb Ranum, Chairperson, Baker
William L. Randash, Baker
Steve Baldwin, Baker

CLERK & RECORDER/SUPT OF SCHOOLS
Brenda J. Wood
Box 846 - Phone 778-7106

COUNTY ATTORNEY
Albert R. (Rich) Batterman
Box 760- Phone 778-3006

JUSTICE OF THE PEACE
Nicole M. Benefiel
Box 846 - Phone 778-7128



FALLON COUNTY
BAKER, MONTANA 59313

CLERK OF COURT
Jeraldine Newell
Box 1521 Phone 778-7114

SHERIFF/CORONER
Tim Barkley
Box 899 - Phone 778-2879

TREASURER/ASSESSOR
Barbara E. Ketterling
Box 787 - Phone 778-7109

March 24, 2014

[redacted]

[redacted]

Dear Secretary James and General Welsh;

We are writing to express our continued opposition to the Air Force's proposal to expand the training airspace for Ellsworth and Minot Air Force Bases; into a larger area of southeastern Montana. To expand the Powder River Training Complex to 28,000 square miles would negatively impact our environment.

We are located 250 miles from any major medical facility; when seconds count in saving lives, we rely on our EMS Life Flight Services to transport patients 24-7-365 to Rapid City, South Dakota, Bismarck, North Dakota and Billings, Montana. This expansion would not only affect our Life Flight Services, it would also affect 33 Community Airports containing 285 general aviation aircraft that support our daily livelihood. SA-19

There are numerous Oil and Gas producing companies in this area, there are weekly flights in and out of these Community Airports checking progress on various pipelines, Oil and Gas related projects.

We are also concerned that the use of live flare and chaff release could cause wild fires that endanger lives and property. The EIS does not provide a plan for responding to these fires. SA-5 AM-3

Furthermore, flights that break the sound barrier and fly as low as 500 feet stress area residents, livestock, wildlife and sage grouse. Once again, there is no proposed remediation plan for land and livestock owners in the affected area. NO-2 BI-3

We appreciate the opportunity to comment on this proposed expansion, please take into consideration the impact it would have on our daily lives.

Sincerely,

Fallon County Commissioners, Baker, Montana, USA.

Deb Ranum
Deb Ranum, Chairperson

William L Randash
William Randash, Member

Steve Baldwin
Steve Baldwin, Member

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March 6, 2014

Manager, Operational Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Dear Manager,

I am writing to you as a pilot, rancher, volunteer firefighter, and concerned citizen. The Powder River Training Complex that is proposed for southeastern Montana, is a terrible mistake and we don't want it. We have vast open spaces here-mainly agricultural and oilfield. As a result of this, many of us fly airplanes. We fear what this training complex would do to our ability to fly over our ranches to check our cattle or fly our pipelines to inspect for leaks, but most of all, what it will do to our ranches and way of life. The Air Force and Senator John Thune are not taking our rights and freedoms into account. Montana should not be held responsible for keeping Ellsworth Air Force Base open.] AM-21

I want to make the point that most everyone within the area of this airspace expansion is patriotic and is proud of those who serve, or have served, in our military. We all want to make sure that our military has the necessary means to protect and defend our freedoms. But they also have to realize that we have to protect our freedoms as well. We are protecting our freedom to fly our aircraft to monitor our land and livestock. We are protecting our livestock from being startled through fences by sonic booms. We are protecting our grasslands from wildfires started by deployed flares and chaff. We are protecting our rural airways to allow emergency flights to transport our injured citizens from accidents or rural hospitals. We are protecting our land values which will be decreased by military operations in this area. We are also protecting our commerce by allowing the many flights of private and corporate aircraft into our small airports.

The Air Force has tried to assure us that none of this will be an issue. But it will be. Aircraft operators flying under VFR (Visual Flight Rules) are told to see and avoid any aircraft in the area. Have you ever tried avoiding something coming at you at 500mph? It is not only hard to see, but you have very little time to react when you do. Those of us who use aircraft on our ranches will have to be especially vigilant whenever we are up in the air. Air ambulance flights have been assured that any military operations will be shut down in the event that an emergency flight has to enter the operations area. This isn't something that can happen with a flip of a switch. This all takes time, which in an emergency, you don't have a lot of.] AM-14] AM-12

On these military training missions, bombers will be permitted to release chaff and flares from their aircraft which they say will disintegrate before reaching the ground, but on rare occasions may reach the earth. They have no mitigation plans for controlling wildfires, so guess who will be responsible for] SA-5 AM-33

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extinguishing them? The landowners and local firefighters will be tasked with that burden. This doesn't even address the loss of grass for our cattle. Just ask all of the landowners who lost thousands of acres of their grassland to wildland fires in the past several years how devastating that can be!

The Federal Aviation Administration has recently sunk tens of millions of dollars in runway expansions and airport improvements within this proposed area. This will end out being an enormous waste of government funds if aircraft are not able to freely operate in and out of the area. As you know, when a MOA is active there are certain areas within that airspace that are completely off limits or can only be entered during certain times of the day due to supersonic aircraft being in the area. Other areas have a floor and ceiling so you can fly either above it or below it (with extreme caution). These aircraft are not to be any lower than five hundred feet above ground level. That's not very high! For the most part, these areas are extreme danger zones when they are active. Bad thing is-they are active, in many instances, for more than eight hours a day and at night. How great will that be to get startled out of bed by a sonic boom at eleven o'clock at night? Also, we will never know if a certain area is active or not without calling air traffic control every time before we fly. This is not always possible due to poor radio coverage in our area. It is just not a safe situation.] AM-3

I could go on and on, but the main point I want to get across is that we don't want this Powder River Training Complex in southeastern Montana. It will be detrimental to our land, our communities, our commerce, our safety, and our wellbeing. We have enough to worry about in the ranching industry without having to be worried about getting knocked out of the sky by a B-1 Bomber. This is truly a threat to our freedom to do what we love. I ask you to please deny the request to make this Powder Training Complex a reality.

Sincerely,

William D. Lane

[redacted]

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To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

From: Concerned Pilots, SW North Dakota

We the SW North Dakota Pilots Association members are very concerned about the proposed Powder River Training Areas. As you may know, western North Dakota has gone through a great change, with the oil activities, associated with the Bakken, Three Forks, and Williston formations. New high paying jobs are increasing, populations climbing, air traffic in double digit increases, and many airports upgrading and expanding to meet the needs of these energy companies. In fact, our local airport is moving to accommodate this increased need. Now we may be faced with many altitude, navigation, operational restrictions associated with the proposed Powder River expanded areas!!

In our view, we gain nothing (no fuel sales, maintenance income, hangar rent, no income to hotels, restaurants,dealerships, etc.), but we are stuck with the proposed low altitude (500' AGL), navigation, gap, and operational restrictions?? Not to mention flares (fire potential), chaff (surface water, livestock affect), low flying fast aircraft (safety issue) and noise? We feel the areas will deter aviation business (who wants to mess with restrictions), and move our income potential to other airports outside the MOA???

SO-5
SO-6

If South Dakota (Ellsworth AFB) wants a larger area, move it to South Dakota!! If North Dakota (Minot AFB) wants an area, go east to the Tiger and Devils Lake MOAs already in place!! Seems like Ellsworth and Minot get the income

PN-2

144

and we in southwest North Dakota get nothing??

We support our men and women in uniform and support training, but there seems to be no compromise to benefit our airport and community??

A few recommendations, we believe, would greatly reduce the training area impacts-

1- area relocation is probably out of the question

2- raise the area (3) floor to something higher than 500' AGL, small aircraft could go under, large aircraft could go over (FL 180)] PN-4

3-have a direct telephone line to a military training office to have instant updates for pilots, flying near the areas (other than Flight Service Stations)] AM-12

Thank you for your consideration.

Concerned Pilots

Rodney Schaaf
S.W. No. Dakota Pilots Association Director

145

March 1, 2014

Manager, Operation Support Group
ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation'
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

To Whom It May Concern:

It has come to our attention that there is AGAIN movement to put the Powder River Training Complex into play. It has not been very many years ago that this met with a resounding NO from the ranchers and others in this highly rural area.

Please realize that this rural area is the livelihood of many people and the use of the air space above us by low flying bomber runs, sonic booms, flares and chaff etc. will have a very adverse affect on our ability to carry on our operations.] SO-6

Cattle spook and run at the sound of sonic booms, often times through fences, getting cut up and remain nervous for some time to come, thus not grazing and gaining as they are meant to do. Also if we are working a cattle and a sonic boom happens, our horses go crazy which could easily cause a big wreck and a rush to the hospital.] BI-4

We would like to know what, if any, is the mitigation plan to compensate the rancher for the losses and costs he may incur for such accidents, or for the burning of his rangeland should some chaff hit the ground before disintegrating? Are the Powers that Be prepared to guarantee payment to the ranchers for the loss of pasture if a wildfire should occur or the loss of cattle due to injury, or a hospital bill due to a bucking horse?] SO-12

Other issues involved also include the use of air space by our locals and oilfield . It is a common practice for many of our ranchers to fly over their cattle, checking water, etc. Are they going to be notified every time a training flight is to be in their area? What about the jets that fly in and out of here with oilfield people? Are they to be notified? What about emergency medical flights that take place frequently from our airport? Are they to be put on hold until the bombing runs are completed?] AM-12

We have said it before and we are saying it again. This is not a feasible plan for anyone

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in this area and we are still saying NO.

Sincerely,

Marvin & Sharon Gookin

Marvin & Sharon Gookin

[redacted]

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To: Manager, Operations Support Group March 18, 2014

Airspace Study 14- AGL- 06NR- Powder River Training Areas

From: Manager, Bowman County Airport

As Fixed Base Operator and manager of the Bowman County Airport, I am very concerned about the Powder River Areas. As you may know, western North Dakota has gone through a great change, with the oil activities, associated with the Bakken, Three Forks, and Williston formations. New high paying jobs are increasing, populations climbing, air traffic in double digit increases, and many airports upgrading and expanding to meet the needs of these energy companies. In fact, our local airport is moving to accommodate this increased need. Now we may be faced with many altitude, navigation, operational restrictions associated with the proposed Powder River expanded areas!!

In my view, we gain nothing (no fuel sales, maintenance income, hangar rent, no income to hotels, restaurants,dealerships, etc.), but we are stuck with the proposed low altitude (500' AGL), navigation, gap, and operational restrictions?? Not to mention flares (fire potential), chaff (surface water, livestock affect), low flying fast aircraft (safety issue) and noise? I feel the areas will deter aviation business (who wants to mess with restrictions), and move our income potential to other airports outside the MOA???

SO-5
SO-6

If South Dakota (Ellsworth AFB) wants a larger area, move it to South Dakota!! If North Dakota (Minot AFB) wants an area, go east to the Tiger and Devils Lake MOAs already in place!! Seems like Ellsworth and Minot get the income

PN-2

146

and we in southwest North Dakota get nothing??

I support our men and women in uniform and support training, but there seems to be no compromise to benefit our airport and community??

A few recommendations, I believe, would greatly reduce the training area impacts-

1- area relocation or area #3 to be a " high altitude area "

2- raise the area (3) floor to something higher than 500' AGL(8000 feet MSL) small aircraft go under, large aircraft could go over (FL 180)] DO-4

3-if need the 500 feet restriction, use it 1 day/week instead of 5 days/ week] PN-4

4- have a direct communication link , telephone or web, to military training center, to get instant area updates when flying near the areas.] AM-12

Thank you for your consideration

Sincerely;

Airport Manager and FBO operator Brent Kline

Bottom Line Aviation

[redacted]

147

To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

From: Concerned Pilot, SW North Dakota

I am a private pilot operating in south west No. Dak. and very concerned about the proposed Powder River Training Areas. As you may know, western North Dakota has gone through a great change, with the oil activities, associated with the Bakken, Three Forks, and Williston formations. New high paying jobs are increasing, populations climbing, air traffic in double digit increases, and many airports upgrading and expanding to meet the needs of these energy companies. In fact, our local airport is moving to accommodate this increased need. Now we may be faced with many altitude, navigation, operational restrictions associated with the proposed Powder River expanded areas!!

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147

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I support our men and women in uniform and support training, but there seems to be no compromise to benefit our airport and community??

A few recommendations, I believe, would greatly reduce the training area impacts-

1- area relocation , or area # 3 a "high area"

2- raise the area (3) floor from the 500 foot above ground restriction to 8000 feet. DO-4

3- if need the 500 feet restriction, use it 1 day/week instead of 5 days/ week. PN-4

4- A direct telephone or web contact, to military training center, for instant updates, for pilots flying near the proposed areas. AM-12

Thank you for your consideration.

Eugene Miller

148

Aug 9, 14

To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

From: Concerned Pilot, SW North Dakota

I am a private pilot operating in south west No. Dak. and very concerned about the proposed Powder River Training Areas. As you may know, western North Dakota has gone through a great change, with the oil activities, associated with the Bakken, Three Forks, and Williston formations. New high paying jobs are increasing, populations climbing, air traffic in double digit increases, and many airports upgrading and expanding to meet the needs of these energy companies. In fact, our local airport is moving to accommodate this increased need. Now we may be faced with many altitude, navigation, operational restrictions associated with the proposed Powder River expanded areas!!

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SO-6

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PN-2

148

and we in southwest North Dakota get nothing??

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1- area relocation , or area # 3 a "high area"

2- raise the area (3) floor from the 500 foot above ground restriction to 8000 feet. DO-4

3- if need the 500 feet restriction, use it 1 day/week instead of 5 days/ week. PN-4

4- A direct telephone or web contact, to military training center, for instant updates, for pilots flying near the proposed areas. AM-12

Thank you for your consideration.

Brian Dilse

149

To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

From: Concerned Pilots, SW North Dakota

I am a student pilot in south western No. Dakota and very concerned about the proposed Powder River Training Areas. As you may know, western North Dakota has gone through a great change, with the oil activities, associated with the Bakken, Three Forks, and Williston formations. New high paying jobs are increasing, populations climbing, air traffic in double digit increases, and many airports upgrading and expanding to meet the needs of these energy companies. In fact, our local airport is moving to accommodate this increased need. Now we may be faced with many altitude, navigation, operational restrictions associated with the proposed Powder River expanded areas!!

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SO-6

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149

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1- area relocation , or area # 3 a "high area"

2- raise the area (3) floor from the 500 foot above ground restriction to 8000 feet. DO-4

3- if need the 500 feet restriction, use it 1 day/week instead of 5 days/ week. PN-4

4- A direct telephone or web contact, to military training center, for instant Updates, for pilots flying near the proposed areas. AM-12

Thank you for your consideration.

4-17-2014

Craig Erickson [redacted]

150

To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

From: Little Missouri Grazing Association

We the members of the Little Missouri Grazing Assoc. are very concerned about the proposed Powder River Training Areas. As you may know, western North Dakota has gone through a great change, with the oil activities, associated with the Bakken, Three Forks, and Williston formations. New high paying jobs are increasing, populations climbing, air traffic in double digit increases, and many airports upgrading and expanding to meet the needs of these energy companies. In fact, our local airport is moving to accommodate this increased need. Now we may be faced with many altitude, navigation, & operational restrictions associated with the proposed Powder River expanded areas!!

In our view, we gain nothing (no fuel sales, maintenance income, hangar rent, no income to hotels, restaurants ,dealerships, etc.), but we are stuck with the proposed low altitude (500' AGL) restriction!! Our concern is what effect low flying, loud aircraft will have on livestock production? Another concern is fire potential from flare drops! Will " chaff" pollution affect our surface waters that our livestock drink?? We feel these "low areas" will impact farmers and ranchers, and any business interests will avoid our area and move income potential to other communities outside the MOA???

SO-5
SO-6

If South Dakota (Ellsworth AFB) wants a larger area, move it to South Dakota!! If North Dakota (Minot AFB) wants an area, go east to the Tiger and Devils

PN-2

150

Lake MOAs already in place!! Seems like Ellsworth and Minot get the income and we in southwest North Dakota get nothing??

We support our men and women in uniform and support training, but there seems to be no compromise to benefit our operations and community??

A few recommendations, we believe, would greatly reduce the training area impacts-

1- area relocation , or area # 3 a "high area" — DO-4

2- raise the area (3) floor from the 500 foot above ground restriction to 8000 feet. — PN-4

3- if need the 500 feet restriction, use it 1 day/week instead of 5 days/ week.

4- A direct telephone or web contact, to military training center, for instant updates, to work around livestock operation schedules. — AM-12

Thank you for your consideration.

Douglas S. Cope

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To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

From: Concerned Pilots, SW North Dakota

I am a private pilot in south western No. Dakota and very concerned about the proposed Powder River Training Areas. As you may know, western North Dakota has gone through a great change, with the oil activities, associated with the Bakken, Three Forks, and Williston formations. New high paying jobs are increasing, populations climbing, air traffic in double digit increases, and many airports upgrading and expanding to meet the needs of these energy companies. In fact, our local airport is moving to accommodate this increased need. Now we may be faced with many altitude, navigation, operational restrictions associated with the proposed Powder River expanded areas!!

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151

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A few recommendations, I believe, would greatly reduce the training area impacts-

1- area relocation , or area # 3 a "high area"] DO-4

2- raise the area (3) floor from the 500 foot above ground restriction to 8000 feet.] PN-4

3- if need the 500 feet restriction, use it 1 day/week instead of 5 days/ week.

4- A direct telephone or web contact, to military training center, for instant Updates, for pilots flying near the proposed areas.] AM-12

Thank you for your consideration.

Shawn Larkin

4-17-2014

152

Apr 15

To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

From: Concerned Pilot, SW North Dakota

I am a private pilot operating in south west No. Dak. and very concerned about the proposed Powder River Training Areas. As you may know, western North Dakota has gone through a great change, with the oil activities, associated with the Bakken, Three Forks, and Williston formations. New high paying jobs are increasing, populations climbing, air traffic in double digit increases, and many airports upgrading and expanding to meet the needs of these energy companies. In fact, our local airport is moving to accommodate this increased need. Now we may be faced with many altitude, navigation, operational restrictions associated with the proposed Powder River expanded areas!!

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SO-5
SO-6

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PN-2

152

and we in southwest North Dakota get nothing??

I support our men and women in uniform and support training, but there seems to be no compromise to benefit our airport and community??

A few recommendations, I believe, would greatly reduce the training area impacts-

1- area relocation , or area # 3 a "high area"] DO-4

2- raise the area (3) floor from the 500 foot above ground restriction to 8000 feet.] PN-4

3- if need the 500 feet restriction, use it 1 day/week instead of 5 days/ week.

4- A direct telephone or web contact, to military training center, for instant updates, for pilots flying near the proposed areas.] AM-12

Thank you for your consideration.

Bruce Hagen

153

APR 14

To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

From: Concerned Pilots, SW North Dakota

I am a private pilot in south west North Dakota and very concerned about the proposed Powder River Training Areas. As you may know, western North Dakota has gone through a great change, with the oil activities, associated with the Bakken, Three Forks, and Williston formations. New high paying jobs are increasing, populations climbing, air traffic in double digit increases, and many airports upgrading and expanding to meet the needs of these energy companies. In fact, our local airport is moving to accommodate this increased need. Now I may be faced with many altitude, navigation, operational restrictions associated with the proposed Powder River expanded areas!!

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Thank you for your consideration.

Ken Hoyer

154

AIR 6/14

To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

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Thank you for your consideration.

Tyler Symanowski

155

Aug 15,

To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

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Thank you for your consideration.

Kevin Symanowski

156

To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

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[redacted]

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Thank you for your consideration.

Bob Waller

158

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Thank you for your consideration.

TED D. DILSE

Ted D. Dilse

159

To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

From: Concerned Pilots, SW North Dakota

I am taking flying lessons in Bowman, No. Dak. and very concerned about the proposed Powder River Training Areas. As you may know, western North Dakota has gone through a great change, with the oil activities, associated with the Bakken, Three Forks, and Williston formations. New high paying jobs are increasing, populations climbing, air traffic in double digit increases, and many airports upgrading and expanding to meet the needs of these energy companies. In fact, our local airport is moving to accommodate this increased need. Now we may be faced with many altitude, navigation, operational restrictions associated with the proposed Powder River expanded areas!!

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Thank you for your consideration.

Chad Nelson

Chad Nelson

[redacted]

160

Manager, Operation Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Dear Federal Aviation Administration Decision-makers:

I am writing in opposition to the expansion of the Powder River Training Complex.

The Draft EIS describes the impacted area as "primarily rural and uninhabited in character." This disrespects the land where we get our meat and grains. The outdoor needs of rural people and farmers and ranchers are necessary on a daily basis, and should not be disrupted with various dangers 240 days out of the year between 7:30-12:00 am. and 6:00-11:30 pm. with a possible ten flights during three hours per day and two flights during six hours per day, plus additional gap flights.] PN-5] AM-6

Please continue using the existing SUA sites in Nevada and Utah, perhaps expanding those sites as needed. Exploiting a food source area is not an appropriate use of the land.] PN-7

It's also not in the best interest of the public when it is known that "modern air warfare has changed dramatically" and the public knows that drones are replacing traditional air defense.

Please do not expand training in this particular area.

Sincerely,

Matthew Kammerer

[redacted]

161

CARTER COUNTY COMMISSIONERS

[redacted]

****

May 1, 2014

Manager, Operations Support Group, ATO Central Services Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Gentlemen:

The Carter County Commissioners would like to go on record as opposing the expansion of the Powder River MOA.

A large portion of Carter County is already in a MOA; however the expansion would increase the size and include the airports at Ekalaka and Broadus. We believe this would have a significant impact on these airports as well as Ashland, Colstrip, Baker and Bowman ND.

We are very concerned with how this will affect emergency medical flights. Ekalaka is 150 miles from the nearest major medical center. Depending on the severity of the illness or injury, a small amount of time may be the difference between life and death. SA-19

Our local pilots have learned to deal with the situation but it is unclear how major war games may impact them. The use of flares and training chaff is also an area of concern relating to starting fires in remote areas. SA-5

We are not anti-military and believe a training area is necessary. However, we think that as a minimum, Powder River #3 should be eliminated or significantly modified. There is a tremendous amount of oil activity which would be disrupted by this expansion.

This expansion, if it does occur, should include significant expansion of air traffic control measures. Air traffic control radar sites need to be developed for the safety of all air traffic within the area. AM-3

Finally, the economic impact of this expansion should be looked at carefully. Millions and millions of dollars have been spent to improve the small local airports that may be compromised severely if this expansion goes through

Board of the Carter County Commissioners:
James E. Courtney, Chairman Steve Rosencranz Luther Waterland

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Operations Support Group Manager, AJV-C2

Airspace Study 14-AGL-06NR

May 1, 2014

Dear Sir:

We oppose the Powder River Training Complex. We ranch near Ekalaka, MT and use a small plane checking livestock, water, and for predator kills so we feel our property rights are violated when the government restricts our use over our own land. The legislators from SD are pork barreling money for SD. Let them have the training area over the bad lands of SD. The Pentagon should make airbase decisions, not the legislators.

AM-5

Fulton Castleberry

Fulton Castleberry

[redacted]

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BISMARCK AERO CENTER ND

Experience Us.

May 1, 2014

Manager, Operations Support Group
ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

RE: Proposed Expansion, Powder River MOA

TO: Whom it may concern

Although I am the owner of a FBO at the Bismarck Airport, I wear many hats in the Aviation Community from that of small aviation business owner, pilot, flight instructor, ag pilot, to Unmanned Aerial Systems Test Site representative, I have many concern about this airspace request, the first being **SAFETY** and the second economically.

Western North Dakota is experiencing growth in numbers not seen in recent history. Not only is the oil boom affecting air travel in proposed area but also is agricultural aviation with the development of genetically altered crops and the commodity prices. These crops have a greater need for pesticide application in a timely manner.

This being an area of poor communication coverage and even poorer radar coverage it will be impossible to see a majority of the aircraft that are proposed to be training in the area. With the concentration of agricultural operations and the frequency of flights into the underlying airports, the potential for conflict increases exponentially.] AM-3

The economic effect could be devastating on the communities that underlie this proposed expansion area. The delaying of pesticide operations and the restriction of flights carrying sportsman in and out can cripple the two very industries that are the life blood of these small rural communities. Medical flights are essential to these communities and although promised priority handling, due to the poor communication and radar, will be delayed because of this expansion.] SA-19

I recognize and support the need for our defense system and recognize the importance of good and frequent training. I also recognize the track record of the Military has not been up front with their intentions with these airspace acquisitions in that what they say they are going to do is completely different than what they actually what they do once they control the airspace.

If the issues raised above were not a valid concern, South Dakota would have offered more of their airspace, the airspace that is south and east of Ellsworth Air force Base.

This proposed expansion is not in the best interest of the FAA, General and Commercial aviation and the economy of the communities that lie below this proposed area.

Thank you for your time and consideration in this matter

Sincerely,

Bob Simmers
President

cc: Senator John Hoeven
Senator Heidi Heitkamp
Representative Kevin Kramer

[redacted]

164

[redacted]

BROSZ ENGINEERING, INC.
ARCHITECTURE ENGINEERING SURVEYING

May 2, 2014

To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

RE: Bowman Regional Airport

As you may know, our community has undergone great changes on account of oil exploration and production activities associated with the Red River, Bakken, Three Forks, and Tyler formations both in and near the Williston Basin.

The population growth in the area as a result of the oil generated economic growth is anticipated to increase air traffic considerably in the area. Many airports are upgrading their facilities to meeting the needs of the energy sector.

The Bowman Municipal Airport will be relocated east of Bowman, where the new Bowman Regional Airport is currently under construction. The need for a new airport has been dictated due to geometric constraints at the existing site that prohibits expansion. The Federal Aviation Administration, North Dakota State Aeronautics and the Bowman County are investing nearly $16,000,000.00 to construct the new facility.

The thought of having a new airport adversely impacted by new flight restrictions including altitude, navigation and operational restrictions associated with the proposed Powder River expanded area would be devastating to this new facility.] AM-5

This could drastically hamper the use of the new facility and the ability for the local authority to generate any revenue from fuel sales and hangar rentals.] SO-7

It would not only have a negative impact on the airport authority, but would adversely affect local businesses that may otherwise benefit from the increase in air traffic.

Bowman, ND • Pierre, SD • Sturgis, SD • Sioux Falls, SD • Stanley, ND • Winner, SD • Eagle Butte, SD • White Lake, SD

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Probably the largest negative impact that could result from Powder River's proposed flight restrictions would be interference with air ambulance runs. Southwest Healthcare Services, located in Bowman, ND operates an ambulance service that serves the tri-county area. SW Healthcare has patients that are in need of immediate care for critical health concerns that, upon stabilization, are transferred to Bismarck or Rapid City on a regular basis for acute care.] SA-19 SO-5

With the proposed low altitude (500' AGL), navigation, gap, and operational restrictions, the Bowman Community and surrounding area stands to suffer significant negative impacts.] AM-5

I would appreciate you giving consideration to discontinue further development of these restrictions for our area. If it is not possible to relocate the training area all together, please consider a couple of suggestions to reduce impacts from the training area.

1. Raise the area (3) floor to something higher than 500' AGL. This would allow for small aircraft to fly below and for large aircraft to fly above (FL 180)
2. Reduce the 500 feet restriction to 1 day per week instead of 5 days/week] DO-3

Thank you for your consideration.

Sincerely,

Gary Brennan, PE

Project Manager

Bowman Regional Airport

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Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

May 3, 2014

Dear Sir:

Following are my comments on the FAA request for further comments on the proposed expansion of the Powder River Military Operations Area (PRMOA). I have submitted comments to the DEIS on the PRMOA issues relating to flares, chaff, impacts on livestock etc. After talking to Dr. John Witucki via telephone, my understanding of this FAA request for comments is that FFA is asking for information on how the Air Force's proposed airspace changes, or lack thereof, affect our local flying operations. My ranch's summer pasture is located in Township 16 North, Range 2 East in Harding County South Dakota. This range is under the current PRMOA in South Dakota. The proposed expansion would place my entire ranch under Powder River 2 Low MOA, Montana. The proposed floor for Powder River 2 is 500 feet AGL. This is the same floor as proposed in DEIS.

I fly a 1947 Piper PA-11 to check livestock , pasture fences, predator control for sheep, mud bog for sheep and cattle and any other problems that happen that affect my ranching operation. This is the only economically feasible way for me to get this job done and I have been flying my ranch for over 20 years.

The same problems exist now as in the original proposal. When I was a student, I learned that wing vortices go down 900 feet below the elevation the plane is flying and move out at a 45 degree angle at around 25 knots. If I am flying my 770 pound PA 11 at 300 feet AGL and a B1 bomber overflies me at 500 feet (if they are actually at 500 feet), these vortices can easily wreck my plane. As someone who has real time experience in attempting to see and avoid B1s, I can tell you that when you are flying at 70 knots, they close on you faster than you can pick them up no matter how vigilantly you are scanning. In addition, B1's, I am sure by design, are extremely hard to spot when they are flying below the horizon. Here is the point. The FFA registry shows 28 airplanes registered to owners in Harding County SD. This airspace is not empty. I cannot operate safely, and the other pilots in Harding County cannot operate safely with military aircraft flying over them at 500 feet. Powder River 2 Low MOA, Montana must have a minimum floor of 1500 feet AGL. The Air Force cannot be allowed to ignore the safety of our local citizens.

] SA-7

] DO-4

Sincerely:

Larry Nelson

[redacted]

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State of
North Dakota
Office of the Governor

Jack Dalrymple
Governor

April 29, 2014

[redacted]
Manager, Operations Support Group
ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-6NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Boulevard
Fort Worth, TX 76137

Dear Mr. Wheeler:

I am writing in regard to the proposed establishment of the Powder River Training Complex (PRTC) Military Operations Areas (MOA), North & South Dakota, Montana, and Wyoming.

The United States Air Force's (USAF) air space expansion request to the Federal Aviation Administration (FAA) would cover approximately four times the original MOA and affect airspace in North Dakota from Bismarck to the southwest corner of the State. Currently, the Powder River MOA is located primarily in Montana. The USAF request also includes the 5th Bomb Wing from the Minot Air Force Base, North Dakota as an additional user of the PRTC and suggests that expanded special use airspace (SUA) is required to properly train aircrews. As the FAA reviews the request and considers whether the USAF has justified the use of the current proposed airspace, there are several concerns that should be addressed before the Powder River MOA expansion is approved.

During the comment period in 2010, North Dakota citizens and the North Dakota Aeronautics Commission expressed concerns related to: airline and charter flight operations; air ambulance operations; aerial applicators; pilot training and instruction; radar/communication; aerial wildlife surveys and predator control; weather modification program; and local communities and airports. Although the current proposal includes some changes in response to previous comments received, there are concerns that still remain along with new concerns. Since the last comment period there has been an increase in aviation activity in the southwestern part of the state and as you know North Dakota was recently selected as one of six sites to test

600 E Boulevard Ave. • Bismarck, ND 58505-0001 • Phone: 701.328.2200 • Fax: 701.328.2205 • www.governor.nd.gov

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unmanned aerial systems (UAS) for integration into the National Airspace. Both of these factors need to be considered as the FAA reviews the proposed expansion.

North Dakota's aviation system is an important resource to the State. To insure that the safe and efficient movement of people and products continues throughout the state and to those areas outside the state, I ask the FAA to make sure all concerns have been addressed. I also would specifically request that the FAA have additional discussions with the North Dakota aviation community and the North Dakota Aeronautics Commission prior to a final decision. Discussions should focus on the possibility of raising the floor of the proposed MOA airspace in southwestern North Dakota from 500 feet MSL to a minimum of 8,000 feet MSL for general aviation; and the possibility of mitigations to North Dakota if the airspace is deemed necessary. For follow-up please contact Director Kyle Wanner, North Dakota Aeronautics Commission, at kcwanner@nd.gov or 701-328-9650.

DO-3
DO-4
GE-5

Thank you for your consideration, it is my hope that we can work together along with the North Dakota aviation community to resolve this important issue.

Sincerely,

Jack Dalrymple

Jack Dalrymple
Governor

C: Kyle Wanner, ND Aeronautics Commission

37:68:56

167

April 28, 2014

Manager, Operations Support Group, ATO
Central Services Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Gentlemen:

I wish to support the military; however the Powder River MOA proposal causes too much harm to the affected area. It would have negative effects on the local residents, economy, medical emergency services, medical services for remote areas, businesses, general aviation, airlines, airports, weather modification, and agricultural operators. Access to the Bakken oil field would be restricted as the majority of support flights are from the south and southwest.] AM-6 AM-12

As we have previously experienced in North Dakota, the segmented airspace of the proposal is a great idea. However, the military activates all of the airspace not just a segment. The proposal does not address the fact that an ATCA airspace will be activated above the proposed airspace, thus even turbine powered aircraft must go around and not over the 18,000ft height. This is a current practice above the existing Powder River MOA and at the Grand Forks Air Force Base.] AM-4

For the proposal to be implemented; radar and communications must be improved in the affected area. IFR traffic needs to be allowed into the local community areas, which means a floor of the airspace, must be at or above 8000ft. For all altitudes including the ATCA, the segmented system must be enforced, to minimize the deviation around the airspace. The airspace should not be activated unless aircraft are actually operating in the airspace and should be cancelled upon the aircraft exiting the area. The proposed blanket of 10 hours a day, five days a week; is impractical and not necessary when the proposal states approximate usage of 3 hours. This requires an enhanced notam system and other systems of notification of activation.] AM-3] DO-3

Is a quadrupling of Powder River MOA airspace really necessary?

As proposed, the Powder River MOA expansion has too many negative impacts on the states, residents, and communities which would underlay it.

Sincerely,

Larry Gebhardt

Larry Gebhardt
[redacted]

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MONTANA PETROLEUM ASSOCIATION, INC.

[redacted]

David A. Galt
Executive Director

OFFICERS
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Crowley Fleck
Greg Brown, Vice President,
Downstream, CHS Inc.
Kent Beers, Vice President,
Upstream, Oasis Petroleum
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Lisa Winn
XTO Energy

April 29, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth TX 76137

Dear Manager,

We are writing to express concern regarding an Air Force proposal to expand the training airspace for Ellsworth Air Force Base and the Minot Air Force Base into large areas of southeastern Montana. In our view, the plan to expand the existing Powder River airspace to create the proposed Powder River Training Complex (PRTC) will negatively impact the operations of the members of the Montana Petroleum Association (MPA) in the areas underlying the PRTC.

The MPA is a not for profit trade association that represents refining, transportation, exploration, production and related oil field service companies in Montana. We have a broad range of interests and represent those interests with Federal, State and Local governments. While the MPA is a staunch supporter of America's military and our veterans, we are concerned about this proposed expansion area of the PRTC.

We have two primary concerns: First, the expanded area will significantly limit access to airports within the PRTC by private aircraft, including the airport located in Baker, Montana; and second, the expanded area will complicate the efforts of our members to properly and effectively monitor an extensive oil, natural gas and CO2 pipeline infrastructure in the area. AM-12

It is our understanding that the proposed PRTC military operations area (MOA) will be active from 0700 to 1200, Mondays through Fridays and from 1800 to 2330 Mondays through Thursdays, and that it will extend from 500 feet above the ground to 18,000 feet. AM-6

We also understand that when the MOA is active, aircraft operating under instrument flight rules (IFR) are not allowed into that airspace, but that airspace is still available to aircraft operating under visual flight rules (VFR); however, there are no additional safeguards that provide separation of VFR civilian aircraft and military aircraft when the MOA is active. As you well know, mixing private aircraft and military aircraft flying at high speeds is not ideal and the safety practices of our members will not allow them to enter the area operating under VFR during these active times. As a result, under the proposed PRTC private aircraft can realistically only access the MOA during the hours from 1200 to 1800, Mondays through Thursdays, and after 1200 on Fridays. That is a considerable restriction! AM-20 AM-21 SA-7 AM-6

The proposed PRTC overlays the Baker Airport, a well-constructed facility that frequently accommodates jet traffic to the area. Baker is one of two key locations for our members technical and management staff in eastern Montana, and accessibility to Baker by private aircraft will obstructed when the MOA is active. Considering that already has the Hays-Lodge Pole training area exists in northeastern Montana, the cumulative effects of the restrictions in place with respect to the existing training area and the size of the proposed PRTC will be to significantly impact our members' operations. AM-5

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2
Montana Petroleum Association
4/29/14

Montana is the 12th largest oil and gas producer in the United States, producing approximately 28 million barrels of oil per year. Most of that production occurs in the eastern part of our state. We have attached two slides that illustrate that production. Furthermore, the eastern edge of Montana provides a vital pipeline corridor to the north and south out of the Williston Basin. Much of the crude oil and natural gas liquids produced in the "Bakken Oil Fields" is transported by pipeline located along the eastern edge of Montana. Production occurs or is transported through three main areas inside the PRTC boundaries:

1. Elm Coulee and areas in Richland and Roosevelt Counties. Significant portions of gas and liquid products are transported south to the mid-continent.
2. Cedar Creek Anticline in Fallon County, has oil, gas and pipeline infrastructure.
3. Belle Creek in southern Powder River County is the site of a mature field that has been renewed with an extensive CO2 Enhanced Oil Recovery program.

Additionally, there are current and planned pipeline projects in the process of planning and construction in the Powder River/Carter/Fallon county areas, including the highly publicized Keystone XL project.

Consider that the southeast corner of Montana is estimated to contain over 300 million barrels of recoverable oil. That is an important resource to our Country, America's national energy security interests, to the State of Montana, and to the residents in the area. All of that resource in addition to the vast resource development in the Bakken is dependent on pipeline transportation. Daily aerial monitoring of the extensive pipeline network is part of our safety ethos and imperative to the citizens of Montana. Most of the monitoring in the area is done with small fixed wing aircraft flying at low level and based in Baker. The PRTC proposal will impact the ability of local service companies to provide that service which is critical to our environment, resident safety and to MPA member operations.

AM-6
AM-12

Besides our primary concerns, we are skeptical of the USAF analysis of the impacts of flare use and impacts to sage grouse. The State of Montana is finalizing a comprehensive conservation strategy for the sage grouse and we fear the PRTC will add additional stress that will result in more limitations to the ground activities. The potential of wildfire as a result of flare use could destroy habitat for sage grouse. If fire does occur to core area sage grouse habitat the damaged habitat will be scored as surface disturbance in the area and will limit other kinds of activity including oil and gas development. Based on comments from the USFWS, loss of habitat is the prime reason they believe sage grouse populations are declining. The Service also insists that reclamation to the sage brush steppe is very complicated and requires long time periods.

BI-3

Finally, you might consider a more detailed check of your analysis that sage grouse will habituate to occasional noise from low flights and supersonic activities. Noise abatement is a serious component to the federal agencies recommendation for activity in sage brush habitat and a component of the State plan. Our cursory review of your analysis leads us to believe that sudden and infrequent loud noise would be disruptive to sage grouse especially during spring mating activates that are so critical.

Regards,

David A. Galt, Executive Director
Montana Petroleum Association

cc: Deborah Lee James, Secretary of the U.S. Air Force
General Mark A. Welsh, III, Chief of Staff of the U.S. Air Force
Michael Huerta, Administrator, FAA

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WAGNER LAW FIRM, PC

Attorney
Michael L. Wagner, JD
[redacted]

April 29, 2014

Manager, Operations Support Group, ATO Central Service Center, AN - C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Re: Objection to Proposed Establishment of the Powder River Training Complex Military Operations Areas, North & South Dakota, Montana, Wyoming

Our File No. 94-696-14

Dear Sir/Ms.:

I am a general aviation pilot from Bismarck, ND and write to express my objection to the above-referenced MOA proposal. Like many general aviation pilots, I frequently fly in the affected area. Frankly I am appalled by the proposal, specifically the large area covered, the floor of the area, and the active times. As a practical matter, it closes down the entire region to general aviation. Even the purported corridors are MOAs.] AM-6

I am also very concerned over the process by which the proposal is being considered. Public disclosure has been minimal at best, and the timeline in which interested parties have to comment is unfairly short.

Sincerely,

Wagner Law Firm, PC
By Michael L Wagner
[redacted]

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Dear Sirs,

I am a Pilot, Single Engine Land, VFR. I live in Colstrip, MT. and I own 1900 acres of Ranch Land in Carter Co. Montana. The land I own is under the Powder River MOA that was put in force in the early 1980's. I have been a Pilot and have owned a Cessna 170-B since 1979. I use my aircraft to count cattle, check on water, Predators, Fences Bulls, and Treaspasing Hunters. All of my flying is at low level, at Reduced speeds (75 to 90 MPH). I have Rolled out of a turn at 250 ft. AGL to see the flame in the tail pipes of a B1B Lancer at less than 1/4 mile away from me. His wings were swept back. I don't know by how many feet he missed me, but it couldn't have been many. He was at my altitude and was going straight away from me.

SA-7
SO-15

SA-1

170

(2)

AND NOW THE AIR FORCE WANTS TO EXPAND THE MOA TO INCLUDE ALMOST ALL OF THE LAND SOUTH OF INTERSTATE I-94 AND NORTH OF INTERSTATE I-90

I WANT THE FAA TO TELL ME HOW I AM SUPPOSED TO "SEE AND AVOID TRAFFIC." THE MILITARY AIRCRAFT ARE PAINTED IN CAMOFLAGE PAINT JOBS AND ARE FLYING AT 550 TO 600 M.P.H. SA-7

MY FAMILY, MY FRIENDS AND THIER KIDS FLY WITH ME. HOW CAN YOU JUSTIFY PUTTING THEM IN DANGER, FOR AN UNNECESSARY REASON. SA-1

THE AIRFORCE ALLREADY HAVE TRAINING AREA'S, BOTH MOA'S AND RESTRICTED AREA'S, IN UTAH, NEVADA, CALIFORNIA AND OTHER STATES. AND IF FUEL SAVINGS IS THIER GOAL THEN THE CLOSEST STATE TO ELSWORTH AIR FORCE BASE IS SOUTH DAKOTA, NOT MONTANA, ALL OF THE EXPANSION SHOULD BE IN SOUTH DAKOTA. OR MOVE THE AIRCRAFT TO WHERE THE EXISTING TRAINING AREA'S ARE. PN-2

THE EXISTING TRAINING AREA'S ARE OVER ~~MOUTAINS~~ MOUNTAINS OR DESERT WHICH SO-24

(3)

170

ALL MOST ALL OWNED BY THE U.S GOVERNMENT. AND THERE IS VERY LITTLE AGRICULTURE UNDER THOSE AREA'S. MONTANA RANCH LAND IN SOUTH-EAST MONTANA IS MOSTLY PRIVATELY OWNED. AND MANY RANCH PILOTS DO NOT KNOW THAT THEY CAN RESPOND IN WRITING TO THE FAA, TO OPPOSE THIS EXPANSION. ONLY A FEW NOTICES WERE GIVEN TO LOCAL NEWS PEOPLE. AND PACKETS WERE SENT TO THE AIRPORT MANAGERS GIVING THE DETAILS ON WHERE TO SEND OPPOSING LETTERS TO. AND WHEN THE COMMENT PERIOD ENDS.

PN-2

THE FAA HAS THE NAME AND ADDRESS OF EVERY AIRCRAFT OWNER AND PILOT IN MONTANA AND THE SURROUNDING STATES. WHY WERN'T NOTICES SEND BY MAIL TO EACH OWNER AND PILOT. ALSO THE MOST BUSYEST TIME OF THE YEAR FOR RANCHING IS IN THE SPRING DURING CALVING SEASON

SINCE THE DESIGNATION OF AIRSPACE TO AN MOA IS A PERMANTE DESIGNATION. A BETTER JOB OF INFORMING LANDOWNERS,

170

④

PILOTS, AND AIRCRAFT OWNERS, ALSO THOSE PEOPLE HERE WHO USE AIRCRAFT SERVICES (CROP SPRAYING, AMBULANCE SERVICE, GAME SURVAYS, SIGHT SEEING, AIR PHOTOGAPHY SEEDING CROPS, ETC. ETC.) SHOULD HAVE BEEN DONE. THE NOTICE SENT TO THE AIRPORT MANAGER IN COLSTRIP, MT. SAT IN A P.O. BOX AT THE POST OFFICE FOR ALMOST 2 MONTHS, WITHOUT EVEN BEING PICKED UP. OUR AIRPORT MANAGER IS 95 YEARS OLD AND IS NOW LIVING IN AN ASSISTED LIVING FACILITY IN A TOWN 45 MILES NORTH OF HERE. WE HAVE A PILOTS LOUNGE AT THE COLSTRIP AIRPORT WERE NOTICES CAN BE POSTED. THE AIRPORTS AT WARDEN, HYSHAM, AND BROADUS ALSO EKALAKA, DO NOT EVEN HAVE ANY PLACE ON THIER AIRPORTS TO PLACE ANY NOTICES.

NOTICE WE CAN NO LONGER DRIVE

THIS EXPANSION IS NOT NESSASARY — IT IS ONLY USEFUL TO PROTECT ELSWORTH AIR FORCE BASE FROM THE NEXT ROUND OF BASE CLOSINGS WHICH ARE TO TAKE PLACE IN 2017. GE-16

I OPPOSE THIS EXPANSION AND ASK THAT THE FAA DENY THIS EXPASION GE-2

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(5)

SOUTH DAKOTA SENATOR JOHN THUNE AND THE MILITARY BRASS AT ELSWORTH WANT THIS EXPASION. I HAVE NOT TALKED TO ONE PERSON WHO THOUGHT THAT WE MUST HAVE THIS EXPANSION SO THAT OUR TROOPS WILL BE BETTER TRAINED. SO-24 PN-3

THIS EXPANSION IS UNESSASARY AND DANGEROUS TO FLYING IN SOUTH EAST MONTANA.

SINCERLY,

DELBERT DINSTEL

Delbert Dinstel

P.S IF YOU HAVE ANY QUESTIONS OR WANT MORE INFORMATION CALL MY CELL PHONE NUMBER: [redacted]

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Manager, Operation Support Group, ATO Central Service Center, AJV-C2
Airspace study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth TX 76137

March 25, 2014

To Whom It May Concern:

We are writing in opposition to the proposed Powder River Training Complex. There are many concerns to the ranching industry that include safety concerns for the ranchers that have small aircraft of their own to manage and maintain their cattle herds. Interference with Emergency Medical flights, this is a very rural area and there is a real need for the availability of air transportation for medical emergencies; not to mention the disruption of the predator control flights, monitoring of the pipeline systems already in place and small airfields, cattle.

SA-1
SA-7
LU-3
SA-19
SO-5
SO-15
SA-21

We are very opposed to this plan, we feel there has been little thought put into the effects that rural America will suffer.

GE-2
GE-3

Thank-you for your consideration.

Dean Johnson
Delia Johnson

Dean and Delia Johnson
[redacted]

172

March 26, 2014

To whom it may concern,

I am writing this to comment on the proposed expansion of the Powder River Complex MOA. When the Draft Environmental Impact Statement on the proposed expansion was released in 2010 for comment, I was in favor of the expansion. I felt our serviceman and women needed it to be able to stay proficient in their duty to defend this country.

Since then, I have changed my mind and no longer favor the expansion of the MOA. This is partially due to my fear that the Air Force would not communicate adequately with those of us who are pilots of small planes in the area affected by the expanded MOA. My fear is based on past examples of government agencies that have failed to communicate with individuals as promised. **AM-3** **SA-19**

I feel a better way to train our military personnel would be to send them to a training area based in Nevada. Population density is much less there. In addition, if they were sent to Nevada for an extended period of time for training, they could be housed there for the training period instead of commuting between Ellsworth and Nevada in their aircraft as has been done in the past. This would mitigate the need for expanding the Powder River Complex MOA and would save taxpayer dollars because housing in Nevada during training would be far more economical than flying back and forth in their training aircraft. **PN-2**

For these reasons I feel the Powder River Complex MOA should not be expanded. **GE-2**

Respectfully Submitted,

James H. Bowers

James H. Bowers

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EXEC AIR
MONTANA
Premier Aviation Services Since 1931

[redacted]

March 21, 2014

Manager, Operations Support Group, ATO Central Services Center, AVJ-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration2601 Meacham Blvd
Fort Worth, TX 76137

I am writing in **opposition** of the proposed enormous expansion of the Powder River MOA.

I own and operate a FAA part 135 charter operation based out of Helena, Montana. We routinely transport passengers and patients throughout Montana and nation wide on a daily basis so are intimately familiar with aircraft operations in and around MOA's.

I can tell you first hand that access into an active MOA while on an instrument flight plan is virtually impossible. The FAA my not have a policy against this but ATC will not clear you through this airspace while "active". This requires a reroute around the vast airspace costing valuable time and at great expense. Additionally, in my opinion, VFR flight in an active MOA with supersonic aircraft is extremely risky and unsafe so that is not a viable option. AM-6

This expansion could essentially block off a huge portion of eastern Montana up to 240 days per year. This would affect not only air traffic in and out of the MOA, the airports under the MOA and over flight traffic as well.

I also find it concerning that this proposed expansion has not been more widely publicized. This expansion will affect far more commercial operators, businesses and pilots than just those under the airspace in the proposed expansion.

This expansion provides no positive economic benefit to Montana and will have a huge negative financial impact by limiting commerce and accessibility to these communities. SO-5

Montana is already home to two existing MOA's.

Please **do not** allow the proposed expansion of the Powder River MOA. GE-2

Sincerely

Dan Norhton
Owner

174

March 27, 2014

Craig Goeden
[redacted]

Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study 14-AGL-06NR
2601 Meacham Blvd
Fort Worth, TX 76137

To whom it may concern,

The Air Force is again pushing for the Powder River Military Operations Area expansion. Senator Thune from South Dakota is trying to fast track the process with a limited public comment period and no apparent public comment meetings. The past several times the Air Force has applied for this expansion, the public comment period was extended and public meetings were held to discuss the possible impact. I am trying to get the word out about this proposed expansion. If the airspace is approved as requested, it will be the largest terrestrial training space over the continental U.S. The MOA will expand to four times its current size (to 28,000 square miles!) I just want to make sure people are aware of this potentially harmful expansion.

I am Chief Pilot of Executive Air Taxi Corp, a Part 135 charter company based in Bismarck, ND and this airspace expansion could have a very harmful effect on our company and business. The MOA will be active up to 240 days a year, Monday - Friday in the morning and evening. Many of the routes we fly at my company go through the potential airspace expansion and if it is approved as requested, we will have to fly around the airspace when it is active, potentially adding hundreds of miles to our flights costing more fuel and time and raising the cost for our customers. All of the charter flights we do at our company are IFR flights, so we will be forced to fly around this large airspace when it is active. The altitudes on most of the blocks of airspace are 12,000 to 18,000 feet which directly impacts our smaller piston and turboprop aircraft (as they typically cruise in that range) and also our larger turboprop and jet aircraft as they will need to climb and descend through the airspace to get to several of our destination airports in North Dakota, South Dakota, Wyoming and Montana. The blocks of airspace that go down to 500 feet AGL may make it impossible to land and take off at certain airports within the MOA. Even the proposed "Gap MOAs" appear to be intended for military aircraft to get between active parts of the MOA. The size and scope of this proposed expansion is unlike anything currently over the United States and I am worried about the tremendous financial impact this will have not only on our company, but also our industry as a whole. I am very concerned about this proposed expansion and how quickly things are moving this time on trying to get approval. Thank you for your time.

AM-6
AM-20
AM-21

AM-6
AM-20
AM-21

SO-5
SO-7
SO-8

Sincerely,

Craig Goeden

Executive Air Taxi Corp – Chief Pilot
Bismarck, ND
[redacted]

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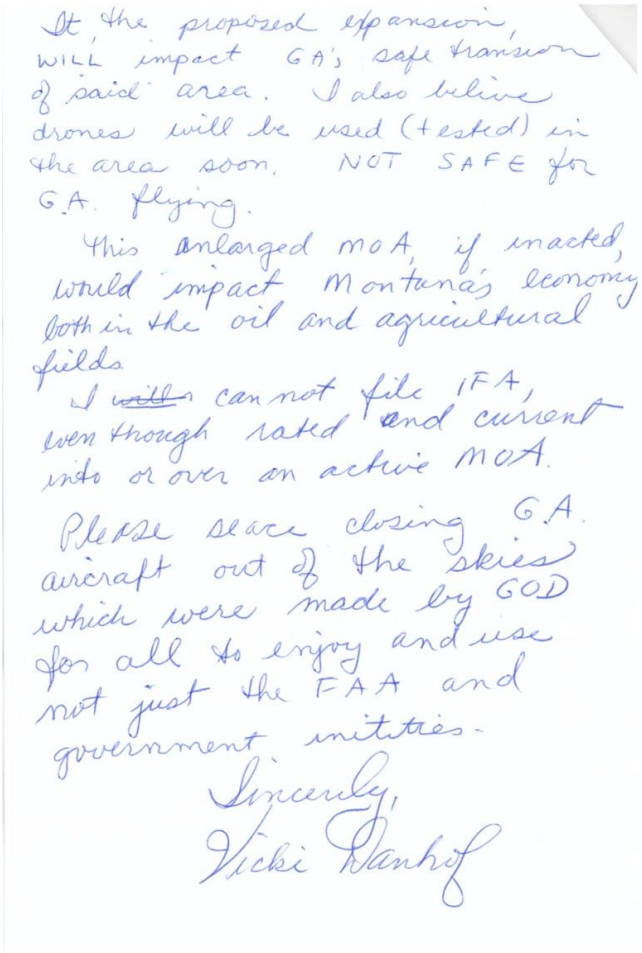

It, the proposed expansion, WILL impact GA's safe transition of said area. I also believe drones will be used (tested) in the area soon. NOT SAFE for G.A. flying.

This enlarged MOA, if enacted, would impact Montana's economy both in the oil and agricultural fields.

I ~~with~~ can not file IFA, even though rated and current into or over an active MOA.

Please cease closing G.A. aircraft out of the skies which were made by GOD for all to enjoy and use not just the FAA and government initities.

Sincerly,
Vicki Wanhof

AM-6
SA-1

AM-17

SO-5
SO-6

AM-6

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U. S. Department
Of Transportation

Federal Aviation Administration

Helena Airports District Office
2725 Skyway Drive, Suite 2
Helena, Montana 59602

Phone: (406) 449-5271
Fax: (406) 449-5274

May 1, 2014

Mr. Kent M. Wheeler, Manager, Operations Support Group
ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Dear Mr. Wheeler:

The FAA Helena Airports District Office offers the following comments and concerns regarding ***Airspace Study 14-AGL-06NR for the Powder River Training Complex (PRTC)***.

- As a result of the proposed PRTC expansion:
  - Civilian aircraft that normally fly through southeastern Montana may have to circumnavigate the PRTC causing increases in cost and time. **SO-7** **SO-8**
  - Fixed Based Operator revenues for fuel, tie-down fees, etc., may be decreased due to aircraft avoiding the area. **SO-6** **SO-10**
  - Restriction of civilian use in the PRTC may increase flight training costs, or may reduce the number of students requesting flight instruction due to the hazardous conditions. **SO-26**
  - Further limitations may be placed on already poor radio and radar coverage in the area. **AM-3**
  - Flexibility for ingress and egress to airports will be lost and IFR capability severely impacted. **AM-13**
  - Delays in air ambulance/medical flight service or conflicts and delays in aerial firefighting support may be created. **SA-19**
  - Crop dusting/aerial applications may be impacted. **SO-2**
  - Aviation activity supporting energy development in the area may be seriously impacted. **SO-5**

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- Use of *"see and avoid"* is difficult for civilian aircraft when military aircraft in the area are operating at speeds of 500+ knots or more. This creates hazardous conditions for those civilian aircraft flying in the area, and may seriously impact the ability of our airports to serve the flying public.

SA-7

Over the past 20 years the FAA has issued Airport Improvement Program (AIP) grants totaling nearly $30 million to five airports in Montana lying within the proposed PRTC expansion: Baker (BHK), Broadus (00F), Colstrip (M46), Ekalaka (97M), and Hardin (new airport expected to be opened in June 2014). In addition, major AIP investment has been made at Billings (BIL), Forsyth (1S3), and Miles City (MLS), located just outside of the PRTC.

SO-10

An AIP grant was issued to the State of Montana to study the economic impacts of Airports in Montana. This report, published in April 2009 estimated that the total economic value of aviation in the region exceeded $280 million. The report showed that, including Billings, over 3,000 jobs are directly and indirectly related to the aviation industry in the area. The PRTC expansion could result in significant economic impacts to airports, flight schools, pilots, and small businesses in southeast Montana. The social and economic impacts to each community and airport need to be studied and mitigated. The airspace study does not identify specific mitigation measures proposed by the Air Force to address the issues and concerns listed above. Without this information, it is difficult to evaluate the impact of the proposal.

SO-10
SO-26
LU-2
SO-26

Over the past several months we have listened to the concerns of airport owners and pilots about the proposal. We recommend that the Air Force work closely with the airports and communities noted above to address and mitigate the impacts to the airports, communities, and aviation related businesses before FAA makes a final determination.

Sincerely,

David S. Stelling

David S. Stelling, Manager
Helena Airports District Office

cc: via e-mail
Katherine Vernon, ANM-001
Sarah Dalton, ANM-600
Carolyn Read, ANM-610
Johanna Forkner, AJV-W23
Dr. John Witucki, AJV-C23
Pat MacQuarrie, ANM-HLN-FSDO-05
Debbie Alke, Montana Aeronautics Division

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April 19, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Manager, Operations Support Group, ATO Central Service Center, AJV-C2,

The USAF is not being fully truthful about the Powder River MOA expansion. During the EIS scoping meetings in 2010, the USAF said that it would have no impact on General Aviation. We could just share the airspace. The USAF said that it would not impact IFR traffic. (all jet traffic and inclement weather operations are conducted under these civil rules) IFR traffic is prohibited in an active MOA by federal regulation!. The USAF also has "Lights Out" night operations approved for the current Powder River MOA. I do not know how VFR civil aircraft will "see & avoid" unlit military aircraft at night. The USAF also said it need this expansion to train in mountainous terrain to simulate Afghanistan operations. There are no mountains in this area! The mountains in Afghanistan have peaks over 24,000 feet high! This expansion is unjustified, causes economic hardship on the local communities and businesses and should not happen.

GE-5

SA-11

PN-02

Sincerely,

Leland Blatter

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I am writing on behalf of the North Central Hangar of the Montana Pilots Association. Many of our membership are categorically opposed to the expansion of the Powder River MOA. Some of our membership would not be opposed to the vast expansion of this MOA if it was merely big, yet managed the same way that other MOA's are, for example the Hays MOA just south of our home town. However all of our membership has expressed concern that the entire corner of our state may at any time become a "no fly zone". I propose hypothetically, if just a few square miles of Washington DC were randomly closed to automobile traffic a few times a year there would be an outcry of epic proportion. **AM-6**

Pilots will be among the first to support a combat ready, well trained air force. A number of general aviation pilots are retired military. Did they serve a country that is so willing to make a proposal that constricts such a huge part of our airspace?

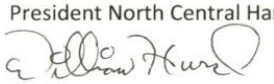
I find it interesting that this huge expansion does not overshadow Rapid City and not even Ellsworth Air force Base. When I looked at the sectional charts vs. the proposed expansion footprint the phrase "not in my back yard" comes to mind. Perhaps if all military aircraft were prevented from traversing general airspace at random times several time a year, our point may become more clear. **SO-26**

I also studied the WAC charts for other parts of the United States, I see a lot of Military airspace, not only over this country but extending well out over the oceans in some places. I find it hard to believe that the vast number of square miles already designated for military training is inadequate. **PN-2** **PN-3**

I realize my words are not quoting facts, sighting economic studies, or addressing the possible need for bomber training. In my life time I have witnessed the slow and steady deterioration of my freedoms and rights. I have watched our government take from us under the banners of "national security", "patriot act", and "military readiness". I feel it is time to draw the line, every square mile of airspace lost from GA is gone forever. So I close with "**We The People"** are opposed to Powder River MOA expansion! **GE-2**

William Hurd

President North Central Hangar MPA



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Robert D. Linscomb
[redacted]

April 20, 2014

Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

I am a pilot and aircraft owner living in eastern Montana. We have family, friends and business ties in south western North and South Dakota. This proposal has a direct, negative effect on our route of flight to those areas. To fly around this massive proposed MOA creates unacceptable expenditures of our time and additional costs to fly around or wait for a period when the area is not active. SO-7 SO-8

Why can't our comments and concerns about the Powder River MOA be submitted via e-mail as we can dealing with other issues that come up for public comment?

Why is the Powder River MOA expansion largely in Montana airspace when it provides no benefits to this state? Who wants it here? The airbases in North and South Dakota will be the primary users of the MOA, build it in their area. I feel this is an effort by Senator Thune of South Dakota to save Rapid City's Ellsworth AFB, that was scheduled for closure in 2005 by the DOD. This expansion was supposed to save Ellsworth AFB/USAF $8 million in the 2010 EIS. That figure appears to have been artificially inflated by a factor of three to $21 million this year. SO-24

Citing data from 2007-2008 Montana Economic Impact of Airports Study that this MASSIVE expansion will jeopardize 95 jobs that generate over $1.5 million in payroll, $3.8 million in economic activity, in the communities that underlay this proposal! This will have a huge negative impact on 39 airports and 285 aircraft effected by this expansion. SO-5 SO-10

It will be the largest MOA in the WORLD, larger than South Carolina, and over 4 1/2 times the size of the Nation of Israel.

When this airspace is used for RED FLAG operations 10 days a year, pilots from all over the world will be flying in this area, FULL SCALE WAR GAMES! It is ridiculous to have this type of operation over populated areas. I object to lack of respect being shown to Montana residents. GE-3 GE-6

Ellsworth does not have an great safety record. There have been two B1's crash in the current PR MOA, Sept '97 & Aug 13, one with 4 fatalities.

The B1-B is extremely expensive to operate as it requires about $1 million in maintenance for every 12 hours of flight time. The USAF wants Minot AFB to bring their aircraft to join in the use of this area. It is approximately 5 times the length of flight to the PR MOA as it is for them to use Tiger & Hays MOA that already exist. There are only 65 B1's left and they have not seen combat duty since 2011. The B52's are a Vietnam era aircraft with only 85 still active. They have not seen combat duty since 2001.

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I fully support our military and Ellsworth, but get this expansion out of Montana! The USAF is not being honest about his expansion. During the EIS scoping meetings in 2010, the USAF said that it would have NO IMPACT on General Aviation. We could just share the airspace. The USAF also said that it would not impact IFR traffic. (all jet traffic and inclement weather operations are conducted under these civil rules) IFR traffic is prohibited in an active MOA by FAR's (Federal Aviation Regulations). The USAF has "Lights Out" night operations approved for the current PR MOA. How can VFR civil aircraft "see & avoid" unlit military aircraft at night. The USAF said it needs this expansion to train in mountainous terrain to simulate Afghanistan operations . There are no mountains in this area! The mountains in Afghanistan have peaks over 24,000 feet high! Malmstrom AFB in Montana has had it's mission changed several times in the last 20 years. Perhaps the mission for the bases in North and South Dakota need to be redefined, combined or moved to another location.

SO-24
GE-5
AM-6
SA-11

There are numerous pipelines that underlay this proposal. How are they going to comply with DOT inspection regulations? Considerable income is generated by pilots who earn their living to patrol pipelines and power lines in Montana! Recently, August 2013, a B1-B from Ellsworth crashed. I have a friend, a commercial pilot, who was unable to fly one of his routes for over a month as the USAF commandeered the airspace for a 15 mile radius around the crash site by issuing a TFR, a no fly zone! That cost him time & money, neither of which he will ever be compensated for!

SA-21
SO-7

In Baker, Montana, the FAA has spent in excess of $15 million on the airport and it will not survive this expansion. Many things have changed in this area due to the energy boom since 2010. In Baker alone, there is a new multi-million dollar fire station, a brand new motel. Montana Highway 323 is now completely paved & has significant use, linking it to the commerce areas of the Black Hills of South Dakota. Oil production is at all time highs. The main mode of transportation for oil executives, engineers, & personnel to this area is through Baker, MT is by private aircraft. Do we really want restrictions placed on their travel to this remote area?

SO-6

Lives are regularly saved by timely transportation of injured or critically ill patients by helicopter and Life Flight aircraft in this medically underserved area of Montana.

SO-5

All the letter groups, including AOPA (approx. 400,000 members), are fighting together against this expansion. AOPA has labeled it "UNJUSTIFIED" It will become an very hot topic at election time if it moves forward.

GE-3

I urge that this proposal not be approved. Not only is general aviation struggling to survive under increasing control from the government, but the hard working people who live in this area will be negatively impacted by the changes this would bring if passed. South Dakota does not want it expanded in their backyard.... neither does Montana!

Sincerely

Robert D. Lipscomb

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Manager, Operations Support Group, ATO Central Service Center, AJV-C2

Airspace Study 14-AGL-06NR

Department of Transportation

Federal Aviation Administration

2601 Meacham Blvd

Fort Worth, TX 76137

I AM OPPOSED TO THE POWDER RIVER MOA EXPANSION . IT IS AN UNNEEDED EXPENSE THAT WILL CREATE SAFTEY CONCERNS AND HAZARDS FOR GENERAL AVIATION IN MONTANA.

GE-2
SA-1

RESPECTFULLY YOURS,

JAMES BOOTH

[redacted]

4-17-2014

PAGE 1 OF 1

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To Whom it may concern:

I have some safety concerns regarding the "Powder River Proposal. The main concern for me as a volunteer Civil Air Patrol pilot would be if we were tasked to perform a search and rescue at 1000 to 1500 feet agl in an area where there would be potential for military aircraft to be flying at high speeds. Our communication system and radar coverage at the lower altitudes is not adequate for safe operation and would have to be a high priority and be in place before any such proposal could even be a thought. There would have to a website or automated phone system with updated, current information regarding any activity in the MOA, not just for pilots, but the general public. I am not going to very active in volunteering if the search would happen to be in the proposed area of the MOA. **SA-1 SA-7 SA-19 AM-1 AM-3**

I can only imagine what it will do to and how it will affect the aerial applicators in North Dakota. Some of those individuals don't even have radios or a way to communicate. I do believe there are a number of items that could and would have to be in place before such a large area of proposal would be considered. There are also a lot of other places that this large of an MOA would fit on the map better than the proposed area. Thank you for taking time to read my comments. **SA-7**

Bob Wiese
ND Civil Air Patrol
1 LT - Pilot

1

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To Manager, Operations Support Group,

ATO Central Service Center, AJV-C2, Airspace Study 14-AGL-06NR, Department of Transportation,

Federal Aviation Administration, 2601 Meacham Blvd. Fort Worth, Texas 76137

19 April, 2014

My name is Bailey Egan and I would like to have the FAA deny the proposed expansion of the Powder River Training Complex. I live 20 miles south of Colstrip Montana and will be affected personally from the environmental, economical, and safety issues from this expansion. I have been flying since 1964 and base my Cessna 182 and Piper Super Cub at Colstrip (M46). I'm a seated board member of the Montana Community Airport Association that has 108 members here in Montana. I use my aircraft in my ranching operation along with enjoying flying as one of my hobbies. **GE-3**

I have participated in all the previous hearing concerning this proposed expansion of airspace. It has been obvious throughout the process that the concerns offered by the effected people were not going to effect the decision but actually used to develop a stronger case to make the expansion seem more needed. **GE-5**

The Air Force has never provided a substantial case that this expansion is needed other than to satisfy the desires of a political group that wants to further their position in keeping the economic dollars in their area at the expense of others around them. **PN-3**

I'm affected also as a rancher and if this expansion is allowed it will devalue this family ranch that we have owned and operated for the past 127 years. Much of that value comes from the peace and tranquility that these wide open spaces offer to those that treasure them so much. If we are invaded by low flying, noisy high speed aircraft much of that value will quickly disappear. **SO-1** **SO-4**

The environment is also a concern with the proposal of dropping burning material from their aircraft. The Air Force made great effort to convince land owners of the safety of that practice. It was of little use to even talk of such a thought to land owners that make their living from the grass that grows on the lands of Eastern Montana. My ranch lost 16,000 acres of grazing range in about 6 ½ hours to one wild fire in 2012, 3,000,000 board feet of saleable timber and 85 miles of fence burned to the ground. Corrals, stock tanks and stock wells are but just a few of the items consumed. We will never ever recoup the loss of some of those valued items in my life time. **SA-5** **SA-6**

The inconvenience to me as an aviator will be tremendous, avoiding active military operations, with lost time, delayed departures and burning $6.00 aviation fuel to avoid those situations that are especially dangerous. When you mix slow and high speed aircraft and then add the increased danger of putting them at the same and low altitude is almost unbelievable. **SA-1** **SO-7** **SO-8**

I realize that there are a good portion of the people that work at the FAA that have never been at the controls of either the fast or slow aircraft that will be the major users of this proposed airspace expansion. I have enclosed three documents taken from the FAA website. They list the Mission, Vision and Values of the FAA and the importance that you stress as the main driver in the actions of the FAA. I

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also am enclosing two other sheets taken from your website that demonstrate the closure rate and the geometry of a collision course that demonstrate very clearly the mixing of a Piper Cub and a F-15. These will serve as a good refresher for those that will be making the decision to allow these types of aircraft to mix in the same environment without radar or FAA services of controlled airspace that is your responsibility. Not even radio coverage in some of this huge expansion of controlled airspace and we were assured by the Air Force that it was "See and Avoid Only" and the burden is on the civilian aircraft because they said they cannot see us quick enough even if they are looking with an observer, which they say they are! **AM-3**

I think you will agree with me that this expansion request is not justified, especially with extending the boundaries where you do not have the necessary control to provide a safe environment for all that fly there. I'm confident that all that work at the FAA share my concerns about the safety issues mentioned here and that they are very legit mate. I hope that their common sense will prevail and that they will deny this unsafe expansion of airspace. With your position on safety in mind it would be unthinkable that you would give the go ahead to a project of this magnitude especially when the need has not been justified. During the past hearings I resented the implication that I was unpatriotic if I should stand in the way of this airspace expansion. A good example is the avoidance of the Reservations, the problem does not go away just at the borders of the Reservations or National Monuments or other singled out areas.

I'm asking you to do the right thing, sort out the politics and listen to the people of Montana. We also do not want all the negative impact, aviation is too important in a State of this size and the effect will be devastating. Stick with your mission statement. An accident has a high probability in this situation and allowing this much airspace to be activated will take most of the Eastern ½ of Montana. The high possibility of an accident is sure to happen and it will fall directly on your hands. The results will be devastating. Consideration of my comments here will be appreciated. Thank You!

Best Regards,

Bailey J. Egan

[redacted]

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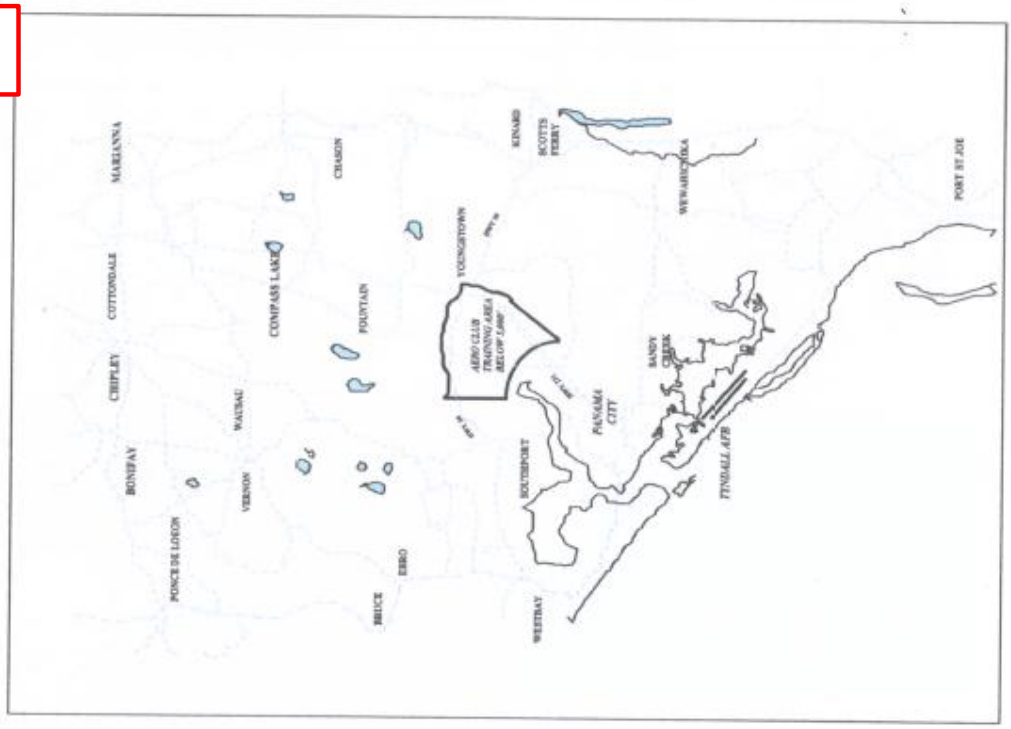
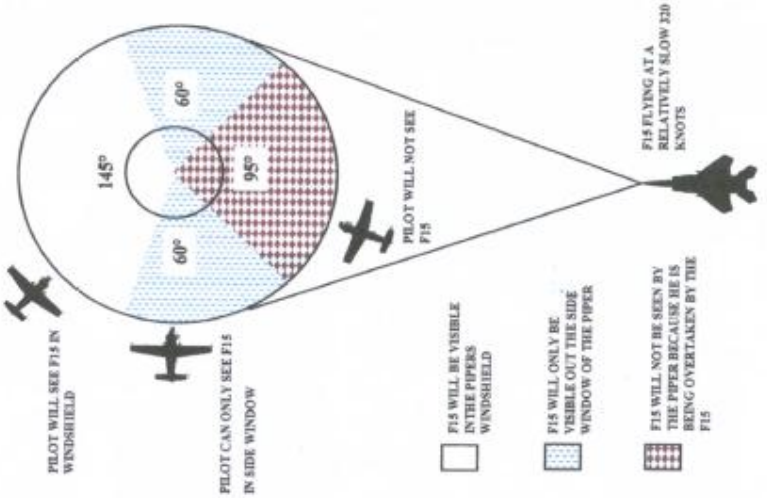


9

GEOMETRY OF A COLLISION COURSE

CIRCLE REPRESENTS 360 DEGREES OF POSSIBLE COLLISION COURSE BETWEEN A PIPER FLYING AT 80 KNOTS AND A F15 FLYING AT 320 KNOTS



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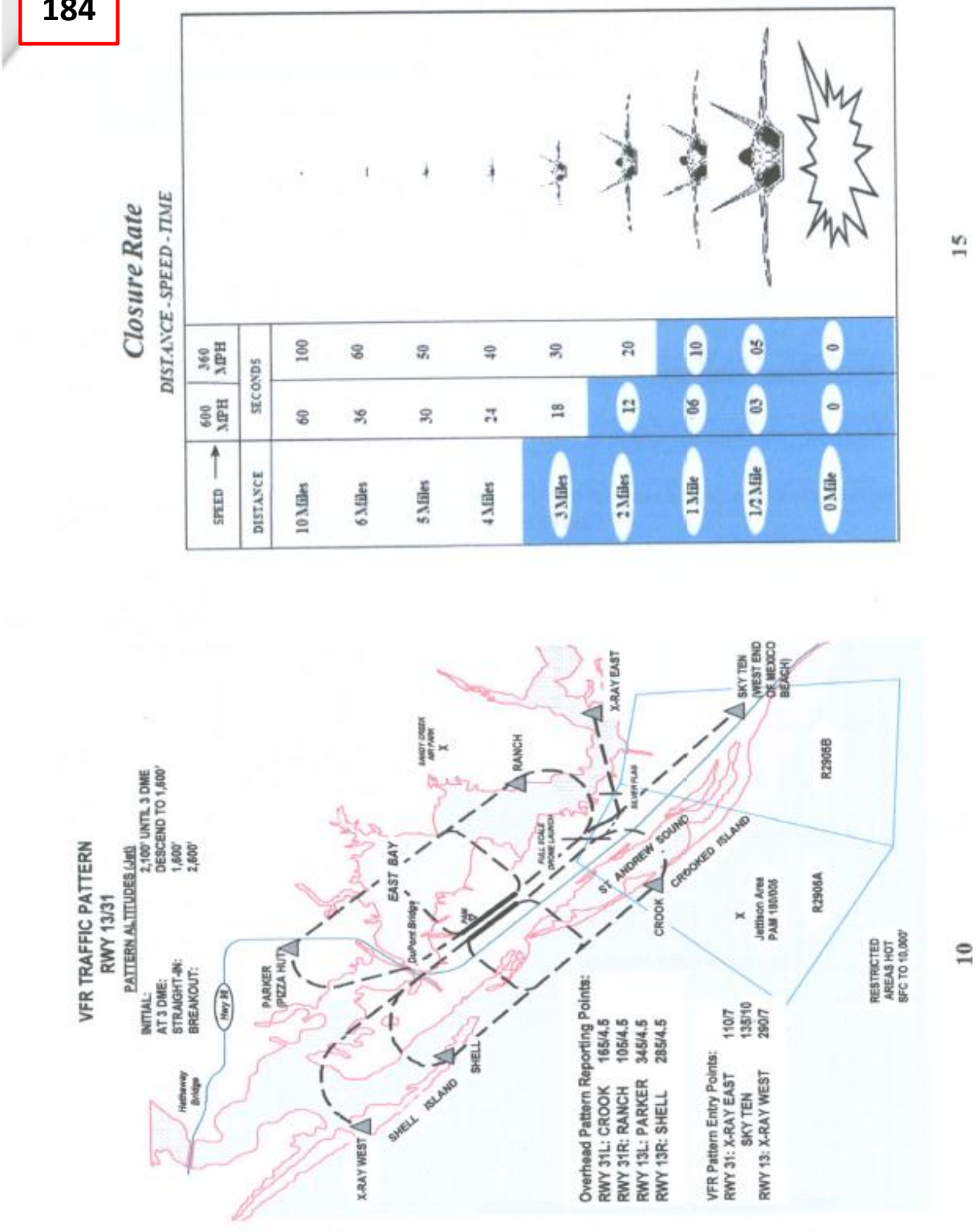
Closure Rate
DISTANCE - SPEED - TIME
SPEED →
600 MPH
360 MPH
DISTANCE
SECONDS
10 Miles 60 100
6 Miles 36 60
5 Miles 30 50
4 Miles 24 40
3 Miles 18 30
2 Miles 12 20
1 Mile 06 10
1/2 Mile 03 05
0 Mile 0 0
15
VFR TRAFFIC PATTERN
RWY 13/31
PATTERN ALTITUDES (Unl)
INITIAL: 2,100' UNTIL 3 DME
AT 3 DME: DESCEND TO 1,600'
STRAIGHT-IN: 1,600'
BREAKOUT: 2,600'
Hwy 98
Holloway Bridge
PARKER (PIZZA HUT)
DuPont Bridge
EAST BAY
RANCH
X-RAY EAST
SKY TEN (WEST END OF MEXICO BEACH)
ST. ANDREW SOUND
CROOKED ISLAND
CROOK
X
Jettison Area
PAM 180/005
R2905A
R2905B
RESTRICTED AREAS HOT SFC TO 10,000'
X-RAY WEST
SHELL ISLAND
SHELL
Overhead Pattern Reporting Points:
RWY 31L: CROOK 165/4.5
RWY 31R: RANCH 105/4.5
RWY 13L: PARKER 345/4.5
RWY 13R: SHELL 285/4.5
VFR Pattern Entry Points:
RWY 31: X-RAY EAST 110/7
SKY TEN 135/10
RWY 13: X-RAY WEST 290/7
10

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Federal Aviation Administration

Mission

Our Mission

Our continuing mission is to provide the safest, most efficient aerospace system in the world.

Our Vision

We strive to reach the next level of safety, efficiency, environmental responsibility and global leadership. We are accountable to the American public and our stakeholders.

Our Values

- Safety is our passion. We work so all air and space travelers arrive safely at their destinations.
- Excellence is our promise. We seek results that embody professionalism, transparency and accountability.
- Integrity is our touchstone. We perform our duties honestly, with moral soundness, and with the highest level of ethics.
- People are our strength. Our success depends on the respect, diversity, collaboration, and commitment of our workforce.
- Innovation is our signature. We foster creativity and vision to provide solutions beyond today's boundaries.

Page last modified: April 23, 2010 9:37:40 AM EDT

This page was published at: http://www.faa.gov/about/mission/

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I am writing in regards to the "Powder River Training complex" NO Have you even considered what it will do to our operations? Several years ago these bombers were flying over our places – the cattle were spooked tearing up fences and corrals. We had to keep cleaning up the piles of silver chaff. Are they going to be responsible for the fires started by their flares – highly unlikely. Are local pilots going to be able to do their daily activities or do they have to wait for permission to check their cattle and water – will they even be given permission?

We "DO NOT" want this training activity in Southeastern montana – we are trying to make a living and this type of activity certainly will not help. "NO"

GE-2
BI-4
SA-5
SA-6
SO-8

Virginia Hoenke
[redacted]

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March 25,2014

To Whom it may concern:
We are ranchers in the NW corner of South Dakota and are in the target path of the newly proposed expansion of the Powder River Training Complex. In addition to the concerns listed below, we own a small single engine plane that Wayne flies regularly to check on livestock and water tanks on the ranch. Please reconsider this proposal.

SA-1
SO-8
BI-4
SA-5
SA-6
SA-8
SA-18
SA-19
SO-10
SA-21

- ***Threat to safety of ranch pilots monitoring land and livestock from the air.*** This proposed flight path for the large Air Force flights could have severe consequences for the small aircraft that ranchers are using.
- ***Predator Control flights operate will be limited in their ability to continue providing safe, timely service to the landowners who depend on them.Livestock on the ground can be disturbed by sonic bombs and large Air Force flights at low levels.***
- The proposed flight path for these planes has the potential to create dangerous situations for livestock and people on the ground.
- Chaff and flares can, on occasion, fall to the ground and cause grassfires to start. Without a mitigation plan or acknowledgement of this risk, landowners and local fire crews will be left to deal with damages and respond to emergencies
- Interference with Emergency Medical flights in rural areas can be crucial. While US Air Force has committed to making emergency flights a priority, moving large bombing exercises out of that airspace is not quickly done.
- Limiting private and corporate flights into small airports could have a real impact on the ability of those small airports to continue operating and also limit flights into rural communities that could be imperative to business development in those areas. Several small airports in the proposed flight area have recently made improvements to increase traffic to their cities. The low flight floor of the Air Forces proposal could limit or prohibit private air traffic to the 39 airports that will be impacted..
- Air surveillance is being used in many areas to monitor safety and activity in oil field areas and along the propose Keystone XL pipeline. Monitoring is crucial for the regulation and safe operation of the oil and gas industry in our region.

Sincerely,
Wayne and Susan Nelson
[redacted]

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TRUE DRILLING LLC

[redacted]

[redacted]

April 28, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Dear Sirs:

I am the Chief Pilot for True companies in Casper, WY. True companies objects to the four fold expansion of the Powder River MOA for the proposed Powder River Training Complex. The True Companies have oil drilling, production, trucking, and pipeline interests in western North Dakota and eastern Montana. The True companies have three all-weather airplanes capable of carrying four, eight, or nine employees. We transport our employees on day trips on one of our airplanes more efficiently than we can on the airlines or on the highway. This is a necessary part of our business.

Last year we flew 75 round trips through the affected area from Casper or Gillette to Glendive and Sidney, Montana, Williston, Watford City, Stanley, Minot, and Bismarck, North Dakota. If the PRTC is approved, the difference in the mileages and resulting costs will increase 15-97% depending on the trip averaging 48% total increase in cost. SO-5 SO-7

True companies are one of several energy related entities which rely on general aviation aircraft to economically operate in North Dakota and Montana. Other companies use private aviation from as far away as Texas and Oklahoma. There are weekly crew hauls from Texas and other points south that will be impacted. I doubt these southern based companies are aware of this airspace problem because the so called "Special Use Airspace" circular was not circulated (we didn't get one either).

The impacts on True companies are:

- It is not safe to operate VFR in an MOA occupied by fighter type aircraft. It is very difficult for the respective pilots to see and avoid each other with closure rates in excess of 700 mph. Military pilots are busy performing their mission and may not be looking closely for civilian traffic. Radar is not available in most of the affected area. SA-7
- It is not economical to operate turbine aircraft below 18,000 ft.
- Inability to safely perform pipeline patrol and maintenance on our pipeline in proposed PR- 2, PR-3, and Gap B. I don't particularly want to be chaffed, or flared, or run over while I'm working in our helicopter. SA-21
- Higher operational cost; 15 to 97% per trip averaging 48% annually.
- Payload will need to be reduced by one or more passengers to allow for the extra fuel required to circumnavigate the Powder River Training Complex. We will have to plan for complete closure of the PRTC airspace on every flight because of the historically poor, untimely NOTAM (status information) dissemination, if any. The two hour NOTAM posting promised by the USAF (Executive Summary page ES-13) has historically been inaccurate.

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- PRTC's proposed active times are during our normal working day commuting times.
- The clause in the proposed active times "...and other times by NOTAM..." implies extra restrictions to IFR traffic. The lack of reliability of this information underscores the requirement to reduce payload to increase fuel load on every flight though the affected area.
- Up to 2 hours lost productivity time for up to nine employees per day increasing man hour cost;
- Cannot get into or out of Baker, Montana when the weather is IFR or diverting to a nearby airport due to weather because it's in PR-3. I am skeptical that the Air Force would recall a flight for an IFR departure or arrival as stated in the Executive Summary page ES-13.
- Many times the company operations in the field are time sensitive and very expensive. A 2 to 4 hour delay, ground hold, or diversion would not be acceptable.
- I don't expect the Air Force will "publish a notice at least one month in advance of LFE'S to help civil aircraft pilots and the public plan for LFE activation." (Exec. Summary page ES-13) We weren't notified about this action; we heard it through the grapevine. GE-5
- Once approved, PRTC altitudes and hours of operation may be expanded further inhibiting our operations.

Conclusion:

The Large Force Exercises apparently include aircraft from other parts of the country. I don't see a lot of difference in the expense of moving northern airplanes to the south where large MOA's already exist, or moving southern airplanes to the north. Other large MOA's currently exist elsewhere in the country

It came out at the meeting in Gillette in 2010 that this airspace grab is largely to create more "need" for Ellsworth AFB and to save it from closing. According to the car dealer and the Chamber of Commerce from Rapid City in attendance, they were concerned about the local economy. I believe that if this airspace is really necessary, then it would be more appropriate to be in South Dakota, closer to Ellsworth AFB. Rapid City can be assured their economy and tax base is safe, and not impact the general aviation access to the economy in Montana, Wyoming, and North Dakota. SO-24

Just today I had a telephone conversation regarding this matter with Dr. John Witucki of the FAA Central Service Center, Operations Support. Now it appears the height of the MOA is to be expanded above what has previously been announced. This whole proposal and the process used to notify the public has been flawed. Proper public comment cannot be made when proper notice is not given.

Would you please add my name and address to your mailing list for future notices? Thank you very much.

Sincerely,

John Campbell, Chief Pilot
True Drilling LLC
[redacted]

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To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR
Comments: I don't think they should take away Right to fly near my town - I was shot down during WW II and was a prisoner of war - I fought for the freedom and we won it I'd like fly at low altitude south of Miles City
Signature: Frank Stoltz Date: 2-23-2014
Name: FRANK STOLTZ
Address: [redacted]

GE-2
AM-19

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Air Dakota Flite Inc.

[redacted]

Manager, Operations Support Group, ATO Central Service Center, AJV-C2

Department of Transportation

Federal Aviation Administration

2601 Meacham Blvd

Fort Worth, TX 76137

RE: Powder River MOA – 14-AGL-06NR

To Whom it May Concern:

Air Dakota Flite, Inc. in Hettinger, ND (HEI) has been in business for over 40 years. We are a FBO, with crop spraying as the mainstay of our business. For several different reasons, we would consider a MOA in our area to be a hardship to our business.

Our first area of concern is with crop spraying. Currently, our trade area for spraying is a radius of 80-100 miles from Hettinger, more north, east, then west, least to the south. We maintain 500' AGL when flying to and from fields, then lower for actual spraying. When our sprayers are loaded, they are near gross weight. Right now our concerns are wind and visibility. With a proposed MOA, our concerns are significantly increased. In the 1980's, there was a bomber route through our area using B52s and some fighter jets. B52s were relatively easy to spot, but even then, there were times, that our spray pilots had to change course in order to feel safe. It is also our concern that B1s and B2s will be more difficult to see by our pilots. Unseen aircraft, a loaded spray plane and the wake turbulence could add up to a major problem.

SO-2
SO-28

With our general aviation we have a couple concerns. The first involves our local pilots. Many of them are "Sunday fliers" or pilots who are generally out enjoying the country only during nice weather conditions. So, a MOA would seriously curtail their activity. A local businessman flies routinely, and it would be difficult to schedule his flying with a MOA. In Hettinger, we have a fairly active medical center. We have an average of 1-2 flights per week, bringing doctors to our clinic. These flights mainly use instrument approach and come even in adverse weather conditions. Most of this charter traffic comes from Bismarck, ND, but we do have one doctor that routinely flies in from Rapid City, SD. During the past 6 months, we have also seen an increase in air ambulance flights with an average of 2 per month. We feel that a MOA could affect our general aviation and the interest that is now enjoyed.

SA-1
AM-12
SA-18
SO-5

Serving The West River Area

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Likewise, any transient flights to our airport will be seriously curtailed with a MOA. Pilots flying through our area are more likely to check the maps and decide to stay clear of our area. Our business will be reduced from lack of pilots using our facilities, fuel sales, etc. Our community also will lose business. AM-5

Another area of concern involves our current and future pilots. In the past 30+ years, we've had an area north of Hettinger that we use for our flight instruction, a practice area for our students. If this area is listed as a MOA, we feel that it will deter the general public from checking into flight instruction. It would be difficult to concentrate on learning or instructing if you are worried about military traffic in the area. SO-26

As a part of our business, we fly an aerial survey for wildlife. This is done for ND Game & Fish Department and we fly Adams, Bowman and Hettinger counties for antelope and deer count. This is a low level flight and as a pilot, you are watching the ground for animals, not the skies for military aircraft. SA-8

ADFI pilots also have a low level flight for highline patrol. Again, the pilots concern is looking at high lines, not for other low level traffic. A MOA would make our low level flights more dangerous to our pilots. Therefore, this is a great concern for us. SA-7

Another low level flight for us is our oil pipeline patrol. Our pilots fly this patrol at 500' AGL and below and are constantly looking downward for any oil leaks and or obstacles. They follow a marked area (trench line) that twists, turns, up and over hills, rivers, around train tracks that spans about 1200 miles of pipeline in southwest ND. We are dependent on weather for this flying and therefore do not follow any set dates. We fly Monday through Sunday, sun up to sun down. Many times, in past years, as with spraying, our pilots flying this pipeline have had to take actions to avoid military jets. Again, a big concern for us! SA-7

Last, but not least, I am concerned about the possibilities of a wind farm near Hettinger. There has been land leased for the past 4 years north of Hettinger and north of GascoyneP for the expressed purpose of a wind farm. So, the possibility of having renewable energy developed in our area is a distinct probability. The major hold up right now is that more investors are needed before the wind farms can proceed. I feel that having a MOA in our area would basically halt any renewable energy development in this area. CM-4 SO-17

IF the military would be doing low level flights, would there be a designated route? – Unknown. Would there be an 800 number that the aviation community could call 24 hr/day to see if the MOA is active? There are a lot of questions that we still feel need to be addressed. We truly fee that this would be a hardship for our business and to our local flight traffic. At this time, with the information we have, we are opposed to a MOA in our service area.

Sincerely,

Charles Q. Lindquist 4-27-14

Joann Lindquist 4-27-14

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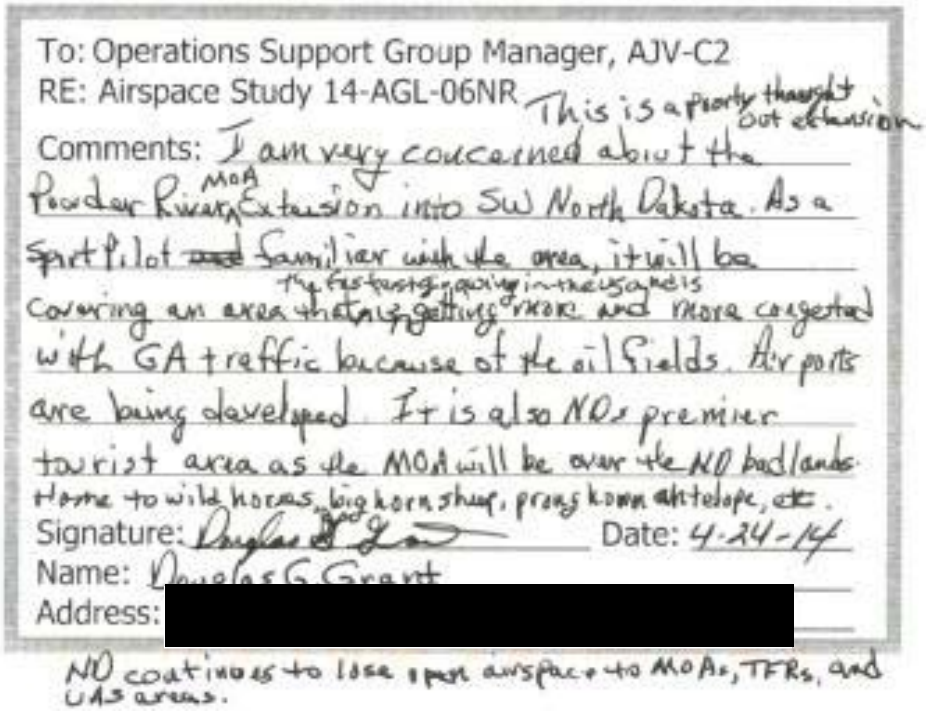

To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR This is a poorly thought out extension.
Comments: I am very concerned about the Powder River MOA Extension into SW North Dakota. As a Sport Pilot ~~and~~ familiar with the area, it will be covering an area that is the fastest growing in the US and is getting more and more congested with GA traffic because of the oil fields. Airports are being developed. It is also ND's premier tourist area as the MOA will be over the ND badlands. Home to wild horses, big horn sheep, prong horn antelope, etc.
Signature: [signature] Date: 4-24-14
Name: Douglas G. Grant
Address: [redacted]

ND continues to lose open airspace to MOAs, TFRs, and UAS areas.

SA-1
SO-5

SO-9
BI-4

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April 23, 2014

Manager, Operations Support Group
ATO Central Service Center
AJV-C2

In regard to the proposed expansion of the Powder River Training Complex Area, I believe it would significantly disrupt commercial and private aviation. AM-5 SO-10

As a rancher and pilot I believe this expansion would be harmful and dangerous to my ranching operation. I use my private plane to check cattle and water that would be in this proposed area. SO-11

I AM OPPOSED TO THIS EXPANSION.

Rod Kelly

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April 27th, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Proposed Powder River Training Area Expansion

As a pilot who utilizes the airspace in southwest North Dakota, southeast Montana and northwest South Dakota every week doing wildlife survey and research work, the proposed Powder River airspace expansion is of great concern to myself and 10 vendor natural resource pilots who fly for the Game and Fish Department. We fly time sensitive surveys and radio telemetry missions tracking radio collared animals throughout the year during VFR (visual flight rules) conditions. Some pronghorn telemetry missions have taken me as far south as the Wyoming border. It is important that these flights are done in a timely fashion to manage wildlife and set hunting seasons. If the airspace is restricted to military flights as proposed, it will limit or eliminate the effectiveness of the work we do to manage wildlife in these areas. If sharing this airspace is done, having low level high speed jet traffic mixing with us will be dangerous. SA-8 SA-1

Another area of concern is cross country seaplane operations. Seaplanes fly across this part of the country to get from the eastern states to the northwest and Alaska and back. These aircraft are often VFR, water landing only, therefor diverting around this proposed area would be a huge inconvenience at best. AM-5 SO-10

If this proposal was implemented, the fact that adequate radar service is lacking, major radar and communication infrastructure would be required. Also some reliable means of notification to the public of the airspace activation would be required. AM-3

Sincerely,
Jeff Faught

ND Game and Fish Dept. Pilot
International Association of Natural Resource Pilots Past President
Seaplane Pilots Association Field Director
[redacted]

195

MOUNTAIN AIR
INSURANCE SERVICES

Aviation Insurance Specialists

[redacted]

April 29, 2014

Airspace Study 14-AGL-06NR

Dept of Transportation

FAA

Ft Worth, TX

Ladies/Gentlemen:

I attended the Montana Aviation Conference in March where I learned of the Powder River MOA study. Since that time I have talked with several pilots who do commercial operations in the area regarding this Study. I noticed first that the MOA study covers a very large area of Montana as well as parts of WY, ND, and SD. It is plain to see that VFR pilots like myself will not have an easy time trying to travel east. More importantly, FBOs and other commercial operators could be shut down because of this and cause significant damage to General Aviation in Montana and adjoining states. It will affect these folks immensely and will ripple down through the entire economy of the area. It will even affect myself as an aviation insurance broker. AM-6 SO-10

More than that, it will cause significant problems within the emerging oil industry in our State, and aviation safety will be compromised throughout the entire area.

Regards,

Ken Brion

196

AAND

Airport Association of North Dakota

Timothy J. Thorsen- President Matthew Remynse - Vice President
Lori Jury - Sec. / Treasurer

[redacted]

April 28, 2014

Manager, Operations Support Group, ATP Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

RE: Powder River Proposal Comments

Dear Sir,

Airport Association of North Dakota (AAND) is an Association of North Dakota's Airports. AAND has among its members 83 out of 89 North Dakota Airports, including the 8 commercial service and 46 general aviation airports that are federal grant eligible as part of the National Plan of Integrated Airport Systems (NPIAS).

The purpose of this letter is to provide comments to the Powder River Military Operations Area (MOA) Proposal. This proposal will quadruple the size of the existing Powder River MOA in an area affecting Southwestern ND, Southeastern Montana, Northeastern Wyoming, and Northwestern SD. AAND supports the military however, we have concerns about the proposed expansion of the Powder River MOA.

Should the MOA be approved and become "active", it will reduce the maximum operating flight altitude to 500 feet for non-military aircraft, which is also the minimum operating flight altitude over a populated area. We are particularly concerned about safe and unlimited access to airports at Bowman, Elgin, Hettinger and Mott. Because of proposed restrictions, the Bowman airport and other airports in that area of the state will have highly restricted operations. Hettinger and Bowman Airports have expended significant resources developing and improving their airport facilities. They have installed automated weather reporting at their airports to improve dependability of air services by both charter and private operators under Instrument Flight Rules (IFR) to their cities. Bowman is currently building a

AM-5
SO-10

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new airport funded by Federal, State and local sources. These efforts will be negated whenever the MOA is active. IFR flights from other airports, especially Bismarck and Dickinson to these communities during active MOA times are effectively eliminated during any scenario with limited ceiling and visibility because radar coverage is lost below approximately 6,000 feet. While active emergency ambulance flights will undoubtedly be accommodated, routine travel by medical teams will be negatively impacted. Those teams routinely fly under IFR, an option not available when the MOA is active and radar coverage is lost around 6,000 feet in that area. Medical teams that experience delays and cancellations resulting from the MOA will find that they cannot count on air transportation as an efficient means of travel. As a result, these medical providers may stop their services to those communities altogether, eliminating convenient access to essential medical service to thousands of rural residents of southwestern North Dakota. Other GA users will be similarly impacted.

AM-5

AM-1
AM-3
AM-12

If the proposed operating restrictions are not altered there are numerous safety concerns that should be considered. There is poor radar coverage and scanty communication services existing in the area. General aviation flights flying visual flight rules (VFR) would face major safety concerns sharing airspace with low-level, high-speed bombers operating in close proximity. Business and general aviation would be forced to spend additional time and monies to avoid the MOA. Flight training in this area would be highly depressed. Weather Modification in the area would be eliminated because of their "last minute" need to treat weather for increased rainfall and hail suppression. Aerial applicators transitioning between airports and farm fields would be utilizing the same airspace as the military aircraft, but without the safety of radar or communications since in that area they don't exist.

AM-3

SA-1
SO-7 & 8
SO-26
SO-2

We would like to see the MOA proposal mitigated by raising the maximum operating altitude of the military to at least 8,000 feet so that general, business, and commercial flights can still safely occur. If the altitude is not raised we would suggest FAA consider the following suggestions to the proposal prior to approval of an expanded MOA. This suggestions include:

- An installation of adequate radar/communications and ATC procedures which would allow IFR aircraft to utilize the area when the MOA is active.
- A series of enhancements for "notification of activation of the MOA" to the general public such as announcements over a local Unicom frequency, a public phone number to call for MOA information, along with a website that includes updates on airspace activation and deactivation.
- An efficient Airspace Utilization Plan agreement between the military and Air Traffic Control to ensure activation only during military training operations.
- A "memorandum of understanding" between the US Air Force and weather modification companies during the months of their operation of June through August, allowing for their operations.

AM-3

AM-1

SO-28

196

We ask that FAA consider the concerns and possible mitigations when making a decision that ideally will minimize negative impacts to commercial and private aviation users in southwestern North Dakota.

Thank you for the opportunity to comment.

Sincerely,

Timothy J. Thorsen
President

197

Manager, Operations Support Group

ATP Central Service Center, AJV-C@

Airspace Study 14-AGL-06NR

Department of Transportation

FAA

As private pilots, my son and I are writing to express our concern about the dramatic expansion of the Powder River MOA. The 500 foot AGL floor causes many concerns of safety and air space utilization for crop dusters, air ambulance crews and general aviation. The lack of radar services in the area will make it impossible for regularly scheduled airline services or for other IFR flight operations to function in the area.

SA-7
SO-2
SO-5
AM-6

In your outline statements you talk about this place be operational for as little as 10 days a year. While on the surface it seems like a minimal use of the air space, it does lead to safety concerns because people get in the habit of expecting that it's not operational. Some form of broad and commonly accessed warnings about when it is operational will be necessary to insure casual flight operations don't end with catastrophic effects.

If the project moves forward, at the minimum, raising the floor to 8000 feet would allow for safe air ambulance and agricultural flight operations.

If the project moves forward, there needs to be enhanced radar capabilities in the area so that IFR business and personal flights, commercial and private, can have operation efficiencies that will allow them to succeed and be safe.

The sheer size and geographic scope of the project are nearly overwhelming. Please don't take this much of our air space.

David Kragnes Benjamin Kragnes

[redacted]

198

P.O. Box 78
Interior, S.D. 57750
24 April 2014

Manager, Operation Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Dear Federal Aviation Administration Decision-makers:

I am writing in opposition to the expansion of the Powder River Training Complex.

The Draft EIS describes the impacted area as "primarily rural and uninhabited in character." This disrespects the land where we get our meat and grains. The outdoor needs of rural people and farmers and ranchers are necessary on a daily basis, and should not be disrupted with various dangers 240 days out of the year between 7:30-12:00 am. and 6:00-11:30 pm. with a possible ten flights during three hours per day and two flights during six hours per day, plus additional gap flights.

GE-2
SO-13
SA-9

Please continue using the existing SUA sites in Nevada and Utah, perhaps expanding those sites as needed. Exploiting a food source area is not an appropriate use of the land.

It's also not in the best interest of the public when it is known that "modern air warfare has changed dramatically" and the public knows that drones are replacing traditional air defense.

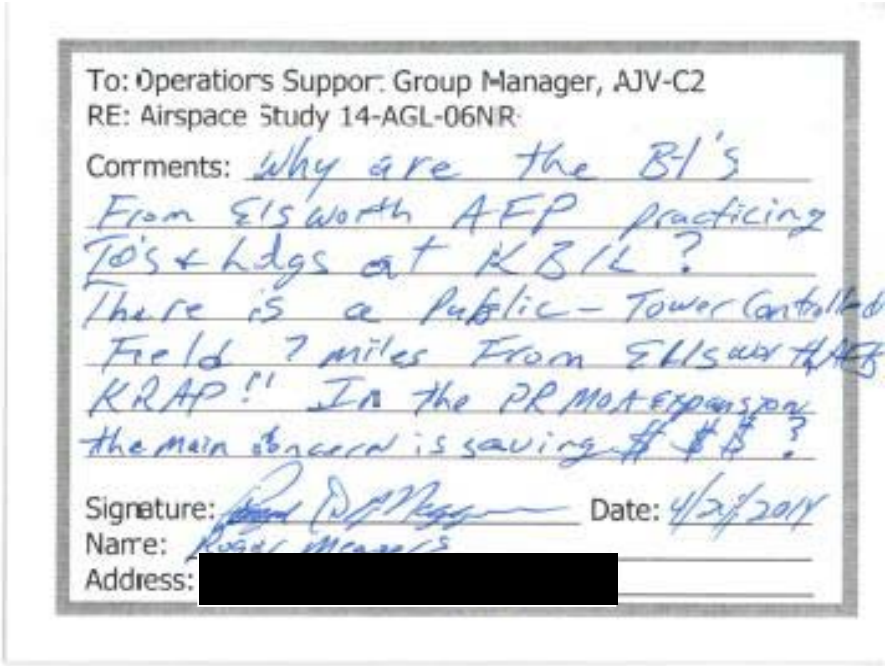
Please do not expand training in this particular area.

Sincerely,

Sylvia Lambert

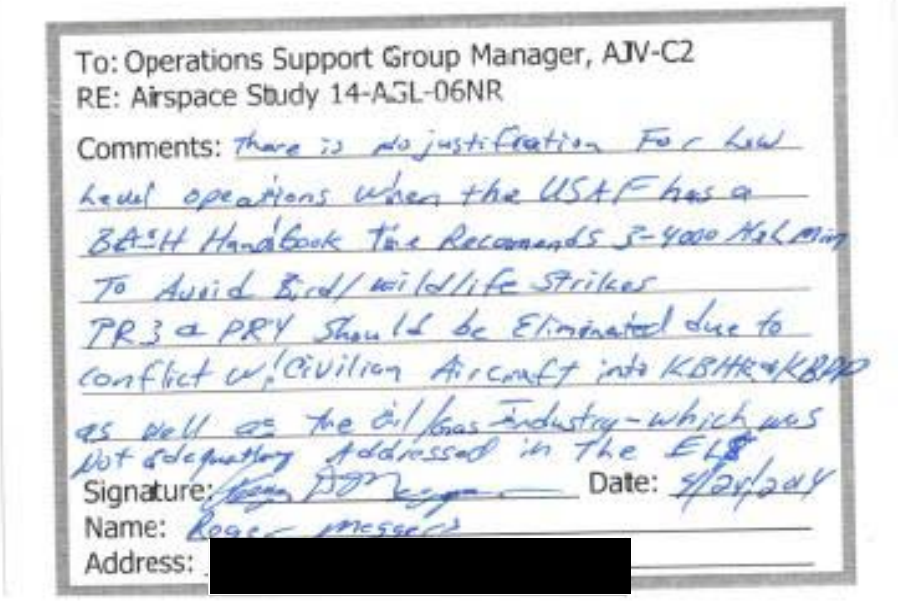
Sylvia Lambert

199



To: Operations Suppor: Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR
Comments: Why are the B-1's From Ellsworth AFB practicing TO's & Ldgs at KBIL? There is a Public-Tower Controlled Field 7 miles From Ellsworth AFB KRAP!! In the PRMOA Expansion the main concern is saving $$$?
Signature: [signature] Date: 4/24/2014
Name: Roger Messer
Address: [redacted]

SO-24
SO-14



To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR
Comments: There is no justification For Low level operations when the USAF has a BASH Handbook that Recommends 3-4000 AGL min To Avoid Bird/wildlife Strikes PR3 a PRY should be Eliminated due to conflict w/ Civilian Aircraft into KBHK & KRAP as well as the Oil/Gas Industry - which was not adequately Addressed in the EIS
Signature: [signature] Date: 4/24/2014
Name: Roger Messer
Address: [redacted]

GE-3
SO-10

200

Robert J. Miller
[redacted]

Manager, Operations Support Group
ATP Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth. TX 76137

April 21, 2014

Please note my opposition to the Powder River proposal as it impacts North Dakota's airspace.

I am a 53 year pilot, ATP, aircraft owner, holder of the FAA's Master Pilot Award, airport manager, ex-USAF pilot, retired airline captain, and past chairman of the North Dakota Aeronautics Commission.

Should the MOA be approved and become active, it will reduce the maximum operating flight altitude to 500 feet for non-military aircraft, which is also the minimum operating flight altitude over a populated area. Because of these restrictions, the Bowman airport and other airports in that area of the state will have highly restricted operations. SO-10

I would like to see the MOA proposal dropped, or at least mitigated by raising the maximum operating altitude of the military to at least 8,000 feet so that general, business, and commercial flights can still safely occur. The proposal as written severely impacts the aviation climate in North Dakota. Business and medical flights may not even be allowed to operate in this area, which would greatly affect the quality of care for medical patients in that part of our state in time of greatest need. SA-7

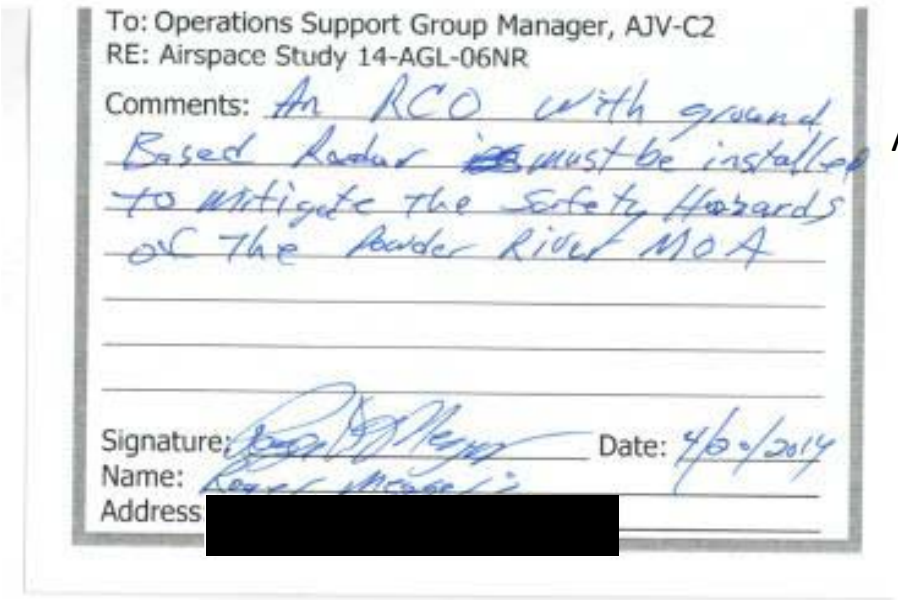
SA-3
AM-3
SO-7
SO-13

As this information suggests, there are considerable safety concerns that should be considered if the proposed operating restrictions are not altered. Because of the poor radar and communication services that exist in the area, VFR (visual flight rules) general aviation flights would face major safety concerns sharing airspace with low-level, high-speed bombers operating in close proximity. Business and general aviation would be forced to spend additional time and monies to avoid the MOA. Flight training in this area would be highly discouraged. IFR (instrument flight rules) flights into and out of the area would not be allowed. Weather Modification in the area would be eliminated because of their "last minute" need to treat weather for increased rainfall and hail suppression. Aerial applicators transitioning between airports and farm fields would be utilizing the same airspace as the military aircraft, but without the safety blanket of radar or communications since their reliability in that area does not exist. Livestock operations in the area will have noise issues with low level high speed supersonic aircraft operating in their area at Mach 1 speeds.

During my days as an Air Force pilot I spent a certain amount of time flying in MOAs. It might have made sense then. But that was in preparation for the "last" war, and to some extent it may have served me during my combat missions in Viet Nam. But we don't fight like that any more!

Make the adjustment.

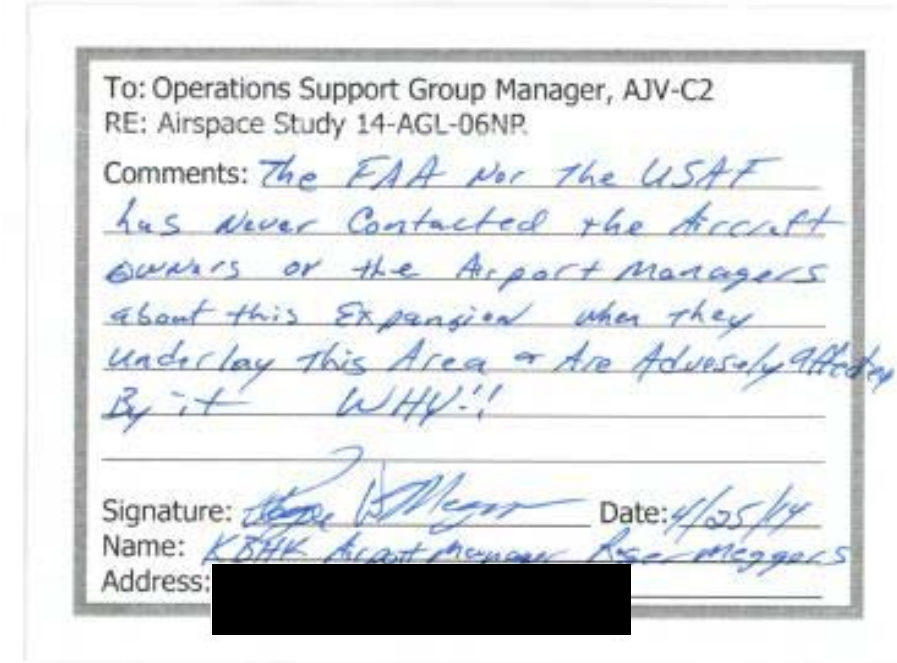
201



To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR
Comments: An RCO with ground Based Radar ~~must~~ must be installed to Mitigate the Safety Hazards of The Border River MOA

Signature: [signature] Date: 4/25/2014
Name: [redacted]
Address [redacted]

AM-3



To: Operations Support Group Manager, AJV-C2
RE: Airspace Study 14-AGL-06NR
Comments: The FAA Nor the USAF has Never Contacted the Aircraft Owners or the Airport Managers about this Expansion when they Underclay this Area or Are Adversely affected By it WHY!!

Signature: [signature] Date: 4/25/14
Name: KBHK Airport Manager Rose Meggers
Address: [redacted]

GE-5

202 [redacted]

April 29, 2014

Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

Dear Sir,

The Powder River MOA in Montana is not wanted or needed. This is an extremely large area and there are towns. So it is a populated area. People own land and earn a living. It is also an area that pilots fly for recreation and business. To declare it an MOA and close it off, even for 10 days a year, is just unacceptable. SO-5

Imagine a pilot wanting to fly from point A to point B with this MOA in the way. Flying around an area larger than the state of South Carolina would be time consuming and expensive. Also, any pilots in airports or runways would not be able to operate until the MOA declares it open. Even one day of closure for a pilot wanting to fly is unacceptable. You are unjustly taking away his rights. AM-6 According to my information there are 39 airports and 285 aircraft that would be affected. SO-10

The information that I have states that the USAF said that it would not impact on General Aviation or the IFR traffic. If this is true I ask "What planet are they living on?" Even a jet flying from New York to Seattle would be affected. Small general aviation aircraft most certainly would be affected. Once again this area is larger than the state of South Carolina! AM-21

I learned how to fly in the deserts of California around China Lake and Edwards so I have some experience dealing with MOA's. And I also understand their value for the safety of the US. This is just too much to ask pilots and private citizens.

Please deny the Powder River MOA.

Sincerely yours,

Robert Shropshire

203

Dear Sirs, 4-25-14

Why is the Powder River MOA expansion largely in Montana airspace when it provides no benefits to this state?

Who wants it here?

Sen. John Thune!! To save Rapid City's Ellsworth AFB, that was scheduled for closure in 2005 by the DOD. GE-16

This expansion was supposed to save Ellsworth AFB/USAF $8 million in the 2010 EIS, but now it is magically $21 million this year? PN-3

Citing data from 2007-2008 Montana Economic Impact of Airports Study that this MASSIVE expansion will jeopardize 95 jobs that generate over $1.5 million in payroll, $3.8 million in economic activity, in the communities that underlay this behemoth!! South Dakota wants this MOA, great, put it over there. AM-6 SO-5

39 airports and 285 aircraft will be very negatively impacted by this expansion. IFR aircraft will be denied the airspace to go in to this area. What about when somebody has a heart attack and needs King Air transport to Billings ASAP? The Billings hospitals fly King Airs for this purpose and they fly IFR. SA-18 SA-19

It will be the largest MOA in the world, larger than the state of South Carolina!! It will be 4 1/2 times the size of the Nation of Israel. The reason given for this particular airspace was because it simulated combat in places like Afghanistan. It does not, that's a silly argument. PN-2

The USAF is not being fully truthful about his expansion. During the EIS scoping meetings in 2010, the USAF said that it would have no impact on General Aviation. We could just share the airspace. The USAF said that it would not impact IFR traffic. (all jet traffic and inclimate weather operations are conducted under these civil rules) IFR traffic is prohibited in an active MOA by FAR'!. With little to no radar coverage in the area non radar procedures have to be used. The way Salt Lake Center will do this is simple. IFR traffic will be kept out of the airspace. AM-6 AM-3

The USAF also has "Lights Out" night operations approved for the current PR MOA. I do not know how VFR civil aircraft will "see & avoid" unlit military aircraft at night. SA-11

Also, why can't we submit comments electronically? The USAF is trying to slide this along with minimal resistance/input form the civilians & general aviation. That is embarrassing as you are trying to hide. Grow up.

203

The B1B is extremely expensive to operate as it requires about $1 million in maintenance for every 12 hours of flight time. The USAF wants Minot AFB to bring their aircraft to join in the use of this area. It is approximately 5 times the length of flight to the PR MOA as it is for them to use Tiger & Hays MOA that already exist. There are only 65 B1's left and they have not seen combat duty since 2011. The B52's are a Vietnam era aircraft with only 85 still active. They have not seen combat duty since 2001. PN-2 PN-6

I fully support our military and Ellsworth, but get this expansion out of Montana! PN-2

There are numerous pipelines that underlay this proposal. How are they going to comply with DOT inspection regulations? Pipeline pilots livelihood comes from these operations!! Recently, August 2013, when the last B1B from Ellsworth crashed, these pilots were unable to fly one of the routes for over a month as the USAF commandeered the airspace for a 15 mile radius around the crash site by issuing a TFR, no fly zone! This costs time & money!! AM-6 SO-5 SA-21

The FAA has spent over $15 million on this airport and it will not survive this expansion. Many things have changed in this energy rich area since 2010. In Baker alone, we have a new multi-million dollar fire station, a brand new motel, and Montana Highway 323 is now completely paved & has significant used tying us to the commerce area of the Black Hills of South Dakota. Oil production is at all time highs. The main mode of transportation for oil executives, engineers, & personnel to Baker, MT is by private aircraft. Do we really want restrictions placed on their travel to this remote area? Numerous Medevac aircraft fly from the Bakken oil fields every day with patients to Billings. SO-10 SO-17 SO-5

All the letter groups, including AOPA (approx. 400,000 members), are fighting together against this expansion. AOPA has labeled it "UNJUSTIFIED" It will become a very hot topic at election time if it moves forward.

Thank you for your time,

Scott Newpower

President

Montana Pilots Assoc

204

To: Manager, Operations Support Group

Airspace Study 14- AGL- 06NR- Powder River Training Areas

From: Concerned Pilots, SW North Dakota

I am a pilot in south western North Dakota, and I am very concerned about the proposed Powder River Training Areas. As you may know, western North Dakota has gone through a great change, with the oil activities, associated with the Bakken, Three Forks, and Williston formations. New high paying jobs are increasing, populations climbing, air traffic in double digit increases, and many airports upgrading and expanding to meet the needs of these energy companies. In fact, our local airport is moving to accommodate this increased need. Now we may be faced with many altitude, navigation, operational restrictions associated with the proposed Powder River expanded areas!!

In my view, we gain nothing (no fuel sales, maintenance income, hangar rent, no income to hotels, restaurants, dealerships, etc.), but we are stuck with the proposed low altitude (500' AGL), navigation, gap, and operational restrictions?? Not to mention flares (fire potential), chaff ¦ surface water, livestock affect), low flying fast aircraft (safety issue) and noise? We feel the areas will deter aviation business (who wants to mess with restrictions), and move our income potential to other airports outside the MOA???

SO-5
SO-6

If South Dakota (Ellsworth AFB) wants a larger area, move it to South Dakota!! If North Dakota (Minot AFB) wants an area, go east to the Tiger and Devils Lake MOAs already in place!! Seems like Ellsworth and Minot get the income

PN-2

204

and we in southwest North Dakota get nothing??

I support our men and women in uniform and support training, but there seems to be no compromise to benefit our airport and community??

A few recommendations, I believe, would greatly reduce the training area impacts-

1- area relocation , or area # 3 a "high area" — PN-2

2- raise the area (3) floor from the 500 foot above ground restriction to 8000 feet. — DO-4

3- if need the 500 feet restriction, use it 1 day/week instead of 5 days/ week. — PN-4

4- A direct telephone or web contact, to military training center, for instant Updates, for pilots flying near the proposed areas. — AM-12

Thank you for your consideration.

FORREST D. Lanchbury, MD

[redacted]

205

BISMARCK AIR MEDICAL, LLC

[redacted]

March 27, 2014

Manager, Operations Support Group, ATO Central Service Center AJV-C2
Airspace Study, 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

To whom it may concern,

I am the Director of Operations for Bismarck Air Medical, LLC, a Part 135 charter Air Ambulance Company based in Bismarck, ND. The expansion of the Powder River Military Operations Area will have a very harmful effect on our business because we regularly fly into Hettinger, ND, Bowman, ND and Baker, MT to pick up patients to transfer to higher care facilities. While you have certain hours that it will be active and not active our patients do not go on that schedule and we must be able to go at any time 24 hours a day and 7 days a week. The altitudes are all the altitudes that we need to go through to take off and land at these airports. This expansion would put considerable hardship on the patients and hospitals that we serve in this area.

AM-6
SA-19
SO-5

Thank you for your time.

Sincerely,

Frank Appert
Bismarck Air Medical, LLC
[redacted]

CC: Senator John Hoven
Senator Heidi Heitkamp
Rep. Kevin Cramer
Todd Porter

Serving Bismarck-Mandan, Burleigh-Morton Counties

206

Bismarck
AIRPORT

April 23, 2014

Manager, Operations Support Group, ATP Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

RE: Powder River Proposal Comments

Dear Sir:

The purpose of this letter is to provide comments to the Powder River Military Operations Area (MOA) Proposal. Bismarck Airport (KBIS) is a Non-Hub primary commercial service airport serving Bismarck, Mandan and surrounding areas of North Dakota. Bismarck has four airlines that serve approximately 480,000 total passengers per year with direct commercial service to five non-stop destinations. Bismarck Airport has 78 Based Aircraft and two Fixed Based Operations (FBO's) serving all aeronautical users with fuel, maintenance, air taxi, avionics, upholstering, hangaring, and other flight line services. Two major energy companies also have hangars, aircraft and flight departments on our airfield. Bismarck Airport also has among its tenants the North Dakota Army National Guard Army Aviation Support Facility. Bismarck Airport and the City of Bismarck are strong supporters of the military; however, we have concerns about the proposed expansion of the Powder River MOA.

We are particularly concerned about safe and unlimited access to neighboring airports at Bowman, Elgin, Hettinger and Mott. Bowman and Hettinger have community medical facilities that are serviced by fly-in medical specialists under IFR controlled airspace by Part 135 and Part 91 aviation providers. These flights deliver medical specialists, on a scheduled basis, to area clinics from large regional medical facilities in Bismarck. There are approximately 80 medical flights that originate from Bismarck Airport each month. These flights are serviced by Bismarck's FBO's or private owners. The proposed MOA expansion would cause delays and cancelations to those teams of medical personnel who travel to serve those communities. Hettinger and Bowman Airports have expended significant resources developing and improving

SA-19
SO-5

[redacted]

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their airport facilities. They have installed automated weather reporting at their airports to improve dependability of air services by both charter and private operators under Instrument Flight Rules (IFR) to their cities. These efforts will be negated whenever the MOA is active. IFR flights from Bismarck to these communities during these times are effectively eliminated during any scenario with limited ceiling and visibility because radar coverage is lost below approximately 6,000 feet. Both the communities and the aviation service providers will suffer social and economic hardship due to the proposed expansion of the MOA. AM-6

While the Air Force says that active emergency ambulance flights will be accommodated, routine travel by medical teams will be negatively impacted. Those teams routinely fly under IFR, an option not available when the MOA is active and radar coverage is lost around 6,000 feet in that area. Medical teams that experience delays and cancellations resulting from the MOA will find that they cannot count on air transportation as an efficient means of travel. As a result, these medical providers may stop their services to those communities altogether, eliminating convenient access to essential medical service to thousands of rural residents of southwestern North Dakota. The reduction in flights would also have a negative economic impact on the aviation service providers in Bismarck and the communities served. AM-3 AM-5 SA-19 SO-5

The proposal will quadruple the size of the current MOA airspace already present in that region The proposed MOA expansion will have negative impacts on private and commercial aviation users in Bismarck that should be considered as this proposed expansion of the Powder River MOA is reviewed. PN-3

If the Federal Aviation Administration judges that the Air Force is able to justify the need for an expanded MOA - then Bismarck recommends FAA raise the ceiling of the proposed MOA airspace in Southwestern North Dakota from 500 feet, to a minimum altitude of 8000 feet. This would allow aircraft operations in the area to operate under the proposed MOA without a large amount of mitigation being required. If raising the ceiling to 8000 feet is not approved, we would encourage the FAA to make other adjustments to the airspace and navigation aids to allow commercial and private aviation users reasonable access to airports under the MOA when it is active. DO-4

While Bismarck Airport and the City of Bismarck understand need for Military Operation Areas to train our military, the size of this expansion is unprecedented, increasing the existing MOA by four times its current size. The MOA when active will impede access to medical facilities, negatively impact aviation business, and cause traffic separation concerns in an area of limited AM-6

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radar and communications coverage. We ask that FAA consider the concerns and possible mitigations when making a decision that ideally will minimize negative impacts to commercial and private aviation users in southwestern North Dakota. AM-3

Thank you for the opportunity to comment.

Sincerely,

Gregory B. Haug
Airport Manager

W:\2008 & Forward\Letters & Memos\2014\Powder River Comment Letter to FAA 042314.docx

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Manager, Operations Support Group, ATO
Central Services Center, AJV-C2
Airspace Study 14-AGL06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth, TX 76137

April 28, 2014

To whomever it concerns:

Why do you want this dangerous situation to be within our National Airspace System? How does See & Avoid work with military aircraft? They are designed not to be seen right? How do you guarantee separation of IFR aircraft within the MOA? There is no way this is possible within the Powder MOA Expansion Area.

Explain to me and everyone else why this airspace has restrictions when it is not considered a "Restricted Area"? The following definition below is from the FAR/AIM.

3-4-5. Military Operations Areas

a. MOAs consist of airspace of defined vertical and lateral limits established for the purpose of separating certain military training activities from IFR traffic. Whenever a MOA is being used, nonparticipating IFR traffic may be cleared through a MOA if IFR separation can be provided by ATC. Otherwise, ATC will reroute or restrict nonparticipating IFR traffic.

How will the military and ATC guarantee the safety of this 28,000 square mile expansion? Who is providing in radar and communications for this area? There is very poor, if any radar and communications at lower altitude! I've been a pilot for the last 12 years in this area and have grown up in Baker, MT just north of the existing Powder MOA. I have first-hand experience in trying the deal with the current MOA. It is not a safe environment to operate in an aircraft nor have I ever been allowed through an active MOA IFR. This causes undue hardship to the FBO that I work at and help operate. This expansion can simply not be allowed!

SA-1
AM-3

The proposed expansion is not reality for the military. They have existing airspace all over the United States. As pilots, we all learned to fly. By definition of FAR 61, we have to complete cross-county experience. Isn't that what the military wants, training experience? Why don't they use the Special Use Airspace (SUA) that already exists? What is all the other SUA's used for in the current National Airspace System?

PN-2
PN-3

Why does the proposed expansion Powder River go down to 500 AGL and in some cases to the surface? What happens when something goes wrong in these military aircraft? There has been two B-1 crashes within the current Powder MOA. Everybody's seen Top Gun right? Where's the hard deck? What margin

DO-3
SA-20

207

of error is there at 500 AGL or less? Why isn't the floor of this huge expansion at 18,000 so everyone could share the airspace?

The facts of Powder River MOA Expansion simply are not accurate. PR-3 has to be done away with since there is no way to conduct this activity safely. There is no economic benefit to this energy rich area. I look forward to hearing a response to my comments.

Darin Meggers

[redacted]

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ADAMS COUNTY Home of the last great buffalo hunt

PO Box 589
602 Adams Ave
Hettinger, ND 58639

COUNTY COMMISSIONERS
Chuck Christman, Chairman
Gene Seamands
Kathy Vliem

Phone 701-567-4363
FAX 701-567-2910

April 29, 2014

Manager, Operations Support Group
ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

RE: Powder River Military Operation Area

To Whom It May Concern:

Enclosed is a resolution signed by the Adams County Commission regarding the proposed expansion to the Powder River Military Operation Area.

Please forward this resolution to the appropriate individual.

Thank you for your prompt attention to this matter.

Sincerely,

Chuck Christman

Chuck Christman
Chair, Adams County Commission

CC/pjc

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RESOLUTION OF THE ADAMS COUNTY COMMISSION

April 14, 2014

Whereas, the FAA has put forward a proposed expansion to the Powder River Military Operation Area that would include a substantial portion of the State of North Dakota, including the County of Adams;

Whereas, the proposed expansion would have an effect in Adams County and other surrounding counties that are adverse not only to the operation of air ambulance service, charter and general aviation, in and through Adams County, as well as an adverse effect to livestock and farming operations along with general quality of life; SA-19 SO-5 SO-6 SO-11

Therefore, It is hereby resolved that the Adams County Commission resists and urges the FAA to deny the request for the expansion of Powder River Military Operation Area in to the State of North Dakota and specifically over Adams County, North Dakota. GO-2

Chuck Christman, Chairman of Adams County Commission

Kathy Vliem, Commissioner

Gene Seamands, Commissioner

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MAr 2014
BY :J .

May 1, 2014

Mr. Kent M. Wheeler
Manager, Operations Support Group
ATO Central Service Center, *AN-C2*
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

Re: Proposed Establishment of the Powder River Training Complex Military Operations Areas, North and South Dakota, Montana, Wyoming, Airspace Study 14-AGL-06NR

Dear Mr. Wheeler,

The Aircraft Owners and Pilots Association (AOPA), the world's largest aviation membership association, submits the following comments in response to the Powder River Airspace Study 14-AGL-06NR. The proposed expansion of the Powder River Training Complex (PRTC) would be the largest Special Use Airspace (SUA) complex in the United States and would cover an area of approximately 28,000 square miles, roughly the size of South Carolina. AOPA is concerned that 39 airports would be faced with airspace access challenges, safety issues and a heavy economic burden. For these reasons, AOPA seeks mitigations to the PRTC proposal to minimize the impact to the flying public, and provides the following concerns and associated impacts of the proposed airspace expansion.

Economic Impacts of the Proposal are Excessive

The United States Air Force (USAF) is required to give public use airports that underlie Military Operations Area (MOA) airspace a three nautical mile radius and 1,500 foot exclusion area. However, this exclusion area does not allow for aircraft to transit the airport safely nor does it provide any accommodation to the 20 private use airports, all of which would be unusable during times of PRTC SUA activation. Without real time SUA data, locally based and transient pilots will lose flexibility in choosing departure and arrival times at airports underlying the PRTC. In the long term, this reduction in flexibility will result in businesses and private owners relocating their aircraft outside of the PRTC to avoid the expense and delay associated with operating through expansive SUA. AM-5

Fixed base operators (FBOs) rely on local and transient aircraft as their primary sources of income. When local operators begin relocating their aircraft to airports outside of the PRTC, income from fuel sales, hangars, and tie down fees will drop precipitously. Based on data contained in the 2007-2008 Montana Economic Impact of Airports Study, the average airport underlying the PRTC provides 5 jobs, $81,000 in annual payroll, and nearly $200,000 in economic activity to the surrounding community. With 19 publicly owned airports underlying the PRTC, this translates to approximately 95 jobs, $1.5 million in annual payroll and $3.8 million in economic activity in the surrounding communities directly attributed to the airport. This economic activity is not sustainable under the PRTC and will be eroded until reaching a point where operating an aviation business under the PRTC is no longer financially viable. Transient aircraft will be more likely to utilize an airport outside of the PRTC even if means renting a car and driving to their desired destination inside the PRTC. This will further erode the FBO's income through lost fuel sales and ramp fees. Operating margins for

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an FBO are extremely thin and even a small decrease in normal traffic levels will have devastating consequences to these small businesses.

The PRTC will negatively affect the flight training industry at 39 airports underlying the proposed airspace. The USAF has stated that one of the key drivers of the PRTC is to avoid expensive, unproductive commutes to distant ranges. The same can be said for general aviation pilots who are paying for flight training as well. Flight instructors would be forced to choose between conducting a flight in an active MOA with low altitude military aircraft operating at speeds in excess of 500 knots, or commute as much as 50 minutes to conduct the flight training outside of the SUA. A typical general aviation training flight lasts approximately 1.5 hours. Adding an additional hour and forty minutes of flight time to every flight lesson, will more than double the cost of earning a pilot certificate. When faced with additional flight time expenses exceeding $7,000 over the course of their private pilot training, potential student pilots will simply drive to an airport outside of the PRTC, or forego learning to fly altogether. This is too high a price for civil aviation to pay, and mitigations must be considered to be a responsible steward of the national airspace system (NAS). SO-26

Reduce Charted Times of Use to Match Actual Planned Usage

AOPA recommends that the FAA require the USAF to amended charted times of use to more accurately depict the actual usage of the proposed PRTC airspace, in order to minimize the impact to the flying public. The Powder River I-4 MOAs are proposed to be active Monday- Thursday 0730-1200; 1800-2330 and Friday 0730-1200, as well as other times by Notice to Airmen (NOTAM). While this amounts to 44.5 hours per week the USAF has said they may use it as little as five hours per day. With the ability to activate the airspace by NOTAM at any time this could be modified to 24/7 and likely will be during large force exercises. PN-5

The proposed PRTC would consist of four primary MOAs, separated by Gap MOAs, mostly extending from 500 feet above ground level to, but not including Flight Level 180 with charted times of use amounting to about 44.5 hours per week. However, the USAF has stated that they expect to use most of what is proposed for just 15 hours per week. While charting 44.5 hours of use provides enormous flexibility for the USAF, it would increase operating expenses, increase delays, and degrade safety for 285 based civil aircraft and countless Visual Flight Rules (VFR) transient operators who will be required to traverse an active MOA to arrive or depart one of 39 airports underlying the PRTC. Pilots operating under Instrument Flight Rules (IFR) will be routed around the MOA's when they are in use and likely will incur delays as a result of reroutes. In addition, the proposal provides for the use of NOTAM to schedule SUA outside of charted times of use. With a minimal need provided in the justification for the proposed expansion, the extensive charted times as well as the allowance of additional flexibility seems excessive.

With a lack of real-time SUA activation data, general aviation pilots are forced to rely primarily on charted times of use for flight planning. However, this information does not reach most pilots and therefore does not mitigate the impact. AOPA would like to see the USAF amended charted times of use to more accurately depict the actual usage of the proposed PRTC airspace, in order to minimize the impact to the flying public. AM-6

Eliminate GAP MOA's and Make Them Temporary

As outlined in the Federal Aviation Administration (FAA) Order 7400.2K, Procedures for Handling Airspace Matters, 25-1-7 Temporary MOAs (TMOA) are designated to accommodate the military's need for additional airspace to periodically conduct exercises that supplement routine training. There are three Gap MOAs in the current PRTC proposal, which would be corridors between the larger MOAs, only utilized for large force exercises, approximately ten days a year. Eliminating the Gap MOA's, and making them TMOAs could address the military's need for training airspace while substantially reducing the impact on general aviation.

The USAF requests several TMOAs annually for military exercises nationwide, ranging from 10 days to 31 days. This leaves AOPA questioning the need to establish permanent SUA for the Gap MOAs when the Draft AM-34

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Draft AM-34

request for TMOAs are routine for exercises that are longer in duration than what is being proposed for the PRTC. The full time establishment of SUA is extreme considering the MOA would be inactive 98% of the year. Establishing TMOAs would allow for true transit capability for non-participating aircraft that would be utilizing the PRTC airspace area.

Establish Special Use Airspace Communication Plan

AM-3

The lack of real-time information sharing makes it nearly impossible in the current airspace environment for non-participants to know the actual status of SUA at a given time. Not having the ability to obtain real-time airspace information forces civilian pilots to rely solely on charted times of use. According to a survey by AOPA, 67% of pilots circumnavigated SUA regard less of its activation status due to lack of timely and reliable information. Although the USAF plans to notify air traffic control when airspace is no longer active, there is limited communication coverage in the PRTC making it unlikely that general aviation pilots will be aware that the SUA has been deactivated, or is about to be activated. A Special Use Airspace Information Service (SUAIS) system is a 24- hour a day communication system which provides civilian pilots with real-time infonnation regarding military flight operations. Since 1990, SUAIS has been successfully used in a large SUA complex in Alaska, which has greatly improved situational awareness for both civil and military airspace users.

AOPA believes that the FAA should require the USAF to implement a similar service to the PRTC airspace area. As part of a UAIS system, a commitment would be essential by the USAF to implement radio coverage, allowing communication with range control, a tape recorded message that could be broadcast during hours when range control is unmanned, and radio repeaters to provide adequate coverage so there are no gaps in coverage at any altitude. All infrastructures would need to be installed and operational prior to finalizing the PRTC proposal.

IFR Access to MOA Airspace

AM-6

AOPA requests that no additional MOA airspace be added until provisions are made to provide real-time Instrument Flight Rules (IFR) access through active MOAs. While the access may be restricted to limited flight altitudes, it is essential that civil traffic, both emergency and routine, have access to communities both inside and adjacent to MOA airspace given the critical role aviation plays in Montana, Wyoming, orth and South Dakota's transportation systems. For example, an aircraft needing to fly from point A to point B would normally make a relatively direct flight along certain airways, when the proposed MOAs would be active, aircraft would be re-routed, increasing the distance around the airspace. Due to the huge size of this MOA complex, lacking the ability to cross them using the protections of the IFR system is a significant safety as well as economic impact on the aircraft operators, and the customers that pay for the increased operational cost.

Expansive and frequently used SUA significantly impacts the availability to instrument flight operations. IFR aircraft are rarely routed through active MOA's and thus routed around at the expense of the operator. Increased MOAs that further block IFR airways create a significant burden on the NAS, IFR access is essential to improving access and aviation safety between communities that underlie the PRTC. Expansion of T-Routes and wide area augmentation system (WAAS) approaches are providing this access under a wider range of weather conditions, adding to the benefits of the IFR system. Those benefits are seriously degraded by expansions of MOAs that preclude IFR access for all but emergency or Lifeguard flights.

Reduce Impact of Powder River 3 Low MOA

AM-5

The proposed Powder River 3 (PR3) Low MOA would be from 500 feet above ground level (AGL) to, but not including 12,000 feet mean sea level (MSL). Powder River 3 Low would negatively affect underlying airports, including Baker Municipal Airport (BHK). Baker Municipal Airport provides several services to the local community, linking remote communities to larger cities in the region and accommodates extensive corporate aviation activities related to the area's petroleum industry. Currently, there is limited radar coverage under

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10,000 feet MSL, in the area that would be PR3 low, leaving a significant risk to non-participating aircraft legally transiting MOA airspace. Establishing radar coverage to the surface would help to alleviate this risk. AM-5

Eliminating the PR3 Low or only activating it by NOTAM would significantly reduce the impacts to BHK and other airports. Doing so would keep dangerous operations segregated from civil traffic and ensure the PR3 low was only used when necessary. Civil and military aircraft are dependent on see and avoid procedures to mitigate the risk of a mid-air-collision. The USAF plans to operate aircraft at speeds up to 540 knots within the PRTC rendering see and avoid extremely difficult and unsafe. Establishing radar coverage to the surface would help mitigate this dangerous combination of high speed, low level military aircraft with civil traffic. AM-6

Additionally, establishing corridors for ingress and egress to BHK would mitigate the impact to a host of services including aircraft fuel, maintenance, rental and aerial pipeline patrol. AM-5

Summary
AOPA understands and respects the military's need to train. However, the massive scale of this airspace will have damaging impacts on the general aviation industry. Based on the economic impacts and safety concerns with the proposed expansion of the PRTC, mitigations are a must to reduce the impact of this expansive airspace design and its substantial effect on civil aviation. These mitigations, combined with previously agreed airspace modifications, would reduce the impact of the proposal on civilian aircraft.

Sincerely,

Melissa McCaffrey

Melissa McCaffrey
Senior Government Analyst
Air Traffic Services

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Montana State Office
5001 Southgate Drive
Billings, Montana 59101-4669
www.blm.gov/mt

In Reply Refer To:
1600 (MT925)

May 1, 2014

RECEIVED
MAY 02 2014
BY: S. Sam

Department of Transportation
Federal Aviation Administration
ATO Central Service Center, Operations Support Group
2601 Meacham Blvd
Fort Worth, TX 76137

ATTN: Manager, AJV-C2, Airspace Study 14-AGL-06NR

Thank you for the opportunity to provide comment on the proposed Department of Defense (DoD) expansion of the Powder River MOA into the Powder River MOA Training Complex (PRMTC). Per invitation via notice in the FAA Circular Airspace Study 14-AGL-06NR, the USDI-Bureau of Land Management (BLM), Montana/Dakotas State Office would like to present comments for your consideration.

Our agency is responsible for land resource management of a large portion of the federal lands underneath the proposed PRMTC. The BLM attended the Air Force public scoping meetings during the initial proposal and also submitted comments in response to the PRMTC draft EIS. Our comments as submitted to the DoD remain unchanged, please find a copy attached.

In consideration of the comments submitted to the DoD, the BLM is requesting the FAA postpone making a decision on the PRMTC until sufficient time has passed to review the final EIS and respond to the FAA with a comprehensive reply.

If you require additional specific information or need clarification on the attached concerns, you may contact Bob Flesch, BLM State Aviation Manager via telephone at 406-896-2912, via email at bflesch@blm.gov or via U.S. mail at BLM-Fire and Aviation, 1299 Rimtop Drive, Billings, MT 59105. Thank you for your consideration.

Sincerely,

James A. Albano
for Jamie E. Connell
State Director

Enclosure

302

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Miles City Field Office
111 Garryowen Road
Miles City, Montana 59301-7000
www.blm.gov/mt

TAKE PRIDE IN AMERICA

In Reply Refer To:

1600 (MTCOOO)

Ms. Linda DeVine
PRTC EIS Project Manager
HQ ACC/A7PP
[redacted]

Dear Ms. DeVine:

Thank you for the opportunity to provide public comment on the Powder River MOA Training Complex (PRTC) draft Environmental Impact Statement (EIS). The United States Department of the Interior (USDI), Bureau of Land Management (BLM), Eastern Montana/Dakotas District (EMDD), Division of Fire and Aviation within the Eastern Montana Fire Zone (EMFZ) has reviewed the proposal and would like to provide comments. As our agency is a primary user of the current and proposed airspace, we would like to see the following concerns addressed in the final Environmental Impact Statement and in your deliberation toward choosing your preferred alternative to implement:

AM-6

1) PRTC PROPOSED ACTION ALTERNATIVES
During the 2008 public scoping period, our office provided you with a request to consider another alternative as was stated below:

> "BLM would also like DoD to evaluate one additional alternative. Please consider, in addition to the existing MOA, adding only one area identified as area PR-3 MOA in the proposal literature. This MOA location north of the existing MOA would add space for additional DoD training and also have the least impact on the Eastern Montana Fire Zone (EMFZ) as far as the number and frequency of aircraft to schedule/deconflict."

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AM-26
AM-33
SA-19

In reviewing the PRTC draft EIS, the military determined this alternative would not provide adequate training airspace. In consideration of the proposed alternatives, the Fire and Aviation Division of our BLM office would prefer to support the No-Action Alternative over the proposed Alternatives A, B, and C. This is due to the following considerations: potential increased man hours that would be required to coordinate/deconflict the majority of our emergency response flights, which now occur in areas not designated as MOA airspace; potential increased man hours that would be required to coordinate/schedule almost daily fire detection flights during the summer that would occur in the majority of the proposed PRTC identified MOA's; lack of assurances that DoD aircraft can be contacted immediately in "real time" to ensure they will relocate or curtail low level training operations and safely yield to higher priority emergency response aircraft entering active MOA's.

PN-2

Should the DoD elect to adopt an alternative other than the No-Action Alternative, then the Fire and Aviation Division of our BLM office would prefer the implementation of proposed actions as presented in Alternative B. This is due to the following considerations: our area of highest

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emergency response aircraft activity occurs over the Ashland Ranger District of the Custer National Forest (adjacent to theNorthern Cheyenne Indian Reservation) where there is currently no MOA established- and the option to not establish PR-1A/B MOA and Gap A MOA would help to ensure that our highest use area remains minimally impacted; savings of taxpayer dollars realized in fuel conservation by utilizing MOA's located closer to established military bases, where it is less likely for our emergency response aircraft to be dispatched to (thus providing for fewer interrupted military training sorties). PN-2

2) PRIORITY TO LIFE FLIGHT & EMERGENCY RESPONSE AIRCRAFT
Our staff attended public hearings for the PRTC draft EIS in Miles City, MT on Friday, October 15, 2010. DoD personnel addressing the attendees at those public hearings confirmed that Life Flight and Emergency Response Aircraft activity held higher priority for MOA airspace use than military training sorties within the existing and proposed MOA's. SO-5 SA-7

The BLM would like to see the Final EIS address exactly how the DoD intends to uphold MOA airspace use prioritization. While the scheduling of known flights involving resource project missions and non-emergency fire reconnaissance is understood, the process of having military training missions/sorties yield to Life Flight and Emergency Response Aircraft is not well addressed. Verbiage within the draft EIS indicates that emergency-related activities would be avoided by military training aircraft and that ATC would notify the training aircraft of the emergency. After being contacted, the affected military training mission would avoid the incident area, move to another actiye airspace or return to base in accordance with agreed-to procedures. The draft EIS does not seem to address the additional impacts to public and civil entities involved with emergency related missions should the existing MOA be expanded into the PRTC.

The BLM would like the final EIS to adequately address the impacts to public and civil entities who provide aircraft with rapid access in response to emergency related missions. The BLM would also like to see the specific procedures and protocols of prioritized MOA airspace use be well documented for correct implementation. The nature of life flight and emergency response aircraft missions are unpredictable as to specific launch times. Any steps taken to ensure military aircraft training at low level (i.e. below 5000 feet AGL) yield to higher prioritized missions (by altering training areas or curtailing operations) will need to be immediate and real time.

3) IMMEDIATE "REAL TIME" COMMUNICATIONS WITH MILITARY AIRCRAFT
When an interagency dispatch center launches public aircraft to respond to a wildfire, these aircraft and pilots meet established standards to ensure operational safety. These interagency fire aircraft are required by policy to maintain radio communications with the dispatching unit at all times. The jurisdictional agencies bare the expense of radio communication systems to ensure that aircraft can be contacted real time in the interest of protecting life and property.

One of the greatest concerns of the Fire and Aviation Division within our BLM office involves the delay in relaying airspace use prioritization to military aircraft currently in training within the MOA. Verbiage within the draft EIS indicates the DoD is aware that there is limited communication capabilities in the region. Specific verbiage within the draft EIS states "radar and radio communications are limited below 12,000 feet MSL and in some areas are limited below FL180". (see page ES-14) However, also within the draft EIS there is verbiage stating that the military "would establish communication procedures to ensure the ability to recall the military aircraft from the low altitude MOA's" (see page 2-110) and that the military "would AM-3

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tablish communication procedures to ensure deconfliction with emergency flight operations within the proposed airspace" (see page 2-110).

In another section of the draft EIS, there is verbiage which seems to contradict this where it states "there is no proposal for increased radio frequency coverage or radar coverage for the PRTC airspace where current coverage is limited" (see page ES-18). DoD officials have informed us that it may take up to 30 minutes for either them or the controlling ARTCC to contact military aircraft currently involved in low level flight profiles. Our response times enable us to have aircraft within MOA airspace in as little as 15 minutes. Because military aircraft in training are not required to maintain immediate "real time" communications to yield the airspace to higher priorities, there can be an unsafe period of at least 15 minutes, and likely more, of increased potential for mid-air collisions. This period of increased risk and exposure would require mitigation to address the effects to other airspaces uses.

The BLM would like to see the DoD address in the final EIS how they will ensure that military training aircraft will be contacted immediately in "real time" to be informed that they must yield to the more critical life flight and fire suppression aircraft in the interest of promoting mid-air collision avoidance. Incident response dispatch centers would need some form of confirmation that military aircraft have indeed been contacted and acknowledge that they are yielding low altitude flight profiles to higher priority emergency response aircraft occupying the airspace.

AM-3

4) COLUSION AVOIDANCE UNDER V.F.R. CONDITIONS

Due to the nature of each agency mission, "see and avoid" may not be sufficient mitigation for mid-air collisions. BLM would like DoD to address more reasonable and effective avoidance measures other than "see and avoid" VFR procedures to prevent mid-air collisions, and seek to increase the safety of our aviation personnel.

SA-1

5) REASONABLE AVOIDANCE MEASURES

There exists predictable periods of airspace usage based on historical data from which reasonable mid-air collision avoidance measures can be implemented. For example, the BLM rarely responds to wildland fires with aircraft from November through April. The shoulder months of the fire season include May and October where average fire season use of aircraft is low. Usage increases to a moderate level in June and September. Our period of highest aircraft use is July and August, when ground fuels are most receptive to ignition sources such as lightning.

In addition, the majority of our incidents are concentrated within a known geographical area. With the likelihood of aircraft responding almost daily to fire dispatches into what would likely be the PR-1 A/B MOA and Gap A MOA during what is typically a two month period, it would seem appropriate for the DoD and partnering agencies such as the BLM to adopt reasonable avoidance measures in the interest of mid-air collision avoidance. This falls in line with your planned actions to avoid altitudes that would interfere with commercial aircraft. In addition, many of our aircraft have to transition from established bases to the TFR area each mission to reload with fire suppressants/retardants and thus have a period of risk during flight not addressed by implementing the TFR.

Please find attached a 20-year fire occurrence map indicating historical incident locations. The majority of fires on the EMFZ are "short duration" which means that the use of aircraft to aid in the suppression of these fires typically lasts only 1 to 2 days. It is impractical to establish a TFR for multiple fires when most are going to be contained within 2 shifts. It would be more practical if the EMFZ could call the DoD scheduling desk and let them know that we have active fires requiring the use of aircraft and that our aircraft will remain 3500' AGL and below (our

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ceiling height for Fire Traffic Area dimensions). If the DoD would initiate avoidance measures such as establishing their training floor (hard deck) with a reasonable buffer (say 5000' AGL) then the establishment of TFR's that could number into the hundreds annually during June through September may be avoided. USAF personnel informed BLM that DoD training is typically done either at low level or well above our Fire Traffic Area ceiling. Ideally it would save multiple agencies tremendous coordination time, effort, and expense if no low level DoD training were held during the primary fire season when the EMFZ utilizes aircraft on active incidents (typically between June through September).

It would seem to be less efficient and more costly when low level military training missions within the proposed PR-1 A/B MOA and Gap A MOA are curtailed or interrupted repeatedly from frequent emergency response aircraft dispatches. When considering the data presented in the draft EIS concerning the Average Annual Baseline Training Hours and Estimated Annual Day-to-Day Time and Altitude Distributions, implementing a 5000' AGL low level VFR training floor as a temporary avoidance measure during the highest fire occurrence period would seem a reasonable and realistic solution.

Verbiage within the draft EIS indicates that the military would establish reasonable temporary or seasonal avoidance areas for concerns with other topics already identified, such as over ranches during calving/weaning/branding seasons or cultural native American/tribal events. Specific verbiage indicates the military "would establish reasonable temporary or seasonal avoidance areas or could adopt other measures identified in Government-to-Government consultation..." (see page 2-100). The BLM would like the PRTC final EIS to address reasonable avoidance measures which would include no low level military training flights during the highest incident response months within all existing and/or proposed PRTC MOA's.

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SA-7

6) SCHEDUUNG OF LONG DURATION MULTIPLE MOA FLIGHTS

With the current size of the Powder River MOA, it has been practical to work out a schedule with DoD when fire detection aircraft need to patrol the Eastern Montana Fire Zone (EMFZ). Lightning maps from the previous storms determine areas that are to be flown by detection aircraft. Historically the majority of fire activity on the EMFZ is south ofinterstate 94. To date, we have been successful to direct flight routes through the current MOA during periods of DoD inactivity.

However, with the proposed expansion of the PRTC spanning from Billings, MT to Bismarck, ND this would end up encompassing most of the southern half of the EMFZ, which is where our predominant fire activity occurs. At public hearings held in eastern Montana during October of 2010, DoD officials commented in their presentations that expansion of the current MOA into the PRTC would not impact Life Flight or Emergency Response Aircraft missions. Is there analyses within the draft EIS to support this? Incidents within the current MOA utilizing aircraft require man-hours to coordinate and deconflict the airspace each time. With the proposed expansion, that workload will increase proportionately.

How will BLM be able to do late morning/early afternoon VFR reconnaissance flights (typically lasting about 3-4 hours due to the size of the area of jurisdiction) to cover that area in the proposed Powder River 1, 2, and 3, which may need to occur daily from June through September? Would DoD schedulers be able to reserve a 3-4 hour time slot in late morning/early afternoon for Powder Rivers 1-3 that will facilitate a VFR detection flight daily through those 3 MOA's for basically a 4 month period?

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AM-3
SO-5
SA-7

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7) FUTURING POTENTIAL MOA AIRSPACE USAGE

The PRTC Draft EIS indicates that expansion of the existing MOA into the PRTC will benefit both current and future DoD training needs, yet there is very little discussion found within the document to address potential future airspace use. The BLM would like to see the EIS address how expanding the current MOA could potentially allow additional training opportunities that have to date been prevented, due primarily because of size. PN-2

8) MISCELLANEOUS UNANSWERED QUESTIONS

Most of the following questions were presented during the public scoping period and answers were either not provided or could not be found within the draft EIS:

- What safety measures beyond see-and-avoid will the DoD implement to buffer between military and civil or public aircraft operating concurrently within an active MOA? SA-7
- Will there be quantity limitations as to how many military aircraft will occupy any given PRTC area at any one time? PN-2
- As ARTCC's covering the proposed PRTC are divided between Salt Lake City, Denver, and Minneapolis, will there be a communication gap in contacting military aircraft that are moving between MOA's as ARTCC's hand off DoD aircraft to each other?
- Will the FAA be considering moving ARTCC jurisdictional boundaries to simplify coverage within the PRTC?
- How will the scheduling of non-DoD aircraft occur within the MOA's during the quarterly "mass" large force DoD exercises (LFE's) that are anticipated to last from 1-3 days?
- If the DoD will be monitoring seasonal fire conditions to determine when to discontinue use of chaff and flares over receptive fuels (i.e. NFDRS; Red Flag Warnings; etc.), how and when will the decisions be made to implement and rescind these actions? AM-12 AM-27
- What sort of aircraft chaff/flare training is available to educate interagency wildland fire investigators? SA-5 SA-27
- How quickly will newly used flares and chaff deteriorate so that fire investigators who find them at fire origin locations can determine that the fire could not have started from recently utilized or misfired flares?
- With a larger area to facilitate training of more mission profiles, what are the additional impacts of military ground assets that will likely be integrated into the local training should the MOA expand?
- USAF personnel stated that there is one large fixed and two mobile pedestals used as threat emitters in 15 locations currently within the Powder River MOA. They also stated that these threat emitters require electricity and phone connections, and are therefore moved infrequently. The USAF representatives said that no new threat emitters were anticipated for installation, as current emitters would be adequate for the entire expansion. Should long term needs dictate the need for additional threat emitters, how will the DoD undertake NEPA analysis tiered to the final EIS? PN-2
- Will the military include the use of AWACS aircraft during the Large Force Exercises (LFE's) to enhance the realism of an actual large force mission and concurrently increase the safety of civil, public, and military aircraft within the MOA?

Thank you again for the opportunity to provide input into the final EIS. If you have any general questions, you may contact Kathy Bockness, Planning & Environmental Coordinator for the Miles City BLM Field Office, via phone at 406-233-2844.

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Aside from the comments above to the Draft PRTC EIS, the Montana/Dakotas BLM State Office currently has a signed Memorandum of Understanding (MOU) between the BLM and Ellsworth Air Force Base in South Dakota where scheduling of the existing MOA occurs. While this document is adequate toward assisting our agencies in achieving mutual objectives of shared airspace usage within the existing MOA, any expansion of the existing Powder River MOA into a larger PRTC would necessitate changes be made to the agreement to address the additional impact.

Personnel who assembled the original MOU agreed that should the MOA be expanded into the PRTC, the document would have to be updated to reflect changes such as the structure of an expanded MOA or inclusion of other affected agencies. Discussions then addressed the likelihood of formulating a MOA committee to address issues/concerns by the identified agency partners as well as development of a more inclusive MOU.

In consideration of the large number of civil and public entities, of which may include city, county, state and federal agencies and other potential partners which could be affected by implementing an expansion to the existing Powder River MOA.....it is requested that a multiple agency "umbrella" Memorandum of Understand (MOU) be developed. We would encourage that development of the MOU be accomplished by open invitation and collaborative teamwork in good faith from interested partners, with periodic meetings of an area MOA committee to review concerns and make needed updates.

If you require additional specific information or need clarifications, you may contact Kevin Gappert, Unit Aviation Manager for the Fire and Aviation Division of the Eastern Montana Fire Zone (EMFZ), via: phone at (406) 233-2909 office or (406) 853-5163 cell; email at kgappert @blm.gov or write him at BLM, 111 Garryowen Road, Miles City, MT 59301.

Sincerely,

M. Elaine Raper
District Manager

Enclosure (Map)
Bockness mmg:1 1/12/10:2010_PRTC_comment_ltr_EMFZ_Bockness

303

OFFICE OF THE GOVERNOR
STATE OF MONTANA

STEVE BULLOCK
GOVERNOR

ANGELA MCLEAN
LT. GOVERNOR

RECEIVED
MAY 02 2014
BY: D. Stern

April 28, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd
Fort Worth TX 76137

Dear Manager:

I am writing you on behalf of the State of Montana to voice our concerns with the proposal to expand the Powder River Military Operating Area (MOA). I understand that a robust national defense is founded on the proper training of our military. However, this large airspace expansion as proposed raises several concerns that will negatively impact our State.

Safety

Communications/radar – communication capability and radar services are limited to altitudes above those commonly flown by Visual Flight Rules (VFR) aircraft. This prevents a pilot from communicating with or being seen by Air Traffic Control to be alerted to activity in the area. Additional communication and radar capability would enhance safety for aircraft transiting the area. Airspace within the proposed expansion is jointly controlled by the Denver, Minneapolis, and Salt Lake Air Route Traffic Control Centers (ARTCC). High speed military aircraft can transition between these three centers in a short period of time. Coordination between these high speed military aircraft, general aviation (GA) aircraft, and three ARTCC's further complicates the issue of no communication or radar in the area. During LFE operations, a distinct plan must be in place to designate which ARTCC is in charge.

AM-3

SA-4

See and Avoid – by Federal Aviation Regulations, VFR aircraft operating below 10,000 feet are limited to airspeeds of 250 knots to allow the VFR pilot to visually identify other aircraft and take corrective or evasive action to avoid a collision. Allowing high speed military aircraft to operate in excess of 250 knots in the same airspace as GA aircraft is inherently dangerous and compromises the "see and avoid" concept.

SA-7

STATE CAPITOL • P.O. BOX 200801 • HELENA, MONTANA 59620-0801
TELEPHONE: 406-444-3111 • FAX: 406-444-5529 • WEBSITE: WWW.MT.GOV

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Induced Congestion – the "Gaps" will only serve to concentrate air traffic in corridors and induce congestion that otherwise would not exist. Forcing multiple VFR aircraft to operate in a confined area is fundamentally unsafe particularly during periods of low visibility. SA-25

NOTAM's – a MOA may be activated by a Notice to Airmen (NOTAM) with only 2 hours' notice. The average GA aircraft has an estimated flight duration of 4-6 hours. The MOA may be activated during a GA flight without the pilot having knowledge of this updated information or having the ability to receive it in a timely fashion. AM-12

Flight Training – a prudent flight instructor will not send a student pilot into an active MOA. The workload of a student pilot in the cockpit is challenging enough without the added distraction of flight in a MOA. SO-26

Economic Impacts

Eastern Montana Resource Development Areas– natural gas liquids, crude oil and coal are produced and/or transported in this area resulting in significant aviation activity. GA aircraft that are based at an airport underlying this MOA will be impacted by not having unrestricted 24/7 access to airspace. Some of those may choose to relocate, creating not only logistical but economic issues as well. This development has changed the traffic patterns in the area. The FAA should perform a traffic study to determine if there is a need for an air corridor between Baker, MT and Gillette, WY. SO-17

Airports/Aviation business – Aircraft typically choose to use local services at airports that are not affected by a MOA. There are six public use and more than 40 private use airports underneath the proposed MOA. The public use airports and associated aviation businesses rely on transient traffic for a majority of their income. Private airport owners (farmers, ranchers) utilize GA aircraft in their day-to-day operations. The proposed MOA will reduce revenue and impact efficiency of these business entities by severely restricting their ability to operate and possibly result in moving commerce to sites outsid the proposed MOA. SO-10

Access

Instrument Flight Rules (IFR) – by current practice, IFR traffic in an active MOA is prohibited by ARTCC. Procedures for "recalling" military aircraft to allow for civilian departures and arrivals must be agreed to by both agencies and clearly identified. AM-1

Air Traffic Control Assigned Airspace (ATCAA) – the effect of the proposed MOA a or above 18,000 feet (ATCAA) is unknown. An action to create an ATCAA will affect GA, commercial and airline operations. AM-6

Life Flight –the draft EIS states priority will be given to these operations, however, prioritization is not defined. Communication issues further complicate an already complex set of circumstances and any delay to life flight operations is unacceptable. SA-18 SA-19 SO-5

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Aerial Applicators- The proposed MOA will create significant problems for aerial applicators that operate in the area. Their operations fall well within the use areas and as a seasonal activity, are limited in the window during which they can and must operate.] SO-2

Mitigations

In addition to the restrictions listed in the FAA proposal, the State of Montana proposes the following mitigations concerning low altitude operations, supersonic flight, and chaff/flare expenditure over SE Montana be mandated by the FAA prior to approving the Powder River MOA expansion:

Powder River 3 MOA – restrict to the high MOA only removing the PR3 Low MOA and restrict PR3 operations to LFE only (10 days/year).] PN-2

Hardin, Colstrip, St. Labre Mission, Broadus, Ekalaka and Baker - raise the minimum altitude and radius to 5000' AGL and 5 nautical miles over these Montana communities; restrict supersonic flight over these communities to no lower than 20,000' AGL and 10 nautical miles; and raise the minimum altitude for chaff and flare expenditures to 12,000' over these communities.] DO-3 DO-4

Chaff/Flare Expenditure –restrict over the National Park Service (NPS) mitigation designation for the Little Bighorn Monument.

Supersonic - no supersonic operations within the Powder River Training Complex after 8pm Mountain Time.] PN-3

Private airfields - maintain the 1,500' AGL and 3 nautical mile restrictions over active SE Montana private airfields within the Powder River Training Complex.] AM-5

Hours of activation - develop coordination procedures that are clearly defined to include anticipated hours of operation as well as deconfliction processes for VFR aircraft.] AM-12

I am interested in continuing to work together to enjoy our freedom that open skies provide and am hopeful that the above measures will be adopted to accommodate the desires of the State of Montana. The State of Montana is committed to working with all stakeholders to develop a safe and effective airspace plan for our military.

I appreciate our Armed Forces and the service they provide to this great country.

Sincerely,

STEVE BULLOCK
Governor

05/02/2014 13:13 7012232587 ND STOCKMENS ASSOCIT PAGE 02/04

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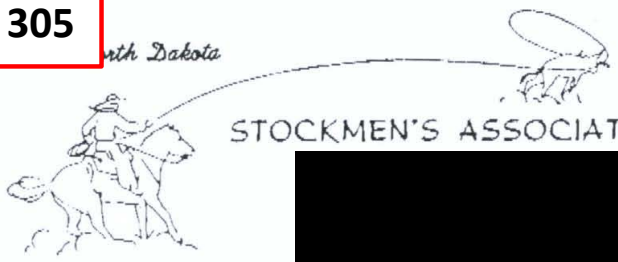

[redacted]

May 2, 2014

Manager, Operations Support Group, ATO Central Service Center, AJV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137

RE: Proposed Establishment of the Powder River Training Complex Military Operations – North Dakota, South Dakota, Montana and Wyoming

To Whom It May Concern:

The North Dakota Stockmen's Association is an 85-year-old trade organization representing nearly 3,000 North Dakota cattlemen and cattlewomen. We strive to ensure a favorable business climate and quality of life for North Dakota ranch families.

Thank you for the opportunity to comment on the proposed expansion of the Powder River Training Complex Military Operations, which would overlay eight southwestern North Dakota counties – Bowman, Slope, Grant, Adams and Hettinger Counties and the southern portions of Stark, Golden Valley and Billings Counties – and encompass approximately 28,000 square miles of air space.

North Dakota Stockmen's Association members understand the need for military operation areas and proper training of military officials within the Air Force in order to provide national security, which is paramount. However, we are opposed to the proposed expansion of the Powder River Training Complex because of the serious negative impacts it could pose to North Dakota's ranchers. Members outlined these concerns in a policy resolution adopted first in 2010, then renewed in 2013, at our organization's annual convention.

02/2014 13:13 7012232587 ND STOCKMENS ASSOCIT PAGE 03/04

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Among members' concerns:

- **Safety for livestock industry aviators:** As you know, civilian aviation is prevalent in this area, whether it is by livestock producers checking their land and livestock or animal damage control officials controlling predators. As the North Dakota Aeronautics Commission pointed out in its comments, there is low altitude radar coverage and voice communications in this region, which shares Federal Aviation Administration Air Traffic Control (ATC) responsibilities between Salt Lake, Denver and Minneapolis ATC Centers, which creates safety issues. With the proposal of a 500-foot floor for large Air Force flights, this limitation adds to the difficulty in segregating military and civilian flight. Sharing air-space with low-flying, high-speed military aircraft with limited radar and communication services available presents a huge safety concern. — AM-3, SA-9, SO-11

- **Safety for aerial applicators.** North Dakota agriculture utilizes aviation for the aerial application of crop protection products throughout the state, including the proposed expansion area. Because Federal Aviation Administration requirements mandate that aerial applicators fly at least 500 feet above any person or structure when transitioning between fields and their airport, these pilots will be at the same altitude as large, high-speed military aircraft in the midst of military training, which could be very dangerous for all parties involved. — S0-2

- **Fire potential:** As we know, chaff and flares can occasionally fall to the ground and cause grassfires to start, particularly in the semi-arid regions of southwestern North Dakota, which receives just 14 to 16 inches of precipitation each year, according to the U.S. Geological Survey. This could put people and livestock, as well as sensitive wildlife species, in serious danger. Absent a mitigation plan, landowners and local fire crews will be the ones who have to respond to emergencies and deal with damages. — SA-5, SA-6

- **Potential medical flight interference:** The proposed training area could hinder medical flights into and out of the area. Such flights are critically important in remote, rural communities, which, in many cases, are many miles from life-saving medical services. While we appreciate the U.S. Air Force's commitment to making emergency flights a priority, relocating large military exercises out of the airspace would be difficult to do quickly, and we do not see that as a realistic option. — SO-5

- **Livestock welfare issues.** The unusual activity and additional noise that are expected to accompany the proposed expansion could be damaging to livestock. Unnaturally high levels of noise can mask more subtle sounds that they need to hear in order to survive and reproduce. They may also react with a fight-or-flight response to artificial sounds like aircraft noise and thereby use up valuable energy reserves to flee from non-existent predators. According to Dr. Temple Grandin, a world-renowned authority — BI-1, BI-2, BI-4

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on livestock behavior and animal welfare, cattle and sheep are more sensitive than people to high frequency noises, and unexpected loud or novel noises can be highly stressful to livestock. These conclusions have been scientifically documented. Grandin noted that sheep exposed to exploding firecrackers or noise in a slaughter plant, for instance, had increased thyroid hormone levels and elevated cortisol. Similarly, T. Camp of the U.S. Department of Agriculture's Experimental Station in College Station, Texas, indicated that even a loud clanging bell from an outdoor telephone will raise a calf's heartrate 50 to 70 beats per minute.

BI-1
BI-2
BI-4

In summary, the NDSA is grateful to the men and women who sacrifice to defend our nation and our way of life and recognizes the need for the military to have appropriate training to do so. Our members also understand that that is the intent of the proposal to expand the Power River Training Complex and appreciate what the Air Force is aiming to achieve. However, the proposal as currently written would present considerable safety and well-being concerns for the people and livestock residing in this area on as many as 240 days of the year.

We hope that the Federal Aviation Administration and the U.S. Air Force recognize the significance of the concerns our organization and others have identified with this proposal and are willing to work with all stakeholders to develop a safe, efficient alternative.

Thank you for the consideration of these comments. If you have any questions, please don't hesitate to call our office at (701) 223-2522.

Sincerely,

Jason Zahn
President
North Dakota Stockmen's Association

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FALLON MEDICAL COMPLEX
"Friends Healing Friends"

[redacted]

May 5, 2014

Rcvd
13 May 14

Manager, Operations Support Group
ATO Central Service Center, AGV-C2
Airspace Study 14-AGL-06NR
Department of Transportation
Federal Aviation Administration
2601 Meacham Boulevard
Fort Worth, TX 76137

RE: PRTC MOA Expansion

Dear Operations Support Group Manager,

Fallon Medical Complex's Board, Medical Staff, and Administration would like to collectively express concern for the proposed expansion of the Powder River Training Complex Military Operations Area. We were very discouraged to hear that a Bridger Pipeline helicopter was grounded in mid-April due to military exercises.

Granted, it was a commercial aircraft and the grounding was only for a few hours. However, we are gravely concerned that a similar incident involving medical aircraft could cause a person his/her life. Whereas, grounding the Bridger Pipeline helicopter was an annoyance to the pilot and an expense to the company, the reason that we fly out patients is because they need immediate attention at a higher level of care.

SA-19
SO-5

In other words, seconds count when we are talking about saving a human life. We do not have the luxury of time to drive them to another community to catch a flight. Since Baker is at least 85 miles from the next largest community, delaying a flight means delaying a patient's care for at least another hour in good weather.

On average, our hospital flies out about two patients a month to Billings, Bismarck, or Rapid City. All of these cities are equidistant from Baker, so it takes about 2-1/2 hours from the time that the flight service is called until the patient arrives at the receiving facility. This, in itself, is generally considered marginal when a patient is suffering from a heart attack or bleeding from a trauma. We cannot possibly accept a longer wait-time, especially on that could possibly extend up to ten hours.

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Plus, given that the MOA is proposed to operate 240 days per year, there is a good chance that a patient's transfer could occur during a no-fly directive, given that we transfer patients during all times of the day or night. Our patients cannot choose when they require emergency care and we cannot choose when to ship them. We simply need to respond when the time is right.

It is our hope that you can see that the MOA expansion will put our community and our patients at grave risk. Baker largely thrives because of its excellent medical facility, its reputation for successfully stabilizing emergency room patients and expediently transferring them to a higher level of care. It is conceivable that the expansion could threaten not only the viability of the facility, but also the community, given that our lifeline to larger hospitals could be restricted.

All in all, it our hope that you can see that the expanded MOA would be an extreme detriment to our community. Providing health care in a rural, isolated area is difficult enough without further limiting options for obtaining timely, necessary higher levels of care for patients. We cannot underscore enough how the expansion has the potential to severely affect the health, safety and welfare of our county and our community.

Regards,

Betty Mueller

Betty Mueller, Board Chair

Darryl Espeland, DO, Chief of Medical Staff

David Espeland, CEO

Sue Lunde, RN, Director of Nursing

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May 04, 2014

Rcvd
8 May 14

Manager, Operation Support Center Group

ATO Central Service Center, AJV-C2

Airspace Study 14-AGL-06NR

Department of Transportation

Federal Aviation Administration

2061 Meacham Blvd.

Fort Worth, Texas 76137

Dear Sirs:

I am opposed to the expansion of the Powder River Military Area for three reasons- GE-2

1. This expansion would cause great danger to the local pilots flying small aircraft checking livestock. Also the pilots doing animal damage control would be in the same danger situation. SA-8 SA-9
2. The threat of starting prairie fires with the dropping of flares. SA-6
3. The dropping of chaff would have the potential of contaminating a wool crop if dropped on a flock of sheep. As a sheep producer we strive very hard to keep the wool clip free of polyester and other contaminates. If a wool clip has been contaminated the value of that wool is greatly reduced or could be valued at zero. SO-16

Sincerely yours,

David Niemi

[redacted]

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USDA United States Department of Agriculture Forest Service Rocky Mountain Region 740 Simms Street Golden, CO 80401 Voice: 303-275-5350 TDD: 303-275-5367

File Code: 1530/1950
Date: JUN 6 2014

John Witucki, AJV-C23
Operations Support Group
Federal Aviation Administration
ATO Central Service Center
2601 Meacham Blvd
Fort Worth, TX 76137

Dear Mr. Witucki:

Thank you for the opportunity to comment on your Powder River Training Complex Airspace Study (14-AGL-06NR). We value our strong working relationship with FAA and look forward to working with you as this project moves forward. We have enclosed comments from both the Rocky Mountain and Northern Regions of the Forest Service for your consideration.

Sincerely,

for DANIEL J. JIRÓN
Regional Forester

Enclosures

It's Cool to Be Safe

Printed on Recycled Paper

309

Northern Region

Comments on the Powder River Training Complex Aeronautical Study

We acknowledge the FAA's role in the efforts of the Air Force to expand their training area to reduce fuel costs and continue to provide training for their pilots with this effort. We do ask that some things be clarified or considered in more detail. Training flights already occur over much of the Ashland and Sioux ranger Districts in Powder River and Carter counties, MT and Harding County, South Dakota, in the current Powder River A and B MOAs. Staff from each ranger district report they have not heard of problems as a result of the use of that airspace.

1) Use of Above Ground Level vs. Mean Sea Level

The Air Force mentioned having planes at certain elevations above the ground. One was Above Ground Level (AGL) for most flights. However, another type of training flight mentioned would use Mean Sea Level (MSL) instead. We suggest using AGL as the guide when talking about all flights unless a specific training need is identified that needs to use MSL instead.

AM-32

2) Archaeology

It is our understanding that the North and South Cave Hills land units of the Forest Service are considered sacred to the Lakota, Mandan, Hidatsa and Arikara tribes and are used for vision quests, solitude, etc. These three land units are part of the Sioux Ranger District and are located in Harding County, South Dakota. The Sioux Ranger District consists of eight land units, five of which are located in South Dakota and the remaining three in southeast Montana, in Carter County. We recommend that you may wish to contact the tribes regarding those areas they might consider sacred.

CU-2

There appears to be no analysis on the effects of noise and vibration, related to sonic booms and low altitude fly-overs, to the geologic units where rock art sites currently listed on the National Register of Historic Places are located. The sites are listed in tables, but no analysis is disclosed if there are potential effects. Also, there does not appear to be analysis of effects to four potentially eligible historic structures located within the analysis area - Jessie Elliott Guard Station, Tri-point Lookout, and the Molstad Cook shack located on the Sioux Ranger District; and Poker Jim Lookout and Whitetail cabin located on Ashland Ranger District. The concern is the potential effects of noise and vibration to the rock art sites and historic structures located on National Forest System land within the proposed project area. Please consider the effects of noise and vibration to these resources.

CU-5

3) Botany

The following species of sensitive plants should be considered in the FAA decision making process:

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Common Name	Scientific Name	Project Area States and Counties of Known Occurrence				FED	Habitat
		ND	SD	MT	WY		
Nutall desert-parsley	Lomatium nuttallii			Big Horn, Rosebud		USFS Species of Interest	Open, rocky pine woodlands in mid to lower elevation.
Pregnant sedge	Carex gravid var. gravida			Big Horn, Carter, Powder River, Rosebud		USFS	Green ash ravines and wooded draws.
Visher's buckwheat	Eriogonum visheri			Carter		USFS	Barren rock outcrops or clay outwash.
Barr's milvetch	Astragalus barrii			Powder River, Rosebud		USFS	Gullied knolls, buttes, & barren hilltops, often on calcareous soft shale and siltstone.
Ovalleaf milkweed	Asclepias ovalifolia			Carter		USFS	Prairies and woodlands in sandy, gravelly or clayey soils.
Prairie gentian	Gentiana affinis		Harding			USFS	Wet meadows, shores, seeps, springs.

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Common Name	Scientific Name	Project Area States and Counties of Known Occurrence				FED	Habitat
							and low prairie.
Mountain bluebells	Mertensia ciliata		Harding			USFS	Forested slopes, damp thickets, moist valley bottoms.
Small yellow lady's slipper	Cypripedium parviflorum			Carter		USFS	Fens, damp mossy woodlands, seepage areas.

4) Fire, Fuels, and Fire Suppression, and Emergency Aircraft

The Forest Service recommends using a combination of the National Fire Danger Rating System's (NFDRS) Adjective Fire Danger Rating and the National Weather Service's Red Flag Warning system to determine times when flare use should be suspended. The NFDRS Adjective Fire Danger Rating is based on indices that track season long and short term fire danger trends by combining calculated Staffing Levels and Ignition Component. We suggest utilizing Miles City Dispatch calculated values for determining the Adjective Fire Danger Rating and suspending flare use between 1000 and 2100 during days of Very High and Extreme Adjective Ratings or raising the minimum altitude for flare deployment to 5000 feet during Very High and Extreme rating days. Very High and Extreme ratings tend to correlate with the potential for numerous fire starts and large fires thus representative of environmental conditions where flares used at low altitude would cause a fire. Additionally, the National Weather Service issues Red Flag Warnings when predicted wind speed, minimum relative humidity and/or lighting activity reach critical thresholds for a particular fire weather zone. The Forest Service recommends suspending flare use during Red Flag Warning issuances.

SA-6

During fire season (June-September) how much notice will Miles City Dispatch be given of planned exercises. We would ask that large quarterly exercises be scheduled in June or late September to avoid the peak of fire season and fire aviation traffic which is typically mid-July through the first part of September to reduce airspace traffic conflicts.

AM-33

We have reviewed the July 2008 scoping comments submitted by the Bureau of Land Management (BLM) and concur and incorporate those comments into our recommendations. The Forest Service and BLM jointly work together with other Federal, Montana State and local

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departments, such as the Department of Natural Resources and Conservation, as well as the Bureau of Indian Affairs in the management and suppression of fire in the Eastern Montana Fire Zone (EMFZ). Due to the large number of cooperating agencies in EMFZ and the need for rapid fire management response, we want to emphasize the need for quick, efficient and effective communication between the Air Force and Miles City and/or Billings Dispatch Center(s).

5) Recreation

The Ashland and Sioux ranger districts on the Custer National Forest are very popular destinations for hunters. National Forest System (NFS) lands provide an important recreation opportunity for hunters both in local communities and those who travel from neighboring states. Families return annually to hunt on these particular lands. Hunting provides individuals an important connection to the land, an opportunity to engage in individual and family hunting traditions, and a way to provide meat for oneself and family. During the various hunting seasons, use of the Forest occurs throughout the week, though use is heaviest on weekends. Noise from aircraft has the potential to negatively affect hunters and their prey.

SO-9

6) Wildlife

Several wildlife species need to be considered in the FAA decision. Some of these species are considered Northern Region Forest Service sensitive species, and others are Forest Plan Habitat Indicator Species (also known as Management Indicator Species (MIS)), and other species are Forest Plan key species. Forest Service sensitive species are analyzed pursuant to the National Forest Management Act (NFMA) to determine whether the effects of an action to these species would cause a trend toward listing under ESA. The analysis of Habitat Indicator Species and Key species ensure an action is consistent with the Custer National Forest Land and Resource Management Plan (Forest Plan) pursuant to NFMA. These species are indicated in the table below.

BI-8

Common Name	Scientific Name	Project Area States and Counties of Known Occurrence				FED	Habitat
		ND	SD	MT	WY		
Blue-gray gnatcatcher	*Polioptila*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, Sensitive	Open stands of juniper and limber pine with intermixed sagebrush.
Loggerhead shrike	*Lanius ludovicianus*		Harding	Big Horn, Carter, Powder River,		USFS, Sensitive	Grassy pastures that are well grazed, nest in shrubs or small trees, preferably

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Common Name	Scientific Name	Project Area States and Counties of Known Occurrence				FED	Habitat
				Rosebud			thorny such as hawthorn.
Long-eared myotis	*Myotis evotis*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, Sensitive	Use a variety of habitats but are strongly associated with coniferous forests.
Long-legged myotis	*Myotis volans*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, Sensitive	Primarily a coniferous-juniper forest bat found at moderate elevations (≥6000ft) but may also inhabit riparian cottonwood bottoms and desert areas.
Greater Short-horned lizard	*Phrynosoma hernandesi*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS' Sensitive	Areas with short, sparse grass or sagebrush; flats with pebbly or stony soil; and rock outcrops.
Western kingbird	*Tyrannus verticalis*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, MIS	Open or partially open country with scattered trees, including agricultural lands.
Lark sparrow	*Chondestes grammacus*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, MIS	Open or partially open country with scattered trees, including agricultural lands.
Bullock's oriole	*Icterus bullockii*		Harding	Big Horn, Carter, Powder River,		USFS, MIS	Open deciduous woodland and riparian areas.

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Common Name	Scientific Name	Project Area States and Counties of Known Occurrence				FED	Habitat
				Rosebud			
Yellow warbler	*Dendroica petechia*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, MIS	Brushy riparian especially with willows.
Ovenbird	*Seiurus aurocapillus*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, MIS	Mid-late successional, closed-canopied deciduous or deciduous/conifer forests with limited understory.
Golden eagle	*Aquila chrysaetos*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, Key Species	Open hilly to mountainous areas. habitat
Merlin	*Falco columbarius*		Harding	Big Horn, Carter, Powder River, Rosebud		USFS, Key species	Patchy shrub/grassland habitats with large trees to support nesting (secondary nester).

A Biological Assessment should be prepared, pursuant to the Endangered Species Act. Please make the Biological Assessment available for review.

The Forest Service conducts flights for wildlife surveys (e.g. goshawk nest surveys), reconnaissance flights after lightning activity or infrared flights to determine hot spot activity during fire operations. Please clarify what procedure will be used when coordinating flights with the DoD flight scheduling desk at Ellsworth AFB. The nature of some of these flights does not warrant requesting a TFR due to the limited amount of flight time required. How much consideration and how far in advance would we be able to schedule flights to avoid conflicts with planned exercises?

AM-12

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Rocky Mountain Region

Comments on the Powder River Training Complex Aeronautical Study

Emergency Use of Airspace

The Air Force proposal identifies that emergency related airspace needs for life flight or firefighting activities would take priority over training exercises and that exercises would be relocated or aborted as needed to accommodate these uses. We recommend that the USFS, FAA, and US Air Force enter into an MOU for this purpose similar to the MOU with the Montana BLM identified in the Air Force DEIS.

Effects to Wildlife

This proposed project will allow Air Force flights over portions of the Thunder Basin National Grassland that have been designated By the State of Wyoming as Core Sage Grouse Habitat. This habitat has been designated throughout Wyoming in an effort to provide protection to a significant portion of the states sage grouse population. Since this species has been identified as being "warranted but precluded" from listing under the Endangered Species Act, it has been listed as a U.S. Forest Service Region 2 Sensitive Species. Wildlife that fall into this category receives additional management consideration by the Forest Service. Adverse impacts are avoided or minimize as much as possible to prevent a continued downward trend in populations and habitat condition.

To accomplish these goals, the Forest Service has been a partner in the development of sage grouse conservation plans and the State of Wyoming's Greater Sage Grouse Core Population Strategy. This strategy provides stipulations and guidelines designed to protect the sage grouse and its habitat. We would encourage the Air Force to review this strategy as well as the Northeast Wyoming Sage Grouse Conservation Plan. Information from both of these plans can be useful in designing their proposed project to minimize impacts to sage grouse and their habitat. This information, used in concert with the above recommendations should provide a framework to assist the State of Wyoming and the U.S. Forest Service manage sage grouse habitat effectively, while allowing the Air Force to conduct their training missions. The long term management of effective habitat and a stable to growing population of sage grouse is the key to keeping this species off of the Endangered Species list.

SO-27

Effects to Recreation Use

We are concerned about the Air Force conclusion that there would be no negatives to recreational land use under the proposal. Many of our visitors come to the National Forests and Grasslands to enjoy nature. For many, this includes freedom from noise and other human impacts. The FAA should note that increasing training overflights and introducing sonic booms would conflict with these goals and would potentially have adverse impacts to visitors to the National Forests and Grasslands.

SO-9

Use of Chaff and Flares

It appears from the Air Force proposal that over the next ten years about 300,000 chaff bundles of 5 million fibers each (1.5 trillion total fibers) will be dropped on lands underneath the training activities. The FAA should clarify if this is the maximum amount of fibers to be permitted. We note that the useful training life cycle of chaff ends after it forms a cloud and is then deposited on the land and that chaff is

309

defined as ordnance. The FAA should identify the permitting processes for this chaff ordnance disposal on lands beneath the airspace.

We understand that these fibers generally do not degrade chemically. Instead, they break down mechanically, apparently into smaller, more numerous fibers. Information on the potential for wildlife or humans to inhale or ingest these smaller, mechanically broken down fibers appears to be limited and could be improved through a monitoring effort to determine the long term environmental effects of these fibers. We understand that biodegradable chaff has not proven feasible. It would be useful to know if other training options, such as electronic simulation of chaff clouds could be investigated. BI-8

Management of any clean up of litter from the chaff on National Forest System lands, how any fires from flares will be suppressed and paid for, and how any dud flares would be handled should be considered in a Memorandum of Agreement. SA-5

Master Agreement

A Memorandum of Agreement (MOA) for this project needs to be completed with the US Forest Service.

310

Rejection of proposed PR2 MOA near Ellsworth AFB South Dakota urged in the strongest possible terms - not lawful.

All of the low level airspace in the U.S. is badly needed for air transport. In previous reviews of this and other proposed MOAs, the proposed PR2 and any future MOA additions would be an obstruction of air commerce; or highly unlawful.

AM-6

The U.S. Air Force must figure out how to use its existing MOAs more efficiently without adding any to prevent obstruction of air commerce. The U.S. Air Force disengagement from the proposed PR2 MOA addition and all future MOA additions are urged as the only lawful choice using existing MOAs only.

AM-6
PN-3

Note: unencumbered, unimpeded transportation of all types in the U.S. is guarranted by the U.S. Constitution; known as the Commerce Clause.

Respectfully submitted,

Terry D. Welander

Terry D. Welander, commercial pilot

[redacted]

311

www.swhealthcare.net

TO: Manager, Airspace Study - Operations Support Group
FROM: Southwest Healthcare Services, Bowman, ND
DATE: April 30, 2014
SUBJECT: Powder River Training Areas

We at Southwest Healthcare are very concerned about the proposed Powder River training expansion areas. Our community has undergone great changes associated with the Bakken and Williston oil activities in the state. High salary jobs are increasing; population is growing; and air traffic is increasing with local communities trying to keep pace with the demand in services. Rural fire departments, hospital and clinic staff, ambulance and EMT staff, and emergency response offices are all impacted by this increase in demand.

We may now be required to do more with the Powder River Area which is Area #3 and is directly over our community! The potential for aircraft mid-air or crashes is very real with the proposed 500 foot altitude restriction. Also, fire potential is a major concern with flare dropping operations. How will these area restrictions impact local health services such as *med-evac* and life flights to transport patients to larger, higher level facilities?

SA-1
SA-5
SA-18
SA-19

Some recommendations that could greatly reduce these impacts include the following:

1. NO area #3, or a "high area" designation
2. . Raise area floors to 8000 feet
3. 500 feet restriction 1 day/week instead of 5 days/week

We do appreciate your attention to this matter which we consider very important to our facility and our communities.

Respectfully,

H

Becky Hansen, CEO

Southwest Healthcare Services

Providing Healthcare Services For
Acute Care, Skilled Nursing, Visiting Nurse Services, Ambulance Services, Outpatient Clinic, Rehab Services, Independent and Assisted Living

[redacted]

312

JOHN HOEVEN
NORTH DAKOTA

COMMITTEES
AGRICULTURE
APPROPRIATIONS
ENERGY AND NATURAL RESOURCES
INDIAN AFFAIRS

United States Senate

WASHINGTON, DC 20510

May 22, 2014

Michael P. Huerta
Administrator
Federal Aviation Administration
800 Independence Avenue SW
Washington, DC 20591

Dear Administrator Huerta:

As you know, the Air Force has worked for many years to develop the Powder River Military Training Range proposal. I am encouraged by the fact that the Air Force has designed several sections of the Powder River range to avoid civilian traffic, including section four, where military airspace would not extend below 12,000 feet mean sea level (MSL). I hope that you will work with the Air Force to mitigate some additional concerns that will maximize the availability of airspace for civilian use while still accommodating the needs of the men and women of the Air Force.

I am specifically concerned with section three of the proposed range, which would involve military traffic as low as 500 feet above ground level (AGL). Such a low altitude greatly complicates civilian use of the airspace and could adversely affect:

- Weather modification activities;
- Air ambulance services; and
- Commercial traffic, especially in and out of the Bowman airport.

SA-15
SO-28
SA-19
AM-21

Better communication is essential to minimizing the effects of military use of the Powder River airspace on civilian users. I welcome the Air Force proposal to create a communications network to provide real-time airspace status to civilian pilots and two-way communication with the scheduling agency. I also believe the Air Force must increase efforts to communicate with the public when it will use the range, perhaps through a hotline or website, and I hope that the FAA will work with the Air Force to ensure the public is notified to the greatest extent possible when the range is in use. Finally, the FAA should encourage the Air Force to establish procedures that allow for maximum civilian use of the airspace in question, including the use of memorandums of understanding with civilian users, the deactivation of the range when the Air Force does not require it, and the development of procedures to accommodate civilian emergency flights.

AM-3

AM-6

Thank you for your attention to this matter. If you have questions, please contact Josh Carter of my staff at 202-224-2551.

Sincerely,

John Hoeven
U.S. Senator

FAA-140605-003

MAY. 2. 2014 4:04PM EAA OSHKOSH, WI NO. 6135 P. 2

313

EAA
THE SPIRIT OF AVIATION

April 28, 2014

Mr. Kent M. Wheeler
Manager, Operations Support Group
ATO Central Service Center, AJV-C2
Department of Transportation
Federal Aviation Administration
2601 Meacham Boulevard
Fort Worth, Texas 76137

In Re: Airspace Study 14-AGL-06NR, Powder River Training Complex Special Use Airspace

Dear Mr. Wheeler:

EAA (the Experimental Aircraft Association) is the world leader in recreational aviation. With an international membership of more than 180,000 people in more than 100 nations, EAA brings together pilots, aircraft owners, and aviation enthusiasts who are dedicated to sharing *the Spirit of Aviation* by promoting the continued growth of aviation, the preservation of its history and a commitment to aviation's future.

EAA is commenting on the proposed Powder River Training Complex (PRTC), which, if approved, will be the largest Special Use Airspace (SUA) in the United States. The United States Air Force (USAF) determined that their training mission requires a four-fold expansion of the existing Powder River Military Operating Area (MOA). The new PRTC would cover approximately 28,000 square miles of Montana, Wyoming, and North and South Dakota, and includes airspace over 39 general aviation (GA) airports and nearly 300 based civil aircraft.

On behalf of our membership, EAA supports and encourages the mission of the USAF and recognizes the need for appropriate training airspace. However, we are also committed to general aviation safety and access, and we have concerns that the proposed PRTC could provide a significant detriment to airports, pilots, student pilots, and aviation businesses located underneath the SUA. We are also concerned that without proper safety considerations in place, non-participating VFR operations could present a safety hazard to both GA and USAF pilots.

EAA hopes that, in the best interest of aviation safety, local economic activity, and airspace access, FAA will consider the following requests and recommendations prior to approving the expansion of the PRTC:

[redacted]

2. 2014 4:05PM EAA OSHKOSH, WI NO. 6135 P. 3

313

Establishment of Advisory Communication Services for the PRTC

The most pressing safety requirement for protecting non-participating VFR traffic, locally based or transient, is the creation and implementation of real-time MOA status advisories distributed through multiple channels. EAA requests that the USAF develop a continuously-operational communications plan that will allow pilots on the ground and in the air to immediately determine the status of the MOA. Such a plan might include a website, a toll-free telephone hotline, and/or an automated VHF broadcast, **before** the FAA approves the PRTC expansion. This system would ideally be continuously updated with information including current MOA status, as well as planned activation and deactivation times.

EAA understands that the establishment of such a system is vital and necessary to promoting situational awareness for GA pilots, especially because the dissimilar operating envelopes of military aircraft and GA aircraft make "see and avoid" difficult at best to practice.

A comprehensive communications plan would also help mitigate some of the deleterious economic effects of the proposed PRTC expansion. Transient GA traffic is an important source of income for many businesses based at airports under the proposed SUA, and EAA believes that without a convenient and accurate source of information, the majority of transient traffic would simply avoid the charted MOA due to safety concerns. This avoidance would immediately harm aeronautical businesses and their communities.

AM-1
AM-3
AM-6
AM-12

Establishment of Full-Coverage, Two-Way VHF Communication for the SUA

EAA requests that the USAF establish a radio communication network that will permit GA traffic and the USAF to communicate over VHF frequencies across the expanse of the proposed PRTC. In contrast to military aircraft, nearly all GA aircraft use VHF exclusively and it is important that these GA aircraft are able to communicate with military range controllers. Additionally, a range-wide system of VHF radio repeaters would facilitate the automated status broadcasts previously referenced.

AM-3

Temporary, Uncharted Gap MOAs

EAA requests that the proposed Gap MOAs remain uncharted and become activated as temporary MOAs, following the guidance for establishing temporary MOAs outlined in FAA Order 7400.2K, section 25-1-7. The relevant passage states that temporary MOAs are appropriate for military operations "that supplement routine training" and for "short-term military exercises," both of which succinctly describe the Large Force Exercises that the USAF plans to conduct once a quarter for a few days per exercise.

Leaving the Gap MOAs uncharted would provide VFR GA traffic with a safe way to transit the area of an active MOA without having to either fly directly through it or fly completely around it, which reduces the inconvenience and imposition of the MOAs to the local GA community.

AM-34

[redacted]

313

While Order 7400.2K section 25-1-7(b) does allow that if "it is determined that the need for a temporary MOA will occur on a regular and continuing basis, the airspace should be considered for establishment as a permanent MOA," EAA does not believe that a few days of usage for Large Force Exercises four times a year, totaling nine or 10 days annually by the USAF's own prediction, reaches the standard of "regular and continuing."

Charted MOA Active Hours That Represent Planned Airspace Usage

The current proposal for the PRTC includes charted MOA activity durations that are not consistent with the USAF estimates of actual usage. For example, the Monday through Thursday charted activity times for PR3 Low MOA are 0730-1200 and 1800-2330—a total of 10 hours—while the USAF estimates daily use to be only three hours. EAA understands that the discrepancy between charted times of activity versus actual use time gives the USAF flexibility in launching and recovering sorties, but we believe that the inflating charted activity times detracts from the public's ability to confidently use the airspace for a larger-than-necessary portion of the day. EAA requests that the charted activity times be amended to reflect estimated usage times. We also respectfully note that should the charted times be inadequate on rare occasions, the USAF always has the option of extending or altering the MOA activity times by NOTAM.

PN-5
AM-6

Summary

The proposed PRTC is a massive Special Use Airspace situated over communities with robust GA communities that provide recreational flying, flight training, medivac services, agricultural flying, aircraft maintenance, business travel, and cargo transport for their host communities. EAA requests that the FAA consider and implement our recommendations in the hopes that the flight safety risks presented by the PRTC, as well as the negative economic consequences, will be mitigated for these communities.

Respectfully Submitted,

Jonathan Harger
Government Advocacy Specialist

[redacted]

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Baker Municipal Airport Commission

[redacted]

Administrator Michael P. Huerta
Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20591

May 21, 2014

RE: Powder River Training Complex

Dear Administrator Huerta;

This entire comment process has been tainted and needs to be re-opened to accept electronic comments as is currently being done with the Cheyenne MOA comments. I was told by the FAA Central ATO that electronic comments were not possible!

Another issue is the EAS that was conducted by the USAF in2006. It did not fully address the concerns of the oil & gas industry. This has also changed significantly over the last 10 years, as 10% of the current US consumption of crude oil is produced in this area.

With the upturn in our area economy due to the oil & gas industry, our airport has become one of the busiest in eastern Montana with over 6,000 operations per year.

Flight instruction has increased immensely at our airport and will not be sustainable with this proposed MOA. This will cost jobs at our airport, as well as fuel sales. Remember, flight instruction is where the food chain for aviation starts!! Without pilots, we do not need airplanes, airports, or the FAA. There is a massive pilot shortage coming.

The FAA cannot justify the Powder River Training Complex after spending $30 million in ADAP funds in Montana alone over the last 20 years on the airports that lay beneath this massive proposed MOA. Bowman, ND is currently spending over $20 million on a new airport to provide services for the oil & gas industry. That's over $50 million dollars!!!

SO-10

The USAF says they will "share" airspace, as long as they can have it on their schedule, prime civilian use times. They have not one damn thing to cooperate with the current Powder River MOA! Ellsworth AFB even issued a "TFR" no fly zone around the last accident site, and kept in place for over 30 days.

On February 11, 2014, a Phenom 300 was cleared direct thru the Powder River MOA, which was active at the time. With no communications or radar coverage in this area, this could have been disastrous had an over flying airline not relayed message to turn 180 degrees immediately!!

AM-3
SA-1

I have enclosed two letters that I sent in to the ATO during the comment period for your review.

Please don't destroy our airport, KBHK, as I have worked for over 36 years to build it to what it is today.

Roger D. Meggers
KBHK Airport Manager
[redacted]

FAA-140602-004

Comment and Response Matrix – FAA Aeronautical Inputs

Comment	*Description*	*Response*
1	Modify Gap B MOA/ ATCAA as depicted on Attachment 1 to avoid Gap B extending across Gap C to prevent usage of V-491 when Gap B MOA/ A TCAA is active and the Gap C MOA/ ACT AA is not.	The Air Force redesigned the Gap B and C intersection. The supporting coordinates are: Gap B High and Low: Beginning at Lat. N46°08 ' 55", Long. Wl05°27'24"; Counter Clockwise along the MLS VOR/DME, 25 NM arc; to Lat. N46°18'08", Long. W105°21'51"; to Lat. N46°03'21", Long. W104°31'24"; to Lat. N45°52'07", Long. W103°44'36"; to Lat. N45°35'42", Long. W103°01'21"; to Lat. N45°29'36", Long. W103°02'33"; to Lat. N45°29'05", Long. W103°17'10"; to Lat. N45°37'48", Long. W103°52'28"; to Lat. N45°53'08", Long. W104°33'46"; to the point of beginning. Gap C High: Beginning at Lat. N46°22'24", Long. W102°56'07"; Counter Clockwise along the DIK VORTAC, 30 NM arc; to Lat. N46°2l'48", Long. W102°41'42"; to Lat. N45°48'35", Long. W102°44'37"; to Lat. N45°30'13", Long. W102°44'07"; to Lat. N45°29'36", Long. W103°02'33"; to Lat. N45°35'42", Long. W103°01'21 "; to Lat. N45°47'47", Long. W102°59'01"; to the point of beginning.
2	Deny the Gap C low MOA (airspace below 12,000MSL) due to the conflict with V-491 and the excessive impacts to traffic by losing that route. Minneapolis Center does not support approval of the Gap C Low MOA (MOA airspace below 12,000MSL) even if limited to Large Force Exercises. In addition: The base of the Gap C MOA should be raised to 12,000 to	The Air Force removed the Gap C Low MOA.

	coincide with the base of the Powder River 4 MOA. The eastern tip of the Gap B should be "clipped-off' and added to Gap C (See Fig 3-l).This would allow low-altitude aircraft to use V -491 while the Gap B low MOA is active.	
3	Amend the Times of Use to read: i. Powder River 2 MOA: By NOTAM 2 hours in advance, 0730-1200 and 1800-2330 Monday-Thursday, and 0730-1200 Friday, Other Times by NOTAM 4 hours in advance. ii. Powder River 1, 3, 4 MOA's: Intermittent by NOTAM 4 hours in advance, 0730-1200 and 1800-2330 Monday-Thursday, and 0730-1200 Friday, Other Times by NOTAM 4 hours in advance. iii. Gap A, B, C MOAs: By NOTAM 4 hours in advance, Large Force Exercise Only. In addition: The proposal request times of use to be published for airspace to be from 0730-1200 and 1800-2330 Mountain Time, Monday- Thursday; 0730-1200 Mountain Time, Friday; other times by NOTAM. Salt Lake center requests PR-2 have these published times and all the rest by NOTAM.	The Air Force revised the Times of Use to the following: For 1A Low, 1B High/Low, IC Low, 1D High/Low; 2 High/Low, 3 High/Low; and 4 High: - By NOTAM 2 hours in advance 0730-1200 and 1800-2330 Monday-Thursday and 0730-1200 Friday; other times by NOTAM 4 hours in advance. For 1A High, 1C High, Gap A High/Low, Gap B High/Low and Gap C High: - By NOTAM 4 hours in advance.
4	Require that Ellsworth AFB have a means of communication with participating aircraft at all altitudes to facilitate a near immediate modification or recall of active airspace if necessary to accommodate arrivals and departures to/from underlying or adjacent airspaces, including the new.	The Air Force intends to establish radio coverage across the PRTC with training aircraft to support agile recall of active airspace. The current coverage for all high-altitude segments and PR2 low is considered effective. The shortfall in coverage for PR1 and PR3 low will be resolved after a determination is made on the airspace action.
5	Require that Ellsworth staff a position to manage real-time activation, use, modification, recall, and return of the proposal airspace as discussed in section H [should read G] "ATC Services" above.	The Air Force intends to establish a focal point responsible for dynamically coordinating the segmentation of the airspace; changing the base or ceiling of the airspace to support nonparticipants requiring minimal delay.
6	Boundary modification (cut-out) of the PR2 low and high MOAs.	The Air Force enlarged the cutout exclusionary area in PR2 high and low-altitude area for Hulett WY (W43). The supporting coordinates are: PR2 High and Low: Beginning at Lat. N45°59'27", Long. Wl05°45'07";

		Counter Clockwise along the MLS VOR/DME, 25 NM arc; to Lat. N46°08'55", Long. W105°27'24"; to Lat. N45°53'08", Long. W104°33'46"; to Lat. N45°37'48", Long. W103°52'28"; to Lat. N45°29'05 ", Long. W103°17'10"; to Lat. N45°03'44", Long. W103°17'58"; to Lat. N44°48'05", Long. W104°15'25 "; to Lat. N44°50'57", Long. W104°35'41"; to Lat. N44°47'04", Long. W104°46'22"; to Lat. N44°42'03", Long. W104°49'27"; to Lat. N44°38'57", Long. W104°48'43"; to Lat. N44°33'01", Long. W105°10'34"; Counter Clockwise along the GCC VOR/DME, 20 NM arc; to Lat. N44°39'45", Long. W105°23'20"; to Lat. N44°47'12", Long. W105°30'41"; to the point of beginning.
7	During large force exercises Gap MOAs and ATCAA's would have an extreme impact to users. Air Force must comply with the AIR FORCE INSTRUCTION 11-214 AIR OPERATIONS RULES AND PROCEDURES Dated 14 A UGUST2012 "Large Force Exercise--Training where more than 1 0 aircraft are operating in the assigned airspace" to be considered a large force exercise when scheduling the GAPS and other airspace.	The Air Force intends to comply with the Air Force Instruction 11-214 guidance for Large Force Exercises.

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Federal Aviation Administration

Memorandum

Date: July 25, 2014

To: Lt Col Richard Miller, US Air Force Representative (AFREP), Air Traffic Organization (ATO) Central Service Center, ASW-910

From: Dr. John A. Wilucki, Air Traffic Representative (ATREP), Operations Support Group, ATO Central Service Center, AJV-C23

Subject: Aeronautical Study Consultations, Powder River Training Complex, Military Operations Area, 14-AGL-06NR

The US Air Force (USAF) submitted the Powder River Training Complex (PRTC) Military Operations Airspace (MOA) Airspace Proposal (AP) to the Federal Aviation Administration (FAA) for consideration. The submission was processed using the Order 7400.2K, Procedures for Handling Airspace Matters. The process includes Aeronautical Studies of the AP by the affected air traffic facilities as covered in Order 7400.2K Part 5, Chapter 21, Section 6.

The procedures in Order 7400.2K, Part 5, Chapter 21, Section 5 covers the Regional/Service Area Office Actions for the processing requirements of items such as issues brought forward by the facilities identified during the Aeronautical Studies. Airspace issues identified during the Aeronautical Studies were provided to the USAF (Attach 1).

The Central Operations Support Group (COSG) and the airspace Proponent coordinated on the issues identified during the Aeronautical Studies (Attach 2). The coordination between the agencies was pre-decisional. The communication or conclusions from coordination provided for in 7400.2 with the Proponent does not constitute a decision or represent an approval by the FAA of the airspace action. The coordination concentrated on investigating ways for the Proponent to lessen the potential aeronautical impacts captured during the studies and/or resolve problem areas. After the USAF consulted with the FAA on the airspace issues, a conclusion was reached that the following revisions to the AP would decrease aeronautical impacts on the NAS.

1. Modify Gap B MOA/ATCAA as depicted on Attachment 1 to avoid Gap B extending across Gap C to prevent usage of V-491 when Gap B MOA/ATCAA is active and the Gap C MOA/ACTAA is not. 1

- The Proponent redesigned the Gap B and C intersection. The supporting coordinates are:

315

2

Gap B High and Low. Beginning at Lat. N46°08'55", Long. W105°27'24";
Counter Clockwise along the MLS VOR/DME, 25 NM arc;
to Lat. N46°18'08", Long. W105°21'51";
to Lat. N46°03'21", Long. W104°31'24";
to Lat. N45°52'07", Long. W103°44'36";
to Lat. N45°35'42", Long. W103°01'21";
to Lat. N45°29'36", Long. W103°02'33";
to Lat. N45°29'05", Long. W103°17'10";
to Lat. N45°37'48", Long. W103°52'28";
to Lat. N45°53'08", Long. W104°33'46";
to the point of beginning.

Gap C High. Beginning at Lat. N46°22'24", Long. W102°56'07";
Counter Clockwise along the DIK VORTAC, 30 NM arc;
to Lat. N46°21'48", Long. W102°41'42";
to Lat. N45°48'35", Long. W102°44'37";
to Lat. N45°30'13", Long. W102°44'07";
to Lat. N45°29'36", Long. W103°02'33";
to Lat. N45°35'42", Long. W103°01'21";
to Lat. N45°47'47", Long. W102°59'01";
to the point of beginning.

2. Deny the Gap C low MOA (airspace below 12,000MSL) due to the conflict with V-491 and the excessive impacts to traffic by losing that route. Minneapolis Center does not support approval of the Gap C Low MOA (MOA airspace below 12,000MSL) even if limited to Large Force Exercises.

In addition:
The base of the Gap C MOA should be raised to 12,000 to coincide with the base of the Powder River 4 MOA. The eastern tip of the Gap B should be "clipped-off" and added to Gap C (See Fig 3-1).This would allow low-altitude aircraft to use V-491 while the Gap B low MOA is active.

- The Proponent removed the Gap C Low MOA.

2

3. Amend the Times of Use to read:

i. Powder River 2 MOA: By NOTAM 2 hours in advance, 0730-1200 and 1800-2330 Monday-Thursday, and 0730-1200 Friday, Other Times by NOTAM 4 hours in advance.

ii. Powder River 1, 3, 4 MOA's: Intermittent by NOTAM 4 hours in advance, 0730-1200 and 1800-2330 Monday-Thursday, and 0730-1200 Friday, Other Times by NOTAM 4 hours in advance.

iii. Gap A, B, C MOAs: By NOTAM 4 hours in advance, Large Force Exercise Only.

In addition:
The proposal request times of use to be published for airspace to be from 0730 - 1200 and 1800 -2330 Mountain Time, Monday - Thursday; 0730 - 1200 Mountain Time, Friday; other times by NOTAM. Salt Lake center requests PR-2 have these published times and all the rest by NOTAM.

- The Proponent revised the Time of Use.

3

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For 1A Low, 1B High/Low, 1C Low, 1D High/Low; 2 High/Low, 3 High/Low; and 4 High.

- By NOTAM 2 hours in advance 0730 - 1200 and 1800 -2330 Monday - Thursday and 0730 - 1200 Friday; other times by NOTAM 4 hours in advance.

For 1A High, 1C High, Gap A High/Low, Gap B High/Low and Gap C High.

- By NOTAM 4 hours in advance.

4. Require that Ellsworth AFB have a means of communication with participating aircraft at all altitudes to facilitate a near immediate modification or recall of active airspace if necessary to accommodate arrivals and departures to/from underlying or adjacent airspaces, including the new.

- The Proponent intends on establishing radio coverage across the PRTC between the Using Agency and training aircraft to support agile recall of active airspace. The current coverage for all high-altitude segments and PR2 low is considered effective. The shortfall in coverage for PR1 and PR3 low will be resolved after a determination is made on the airspace action.

4

5. Require that Ellsworth staff a position to manage real-time activation, use, modification, recall, and return of the proposal airspace as discussed in section H [should read G] "ATC Services" above.

- The Proponent intends on establishing a focal point responsible for dynamically coordinating the segmentation of the airspace; changing the base or ceiling of the airspace to support nonparticipants requiring minimal delay.

5

6. Boundary modification (cut-out) of the PR2 low and high MOAs.

- The Proponent enlarged the cutout exclusionary area in PR2 high and low-altitude area for Hulett WY (W43). The supporting coordinates are:

6

PR2 High and Low. Beginning at Lat. N45°59'27", Long. W105°45'07";
Counter Clockwise along the MLS VOR/DME, 25 NM arc;
to Lat. N46°08'55", Long. W105°27'24";
to Lat. N45°53'08", Long. W104°33'46";
to Lat. N45°37'48", Long. W103°52'28";
to Lat. N45°29'05", Long. W103°17'10";
to Lat. N45°03'44", Long. W103°17'58";
to Lat. N44°48'05", Long. W104°15'25";
to Lat. N44°50'57", Long. W104°35'41";
to Lat. N44°47'04", Long. W104°46'22";
to Lat. N44°42'03", Long. W104°49'27";
to Lat. N44°38'57", Long. W104°48'43";
to Lat. N44°33'01", Long. W105°10'34";
Counter Clockwise along the GCC VOR/DME, 20 NM arc;

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to Lat. N44°39'45", Long. W105°23'20";
to Lat. N44°47'12", Long. W105°30'41";
to the point of beginning.

7. During large force exercises Gap MOAs and ATCAA's would have an extreme impact to users. Air Force must comply with the ***AIR FORCE INSTRUCTION 11-214 AIR OPERATIONS RULES AND PROCEDURES Dated 14 AUGUST2012*** **"Large Force Exercise**—Training where more than 10 aircraft are operating in the assigned airspace" to be considered a large force exercise when scheduling the GAPS and other airspace. 7

- The Proponent intends on complying with the Air Force Instruction 11-214 guidance for Large Force Exercise.

Any changes or alterations of these AP revisions will require further consultations between the USAF and the FAA. Should you have any questions, please contact Dr. John Witucki, Air Traffic Representative at 817-321-7734.

Attachments:
1. Facility's Aeronautical Study Contingencies
2. USAF Aeronautical Study Inputs

cc:
AJV-W23
ANM-910
ASW-910

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APPENDIX I
NOISE

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APPENDIX I NOISE

Noise is generally described as unwanted sound. Unwanted sound can be based on objective effects (such as hearing loss or damage to structures) or subjective judgments (community annoyance). Noise analysis thus requires a combination of physical measurement of sound, physical and physiological effects, plus psycho- and socio-acoustic effects.

Section 1.0 of this appendix describes how sound is measured and summarizes noise impacts in terms of community acceptability and land use compatibility. Section 2.0 gives detailed descriptions of the effects of noise that lead to the impact guidelines presented in Section 1.0. Section 3.0 provides a description of the specific methods used to predict aircraft noise, including a detailed description of sonic booms.

1.0 NOISE DESCRIPTORS AND IMPACT

Aircraft operating in military airspace generate two types of sound. One is "subsonic" noise, which is continuous sound generated by the aircraft's engines and also by air flowing over the aircraft itself. The other is sonic booms (where authorized for supersonic), which are transient impulsive sounds generated during supersonic flight. These are quantified in different ways.

Section 1.1 describes the characteristics which are used to describe sound. Section 1.2 describes the specific noise metrics used for noise impact analysis. Section 1.3 describes how environmental impact and land use compatibility are judged in terms of these quantities.

1.1 QUANTIFYING SOUND

Measurement and perception of sound involve two basic physical characteristics: amplitude and frequency. Amplitude is a measure of the strength of the sound and is directly measured in terms of the pressure of a sound wave. Because sound pressure varies in time, various types of pressure averages are usually used. Frequency, commonly perceived as pitch, is the number of times per second the sound causes air molecules to oscillate. Frequency is measured in units of cycles per second, or hertz (Hz).

Amplitude. The loudest sounds the human ear can comfortably hear have acoustic energy one trillion times the acoustic energy of sounds the ear can barely detect. Because of this vast range, attempts to represent sound amplitude by pressure are generally unwieldy. Sound is, therefore, usually represented on a logarithmic scale with a unit called the decibel (dB). Sound measured on the decibel scale is referred to as a sound level. The threshold of human hearing is approximately 0 dB, and the threshold of discomfort or pain is around 120 dB.

Because of the logarithmic nature of the decibel scale, sounds levels do not add and subtract directly and are somewhat cumbersome to handle mathematically. However, some simple rules of thumb are useful in dealing with sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. Thus, for example:

60 dB + 60 dB = 63 dB, and

80 dB + 80 dB = 83 dB.

The total sound level produced by two sounds of different levels is usually only slightly more than the higher of the two. For example:

60.0 dB + 70.0 dB = 70.4 dB.

Because the addition of sound levels behaves differently than that of ordinary numbers, such addition is often referred to as "decibel addition" or "energy addition." The latter term arises from the fact that the combination of decibel values consists of first converting each decibel value to its corresponding acoustic energy, then adding the energies using the normal rules of addition, and finally converting the total energy back to its decibel equivalent.

The difference in dB between two sounds represents the ratio of the amplitudes of those two sounds. Because human senses tend to be proportional (i.e., detect whether one sound is twice as big as another) rather than absolute (i.e., detect whether one sound is a given number of pressure units bigger than another), the decibel scale correlates well with human response.

Under laboratory conditions, differences in sound level of 1 dB can be detected by the human ear. In the community, the smallest change in average noise level that can be detected is about 3 dB. A change in sound level of about 10 dB is usually perceived by the average person as a doubling (or halving) of the sound's loudness, and this relation holds true for loud sounds and for quieter sounds. A decrease in sound level of 10 dB actually represents a 90 percent decrease in sound *intensity* but only a 50 percent decrease in perceived *loudness* because of the nonlinear response of the human ear (similar to most human senses).

The one exception to the exclusive use of levels, rather than physical pressure units, to quantify sound is in the case of sonic booms. As described in Section 3.2, sonic booms are coherent waves with specific characteristics. There is a long-standing tradition of describing individual sonic booms by the amplitude of the shock waves, in pounds per square foot (psf). This is particularly relevant when assessing structural effects as opposed to loudness or cumulative community response. In this environmental analysis, sonic booms are quantified by either dB or psf, as appropriate for the particular impact being assessed.

***Frequency*.** The normal human ear can hear frequencies from about 20 Hz to about 20,000 Hz. It is most sensitive to sounds in the 1,000 to 4,000 Hz range. When measuring community response to noise, it is common to adjust the frequency content of the measured sound to correspond to the frequency sensitivity of the human ear. This adjustment is called A-weighting (American National Standards Institute 1988). Sound levels that have been so adjusted are referred to as A-weighted sound levels.

The audible quality of high thrust engines in modern military combat aircraft can be somewhat different than other aircraft, including (at high throttle settings) the characteristic nonlinear crackle of high thrust engines. The spectral characteristics of various noises are accounted for by A-weighting, which approximates the response of the human ear but does not necessarily account for quality. There are other, more detailed, weighting factors that have been applied to sounds. In the 1950s and 1960s, when noise from civilian jet aircraft became an issue, substantial research was performed to determine what characteristics of jet noise were a problem. The metrics Perceived Noise Level and Effective Perceived Noise Level were developed. These accounted for nonlinear behavior of hearing and the importance of low frequencies at high levels, and for many years airport/airbase noise contours were presented in terms of Noise Exposure Forecast, which was based on Perceived Noise Level and Effective Perceived Noise Level. In the 1970s, however, it was realized that the primary intrusive aspect of aircraft noise was the high noise level, a factor which is well represented by A-weighted levels and day-night average sound level (DNL). The refinement of Perceived Noise Level, Effective Perceived Noise Level, and Noise Exposure Forecast was not significant in protecting the public from noise.

There has been continuing research on noise metrics and the importance of sound quality, sponsored by the Department of Defense (DoD) for military aircraft noise and by the Federal Aviation Administration

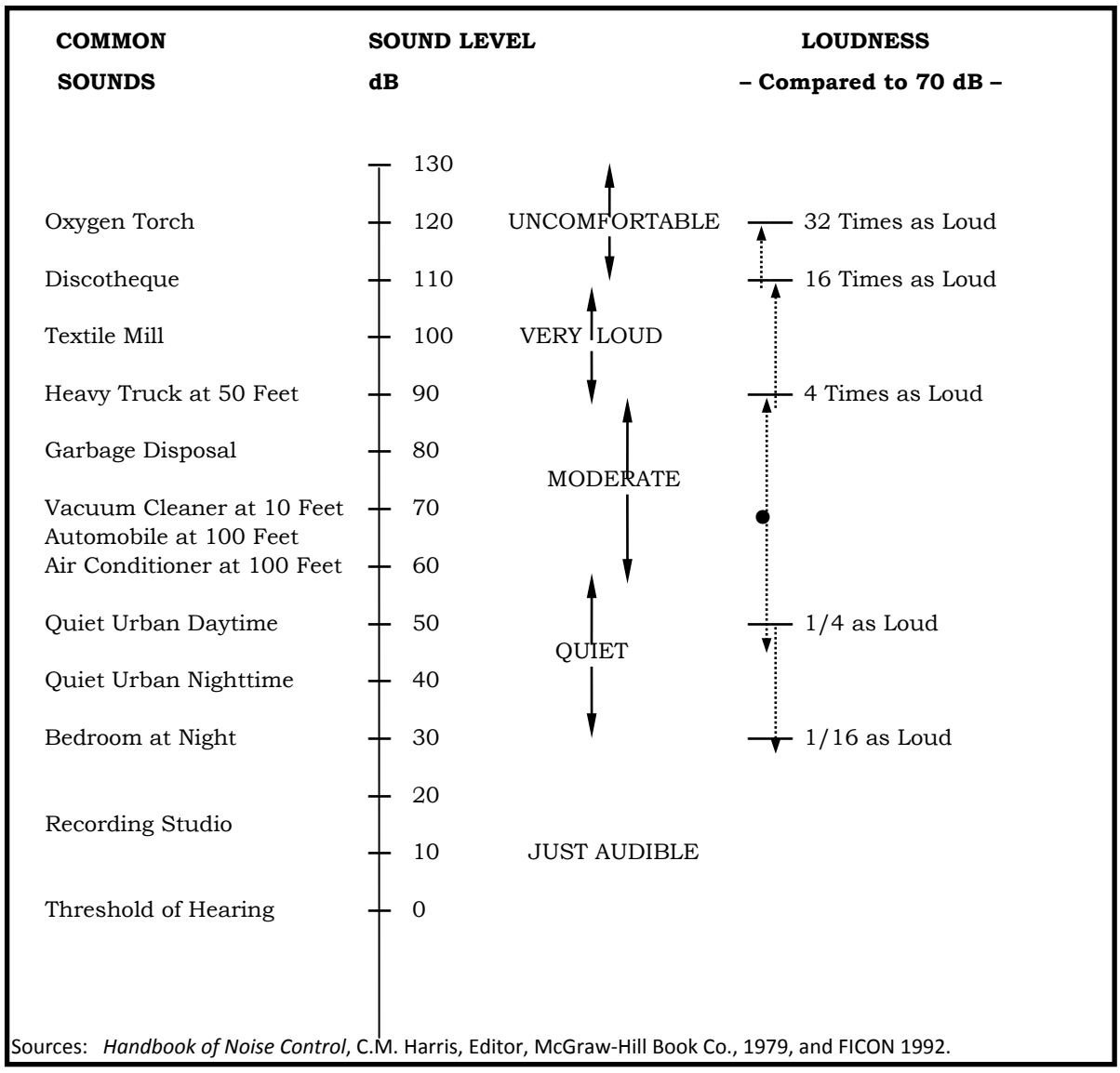
(FAA) for civil aircraft noise. The metric L_{dnmr}, which is described later and accounts for the increased annoyance of rapid onset rate of sound, is a product of this long-term research.

The amplitude of A-weighted sound levels is measured in dB. It is common for some noise analysts to denote the unit of A-weighted sounds by dBA. As long as the use of A-weighting is understood, there is no difference between dB or dBA: it is only important that the use of A-weighting be made clear. In this environmental analysis, A-weighted sound levels are reported as dB.

A-weighting is appropriate for continuous sounds, which are perceived by the ear. Impulsive sounds, such as sonic booms, are perceived by more than just the ear. When experienced indoors, there can be secondary noise from rattling of the building. Vibrations may also be felt. C-weighting (American National Standards Institute 1988) is applied to such sounds. This is a frequency weighting that is relatively flat over the range of human hearing (about 20 Hz to 20,000 Hz) that rolls off above 5,000 Hz and below 50 Hz. In this study, C-weighted sound levels are used for the assessment of sonic booms and other impulsive sounds. As with A-weighting, the unit is dB, but dBC is sometimes used for clarity. In this study, sound levels are reported in both A-weighting and C-weighting dBs, and C-weighted metrics are denoted when used.

***Time Averaging*.** Sound pressure of a continuous sound varies greatly with time, so it is customary to deal with sound levels that represent averages over time. Levels presented as instantaneous (i.e., as might be read from the display of a sound level meter) are based on averages of sound energy over either 1/8 second (fast) or 1 second (slow). The formal definitions of fast and slow levels are somewhat complex, with details that are important to the makers and users of instrumentation. They may, however, be thought of as levels corresponding to the root-mean-square sound pressure measured over the 1/8-second or 1-second periods.

The most common uses of the fast or slow sound level in environmental analysis is in the discussion of the maximum sound level that occurs from the action, and in discussions of typical sound levels. Figure I-1 is a chart of A-weighted sound levels from typical sounds. Some (air conditioner, vacuum cleaner) are continuous sounds whose levels are constant for some time. Some (automobile, heavy truck) are the maximum sound during a vehicle pass-by. Some (urban daytime, urban nighttime) are averages over some extended period. A variety of noise metrics have been developed to describe noise over different time periods. These are described in Section 1.2.



Sources: *Handbook of Noise Control*, C.M. Harris, Editor, McGraw-Hill Book Co., 1979, and FICON 1992.

Figure I-1. Typical A-Weighted Sound Levels of Common Sounds

1.2 NOISE METRICS

MAXIMUM SOUND LEVEL

The highest A-weighted sound level measured during a single event in which the sound level changes value as time goes on (e.g., an aircraft overflight) is called the maximum A-weighted sound level or maximum sound level, for short. It is usually abbreviated by ALM, L_{max}, or L_{Amax}. The maximum sound level is important in judging the interference caused by a noise event with conversation, TV or radio listening, sleeping, or other common activities. Table I-1 reflects L_{max} values for typical aircraft associated with this assessment operating at the indicated flight profiles and power settings.

Table I-1. Representative Maximum Sound Levels (L_{max})

Aircraft (engine type)	*Power Setting*	*Power Unit*	L_{MAX} VALUES (IN DBA) AT VARYING DISTANCES (IN FEET)				
			500	*1,000*	*2,000*	*5,000*	*10,000*
Takeoff/Departure Operations (at 300 knots airspeed)							
A-10A	6200	NF	99.9	91.7	82.2	68.2	57.8
B-1	97.5%	RPM	126.5	118.3	109.9	98.3	88.7
F-15 (P220)	90%	NC	111.4	104.3	96.6	85	74.7
F-16 (P229)	93%	NC	113.7	106.2	98.1	86.1	75.7
F-22	100%	ETR	119.7	112.4	104.6	93	82.9
Landing/Arrival Operations (at 160 knots airspeed)							
A-10A	5225	NF	97	88.9	78.8	60.2	46.4
B-1	90%	RPM	98.8	91.9	84.5	72.8	62
F-15 (P220)	75%	NC	88.5	81.6	74.3	63.2	53.4
F-16 (P229)	83.5%	NC	92.6	85.5	77.8	66.1	55.6
F-22	43%	ETR	111.3	103.9	95.9	83.9	73.1

Engine Unit of Power: RPM—Revolutions Per Minute; ETR—Engine Thrust Ratio; NC—Engine Core RPM; and NF—Engine Fan RPM.
Source: SELCalc2 (Flyover Noise Calculator), Using Noisemap 6/7 and Maximum Omega10 Result as the defaults.

PEAK SOUND LEVEL

For impulsive sounds, the true instantaneous sound pressure is of interest. For sonic booms, this is the peak pressure of the shock wave, as described in Section 3.2 of this appendix. This pressure is usually presented in physical units of pounds per square foot. Sometimes it is represented on the decibel scale, with symbol L_{pk}. Peak sound levels do not use either A or C weighting.

SOUND EXPOSURE LEVEL

Individual time-varying noise events have two main characteristics: a sound level that changes throughout the event and a period of time during which the event is heard. Although the maximum sound level, described above, provides some measure of the intrusiveness of the event, it alone does not completely describe the total event. The period of time during which the sound is heard is also significant. The Sound Exposure Level (abbreviated SEL or L_{AE} for A-weighted sounds) combines both of these characteristics into a single metric.

SEL is a composite metric that represents both the intensity of a sound and its duration. Mathematically, the mean square sound pressure is computed over the duration of the event, then multiplied by the duration in seconds, and the resultant product is turned into a sound level. It does not

directly represent the sound level heard at any given time, but rather provides a measure of the net impact of the entire acoustic event. It has been well established in the scientific community that SEL measures this impact much more reliably than just the maximum sound level. Table I-2 shows SEL values corresponding to the aircraft and power settings reflected in Table I-1.

Table I-2. Representative Sound Exposure Levels (SEL)

Aircraft (engine type)	*Power Setting*	*Power Unit*	SEL Values (in dBA) At Varying Distances (In Feet)				
			500	*1,000*	*2,000*	*5,000*	*10,000*
Takeoff/Departure Operations (at 300 knots airspeed)							
A-10A	6200	NF	102.6	96.2	88.5	76.9	68.3
B-1	97.5%	RPM	129.5	123.1	116.5	107.3	99.3
F-15 (P220)	90%	NC	117.3	112	106.1	97	88.4
F-16 (P229)	93%	NC	116.5	110.8	104.6	95	86.3
F-22	100%	ETR	124.2	118.7	112.7	103.5	95.2
Landing/Arrival Operations (at 160 knots airspeed)							
A-10A	5225	NF	97.9	91.5	83.3	67	55
B-1	90%	RPM	103.4	98.3	92.7	83.4	74.4
F-15 (P220)	75%	NC	94.2	89.2	83.6	74.9	66.9
F-16 (P229)	83.5%	NC	97.4	92.1	86.3	76.9	68.2
F-22	43%	ETR	114.9	109.3	103.1	93.5	84.5

Engine Unit of Power: RPM—Revolutions Per Minute; ETR—Engine Thrust Ratio; NC—Engine Core RPM; and NF—Engine Fan RPM.
Source: SELCalc2 (Flyover Noise Calculator), Using Noisemap 6/7 and Maximum Omega10 Result as the defaults.

Because the SEL and the maximum sound level are both used to describe single events, there is sometimes confusion between the two, so the specific metric used should be clearly stated.

SEL can be computed for C-weighted levels (appropriate for impulsive sounds), and the results denoted CSEL or L_{CE}. SEL for A-weighted sound is sometimes denoted ASEL. Within this study, SEL is used for A-weighted sounds and CSEL for C-weighted.

Equivalent Sound Level

For longer periods of time, total sound is represented by the equivalent continuous sound pressure level (L_{eq}). L_{eq} is the average sound level over some time period (often an hour or a day, but any explicit time span can be specified), with the averaging being done on the same energy basis as used for SEL. SEL and L_{eq} are closely related, with L_{eq} being SEL over some time period normalized by that time.

Just as SEL has proven to be a good measure of the noise impact of a single event, L_{eq} has been established to be a good measure of the impact of a series of events during a given time period. Also, while L_{eq} is defined as an average, it is effectively a sum over that time period and is, thus, a measure of the cumulative impact of noise.

Day-Night Average Sound Level

Noise tends to be more intrusive at night than during the day. This effect is accounted for by applying a 10 dB penalty to events that occur after 10 pm and before 7 am. If L_{eq} is computed over a 24-hour period with this nighttime penalty applied, the result is the DNL. DNL is the community noise metric recommended by the USEPA (United States Environmental Protection Agency [USEPA] 1974) and has been adopted by most federal agencies (Federal Interagency Committee on Noise 1992). It has been

well established that DNL correlates well with long-term community response to noise (Schultz 1978; Finegold *et al.* 1994). This correlation is presented in Section 1.3 of this appendix.

DNL accounts for the total, or cumulative, noise impact at a given location, and for this reason is often referred to as a "cumulative" metric.

It was noted earlier that, for impulsive sounds, such as sonic booms, C-weighting is more appropriate than A-weighting. The day-night average sound level computed with C-weighting is denoted CDNL or L_{Cdn}. This procedure has been standardized, and impact interpretive criteria similar to those for DNL have been developed (Committee on Hearing, Bioacoustics and Biomechanics 1981).

ONSET-ADJUSTED MONTHLY DAY-NIGHT AVERAGE SOUND LEVEL

Aircraft operations in military training airspace generate a noise environment somewhat different from other community noise environments. Overflights are sporadic, occurring at random times and varying from day to day and week to week. This situation differs from most community noise environments, in which noise tends to be continuous or patterned. Individual military overflight events also differ from typical community noise events in that noise from a low-altitude, high-airspeed flyover can have a rather sudden onset.

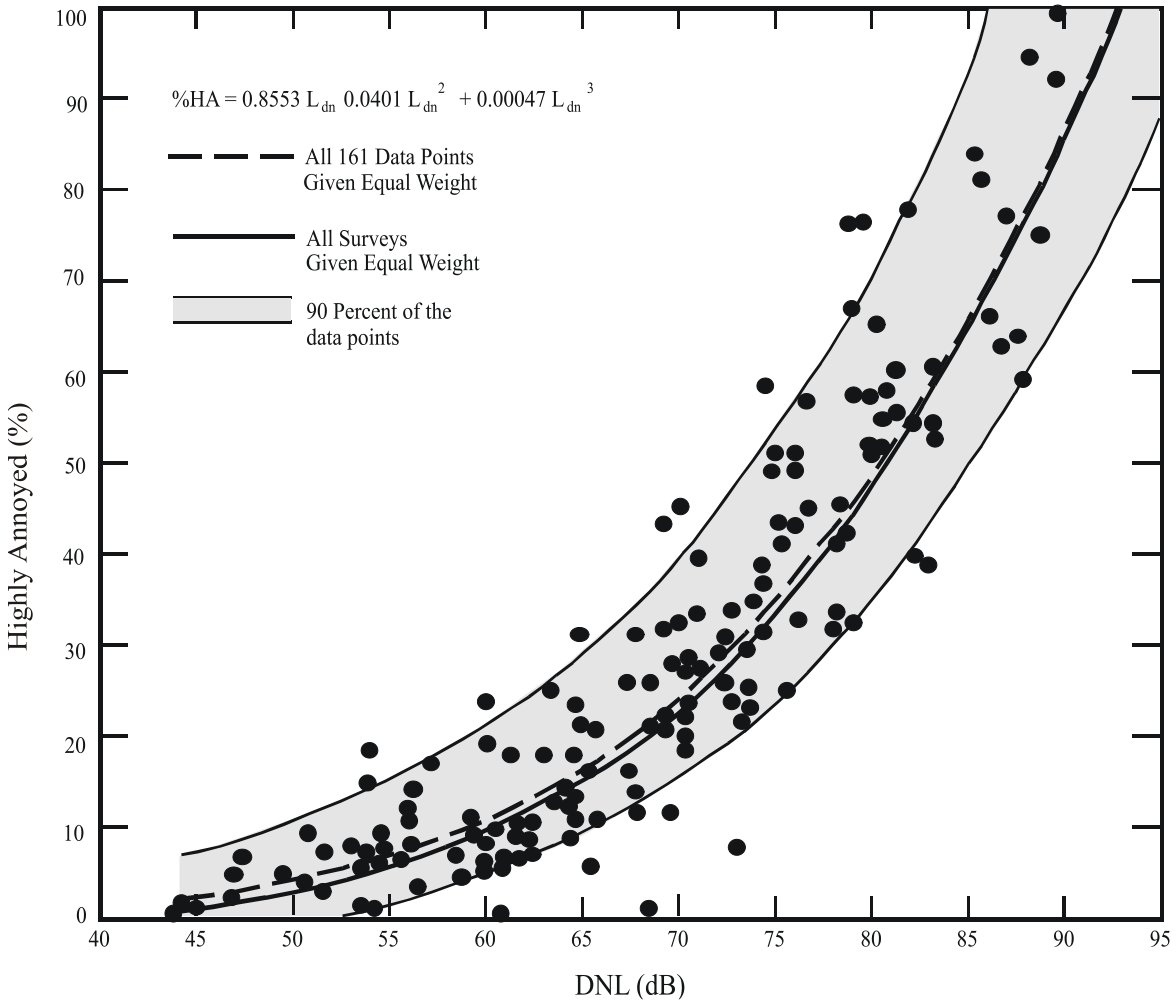
To represent these differences, the conventional DNL metric is adjusted to account for the "surprise" effect of the sudden onset of aircraft noise events on humans (Plotkin *et al.* 1987; Stusnick *et al.* 1992; Stusnick *et al.* 1993). For aircraft exhibiting a rate of increase in sound level (called onset rate) of from 15 to 150 dB per second, an adjustment or penalty ranging from 0 to 11 dB is added to the normal SEL. Onset rates above 150 dB per second require an 11 dB penalty, while onset rates below 15 dB per second require no adjustment. The DNL is then determined in the same manner as for conventional aircraft noise events and is designated as Onset-Rate Adjusted Day-Night Average Sound Level (abbreviated L_{dnmr}).

Because of the irregular occurrences of aircraft operations, the number of average daily operations is determined by using the calendar month with the highest number of operations. The monthly average is denoted L_{dnmr}. Noise levels are calculated the same way for both DNL and L_{dnmr}. L_{dnmr} is interpreted by the same criteria as used for DNL.

1.3 NOISE IMPACT

COMMUNITY REACTION

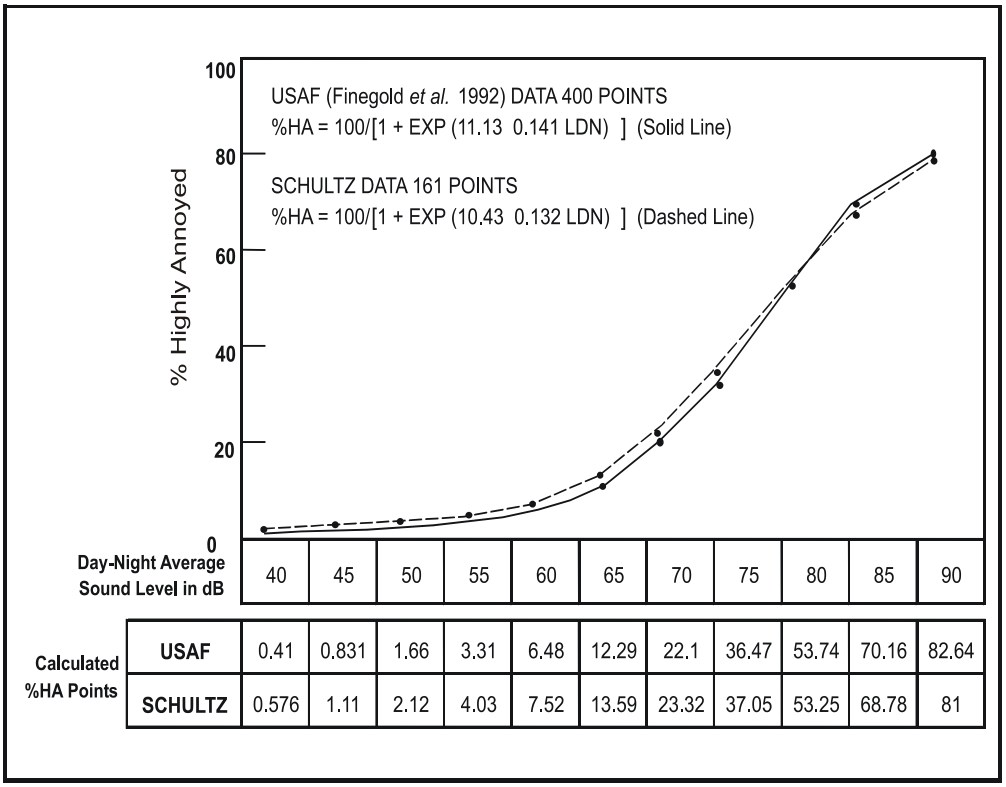
Studies of long-term community annoyance to numerous types of environmental noise show that DNL correlates well with the annoyance. Schultz (1978) showed a consistent relationship between DNL and annoyance. Shultz's original curve fit (Figure I-2) shows that there is a remarkable consistency in results of attitudinal surveys which relate the percentages of groups of people who express various degrees of annoyance when exposed to different DNL.



Source: Schultz 1978

Figure I-2. Community Surveys of Noise Annoyance

A more recent study has reaffirmed this relationship (Fidell *et al.* 1991). Figure I-3 (Federal Interagency Committee on Noise 1992) shows an updated form of the curve fit (Finegold *et al.* 1994) in comparison with the original. The updated fit, which does not differ substantially from the original, is the current preferred form. In general, correlation coefficients of 0.85 to 0.95 are found between the percentages of groups of people highly annoyed and the level of average noise exposure. The correlation coefficients for the annoyance of individuals are relatively low, however, on the order of 0.5 or less. This is not surprising, considering the varying personal factors that influence the manner in which individuals react to noise. Nevertheless, findings substantiate that community annoyance to aircraft noise is represented quite reliably using DNL.



Day-Night Average Sound Level in dB		40	45	50	55	60	65	70	75	80	85	90
Calculated %HA Points	USAF	0.41	0.831	1.66	3.31	6.48	12.29	22.1	36.47	53.74	70.16	82.64
	SCHULTZ	0.576	1.11	2.12	4.03	7.52	13.59	23.32	37.05	53.25	68.78	81

Figure I-3. Response of Communities to Noise; Comparison of Original (Schultz 1978) and Current (Finegold *et al*. 1994) Curve Fits

As noted earlier for SEL, DNL does not represent the sound level heard at any particular time, but rather represents the total sound exposure. DNL accounts for the sound level of individual noise events, the duration of those events, and the number of events. Its use is endorsed by the scientific community (American National Standards Institute 1980, 1988, 2005; USEPA 1974; Federal Interagency Committee on Urban Noise 1980; Federal Interagency Committee on Noise 1992).

While DNL is the best metric for quantitatively assessing cumulative noise impact, it does not lend itself to intuitive interpretation by non-experts. Accordingly, it is common for environmental noise analyses to include other metrics for illustrative purposes. A general indication of the noise environment can be presented by noting the maximum sound levels which can occur and the number of times per day noise events will be loud enough to be heard. Use of other metrics as supplements to DNL has been endorsed by federal agencies (Federal Interagency Committee on Noise 1992).

The Schultz curve is generally applied to annual average DNL. In Section 1.2, L_{dnmr} was described and presented as being appropriate for quantifying noise in military airspace. The Schultz curve is used with L_{dnmr} as the noise metric. L_{dnmr} is always equal to or greater than DNL, so impact is generally higher than would have been predicted if the onset rate and busiest-month adjustments were not accounted for.

There are several points of interest in the noise-annoyance relation. The first is DNL of 65 dB. This is a level most commonly used for noise planning purposes and represents a compromise between community impact and the need for activities like aviation which do cause noise. Areas exposed to DNL above 65 dB are generally not considered suitable for residential use. The second is DNL of 55 dB, which was identified by USEPA as a level "...requisite to protect the public health and welfare with an adequate margin of safety," (USEPA 1974) which is essentially a level below which adverse impact is not expected. The third is DNL of 75 dB. This is the lowest level at which adverse health effects could be credible

(USEPA 1974). The very high annoyance levels correlated with DNL of 75 dB make such areas unsuitable for residential land use.

Sonic boom exposure is measured by C-weighting, with the corresponding cumulative metric being CDNL. Correlation between CDNL and annoyance has been established, based on community reaction to impulsive sounds (Committee on Hearing, Bioacoustics and Biomechanics 1981). Values of the C-weighted equivalent to the Schultz curve are different than that of the Schultz curve itself. Table I-3 shows the relation between annoyance, DNL, and CDNL.

Table I-3. Relation Between Annoyance, DNL and CDNL

DNL	*% Highly Annoyed*	*CDNL*
45	0.83	42
50	1.66	46
55	3.31	51
60	6.48	56
65	12.29	60
70	22.10	65

Interpretation of CDNL from impulsive noise is accomplished by using the CDNL versus annoyance values in Table I-3. CDNL can be interpreted in terms of an "equivalent annoyance" DNL. For example, CDNL of 52, 61, and 69 dB are equivalent to DNL of 55, 65, and 75 dB, respectively. If both continuous and impulsive noise occurs in the same area, impacts are assessed separately for each.

LAND USE COMPATIBILITY

As noted above, the inherent variability between individuals makes it impossible to predict accurately how any individual will react to a given noise event. Nevertheless, when a community is considered as a whole, its overall reaction to noise can be represented with a high degree of confidence. As described above, the best noise exposure metric for this correlation is the DNL or L_{dnmr} for military overflights. Impulsive noise can be assessed by relating CDNL to an "equivalent annoyance" DNL, as outlined in Section 1.3.1.

In June 1980, an ad hoc Federal Interagency Committee on Urban Noise published guidelines (Federal Interagency Committee on Urban Noise 1980) relating DNL to compatible land uses. This committee was composed of representatives from DoD, Transportation, and Housing and Urban Development; USEPA; and the Veterans Administration. Since the issuance of these guidelines, federal agencies have generally adopted these guidelines for their noise analyses.

Following the lead of the committee, DoD and FAA adopted the concept of land-use compatibility as the accepted measure of aircraft noise effect. The FAA included the committee's guidelines in the Federal Aviation Regulations (United States Department of Transportation 1984). These guidelines are reprinted in Table I-4, along with the explanatory notes included in the regulation. Although these guidelines are not mandatory (note the footnote "*" in the table), they provide the best means for determining noise impact in airport communities. In general, residential land uses normally are not compatible with outdoor DNL values above 65 dB, and the extent of land areas and populations exposed to DNL of 65 dB and higher provides the best means for assessing the noise impacts of alternative aircraft actions. In some cases a change in noise level, rather than an absolute threshold, may be a more appropriate measure of impact. The FAA recognizes that there are settings where the 65 dB DNL standard may not apply. Special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within national parks, national wildlife refuges and historic sites, including traditional cultural properties.

Table I-4. Land-Use Compatibility With Yearly Day-Night Average Sound Levels

	Yearly Day-Night Average Sound Level (DNL) in Decibels					
Land Use	***Below 65***	***65–70***	***70–75***	***75–80***	***80–85***	***Over 85***
Residential						
Residential, other than mobile homes and transient lodgings ..	Y	N[1]	N[1]	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N[1]	N[1]	N[1]	N	N
Public Use						
Schools	Y	N[1]	N[1]	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoria, and concert halls	Y	25	30	N	N	N
Government services	Y	Y	25	30	N	N
Transportation	Y	Y	Y[2]	Y[3]	Y[4]	Y[4]
Parking	Y	Y	Y[2]	Y[3]	Y[4]	N
Commercial Use						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail—building materials, hardware, and farm equipment	Y	Y	Y[2]	Y[3]	Y[4]	N
Retail trade—general	Y	Y	25	30	N	N
Utilities	Y	Y	Y[2]	Y[3]	Y[4]	N
Communication	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing, general	Y	Y	Y[2]	Y[3]	Y[4]	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y[6]	Y[7]	Y[8]	Y[8]	Y[8]
Livestock farming and breeding	Y	Y[6]	Y[7]	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor sports arenas and spectator sports	Y	Y[5]	Y[5]	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts, and camps	Y	Y	Y	N	N	N
Golf courses, riding stables, and water recreation	Y	Y	25	30	N	N

* The designations contained in this table do not constitute a federal determination that any use of land covered by the program is acceptable or unacceptable under federal, state, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise-compatible land uses.

Key:

Y (YES) = Land Use and related structures compatible without restrictions.

N (No) = Land Use and related structures are not compatible and should be prohibited.

NLR = Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.

25, 30, or 35 = Land Use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated into design and construction of structures.

Notes:

1. Where the community determines that residential or school uses must be allowed, measures to achieve outdoor-to-indoor NLR of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide an NLR of 20 dB; thus the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year-round. However, the use of NLR criteria will not eliminate outdoor noise problems.
2. Measures to achieve NLR 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.
3. Measures to achieve NLR 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.
4. Measures to achieve NLR 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.
5. Land-use compatible provided special sound reinforcement systems are installed.
6. Residential buildings require an NLR of 25.
7. Residential buildings require an NLR of 30.
8. Residential buildings not permitted.

2.0 NOISE EFFECTS

The discussion in Section 1.3 presents the global effect of noise on communities. The following sections describe particular noise effects.

2.1 HEARING LOSS

Noise-induced hearing loss is probably the best defined of the potential effects of human exposure to excessive noise. Federal workplace standards for protection from hearing loss allow a time-average level of 90 dB over an 8-hour work period, or 85 dB averaged over a 16-hour period. Even the most protective criterion (no measurable hearing loss for the most sensitive portion of the population at the ear's most sensitive frequency, 4,000 Hz, after a 40-year exposure suggests a time-average sound level of 70 dB over a 24-hour period (USEPA 1974). Since it is unlikely that airport neighbors will remain outside their homes 24 hours per day for extended periods of time, there is little possibility of hearing loss below a DNL of 75 dB, and this level is extremely conservative.

2.2 NONAUDITORY HEALTH EFFECTS

Nonauditory health effects of long-term noise exposure, where noise may act as a risk factor, have not been found to occur at levels below those protective against noise-induced hearing loss, described above. Most studies attempting to clarify such health effects have found that noise exposure levels established for hearing protection will also protect against any potential nonauditory health effects, at least in workplace conditions. The best scientific summary of these findings is contained in the lead paper at the National Institutes of Health Conference on Noise and Hearing Loss, held on January 22–24, 1990, in Washington, D.C., which states "The nonauditory effects of chronic noise exposure, when noise is suspected to act as one of the risk factors in the development of hypertension, cardiovascular disease, and other nervous disorders, have never been proven to occur as chronic manifestations at levels below these criteria (an average of 75 dBA for complete protection against hearing loss for an eight-hour day)" (von Gierke 1990; parenthetical wording added for clarification). At the International Congress (1988) on Noise as a Public Health Problem, most studies attempting to clarify such health effects did not find them at levels below the criteria protective of noise-induced hearing loss; and even above these criteria, results regarding such health effects were ambiguous.

Consequently, it can be concluded that establishing and enforcing exposure levels protecting against noise-induced hearing loss would not only solve the noise-induced hearing loss problem but also any potential nonauditory health effects in the work place.

Although these findings were directed specifically at noise effects in the work place, they are equally applicable to aircraft noise effects in the community environment. Research studies regarding the nonauditory health effects of aircraft noise are ambiguous, at best, and often contradictory. Yet, even those studies which purport to find such health effects use time-average noise levels of 75 dB and higher for their research.

For example, in an often-quoted paper, two University of California at Los Angeles researchers found a relation between aircraft noise levels under the approach path to Los Angeles International Airport and increased mortality rates among the exposed residents by using an average noise exposure level greater than 75 dB for the "noise-exposed" population (Meecham and Shaw 1979). Nevertheless, three other University of California at Los Angeles professors analyzed those same data and found no relation between noise exposure and mortality rates (Frerichs *et al*. 1980).

As a second example, two other University of California at Los Angeles researchers used this same population near Los Angeles International Airport to show a higher rate of birth defects during the period of 1970 to 1972 when compared with a control group residing away from the airport (Jones and Tauscher 1978). Based on this report, a separate group at the United States Centers for Disease Control performed a more thorough study of populations near Atlanta's Hartsfield International Airport for 1970 to 1972 and found no relation in their study of 17 identified categories of birth defects to aircraft noise levels above 65 dB (Edmonds *et al.* 1979).

A recent review of health effects, prepared by a Committee of the Health Council of The Netherlands (Committee of the Health Council of the Netherlands 1996), analyzed currently available published information on this topic. The committee concluded that the threshold for possible long-term health effects was a 16-hour (6:00 a.m. to 10:00 p.m.) L_{eq} of 70 dB. Projecting this to 24 hours and applying the 10 dB nighttime penalty used with DNL, this corresponds to DNL of about 75 dB. The study also affirmed the risk threshold for hearing loss, as discussed earlier.

In summary, there is no scientific basis for a claim that potential health effects exist for aircraft time-average sound levels below 75 dB. The potential for noise to affect physiological health, such as the cardiovascular system, has been speculated; however, no unequivocal evidence exists to support such claims (Harris 1997). Conclusions drawn from a review of health effect studies involving military low-altitude flight noise with its unusually high maximum levels and rapid rise in sound level have shown no increase in cardiovascular disease (Schwarze and Thompson 1993). Additional claims that are unsupported include flyover noise producing increased mortality rates and increases in cardiovascular death, aggravation of post-traumatic stress disorder, increased stress, increases in admissions to mental hospitals, and adverse affects on pregnant women and the unborn fetus (Harris 1997).

2.3 ANNOYANCE

The primary effect of aircraft noise on exposed communities is one of annoyance. Noise annoyance is defined by the USEPA as any negative subjective reaction on the part of an individual or group (USEPA 1974). As noted in the discussion of DNL above, community annoyance is best measured by that metric.

Because the USEPA Levels Document (USEPA 1974) identified DNL of 55 dB as ". . . requisite to protect public health and welfare with an adequate margin of safety," it is commonly assumed that 55 dB should be adopted as a criterion for community noise analysis. From a noise exposure perspective, that would be an ideal selection. However, financial and technical resources are generally not available to achieve that goal. Most agencies have identified DNL of 65 dB as a criterion which protects those most impacted by noise, and which can often be achieved on a practical basis (Federal Interagency Committee on Noise 1992). This corresponds to about 12 percent of the exposed population being highly annoyed.

Although DNL of 65 dB is widely used as a benchmark for significant noise impact, and is often an acceptable compromise, it is not a statutory limit, and it is appropriate to consider other thresholds in particular cases.

In this analysis, no specific threshold is used. The noise in the affected environment is evaluated on the basis of the information presented in this appendix and in the body of the environmental analysis.

Community annoyance from sonic booms is based on CDNL, as discussed in Section 1.3. These effects are implicitly included in the "equivalent annoyance" CDNL values in Table I-3, since those were developed from actual community noise impact.

2.4 SPEECH INTERFERENCE

Speech interference associated with aircraft noise is a primary cause of annoyance to individuals on the ground. The disruption of routine activities in the home, such as radio or television listening, telephone use, or family conversation, gives rise to frustration and irritation. The quality of speech communication is also important in classrooms, offices, and industrial settings and can cause fatigue and vocal strain in those who attempt to communicate over the noise. Research has shown that the use of the SEL metric will measure speech interference successfully, and that a SEL exceeding 65 dB will begin to interfere with speech communication.

2.5 SLEEP INTERFERENCE

Sleep interference is another source of annoyance associated with aircraft noise. This is especially true because of the intermittent nature and content of aircraft noise, which is more disturbing than continuous noise of equal energy and neutral meaning.

Sleep interference may be measured in either of two ways. "Arousal" represents actual awakening from sleep, while a change in "sleep stage" represents a shift from one of four sleep stages to another stage of lighter sleep without actual awakening. In general, arousal requires a somewhat higher noise level than does a change in sleep stage.

An analysis sponsored by the Air Force summarized 21 published studies concerning the effects of noise on sleep (Pearsons *et al*. 1989). The analysis concluded that a lack of reliable in-home studies, combined with large differences among the results from the various laboratory studies, did not permit development of an acceptably accurate assessment procedure. The noise events used in the laboratory studies and in contrived in-home studies were presented at much higher rates of occurrence than would normally be experienced. None of the laboratory studies were of sufficiently long duration to determine any effects of habituation, such as that which would occur under normal community conditions. A recent extensive study of sleep interference in people's own homes (Ollerhead *et al.* 1992) showed very little disturbance from aircraft noise.

There is some controversy associated with the recent studies, so a conservative approach should be taken in judging sleep interference. Based on older data, the USEPA identified an indoor DNL of 45 dB as necessary to protect against sleep interference (USEPA 1974). Assuming a very conservative structural noise insulation of 20 dB for typical dwelling units, this corresponds to an outdoor DNL of 65 dB as minimizing sleep interference.

A 1984 publication reviewed the probability of arousal or behavioral awakening in terms of SEL (Kryter 1984). Figure I-4, extracted from Figure 10.37 of Kryter (1984), indicates that an indoor SEL of 65 dB or lower should awaken less than 5 percent of those exposed. These results do not include any habituation over time by sleeping subjects. Nevertheless, this provides a reasonable guideline for assessing sleep interference and corresponds to similar guidance for speech interference, as noted above.

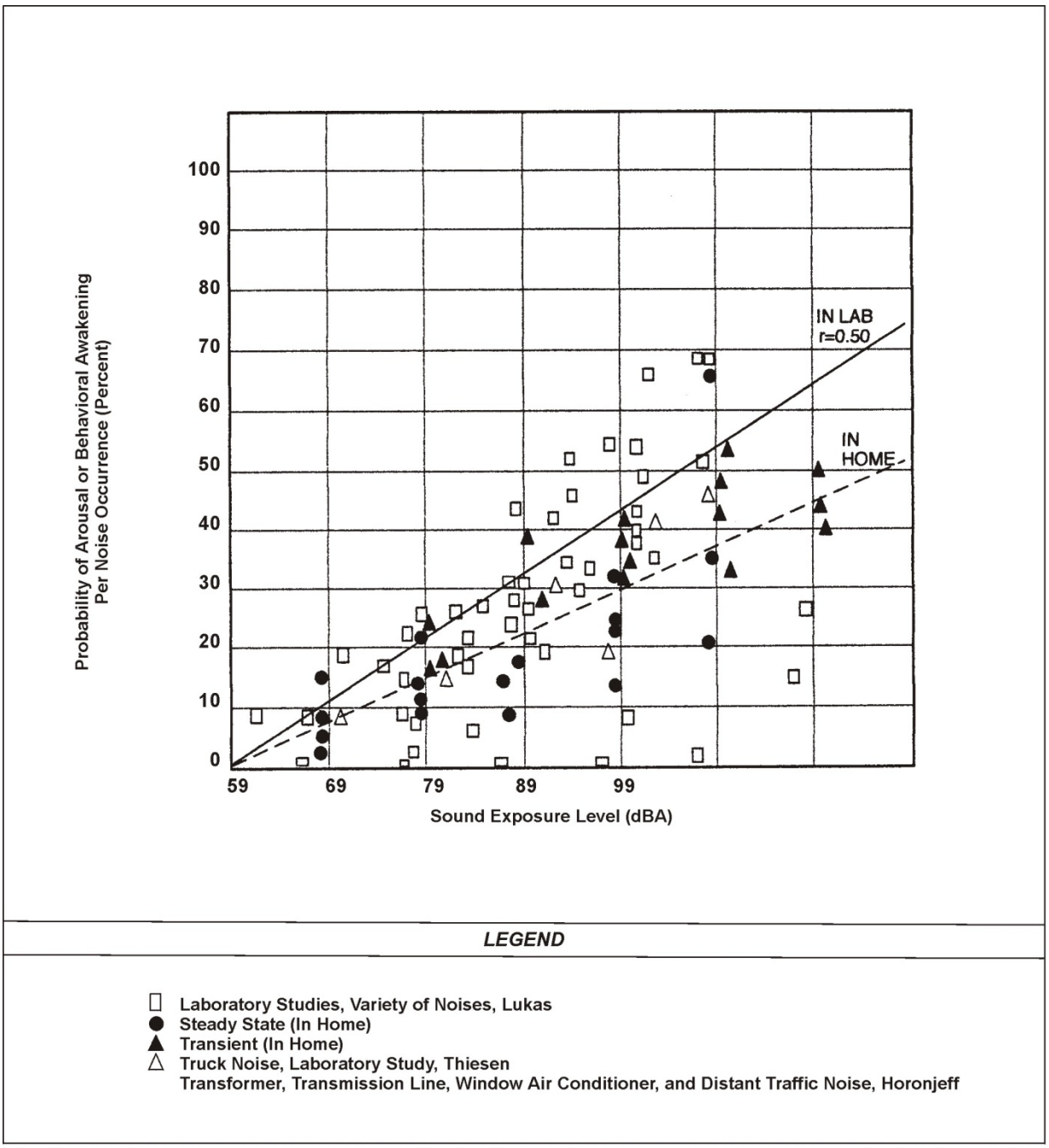


Figure I-4. Probability of Arousal or Behavioral Awakening in Terms of Sound Exposure Level

2.6 NOISE EFFECTS ON DOMESTIC ANIMALS AND WILDLIFE

Animal species differ greatly in their responses to noise. Each species has adapted, physically and behaviorally, to fill its ecological role in nature, and its hearing ability usually reflects that role. Animals rely on their hearing to avoid predators, obtain food, and communicate with and attract other members of their species. Aircraft noise may mask or interfere with these functions. Secondary effects may include nonauditory effects similar to those exhibited by humans: stress, hypertension, and other nervous disorders. Tertiary effects may include interference with mating and resultant population declines.

2.7 NOISE EFFECTS ON STRUCTURES

SUBSONIC AIRCRAFT NOISE

Normally, the most sensitive components of a structure to airborne noise are the windows and, infrequently, the plastered walls and ceilings. An evaluation of the peak sound pressures impinging on the structure is normally sufficient to determine the possibility of damage. In general, at sound levels above 130 dB, there is the possibility of the excitation of structural component resonance. While certain frequencies (such as 30 Hz for window breakage) may be of more concern than other frequencies, conservatively, only sounds lasting more than one second above a sound level of 130 dB are potentially damaging to structural components (National Research Council/National Academy of Sciences 1977).

A study directed specifically at low-altitude, high-speed aircraft showed that there is little probability of structural damage from such operations (Sutherland 1989). One finding in that study is that sound levels at damaging frequencies (e.g., 30 Hz for window breakage or 15 to 25 Hz for whole-house response) are rarely above 130 dB.

Noise-induced structural vibration may also cause annoyance to dwelling occupants because of induced secondary vibrations, or "rattle," of objects within the dwelling, such as hanging pictures, dishes, plaques, and bric-a-brac. Window panes may also vibrate noticeably when exposed to high levels of airborne noise, causing homeowners to fear breakage. In general, such noise-induced vibrations occur at sound levels above those considered normally incompatible with residential land use. Thus assessments of noise exposure levels for compatible land use should also be protective of noise-induced secondary vibrations.

SONIC BOOMS

Sonic booms are commonly associated with structural damage. Most damage claims are for brittle objects, such as glass and plaster. Table I-5 summarizes the threshold of damage that might be expected at various overpressures. There is a large degree of variability in damage experience, and much damage depends on the pre-existing condition of a structure. Breakage data for glass, for example, spans a range of two to three orders of magnitude at a given overpressure. At 1 psf, the probability of a window breaking ranges from one in a billion (Sutherland 1990) to one in a million (Hershey and Higgins 1976). These damage rates are associated with a combination of boom load and glass condition. At 10 psf, the probability of breakage is between one in a hundred and one in a thousand. Laboratory tests of glass (White 1972) have shown that properly installed window glass will not break at overpressures below 10 psf, even when subjected to repeated booms, but in the real world glass is not in pristine condition.

Table I-5. Possible Damage to Structures From Sonic Booms

Sonic Boom Overpressure Nominal (psf)	*Type of Damage*	*Item Affected*
0.5 - 2	Plaster	Fine cracks; extension of existing cracks; more in ceilings; over door frames; between some plaster boards.
	Glass	Rarely shattered; either partial or extension of existing.
	Roof	Slippage of existing loose tiles/slates; sometimes new cracking of old slates at nail hole.
	Damage to outside walls	Existing cracks in stucco extended.
	Bric-a-brac	Those carefully balanced or on edges can fall; fine glass, such as large goblets, can fall and break.
	Other	Dust falls in chimneys.
2 - 4	Glass, plaster, roofs, ceilings	Failures show that would have been difficult to forecast in terms of their existing localized condition. Nominally in good condition.
4 - 10	Glass	Regular failures within a population of well-installed glass; industrial as well as domestic greenhouses.
	Plaster	Partial ceiling collapse of good plaster; complete collapse of very new, incompletely cured, or very old plaster.
	Roofs	High probability rate of failure in nominally good state, slurry-wash; some chance of failures in tiles on modern roofs; light roofs (bungalow) or large area can move bodily.
	Walls (out)	Old, free standing, in fairly good condition can collapse.
	Walls (in)	Inside ("party") walls known to move at 10 psf.
Greater than 10	Glass	Some good glass will fail regularly to sonic booms from the same direction. Glass with existing faults could shatter and fly. Large window frames move.
	Plaster	Most plaster affected.
	Ceilings	Plaster boards displaced by nail popping.
	Roofs	Most slate/slurry roofs affected, some badly; large roofs having good tile can be affected; some roofs bodily displaced causing gale-end and will-plate cracks; domestic chimneys dislodged if not in good condition.
	Walls	Internal party walls can move even if carrying fittings such as hand basins or taps; secondary damage due to water leakage.
	Bric-a-brac	Some nominally secure items can fall; e.g., large pictures, especially if fixed to party walls.

Source: Haber and Nakaki 1989

Damage to plaster occurs at similar ranges to glass damage. Plaster has a compounding issue in that it will often crack due to shrinkage while curing, or from stresses as a structure settles, even in the absence of outside loads. Sonic boom damage to plaster often occurs when internal stresses are high from these factors.

Some degree of damage to glass and plaster should thus be expected whenever there are sonic booms, but usually at the low rates noted above. In general, structural damage from sonic booms should be expected only for overpressures above 10 psf.

2.8 NOISE EFFECTS ON TERRAIN

SUBSONIC AIRCRAFT NOISE

Members of the public often believe that noise from low-flying aircraft can cause avalanches or landslides by disturbing fragile soil or snow structures in mountainous areas. There are no known instances of such effects, and it is considered improbable that such effects will result from routine, subsonic aircraft operations**.**

SONIC BOOMS

In contrast to subsonic noise, sonic booms are considered to be a potential trigger for snow avalanches. Avalanches are highly dependent on the physical status of the snow, and do occur spontaneously. They can be triggered by minor disturbances, and there are documented accounts of sonic booms triggering avalanches. Switzerland routinely restricts supersonic flight during avalanche season.

Landslides are not an issue for sonic booms. There was one anecdotal report of a minor landslide from a sonic boom generated by the Space Shuttle during landing, but there is no credible mechanism or consistent pattern of reports.

2.9 NOISE EFFECTS ON HISTORICAL AND ARCHAEOLOGICAL SITES

Because of the potential for increased fragility of structural components of historical buildings and other historical sites, aircraft noise may affect such sites more severely than newer, modern structures. Again, there are few scientific studies of such effects to provide guidance for their assessment.

One study involved the measurements of sound levels and structural vibration levels in a superbly restored plantation house, originally built in 1795, and now situated approximately 1,500 feet from the centerline at the departure end of Runway 19L at Washington Dulles International Airport. These measurements were made in connection with the proposed scheduled operation of the supersonic Concorde airplane at Dulles (Wesler 1977). There was special concern for the building's windows, since roughly half of the 324 panes were original. No instances of structural damage were found. Interestingly, despite the high levels of noise during Concorde takeoffs, the induced structural vibration levels were actually less than those induced by touring groups and vacuum cleaning within the building itself.

As noted above for the noise effects of noise-induced vibrations on normal structures, assessments of noise exposure levels for normally compatible land uses should also be protective of historic and archaeological sites.

3.0 NOISE MODELING

3.1 SUBSONIC AIRCRAFT NOISE

An aircraft in subsonic flight generally emits noise from two sources: the engines and flow noise around the airframe. Noise generation mechanisms are complex and, in practical models, the noise sources must be based on measured data. The Air Force has developed a series of computer models and aircraft noise databases for this purpose. The models include NOISEMAP (Moulton 1992) for noise around airbases, and MR_NMAP (Lucas and Calamia 1996) for use in MOAs, ranges, and low-level training routes. These models use the NOISEFILE database developed by the Air Force. NOISEFILE data includes SEL and L_{Amax} as a function of speed and power setting for aircraft in straight flight.

Noise from an individual aircraft is a time-varying continuous sound. It is first audible as the aircraft approaches, increases to a maximum when the aircraft is near its closest point, then diminishes as it departs. The noise depends on the speed and power setting of the aircraft and its trajectory. The models noted above divide the trajectory into segments whose noise can be computed from the data in NOISEFILE. The contributions from these segments are summed.

MR_NMAP was used to compute noise levels in the airspace. The primary noise metric computed by MR_NMAP was L_{dnmr} averaged over each airspace. Supporting routines from NOISEMAP were used to calculate SEL and L_{Amax} for various flight altitudes and lateral offsets from a ground receiver position.

3.2 SONIC BOOMS

When an aircraft moves through the air, it pushes the air out of its way. At subsonic speeds, the displaced air forms a pressure wave that disperses rapidly. At supersonic speeds, the aircraft is moving too quickly for the wave to disperse, so it remains as a coherent wave. This wave is a sonic boom. When heard at the ground, a sonic boom consists of two shock waves (one associated with the forward part of the aircraft, the other with the rear part) of approximately equal strength and (for fighter aircraft) separated by 100 to 200 milliseconds. When plotted, this pair of shock waves and the expanding flow between them have the appearance of a capital letter “N,” so a sonic boom pressure wave is usually called an “N-wave.” An N-wave has a characteristic "bang-bang" sound that can be startling. Figure I-5 shows the generation and evolution of a sonic boom N-wave under the aircraft. Figure I-6 shows the sonic boom pattern for an aircraft in steady supersonic flight. The boom forms a cone that is said to sweep out a “carpet” under the flight track.

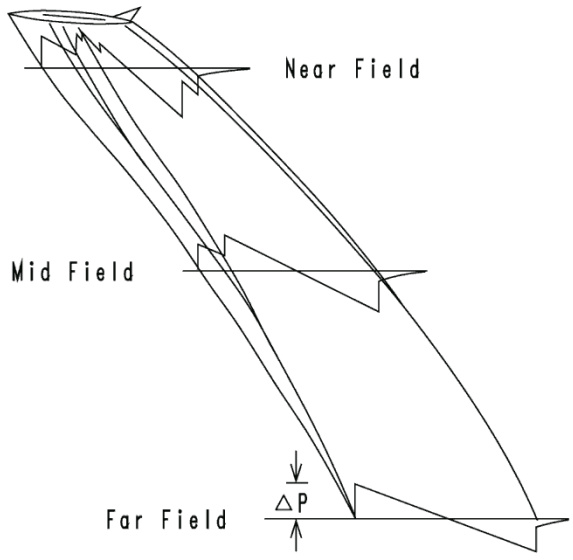


Figure I-5. Sonic Boom Generation and Evolution to N-Wave

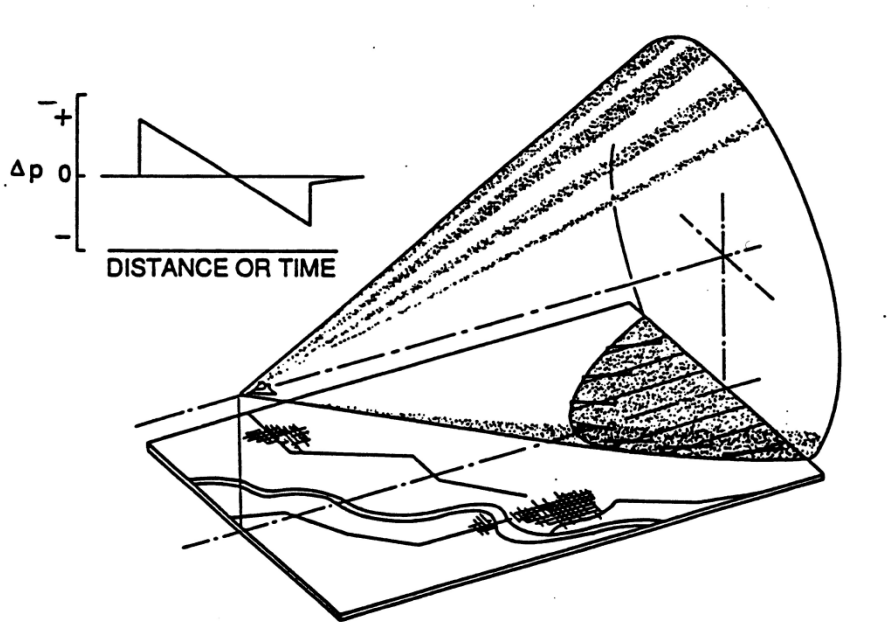


Figure I-6. Sonic Boom Carpet in Steady Flight

The complete ground pattern of a sonic boom depends on the size, shape, speed, and trajectory of the aircraft. Even for a nominally steady mission, the aircraft must accelerate to supersonic speed at the start, decelerate back to subsonic speed at the end, and usually change altitude. Figure I-7 illustrates the complexity of a nominal full mission.

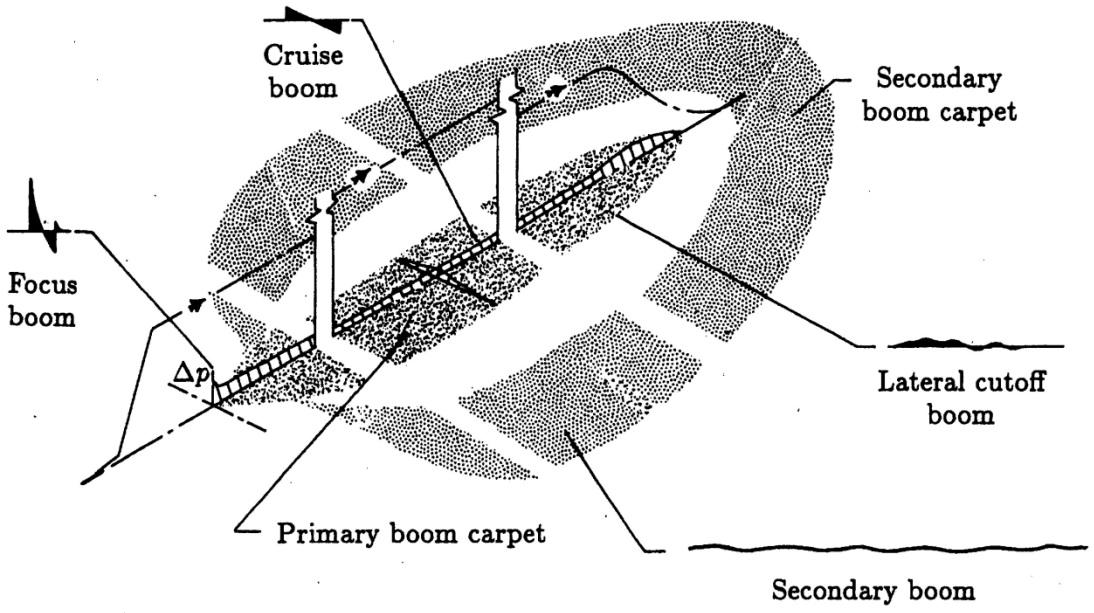


Figure I-7. Complex Sonic Boom Pattern for Full Mission

The Air Force's PCBoom4 computer program (Plotkin and Grandi 2002) can be used to compute the complete sonic boom footprint for a given single event, accounting for details of a particular maneuver.

Supersonic operations for the proposed action and alternatives are, however, associated with air combat training, which cannot be described in the deterministic manner that PCBoom4 requires. Supersonic events occur as aircraft approach an engagement, break at the end, and maneuver for advantage during the engagement. Long time cumulative sonic boom exposure, CDNL, is meaningful for this kind of environment.

Long-term sonic boom measurement projects have been conducted in four supersonic air combat training airspaces: White Sands, New Mexico (Plotkin *et al.* 1989); the eastern portion of the Goldwater Range, Arizona (Plotkin *et al.* 1992); the Elgin MOA at Nellis AFB, Nevada (Frampton *et al.* 1993); and the western portion of the Goldwater Range (Page *et al.* 1994). These studies included analysis of schedule and air combat maneuvering instrumentation data and supported development of the 1992 BOOMAP model (Plotkin *et al.* 1992). The current version of BOOMAP (Frampton *et al.* 1993; Plotkin 1996) incorporates results from all four studies. Because BOOMAP is directly based on long-term measurements, it implicitly accounts for such variables as maneuvers, statistical variations in operations, atmosphere effects, and other factors.

Figure I-8 shows a sample of supersonic flight tracks measured in the air combat training airspace at White Sands (Plotkin *et al.* 1989). The tracks fall into an elliptical pattern aligned with preferred engagement directions in the airspace. Figure I-9 shows the CDNL contours that were fit to six months of measured booms in that airspace. The subsequent measurement programs refined the fit, and demonstrated that the elliptical maneuver area is related to the size and shape of the airspace (Frampton *et al*. 1993). BOOMAP quantifies the size and shape of CDNL contours, and also numbers of booms per day, in air combat training airspaces. That model was used for prediction of cumulative sonic boom exposure in this analysis.

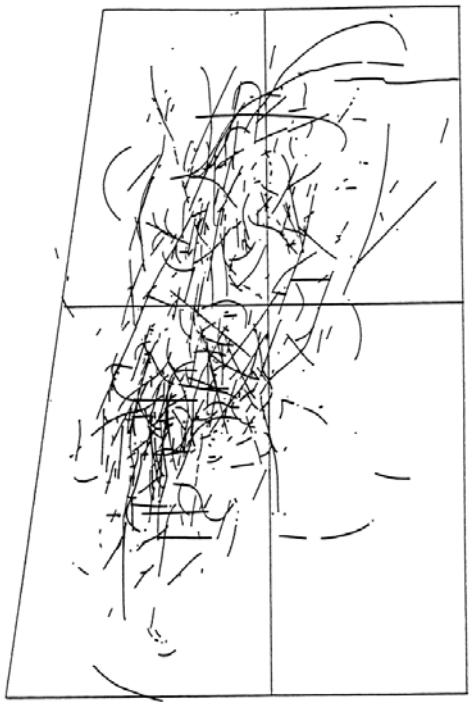


Figure I-8. Supersonic Flight Tracks in Supersonic Air Combat Training Airspace

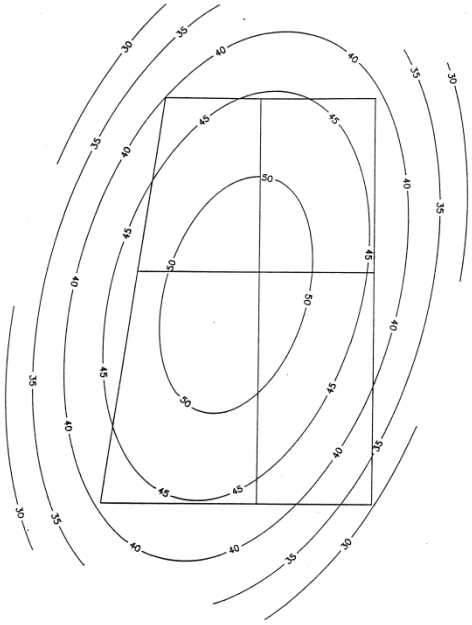


Figure I-9. Elliptical CDNL Contours in Supersonic Air Combat Training Airspace

4.0 DETAILED NOISE ANALYSIS RESULTS

Table I-6 expands on Table 4.2-5 in the body of the document. The frequency of events exceeding stated thresholds under baseline conditions is compared to the frequency of events under the proposed Modified Alternative A. In addition, a 95 dB threshold is included to show the frequency of overflights at higher noise levels.

Table I-7 compares the number of days between noise events under baseline conditions and under the proposed Modified Alternative A. Under the proposed Modified Alternative A, overflights of 65 dB SEL would occur as frequently as every other day, to once every 19 days. Overflights of 105 dB SEL would occur rarely under the proposed Modified Alternative A.

Table I-8 expands on Table 4.2-7 in the Chapter 4 of the document. The frequency of events under baseline conditions is compared to the frequency of events under the proposed Modified Alternative A using the Maximum Sound Level (L_{max}) noise metric. The L_{max} noise metric is used to further clarify effects of noise on different types of community annoyance.

Table I-9 compares the number of days between noise events under baseline conditions and under the proposed Modified Alternative A using the L_{max} noise metric.

Table I-6. Average Frequency of Military Aircraft Noise Events at Varying Noise Thresholds (in dB SEL) at Selected Representative Noise-Sensitive Locations[1] Under Modified Alternative A (Page 1 of 2)

ID#	General Description	Baseline Airspace	Baseline Number of Events Per Day Exceeding Threshold in Avoidance Area				Proposed Airspace	Proposed Number of Events Per Day Exceeding Threshold in Avoidance Area			
			65 dB SEL	75 dB SEL	85 dB SEL	95 dB SEL		65 dB SEL	75 dB SEL	85 dB SEL	95 dB SEL
1	Inyan Kara Mountain	Gateway ATCAA	0.44607	0.14885	0.00000	0.00000	Gateway West ATCAA	0.26183	0.14830	0.00000	0.00000
2	Devils Tower National Monument [2]	Gateway ATCAA	0.44607	0.14885	0.00000	0.00000	Gateway West ATCAA	0.47862	0.20488	0.00000	0.00000
3	Little Bighorn Battlefield National Monument [3]	None	n/a	n/a	n/a	n/a	PR-1C MOA/ATCAA	0.19267	0.11854	0.02837	0.00000
4	Bear Butte	None	n/a	n/a	n/a	n/a	Gateway West ATCAA	0.26183	0.14830	0.00000	0.00000
5	Thunder Basin National Forest (northern section)	None	n/a	n/a	n/a	n/a	PR-2 MOA/ATCAA	0.45839	0.23939	0.01257	0.00452
6	Thunder Basin National Forest (southern section)	Gateway ATCAA	0.44607	0.14885	0.00000	0.00000	Gateway West ATCAA	0.26183	0.14830	0.00000	0.00000
7	Black Hills National Forest	Gateway ATCAA	0.44607	0.14885	0.00000	0.00000	Gateway West ATCAA	0.26183	0.14830	0.00000	0.00000
8	Custer National Forest (western section)	None	n/a	n/a	n/a	n/a	PR-1D MOA/ATCAA	1.3000	0.64000	0.25700	0.0040
9	Custer National Forest (central section)	Powder River A	0.63323	0.23886	0.03067	0.00000	PR-2 MOA/ATCAA	0.45829	0.23939	0.01257	0.00452
10	Custer National Forest (southeastern section)	none	n/a	n/a	n/a	n/a	Gateway West ATCAA	0.26183	0.14830	0.00000	0.00000
11	Little Missouri National Grassland	none	n/a	n/a	n/a	n/a	PR-3 MOA/ATCAA	0.30563	0.15976	0.01242	0.00342
12	Grand River National Grassland	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	0.36685	0.19403	0.01838	0.00000
13	Crow Native American Reservation (Crow Agency, MT)	none	n/a	n/a	n/a	n/a	PR-1C MOA/ATCAA	0.12065	0.06652	0.00601	0.00239
14	Northern Cheyenne Native American Reservation (Lame Deer, MT)	none	n/a	n/a	n/a	n/a	PR-1D MOA/ATCAA	0.30000	0.19000	0.00100	0.00000

Table I-6. Average Frequency of Military Aircraft Noise Events at Varying Noise Thresholds (in dB SEL) at Selected Representative Noise-Sensitive Locations[1] Under Modified Alternative A (Page 2 of 2)

ID#	General Description	Baseline Airspace	Baseline Number of Events Per Day Exceeding Threshold in Avoidance Area				Proposed Airspace	Proposed Number of Events Per Day Exceeding Threshold in Avoidance Area			
			65 dB SEL	75 dB SEL	85 dB SEL	95 dB SEL		65 dB SEL	75 dB SEL	85 dB SEL	95 dB SEL
15	Standing Rock Native American Reservation	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	0.36685	0.19403	0.01838	0.00000
16	Cheyenne River Native American Reservation	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	0.36685	0.19403	0.01838	0.00000
17	Hardin, MT	none	n/a	n/a	n/a	n/a	PR-1A MOA/ATCAA	0.12480	0.05755	0.00965	0.00388
18	Colstrip, MT	none	n/a	n/a	n/a	n/a	PR-1B MOA/ATCAA	0.48180	0.26711	0.02767	0.01172
19	Broadus, MT [4]	Powder River A MOA	0.73111	0.29312	0.05655	0.02117	PR-2 MOA/ATCAA	0.55493	0.30235	0.03281	0.013890
20	Ekalaka, MT	none	n/a	n/a	n/a	n/a	PR-2 MOA/ATCAA	0.62127	0.33747	0.03712	0.01389
21	Baker, MT	none	n/a	n/a	n/a	n/a	PR-3 MOA/ATCAA	0.30171	0.15834	0.01120	0.00158
22	Elgin, ND	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	0.36685	0.19403	0.01838	0.00000
23	Bowman, ND	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	0.36685	0.19403	0.01838	0.00000
24	Bison, SD	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	0.36685	0.19403	0.01838	0.00000
25	Buffalo, SD	none	n/a	n/a	n/a	n/a	Gap B MOA/ATCAA	0.05334	0.02723	0.00161	0.00061
26	Sundance, WY	Gateway ATCAA	0.44607	0.14885	0.00000	0.00000	Gateway West ATCAA	0.26183	0.14830	0.00000	0.00000
27	Belle Fourche, SD	Gateway ATCAA	0.44607	0.14885	0.00000	0.00000	Gateway West ATCAA	0.26183	0.14830	0.00000	0.00000

Notes:

1. Because several of the listed noise-sensitive areas are very large, locations were selected from within the designated areas that are near the center of proposed airspace units.
2. Devils Tower National Monument published aircraft avoidance area is 5 NM horizontally and 18,000 feet AGL.
3. Little Bighorn Battlefield National Monument published aircraft avoidance area is 0.75 NM horizontally and 2,000 feet AGL.
4. Broadus, MT published aircraft avoidance area is 3 NM horizontally and 1,500 feet AGL.

Table I-7. Number of Days between Events at Varying Sound Exposure Levels (SEL) Thresholds (Page 1 of 2)

ID #	General Description	Baseline Airspace	Baseline # Events Per Day Exceeding Threshold in Avoidance Area				Proposed Airspace	Proposed Number of Events Per Day Exceeding Threshold in Avoidance Area			
			65 dB SEL	75 dB SEL	85 dB SEL	95 dB SEL		65 dB SEL	75 dB SEL	85 dB SEL	95 dB SEL
1	Inyan Kara Mountain	Gateway ATCAA	2.24	6.72	rare[1]	rare[1]	Gateway West ATCAA	3.82	6.74	rare[1]	rare[1]
2	Devils Tower National Monument	Gateway ATCAA	2.24	6.72	rare[1]	rare[1]	Gateway West ATCAA	2.09	4.88	rare[1]	rare[1]
3	Little Bighorn Battlefield National Monument	None	n/a	n/a	n/a	n/a	PR-1C MOA/ATCAA	5.19	8.44	35.25	rare[1]
4	Bear Butte	None	n/a	n/a	n/a	n/a	Gateway West ATCAA	3.82	6.74	rare[1]	rare[1]
5	Thunder Basin National Forest (northern section)	None	n/a	n/a	n/a	n/a	PR-2 MOA/ATCAA	2.18	4.18	79.57	221.15
6	Thunder Basin National Forest (southern section)	Gateway ATCAA	2.24	6.72	rare[1]	rare[1]	Gateway West ATCAA	3.82	6.74	rare[1]	rare[1]
7	Black Hills National Forest	Gateway ATCAA	2.24	6.72	rare[1]	rare[1]	Gateway West ATCAA	3.82	6.74	rare[1]	rare[1]
8	Custer National Forest (western section)	None	n/a	n/a	n/a	n/a	PR-1D MOA/ATCAA	0.80	1.60	3.90	243.30
9	Custer National Forest (central section)	Powder River A	1.58	4.19	32.61	rare[1]	PR-2 MOA/ATCAA	2.18	4.18	79.57	221.15
10	Custer National Forest (southeastern section)	none	n/a	n/a	n/a	n/a	Gateway West ATCAA	3.82	6.74	rare[1]	rare[1]
11	Little Missouri National Grassland	none	n/a	n/a	n/a	n/a	PR-3 MOA/ATCAA	3.27	6.26	80.52	291.99
12	Grand River National Grassland	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	2.73	5.15	54.41	rare[1]
13	Crow Native American Reservation (Crow Agency, MT)	none	n/a	n/a	n/a	n/a	PR-1C MOA/ATCAA	8.29	15.03	166.39	418.52

Table I-7. Number of Days between Events at Varying Sound Exposure Levels (SEL) Thresholds (Page 2 of 2)

ID #	General Description	Baseline Airspace	Baseline # Events Per Day Exceeding Threshold in Avoidance Area				Proposed Airspace	Proposed Number of Events Per Day Exceeding Threshold in Avoidance Area			
			65 dB SEL	75 dB SEL	85 dB SEL	95 dB SEL		65 dB SEL	75 dB SEL	85 dB SEL	95 dB SEL
14	Northern Cheyenne Native American Reservation (Lame Deer, MT)	none	n/a	n/a	n/a	n/a	PR-1D MOA/ATCAA	3.3	5.3	961.5	rare[1]
15	Standing Rock Native American Reservation	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	2.73	5.15	54.41	rare[1]
16	Cheyenne River Native American Reservation	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	2.73	5.15	54.41	rare[1]
17	Hardin, MT	none	n/a	n/a	n/a	n/a	PR-1A MOA/ATCAA	8.01	17.38	103.63	258.05
18	Colstrip, MT	none	n/a	n/a	n/a	n/a	PR-1B MOA/ATCAA	2.08	3.74	36.14	85.32
19	Broadus, MT	Powder River A MOA	1.37	3.41	17.68	47.23	PR-2 MOA/ATCAA	1.80	3.31	30.48	71.97
20	Ekalaka, MT	none	n/a	n/a	n/a	n/a	PR-2 MOA/ATCAA	1.16	2.96	26.94	71.97
21	Baker, MT	none	n/a	n/a	n/a	n/a	PR-3 MOA/ATCAA	3.31	6.32	89.32	631.71
22	Elgin, ND	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	2.73	5.15	54.41	rare[1]
23	Bowman, ND	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	2.73	5.15	54.41	rare[1]
24	Bison, SD	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	2.73	5.15	54.41	rare[1]
25	Buffalo, SD	none	n/a	n/a	n/a	n/a	Gap B MOA/ATCAA	18.75	36.73	619.77	1,630.26
26	Sundance, WY	Gateway ATCAA	2.24	6.72	rare[1]	rare[1]	Gateway West ATCAA	3.82	6.74	rare[1]	rare[1]
27	Belle Fourche, SD	Gateway ATCAA	2.24	6.72	rare[1]	rare[1]	Gateway West ATCAA	3.82	6.74	rare[1]	rare[1]

1. Overflight occurrences described as rare may happen less frequently than once every 100,000 days.

Table I-8. Average Frequency of Military Aircraft Noise Events at Varying Noise Thresholds (in dB L_{max}) at Selected Representative Noise-Sensitive Locations[1] Under Modified Alternative A (Page 1 of 2)

ID#	General Description	Baseline Airspace	Baseline Number of Events Per Day Exceeding Threshold in Avoidance Area				Proposed Airspace	Proposed Number of Events Per Day Exceeding Threshold in Avoidance Area			
			65 dB L_{max}	75 dB L_{max}	85 dB L_{max}	95 dB L_{max}		65 dB L_{max}	75 dB L_{max}	85 dB L_{max}	95 dB L_{max}
1	Inyan Kara Mountain	Gateway ATCAA	0.00000	0.00000	0.00000	0.00000	Gateway West ATCAA	0.10825	0.00000	0.00000	0.00000
2	Devils Tower National Monument [2]	Gateway ATCAA	0.00000	0.00000	0.00000	0.00000	Gateway West ATCAA	0.00000	0.00000	0.00000	0.00000
3	Little Bighorn Battlefield National Monument [3]	None	n/a	n/a	n/a	n/a	PR-1C MOA/ATCAA	0.10392	0.10336	0.00770	0.00000
4	Bear Butte	None	n/a	n/a	n/a	n/a	Gateway West ATCAA	0.10825	0.00000	0.00000	0.00000
5	Thunder Basin National Forest (northern section)	None	n/a	n/a	n/a	n/a	PR-2 MOA/ATCAA	0.19139	0.01821	0.00537	0.00205
6	Thunder Basin National Forest (southern section)	Gateway ATCAA	0.00000	0.00000	0.00000	0.00000	Gateway West ATCAA	0.10825	0.00000	0.00000	0.00000
7	Black Hills National Forest	Gateway ATCAA	0.00000	0.00000	0.00000	0.00000	Gateway West ATCAA	0.10825	0.00000	0.00000	0.00000
8	Custer National Forest (western section)	None	n/a	n/a	n/a	n/a	PR-1D MOA/ATCAA	0.60000	0.24000	0.00500	0.00190
9	Custer National Forest (central section)	Powder River A	0.10896	0.05541	0.01528	0.00637	PR-2 MOA/ATCAA	0.19139	0.01821	0.00537	0.00205
10	Custer National Forest (southeastern section)	none	n/a	n/a	n/a	n/a	Gateway West ATCAA	0.10825	0.00000	0.00000	0.00000
11	Little Missouri National Grassland	none	n/a	n/a	n/a	n/a	PR-3 MOA/ATCAA	0.13011	0.01705	0.00399	0.00155
12	Grand River National Grassland	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	0.14704	0.02042	0.00000	0.00000
13	Crow Native American Reservation (Crow Agency, MT)	none	n/a	n/a	n/a	n/a	PR-1C MOA/ATCAA	0.05839	0.00892	0.00265	0.00103
14	Northern Cheyenne Native American Reservation (Lame Deer, MT)	none	n/a	n/a	n/a	n/a	PR-1D MOA/ATCAA	0.10000	0.00100	0.00000	0.00000

Table I-8. Average Frequency of Military Aircraft Noise Events at Varying Noise Thresholds (in dB L_{max}) at Selected Representative Noise-Sensitive Locations[1] Under Modified Alternative A (Page 2 of 2)

ID#	General Description	Baseline Airspace	Baseline Number of Events Per Day Exceeding Threshold in Avoidance Area				Proposed Airspace	Proposed Number of Events Per Day Exceeding Threshold in Avoidance Area			
			65 dB L_{max}	75 dB L_{max}	85 dB L_{max}	95 dB L_{max}		65 dB L_{max}	75 dB L_{max}	85 dB L_{max}	95 dB L_{max}
15	Standing Rock Native American Reservation	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	0.14704	0.02042	0.00000	0.00000
16	Cheyenne River Native American Reservation	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	0.14704	0.02042	0.00000	0.00000
17	Hardin, MT	none	n/a	n/a	n/a	n/a	PR-1A MOA/ATCAA	0.05628	0.01440	0.02598	0.00965
18	Colstrip, MT	none	n/a	n/a	n/a	n/a	PR-1B MOA/ATCAA	0.22734	0.03801	0.01653	0.00619
19	Broadus, MT [4]	Powder River A MOA	0.16515	0.07461	0.02878	0.01160	PR-2 MOA/ATCAA	0.25890	0.04558	0.02019	0.00738
20	Ekalaka, MT	none	n/a	n/a	n/a	n/a	PR-2 MOA/ATCAA	0.29059	0.05145	0.02280	0.00826
21	Baker, MT	none	n/a	n/a	n/a	n/a	PR-3 MOA/ATCAA	0.13047	0.01860	0.00297	0.00315
22	Elgin, ND	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	0.14704	0.02042	0.00000	0.00000
23	Bowman, ND	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	0.14704	0.02042	0.00000	0.00000
24	Bison, SD	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	0.14704	0.02042	0.00000	0.00000
25	Buffalo, SD	none	n/a	n/a	n/a	n/a	Gap B MOA/ATCAA	0.02278	0.00230	0.00072	0.00027
26	Sundance, WY	Gateway ATCAA	0.00000	0.00000	0.00000	0.00000	Gateway West ATCAA	0.10825	0.00000	0.00000	0.00000
27	Belle Fourche, SD	Gateway ATCAA	0.00000	0.00000	0.00000	0.00000	Gateway West ATCAA	0.10825	0.00000	0.00000	0.00000

Notes:

1. Because several of the listed noise-sensitive areas are very large, locations were selected from within the designated areas that are near the center of proposed airspace units.
2. Devils Tower National Monument published aircraft avoidance area is 5 NM horizontally and 18,000 feet AGL.
3. Little Bighorn Battlefield National Monument published aircraft avoidance area is 0.75 NM horizontally and 2,000 feet AGL.
4. Broadus, MT published aircraft avoidance area is 3 NM horizontally and 1,500 feet AGL.

Table I-9. Number of Days between Overflight Events at Varying Maximum Sounds Level (L_{max}) Thresholds (Page 1 of 3)

ID #	General Description	Baseline Airspace	Baseline # Events Per Day Exceeding Threshold in Avoidance Area				Proposed Airspace	Proposed Number of Events Per Day Exceeding Threshold in Avoidance Area			
			65 dB L_{max}	75 dB L_{max}	85 dB L_{max}	95 dB L_{max}		65 dB L_{max}	75 dB L_{max}	85 dB L_{max}	95 dB L_{max}
1	Inyan Kara Mountain	Gateway ATCAA	rare[1]	rare[1]	rare[1]	rare[1]	Gateway West ATCAA	9.24	rare[1]	rare[1]	rare[1]
2	Devils Tower National Monument	Gateway ATCAA	rare[1]	rare[1]	rare[1]	rare[1]	Gateway West ATCAA	rare[1]	rare[1]	rare[1]	rare[1]
3	Little Bighorn Battlefield National Monument	None	n/a	n/a	n/a	n/a	PR-1C MOA/ATCAA	9.62	9.68	129.95	rare[1]
4	Bear Butte	None	n/a	n/a	n/a	n/a	Gateway West ATCAA	9.24	rare[1]	rare[1]	rare[1]
5	Thunder Basin National Forest (northern section)	None	n/a	n/a	n/a	n/a	PR-2 MOA/ATCAA	5.22	54.93	186.08	487.04
6	Thunder Basin National Forest (southern section)	Gateway ATCAA	rare[1]	rare[1]	rare[1]	rare[1]	Gateway West ATCAA	9.24	rare[1]	rare[1]	rare[1]
7	Black Hills National Forest	Gateway ATCAA	rare[1]	rare[1]	rare[1]	rare[1]	Gateway West ATCAA	9.24	rare[1]	rare[1]	rare[1]
8	Custer National Forest (western section)	None	n/a	n/a	n/a	n/a	PR-1D MOA/ATCAA	1.70	4.20	209.20	537.60
9	Custer National Forest (central section)	Powder River A	9.18	18.05	65.46	156.93	PR-2 MOA/ATCAA	5.22	54.93	186.08	487.04
10	Custer National Forest (southeastern section)	none	n/a	n/a	n/a	n/a	Gateway West ATCAA	9.24	rare[1]	rare[1]	rare[1]
11	Little Missouri National Grassland	none	n/a	n/a	n/a	n/a	PR-3 MOA/ATCAA	7.69	58.65	250.38	646.04

Table I-9. Number of Days between Overflight Events at Varying Maximum Sounds Level (L_{max}) Thresholds (Page 2 of 3)

ID #	General Description	Baseline Airspace	Baseline # Events Per Day Exceeding Threshold in Avoidance Area				Proposed Airspace	Proposed Number of Events Per Day Exceeding Threshold in Avoidance Area			
			65 dB L_{max}	75 dB L_{max}	85 dB L_{max}	95 dB L_{max}		65 dB L_{max}	75 dB L_{max}	85 dB L_{max}	95 dB L_{max}
12	Grand River National Grassland	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	6.80	48.97	rare[1]	rare[1]
13	Crow Native American Reservation (Crow Agency, MT)	none	n/a	n/a	n/a	n/a	PR-1C MOA/ATCAA	17.13	112.11	377.29	973.99
14	Northern Cheyenne Native American Reservation (Lame Deer, MT)	none	n/a	n/a	n/a	n/a	PR-1D MOA/ATCAA	10.0	869.6	rare[1]	rare[1]
15	Standing Rock Native American Reservation	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	6.80	48.97	rare[1]	rare[1]
16	Cheyenne River Native American Reservation	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	6.80	48.97	rare[1]	rare[1]
17	Hardin, MT	none	n/a	n/a	n/a	n/a	PR-1A MOA/ATCAA	17.77	69.44	38.49	103.63
18	Colstrip, MT	none	n/a	n/a	n/a	n/a	PR-1B MOA/ATCAA	4.40	26.31	60.50	161.52
19	Broadus, MT	Powder River A MOA	6.06	13.40	34.75	86.22	PR-2 MOA/ATCAA	3.86	21.94	49.52	135.58
20	Ekalaka, MT	none	n/a	n/a	n/a	n/a	PR-2 MOA/ATCAA	3.44	19.44	43.87	121.08
21	Baker, MT	none	n/a	n/a	n/a	n/a	PR-3 MOA/ATCAA	7.66	53.77	336.92	317.06
22	Elgin, ND	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	6.80	48.97	rare[1]	rare[1]

Table I-9. Number of Days between Overflight Events at Varying Maximum Sounds Level (L_{max}) Thresholds (Page 3 of 3)

ID #	General Description	Baseline Airspace	Baseline # Events Per Day Exceeding Threshold in Avoidance Area				Proposed Airspace	Proposed Number of Events Per Day Exceeding Threshold in Avoidance Area			
			65 dB L_{max}	75 dB L_{max}	85 dB L_{max}	95 dB L_{max}		65 dB L_{max}	75 dB L_{max}	85 dB L_{max}	95 dB L_{max}
23	Bowman, ND	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	6.80	48.97	rare[1]	rare[1]
24	Bison, SD	none	n/a	n/a	n/a	n/a	PR-4 MOA/ATCAA	6.80	48.97	rare[1]	rare[1]
25	Buffalo, SD	none	n/a	n/a	n/a	n/a	Gap B MOA/ATCAA	43.90	434.54	1,398.21	3,665.69
26	Sundance, WY	Gateway ATCAA	rare[1]	rare[1]	rare[1]	rare[1]	Gateway West ATCAA	9.24	rare[1]	rare[1]	rare[1]
27	Belle Fourche, SD	Gateway ATCAA	rare[1]	rare[1]	rare[1]	rare[1]	Gateway West ATCAA	9.24	rare[1]	rare[1]	rare[1]

1. Overflight occurrences described as rare may happen less frequently than once every 100,000 days.
2. In using MRNMAP2 to calculate time-average sound levels for airspaces, the reliability of the results varies at lower levels (below 55 dB). This arises from the increasing variability of individual aircraft sound levels at the longer distances due to atmospheric effects on sound propagation and to the presence of other sources of noise. Also, when flight activity is infrequent, the time-averaged sound levels are generated by only a few individual aircraft noise events, which may not be statistically representative of the given aircraft modeled. These infrequent operations modeled in MRNMAP2 may result in frequency anomalies at some noise level thresholds.

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APPENDIX J
OBSTRUCTION MARKING AND LIGHTING

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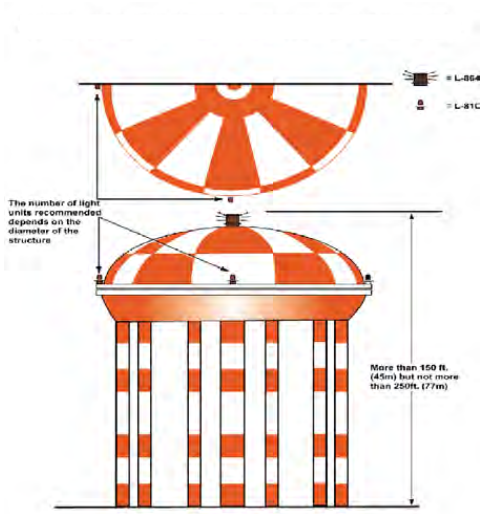
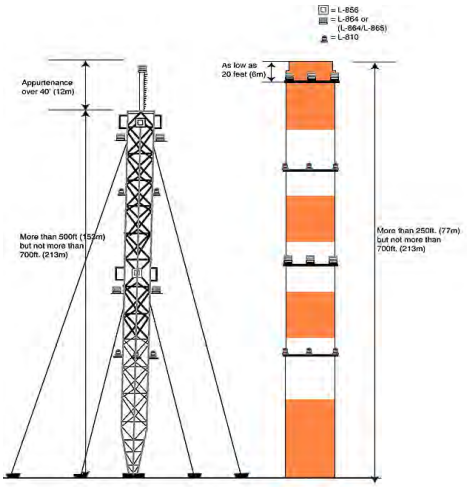
U.S. Department
of Transportation
Federal Aviation
Administration

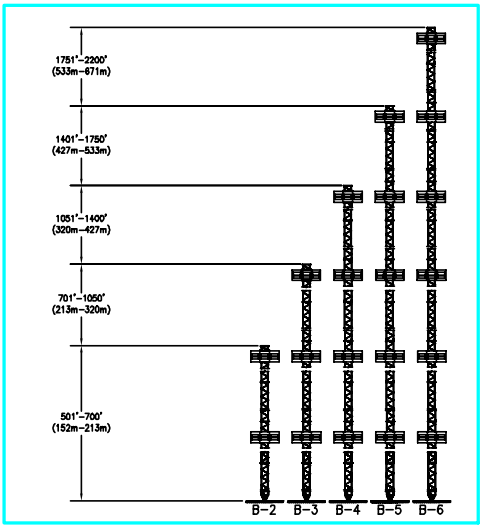
ADVISORY CIRCULAR

AC 70/7460-1K

Obstruction Marking and Lighting







Effective: 2/1/07 **Initiated by: System Operations Services**

Subject: CHANGE 2 TO OBSTRUCTION MARKING AND LIGHTING **Date:** 2/1/07 **Initiated by:** AJR-33 **AC No.:** 70/7460-1K **Change:** 2

1. PURPOSE. This change amends the Federal Aviation Administration's standards for marking and lighting structures to promote aviation safety. The change number and date of the change material are located at the top of the page.

2. EFFECTIVE DATE. This change is effective February 1, 2007.

3. EXPLANATION OF CHANGES.

   a. Table of Contents. Change pages i through iii.

   b. Page 1. Paragraph 1. **Reporting Requirements**. Incorporated the word "Title" in reference to the 14 Code of Federal Regulations (14 CFR part 77). FAA Regional Air Traffic Division office to read Obstruction Evaluation service (OES). FAA website to read http://oeaaa.faa.gov.

   c. Page 1. Paragraph 4. **Supplemental Notice Requirement** (subpart b). FAA Regional Air Traffic Division office to read OES.

   d. Page 1. Paragraph 5. **Modifications and Deviations** (subpart a). FAA Regional Air Traffic Division office to read OES.

   e. Page 1. Paragraph 5. **Modifications and Deviations** (subpart c). FAA Regional office to read OES.

   f. Page 2. Paragraph 5. **Modifications and Deviations** (subpart d). Removed period to create one sentence.

   g. Page 2. Paragraph 7. **Metric Units**. And to read however.

   h. Page 3. Paragraph 23. **Light Failure Notification** (subpart b). Nearest to read appropriate. FAA's website to read web. Website www.faa.gov/ats/ata/ata400 to read http://www.afss.com.

   i. Page 4. Paragraph 24. **Notification of Restoration**. Removed AFSS.

   j. Page 5. Paragraph 32. **Paint Standards**. Removed a comma after "Since".

   k. Page 5. Paragraph 33. **Paint Patterns** (subpart d. **Alternate Bands**). Removed number 6. Number 7 to read number 6.

   l. Page 9. Paragraph 41. **Standards**. TASC to read OTS. SVC-121.23 to read M-30.

m. Page 14. Paragraph 55. **Wind Turbine Structures**. Removed. The paragraph numbers that follow have been changed accordingly.

n. Page 18. Paragraph 65. **Wind Turbine Structures**. Removed. The paragraph numbers that follow have been changed accordingly.

o. Page 20. Paragraph 77. **Radio and Television Towers and Similar Skeletal Structures**. Excluding to read including.

p. Page 23. Paragraph 85. **Wind Turbine Structures**. Removed. The paragraph number that follows has been changed accordingly.

q. Page 33-34. Chapter 13. **Marking and Lighting Wind Turbine Farms**. Added.

r. Page A1-3. Appendix 1. Verbiage removed under first structure.

Nancy B. Kalinowski
Director, System Operations Airspace and Aeronautical Information Management

PAGE CONTROL CHART

AC 70/7460-1K CHG 2

Remove Pages	Dated	Insert Pages	Dated
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CHAPTER 1. ADMINISTRATIVE AND GENERAL PROCEDURES

1. REPORTING REQUIREMENTS

A sponsor proposing any type of construction or alteration of a structure that may affect the National Airspace System (NAS) is required under the provisions of Title 14 Code of Federal Regulations (14 CFR part 77) to notify the FAA by completing the Notice of Proposed Construction or Alteration form (FAA Form 7460-1). The form should be sent to the Obstruction Evaluation service (OES). Copies of FAA Form 7460-1 may be obtained from OES, Airports District Office or FAA Website at http://oeaaa.faa.gov.

2. PRECONSTRUCTION NOTICE

The notice must be submitted:

a. At least 30 days prior to the date of proposed construction or alteration is to begin.

b. On or before the date an application for a construction permit is filed with the Federal Communications Commission (FCC). (The FCC advises its applicants to file with the FAA well in advance of the 30-day period in order to expedite FCC processing.)

3. FAA ACKNOWLEDGEMENT

The FAA will acknowledge, in writing, receipt of each FAA Form 7460-1 notice received.

4. SUPPLEMENTAL NOTICE REQUIREMENT

a. If required, the FAA will include a FAA Form 7460-2, Notice of Actual Construction or Alteration, with a determination.

b. FAA Form 7460-2 Part 1 is to be completed and sent to the FAA at least 48 hours prior to starting the actual construction or alteration of a structure. Additionally, Part 2 shall be submitted no later than 5 days after the structure has reached its greatest height. The form should be sent to the OES.

c. In addition, supplemental notice shall be submitted upon abandonment of construction.

d. Letters are acceptable in cases where the construction/alteration is temporary or a proposal is abandoned. This notification process is designed to permit the FAA the necessary time to change affected procedures and/or minimum flight altitudes, and to otherwise alert airmen of the structure's presence.

Note-
NOTIFICATION AS REQUIRED IN THE DETERMINATION IS CRITICAL TO AVIATION SAFETY.

5. MODIFICATIONS AND DEVIATIONS

a. Requests for modification or deviation from the standards outlined in this AC must be submitted to the OES. The sponsor is responsible for adhering to approved marking and/or lighting limitations, and/or recommendations given, and should notify the FAA and FCC (for those structures regulated by the FCC) prior to removal of marking and/or lighting. A request received after a determination is issued may require a new study and could result in a new determination.

b. ***Modifications***. Modifications will be based on whether or not they impact aviation safety. Examples of modifications that may be considered:

1. ***Marking and/or Lighting Only a Portion of an Object.*** The object may be so located with respect to other objects or terrain that only a portion of it needs to be marked or lighted.

2. ***No Marking and/or Lighting***. The object may be so located with respect to other objects or terrain, removed from the general flow of air traffic, or may be so conspicuous by its shape, size, or color that marking or lighting would serve no useful purpose.

3. ***Voluntary Marking and/or Lighting***. The object may be so located with respect to other objects or terrain that the sponsor feels increased conspicuity would better serve aviation safety. Sponsors who desire to voluntarily mark and/or light their structure should request the proper marking and/or lighting from the FAA to ensure no aviation safety issues are impacted.

4. ***Marking or Lighting an Object in Accordance with the Standards for an Object of Greater Height or Size.*** The object may present such an extraordinary hazard potential that higher standards may be recommended for increased conspicuity to ensure the safety to air navigation.

c. ***Deviations***. The OES conducts an aeronautical study of the proposed deviation(s) and forwards its recommendation to FAA headquarters in Washington, DC, for final approval. Examples of deviations that may be considered:

1. Colors of objects.

2. Dimensions of color bands or rectangles.

3. Colors/types of lights.

4. Basic signals and intensity of lighting.

5. Night/day lighting combinations.

6. Flash rate.

d. The FAA strongly recommends that owners become familiar with the different types of lighting systems and to specifically request the type of lighting system desired when submitting FAA Form 7460-1. (This request should be noted in "item 2.D" of the FAA form.) Information on these systems can be found in Chapter 12, Table 4 of this AC. While the FAA will make every effort to accommodate the structure sponsor's request, sponsors should also request information from system manufacturers in order to determine which system best meets their needs based on purpose, installation, and maintenance costs.

6. ADDITIONAL NOTIFICATION

Sponsors are reminded that any change to the submitted information on which the FAA has based its determination, including modification, deviation or optional upgrade to white lighting on structures which are regulated by the FCC, must also be filed with the FCC prior to making the change for proper authorization and annotations of obstruction marking and lighting. These structures will be subject to inspection and enforcement of marking and lighting requirements by the FCC. FCC Forms and Bulletins can be obtained from the FCC's National Call Center at 1-888-CALL-FCC (1-888-225-5322). Upon completion of the actual change, notify the Aeronautical Charting office at:

NOAA/NOS
Aeronautical Charting Division
Station 5601, N/ACC113
1305 East-West Highway
Silver Spring, MD 20910-3233

7. METRIC UNITS

To promote an orderly transition to metric units, sponsors should include both English and metric (SI units) dimensions. The metric conversions may not be exact equivalents, however, until there is an official changeover to the metric system, the English dimensions will govern.

CHAPTER 2. GENERAL

20. STRUCTURES TO BE MARKED AND LIGHTED

Any temporary or permanent structure, including all appurtenances, that exceeds an overall height of 200 feet (61m) above ground level (AGL) or exceeds any obstruction standard contained in 14 CFR part 77, should normally be marked and/or lighted. However, an FAA aeronautical study may reveal that the absence of marking and/or lighting will not impair aviation safety. Conversely, the object may present such an extraordinary hazard potential that higher standards may be recommended for increased conspicuity to ensure safety to air navigation. Normally outside commercial lighting is not considered sufficient reason to omit recommended marking and/or lighting. Recommendations on marking and/or lighting structures can vary depending on terrain features, weather patterns, geographic location, and in the case of wind turbines, number of structures and overall layout of design. The FAA may also recommend marking and/or lighting a structure that does not exceed 200 (61m) feet AGL or 14 CFR part 77 standards because of its particular location.

21. GUYED STRUCTURES

The guys of a 2,000-foot (610m) skeletal tower are anchored from 1,600 feet (488m) to 2,000 feet (610m) from the base of the structure. This places a portion of the guys 1,500 feet (458m) from the tower at a height of between 125 feet (38m) to 500 feet (153m) AGL. 14 CFR part 91, section 119, requires pilots, when operating over other than congested areas, to remain at least 500 feet (153m) from man-made structures. Therefore, the tower must be cleared by 2,000 feet (610m) horizontally to avoid all guy wires. Properly maintained marking and lighting are important for increased conspicuity since the guys of a structure are difficult to see until aircraft are dangerously close.

22. MARKING AND LIGHTING EQUIPMENT

Considerable effort and research have been expended in determining the minimum marking and lighting systems or quality of materials that will produce an acceptable level of safety to air navigation. The FAA will recommend the use of only those marking and lighting systems that meet established technical standards. While additional lights may be desirable to identify an obstruction to air navigation and may, on occasion be recommended, the FAA will recommend minimum standards in the interest of safety, economy, and related concerns. Therefore, to provide an adequate level of safety, obstruction lighting systems should be installed, operated, and maintained in accordance with the recommended standards herein.

23. LIGHT FAILURE NOTIFICATION

a. Sponsors should keep in mind that conspicuity is achieved only when all recommended lights are working. Partial equipment outages decrease the margin of safety. Any outage should be corrected as soon as possible. Failure of a steady burning side or intermediate light should be corrected as soon as possible, but notification is not required.

b. Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to the appropriate flight service station (FSS) so a Notice to Airmen (NOTAM) can be issued. Toll-free numbers for FSS are listed in most telephone books or on the web at http://www.afss.com. This report should contain the following information:

1. Name of persons or organizations reporting light failures including any title, address, and telephone number.

2. The type of structure.

3. Location of structure (including latitude and longitude, if known, prominent structures, landmarks, etc.).

4. Height of structure above ground level (AGL)/above mean sea level (AMSL), if known.

5. A return to service date.

6. FCC Antenna Registration Number (for structures that are regulated by the FCC).

Note-
1. *When the primary lamp in a double obstruction light fails, and the secondary lamp comes on, no report is required. However, when one of the lamps in an incandescent L-864 flashing red beacon fails, it should be reported.*

2. *After 15 days, the NOTAM is automatically deleted from the system. The sponsor is responsible for calling the nearest FSS to extend the outage date or to report a return to service date.*

24. NOTIFICATION OF RESTORATION

As soon as normal operation is restored, notify the same FSS that received the notification of failure. The FCC advises that noncompliance with notification procedures could subject its sponsor to penalties or monetary forfeitures.

25. FCC REQUIREMENT

FCC licensees are required to file an environmental assessment with the Commission when seeking authorization for the use of the high intensity flashing white lighting system on structures located in residential neighborhoods, as defined by the applicable zoning law.

CHAPTER 3. MARKING GUIDLINES

30. PURPOSE

This chapter provides recommended guidelines to make certain structures conspicuous to pilots during daylight hours. One way of achieving this conspicuity is by painting and/or marking these structures. Recommendations on marking structures can vary depending on terrain features, weather patterns, geographic location, and in the case of wind turbines, number of structures and overall layout of design.

31. PAINT COLORS

Alternate sections of aviation orange and white paint should be used as they provide maximum visibility of an obstruction by contrast in colors.

32. PAINT STANDARDS

The following standards should be followed. To be effective, the paint used should meet specific color requirements when freshly applied to a structure. Since all outdoor paints deteriorate with time and it is not practical to give a maintenance schedule for all climates, surfaces should be repainted when the color changes noticeably or its effectiveness is reduced by scaling, oxidation, chipping, or layers of contamination.

a. ***Materials and Application***. Quality paint and materials should be selected to provide extra years of service. The paint should be compatible with the surfaces to be painted, including any previous coatings, and suitable for the environmental conditions. Surface preparation and paint application should be in accordance with manufacturer's recommendations.

Note-
In-Service Aviation Orange Color Tolerance Charts are available from private suppliers for determining when repainting is required. The color should be sampled on the upper half of the structure, since weathering is greater there.

b. ***Surfaces Not Requiring Paint.*** Ladders, decks, and walkways of steel towers and similar structures need not be painted if a smooth surface presents a potential hazard to maintenance personnel. Paint may also be omitted from precision or critical surfaces if it would have an adverse effect on the transmission or radiation characteristics of a signal. However, the overall marking effect of the structure should not be reduced.

c. ***Skeletal Structures***. Complete all marking/painting prior to or immediately upon completion of construction. This applies to catenary support structures, radio and television towers, and similar skeletal structures. To be effective, paint should be applied to all inner and outer surfaces of the framework.

33. PAINT PATTERNS

Paint patterns of various types are used to mark structures. The pattern to be used is determined by the size and shape of the structure. The following patterns are recommended.

a. ***Solid Pattern***. Obstacles should be colored aviation orange if the structure has both horizontal and vertical dimensions not exceeding 10.5 feet (3.2m).

b. ***Checkerboard Pattern***. Alternating rectangles of aviation orange and white are normally displayed on the following structures:

1. Water, gas, and grain storage tanks.

2. Buildings, as required.

3. Large structures exceeding 10.5 feet (3.2m) across having a horizontal dimension that is equal to or greater than the vertical dimension.

c. ***Size of Patterns***. Sides of the checkerboard pattern should measure not less than 5 feet (1.5m) or more than 20 feet (6m) and should be as nearly square as possible. However, if it is impractical because of the size or shape of a structure, the patterns may have sides less than 5 feet (1.5m). When possible, corner surfaces should be colored orange.

d. ***Alternate Bands***. Alternate bands of aviation orange and white are normally displayed on the following structures:

1. Communication towers and catenary support structures.

2. Poles.

3. Smokestacks.

4. Skeletal framework of storage tanks and similar structures.

5. Structures which appear narrow from a side view, that are 10.5 feet (3.2m) or more across and the horizontal dimension is less than the vertical dimension.

6. Coaxial cable, conduits, and other cables attached to the face of a tower.

e. ***Color Band Characteristics***. Bands for structures of any height should be:

1. Equal in width, provided each band is not less than $1^1/_2$ feet (0.5m) or more than 100 feet (31m) wide.

2. Perpendicular to the vertical axis with the bands at the top and bottom ends colored orange.

3. An odd number of bands on the structure.

4. Approximately one-seventh the height if the structure is 700 feet (214m) AGL or less. For each additional 200 feet (61m) or fraction thereof, add one (1) additional orange and one (1) additional white band.

5. Equal and in proportion to the structure's height AGL.

Structure Height to Bandwidth Ratio

Example: If a Structure is:		
Greater Than	**But Not More Than**	**Band Width**
10.5 feet (3.2m)	700 feet (214m)	$^1/_7$ of height
701 feet (214m)	900 feet (275m)	$^1/_9$ of height
901 feet (275m)	1,100 feet (336m)	$^1/_{11}$ of height
1,100 feet (336m)	1,300 feet (397m)	$^1/_{13}$ of height

TBL 1

f. ***Structures With a Cover or Roof***. If the structure has a cover or roof, the highest orange band should be continued to cover the entire top of the structure.

g. ***Skeletal Structures Atop Buildings***. If a flagpole, skeletal structure, or similar object is erected on top of a building, the combined height of the object and building will determine whether marking is recommended; however, only the height of the object under study determines the width of the color bands.

h. ***Partial Marking***. If marking is recommended for only a portion of a structure because of shielding by other objects or terrain, the width of the bands should be determined by the overall height of the structure. A minimum of three bands should be displayed on the upper portion of the structure.

i. ***Teardrop Pattern***. Spherical water storage tanks with a single circular standpipe support may be marked in a teardrop-striped pattern. The tank should show alternate stripes of aviation orange and white. The stripes should extend from the top center of the tank to its supporting standpipe. The width of the stripes should be equal, and the width of each stripe at the greatest girth of the tank should not be less than 5 feet (1.5m) nor more than 15 feet (4.6m).

j. ***Community Names***. If it is desirable to paint the name of the community on the side of a tank, the stripe pattern may be broken to serve this purpose. This open area should have a maximum height of 3 feet (0.9m).

k. ***Exceptions.*** Structural designs not conducive to standard markings may be marked as follows:

1. If it is not practical to color the roof of a structure in a checkerboard pattern, it may be colored solid orange.

2. If a spherical structure is not suitable for an exact checkerboard pattern, the shape of the rectangles may be modified to fit the shape of the surface.

3. Storage tanks not suitable for a checkerboard pattern may be colored by alternating bands of aviation orange and white or a limited checkerboard pattern applied to the upper one-third of the structure.

4. The skeletal framework of certain water, gas, and grain storage tanks may be excluded from the checkerboard pattern.

34. MARKERS

Markers are used to highlight structures when it is impractical to make them conspicuous by painting. Markers may also be used in addition to aviation orange and white paint when additional conspicuity is necessary for aviation safety. They should be displayed in conspicuous positions on or adjacent to the structures so as to retain the general definition of the structure. They should be recognizable in clear air from a distance of at least 4,000 feet (1219m) and in all directions from which aircraft are likely to approach. Markers should be distinctively shaped, i.e., spherical or cylindrical, so they are not mistaken for items that are used to convey other information. They should be replaced when faded or otherwise deteriorated.

a. ***Spherical Markers***. Spherical markers are used to identify overhead wires. Markers may be of another shape, i.e., cylindrical, provided the projected area of such markers will not be less than that presented by a spherical marker.

1. *Size and Color*.

The diameter of the markers used on extensive catenary wires across canyons, lakes, rivers, etc., should be not less than 36 inches (91cm). Smaller 20-inch (51cm) spheres are permitted on less extensive power lines or on power lines below 50 feet (15m) above the ground and within 1,500 feet (458m) of an airport runway end. Each marker should be a solid color such as aviation orange, white, or yellow.

2. ***Installations.***

(a) *Spacing.* Markers should be spaced equally along the wire at intervals of approximately 200 feet (61m) or a fraction thereof. Intervals between markers should be less in critical areas near runway ends (i.e., 30 to 50 feet (10m to 15m)). They should be displayed on the highest wire or by another means at the same height as the highest wire. Where there is more than one wire at the highest point, the markers may be installed alternately along each wire if the distance between adjacent markers meets the spacing standard. This method allows the weight and wind loading factors to be distributed.

(b) *Pattern*. An alternating color scheme provides the most conspicuity against all backgrounds. Mark overhead wires by alternating solid colored markers of aviation orange, white, and yellow. Normally, an orange sphere is placed at each end of a line and the spacing is adjusted (not to exceed 200 feet (61m)) to accommodate the rest of the markers. When less than four markers are used, they should all be aviation orange.

b. ***Flag Markers***. Flags are used to mark certain structures or objects when it is technically impractical to use spherical markers or painting. Some examples are temporary construction equipment, cranes, derricks, oil and other drilling rigs. Catenaries should use spherical markers.

1. *Minimum Size*. Each side of the flag marker should be at least 2 feet (0.6m) in length.

2. ***Color Patterns***. Flags should be colored as follows:

(a) ***Solid***. Aviation orange.

(b) *Orange and White*. Arrange two triangular sections, one aviation orange and the other white to form a rectangle.

(c) *Checkerboard.* **Flags** 3 feet (0.9m) or larger should be a checkerboard pattern of aviation orange and white squares, each 1 foot (0.3m) plus or minus 10 percent.

3. ***Shape***. Flags should be rectangular in shape and have stiffeners to keep them from drooping in calm wind.

4. ***Display***. Flag markers should be displayed around, on top, or along the highest edge of the obstruction. When flags are used to mark extensive or closely grouped obstructions, they should be displayed approximately 50 feet (15m) apart. The flag stakes should be of such strength and height that they will support the flags above all surrounding ground, structures, and/or objects of natural growth.

35. UNUSUAL COMPLEXITIES

The FAA may also recommend appropriate marking in an area where obstructions are so grouped as to present a common obstruction to air navigation.

36. OMISSION OR ALTERNATIVES TO MARKING

There are two alternatives to marking. Either alternative requires FAA review and concurrence.

a. ***High Intensity Flashing White Lighting Systems***. The high intensity lighting systems are more effective than aviation orange and white paint and therefore can be recommended instead of marking. This is particularly true under certain ambient light conditions involving the position of the sun relative to the direction of flight. When high intensity lighting systems are operated during daytime and twilight, other methods of marking may be omitted. When operated 24 hours a day, other methods of marking and lighting may be omitted.

b. ***Medium Intensity Flashing White Lighting Systems.*** When medium intensity lighting systems are operated during daytime and twilight on structures 500 feet (153m) AGL or less, other methods of marking may be omitted. When operated 24 hours a day on structures 500 feet (153m) AGL or less, other methods of marking and lighting may be omitted.

Note-
SPONSORS MUST ENSURE THAT ALTERNATIVES TO MARKING ARE COORDINATED WITH THE FCC FOR STRUCTURES UNDER ITS JURISDICTION PRIOR TO MAKING THE CHANGE.

CHAPTER 4. LIGHTING GUIDELINE

40. PURPOSE

This chapter describes the various obstruction lighting systems used to identify structures that an aeronautical study has determined will require added conspicuity. The lighting standards in this circular are the minimum necessary for aviation safety. Recommendations on lighting structures can vary depending on terrain features, weather patterns, geographic location, and in the case of wind turbines, number of structures and overall layout of design.

41. STANDARDS

The standards outlined in this AC are based on the use of light units that meet specified intensities, beam patterns, color, and flash rates as specified in AC 150/5345-43.

These standards may be obtained from:

Department of Transportation
OTS
Subsequent Distribution Office, M-30
Ardmore East Business Center
3341 Q 75th Avenue
Landover, MD 20785

42. LIGHTING SYSTEMS

Obstruction lighting may be displayed on structures as follows:

a. ***Aviation Red Obstruction Lights***. Use flashing beacons and/or steady burning lights during nighttime.

b. ***Medium Intensity Flashing White Obstruction Lights.*** Medium intensity flashing white obstruction lights may be used during daytime and twilight with automatically selected reduced intensity for nighttime operation. When this system is used on structures 500 feet (153m) AGL or less in height, other methods of marking and lighting the structure may be omitted. Aviation orange and white paint is always required for daytime marking on structures exceeding 500 feet (153m) AGL. This system is not normally recommended on structures 200 feet (61m) AGL or less.

c. ***High Intensity Flashing White Obstruction Lights***. Use high intensity flashing white obstruction lights during daytime with automatically selected reduced intensities for twilight and nighttime operations. When this system is used, other methods of marking and lighting the structure may be omitted. This system should not be recommended on structures 500 feet (153m) AGL or less, unless an FAA aeronautical study shows otherwise.

Note-
All flashing lights on a structure should flash simultaneously except for catenary support structures, which have a distinct sequence flashing between levels.

d. ***Dual Lighting***. This system consists of red lights for nighttime and high or medium intensity flashing white lights for daytime and twilight. When a dual lighting system incorporates medium flashing intensity lights on structures 500 feet (153m) or less, or high intensity flashing white lights on structures of any height, other methods of marking the structure may be omitted.

e. ***Obstruction Lights During Construction***. As the height of the structure exceeds each level at which permanent obstruction lights would be recommended, two or more lights of the type specified in the determination should be installed at that level. Temporary high or medium intensity flashing white lights, as recommended in the determination, should be operated 24 hours a day until all permanent lights are in operation. In either case, two or more lights should be installed on the uppermost part of the structure any time it exceeds the height of the temporary construction equipment. They may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level.

f. ***Obstruction Lights in Urban Areas***. When a structure is located in an urban area where there are numerous other white lights (e.g., streetlights, etc.) red obstruction lights with painting or a medium intensity dual system is recommended. Medium intensity lighting is not normally recommended on structures less than 200 feet (61m).

g. ***Temporary Construction Equipment Lighting***. Since there is such a variance in construction cranes, derricks, oil and other drilling rigs, each case should be considered individually. Lights should be installed according to the standards given in Chapters 5, 6, 7, or 8, as they would apply to permanent structures.

43. CATENARY LIGHTING

Lighted markers are available for increased night conspicuity of high-voltage (69KV or greater) transmission line catenary wires. These markers should be used on transmission line catenary wires near airports, heliports, across rivers, canyons, lakes, etc. The lighted markers should be manufacturer certified as recognizable from a minimum distance of 4,000 feet (1219m) under nighttime conditions, minimum visual flight rules (VFR) conditions or having a minimum intensity of at least 32.5 candela. The lighting unit should emit a steady burning red light. They should be used on the highest energized line. If the lighted markers are installed on a line other than the highest catenary, then markers specified in paragraph 34 should be used in addition to the lighted markers. (The maximum distance between the line energizing the lighted markers and the highest catenary above the lighted marker should be no more than 20 feet (6m).) Markers should be distinctively shaped, i.e., spherical, cylindrical, so they are not mistaken for items that are used to convey other information. They should be visible in all directions from which aircraft are likely to approach. The area in the immediate vicinity of the supporting structure's base should be clear of all items and/or objects of natural growth that could interfere with the line-of-sight between a pilot and the structure's lights. Where a catenary wire crossing requires three or more supporting structures, the inner structures should be equipped with enough light units per level to provide a full coverage.

44. INSPECTION, REPAIR AND MAINTENANCE

To ensure the proper candela output for fixtures with incandescent lamps, the voltage provided to the lamp filament should not vary more than plus or minus 3 percent of the rated voltage of the lamp. The input voltage should be measured at the lamp socket with the lamp operating during the hours of normal operation. (For strobes, the input voltage of the power supplies should be within 10 percent of rated voltage.) Lamps should be replaced after being operated for not more than 75 percent of their rated life or immediately upon failure. Flashtubes in a light unit should be replaced immediately upon failure, when the peak effective intensity falls below specification limits or when the fixture begins skipping flashes, or at the manufacturer's recommended intervals. Due to the effects of harsh environments, beacon lenses should be visually inspected for ultraviolet damage, cracks, crazing, dirt build up, etc., to insure that the certified light output has not deteriorated. (See paragraph 23, for reporting requirements in case of failure.)

45. NONSTANDARD LIGHTS

Moored balloons, chimneys, church steeples, and similar obstructions may be floodlighted by fixed search light projectors installed at three or more equidistant points around the base of each obstruction. The searchlight projectors should provide an average illumination of at least 15 foot-candles over the top one-third of the obstruction.

46. PLACEMENT FACTORS

The height of the structure AGL determines the number of light levels. The light levels may be adjusted slightly, but not to exceed 10 feet (3m), when necessary to accommodate guy wires and personnel who replace or repair light fixtures. Except for catenary support structures, the following factors should be considered when determining the placement of obstruction lights on a structure.

a. ***Red Obstruction Lighting Systems***. The overall height of the structure including all appurtenances such as rods, antennas, obstruction lights, etc., determines the number of light levels.

b. ***Medium Intensity Flashing White Obstruction Lighting Systems***. The overall height of the structure including all appurtenances such as rods, antennas, obstruction lights, etc., determines the number of light levels.

c. ***High Intensity Flashing White Obstruction Lighting Systems***. The overall height of the main structure including all appurtenances such as rods, antennas, obstruction lights, etc., determines the number of light levels.

d. ***Dual Obstruction Lighting Systems***. The overall height of the structure including all appurtenances such as rods, antennas, obstruction lights, etc., is used to determine the number of light levels for a medium intensity white obstruction light/red obstruction dual lighting system. The overall height of the structure including all appurtenances is used to determine the number of light levels for a high intensity white obstruction light/red obstruction dual lighting system.

e. ***Adjacent Structures***. The elevation of the tops of adjacent buildings in congested areas may be used as the equivalent of ground level to determine the proper number of light levels required.

f. ***Shielded Lights***. If an adjacent object shields any light, horizontal placement of the lights should be adjusted or additional lights should be mounted on that object to retain or contribute to the definition of the obstruction.

47. MONITORING OBSTRUCTION LIGHTS

Obstruction lighting systems should be closely monitored by visual or automatic means. It is extremely important to visually inspect obstruction lighting in all operating intensities at least once every 24 hours on systems without automatic monitoring. In the event a structure is not readily accessible for visual observation, a properly maintained automatic monitor should be used. This monitor should be designed to register the malfunction of any light on the obstruction regardless of its position or color. When using remote monitoring devices, the communication status and operational status of the system should be confirmed at least once every 24 hours. The monitor (aural or visual) should be located in an area generally occupied by responsible personnel. In some cases, this may require a remote monitor in an attended location. For each structure, a log should be maintained in which daily operations status of the lighting system is recorded. Beacon lenses should be replaced if serious cracks, crazing, dirt build up, etc., has occurred.

48. ICE SHIELDS

Where icing is likely to occur, metal grates or similar protective ice shields should be installed directly over each light unit to prevent falling ice or accumulations from damaging the light units.

49. DISTRACTION

a. Where obstruction lights may distract operators of vessels in the proximity of a navigable waterway, the sponsor must coordinate with the Commandant, U.S. Coast Guard, to avoid interference with marine navigation.

b. The address for marine information and coordination is:

Chief, Aids to Navigation
Division (OPN)
U.S. Coast Guard Headquarters
2100 2nd Street, SW., Rm. 3610
Washington, DC 20593-0001
Telephone: (202) 267-0980

CHAPTER 5. RED OBSTRUCTION LIGHT SYSTEM

50. PURPOSE

Red Obstruction lights are used to increase conspicuity during nighttime. Daytime and twilight marking is required. Recommendations on lighting structures can vary depending on terrain features, weather patterns, geographic location, and in the case of wind turbines, number of structutes and overall layout of design.

51. STANDARDS

The red obstruction lighting system is composed of flashing omnidirectional beacons (L-864) and/or steady burning (L-810) lights. When one or more levels is comprised of flashing beacon lighting, the lights should flash simultaneously.

a. ***Single Obstruction Light***. A single (L-810) light may be used when more than one obstruction light is required either vertically or horizontally or where maintenance can be accomplished within a reasonable time.

1. *Top Level*. A single light may be used to identify low structures such as airport ILS buildings and long horizontal structures such as perimeter fences and building roof outlines.

2. ***Intermediate Level***. Single lights may be used on skeletal and solid structures when more than one level of lights is installed and there are two or more single lights per level.

b. ***Double Obstruction Light***. A double (L-810) light should be installed when used as a top light, at each end of a row of single obstruction lights, and in areas or locations where the failure of a single unit could cause an obstruction to be totally unlighted.

1. ***Top Level.*** **Structures** 150 feet (46m) AGL or less should have one or more double lights installed at the highest point and operating simultaneously.

2. ***Intermediate Level***. Double lights should be installed at intermediate levels when a malfunction of a single light could create an unsafe condition and in remote areas where maintenance cannot be performed within a reasonable time. Both units may operate simultaneously, or a transfer relay may be used to switch to a spare unit should the active system fail.

3. ***Lowest Level***. The lowest level of light units may be installed at a higher elevation than normal on a structure if the surrounding terrain, trees, or adjacent building(s) would obscure the lights. In certain instances, as determined by an FAA aeronautical study, the lowest level of lights may be eliminated.

52. CONTROL DEVICE

Red obstruction lights should be operated by a satisfactory control device (e.g., photo cell, timer, etc.) adjusted so the lights will be turned on when the northern sky illuminance reaching a vertical surface falls below a level of 60 foot-candles (645.8 lux) but before reaching a level of 35 foot-candles (367.7 lux). The control device should turn the lights off when the northern sky illuminance rises to a level of not more than 60 foot-candles (645.8 lux). The lights may also remain on continuously. The sensing device should, if practical, face the northern sky in the Northern Hemisphere. (See AC 150/5345-43.)

53. POLES, TOWERS, AND SIMILAR SKELETAL STRUCTURES

The following standards apply to radio and television towers, supporting structures for overhead transmission lines, and similar structures.

a. ***Top Mounted Obstruction Light.***

1. *Structures 150 Feet (46m) AGL or Less*. Two or more steady burning (L-810) lights should be installed in a manner to ensure an unobstructed view of one or more lights by a pilot.

2. ***Structures Exceeding 150 Feet (46m) AGL***. At least one red flashing (L-864) beacon should be installed in a manner to ensure an unobstructed view of one or more lights by a pilot.

3. ***Appurtenances 40 Feet (12m) or Less***. If a rod, antenna, or other appurtenance 40 feet (12m) or less in height is incapable of supporting a red flashing beacon, then it may be placed at the base of the appurtenance. If the mounting location does not allow unobstructed viewing of the beacon by a pilot, then additional beacons should be added.

4. ***Appurtenances Exceeding 40 Feet (12m)***. If a rod, antenna, or other appurtenance exceeding 40 feet (12m) in height is incapable of supporting a red flashing beacon, a supporting mast with one or more beacons should be installed adjacent to the appurtenance. Adjacent installations should not exceed the height of the appurtenance and be within 40 feet (12m) of the tip to allow the pilot an unobstructed view of at least one beacon.

b. ***Mounting Intermediate Levels***. The number of light levels is determined by the height of the structure, including all appurtenances, and is detailed in Appendix 1. The number of lights on each level is

determined by the shape and height of the structure. These lights should be mounted so as to ensure an unobstructed view of at least one light by a pilot.

1. ***Steady Burning Lights (L-810).***

(a) ***Structures 350 Feet (107m) AGL or Less***. Two or more steady burning (L-810) lights should be installed on diagonally or diametrically opposite positions.

(b) ***Structures Exceeding 350 Feet (107m) AGL.*** Install steady burning (L-810) lights on each outside corner of each level.

2. ***Flashing Beacons (L-864).***

(a) ***Structures 350 Feet (107m) AGL or Less***. These structures do not require flashing (L-864) beacons at intermediate levels.

(b) ***Structure Exceeding 350 Feet (107m) AGL***. At intermediate levels, two beacons (L-864) should be mounted outside at diagonally opposite positions of intermediate levels.

54. CHIMNEYS, FLARE STACKS, AND SIMILAR SOLID STRUCTURES

a. *Number of Light Units.*

1. The number of units recommended depends on the diameter of the structure at the top. The number of lights recommended below are the minimum.

2. When the structure diameter is:

(a) *20 Feet (6m) or Less.* Three light units per level.

(b) *Exceeding 20 Feet (6m) But Not More Than 100 Feet (31m).* Four light units per level.

(c) *Exceeding 100 Feet (31m) But Not More Than 200 Feet (61m).* Six light units per level.

(d) *Exceeding 200 Feet (61m).* Eight light units per level.

b. ***Top Mounted Obstruction Lights***.

1. *Structures 150 Feet (46m) AGL or Less.* L-810 lights should be installed horizontally at regular intervals at or near the top.

2. *Structures Exceeding 150 Feet (46m) AGL.* At least three L-864 beacons should be installed.

3. *Chimneys, Cooling Towers, and Flare Stacks.* Lights may be displayed as low as 20 feet (6m) below the top to avoid the obscuring effect of deposits and heat generally emitted by this type of structure. It is important that these lights be readily accessible for cleaning and lamp replacement. It is understood that with flare stacks, as well as any other structures associated with the petrol-chemical industry, normal lighting requirements may not be necessary. This could be due to the location of the flare stack/structure within a large well-lighted petrol-chemical plant or the fact that the flare, or working lights surrounding the flare stack/structure, is as conspicuous as obstruction lights.

c. ***Mounting Intermediate Levels***. The number of light levels is determined by the height of the structure including all appurtenances. For cooling towers 600 feet (183m) or less, intermediate light levels are not necessary. Structures exceeding 600 feet (183m) AGL should have a second level of light units installed approximately at the midpoint of the structure and in a vertical line with the top level of lights.

1. ***Steady Burning (L-810) Lights***. The recommended number of light levels may be obtained from Appendix 1. At least three lights should be installed on each level.

2. ***Flashing (L-864) Beacons***. The recommended number of beacon levels may be obtained from Appendix 1. At least three lights should be installed on each level.

(a) *Structures 350 Feet (107m) AGL or Less.* These structures do not need intermediate levels of flashing beacons.

(b) *Structures Exceeding 350 Feet (107m) AGL.* At least three flashing (L-864) beacons should be installed on each level in a manner to allow an unobstructed view of at least one beacon.

55. GROUP OF OBSTRUCTIONS

When individual objects, except wind turbines, within a group of obstructions are not the same height and are spaced a maximum of 150 feet (46m) apart, the prominent objects within the group should be lighted in accordance with the standards for individual obstructions of a corresponding height. If the outer structure is shorter than the prominent, the outer structure should be lighted in accordance with the standards for individual obstructions of a corresponding height. Light units should be placed to ensure that the light is visible to a pilot approaching from **any** direction. In addition, at least one flashing beacon should be installed at the top of a prominent center obstruction or on a special tower located near the center of the group.

56. ALTERNATE METHOD OF DISPLAYING OBSTRUCTION LIGHTS

When recommended in an FAA aeronautical study, lights may be placed on poles equal to the height of the obstruction and installed on or adjacent to the structure instead of installing lights on the obstruction.

57. PROMINENT BUILDINGS, BRIDGES, AND SIMILAR EXTENSIVE OBSTRUCTIONS

When objects within a group of obstructions are approximately the same overall height above the surface and are located a maximum of 150 feet (46m) apart, the group of obstructions may be considered an extensive obstruction. Install light units on the same horizontal plane at the highest portion or edge of prominent obstructions. Light units should be placed to ensure that the light is visible to a pilot approaching from **any** direction. If the structure is a bridge and is over navigable water, the sponsor must obtain prior approval of the lighting installation from the Commander of the District Office of the United States Coast Guard to avoid interference with marine navigation. Steady burning lights should be displayed to indicate the extent of the obstruction as follows:

a. ***Structures 150 Feet (46m) or Less in Any Horizontal Direction***. If the structure/bridge/extensive obstruction is 150 feet (46m) or less horizontally, at least one steady burning light (L-810) should be displayed on the highest point at each end of the major axis of the obstruction. If this is impractical because of the overall shape, display a double obstruction light in the center of the highest point.

b. ***Structures Exceeding 150 Feet (46m) in at Least One Horizontal Direction***. If the structure/bridge/ extensive obstruction exceeds 150 feet (46m) horizontally, display at least one steady burning light for each 150 feet (46m), or fraction thereof, of the overall length of the major axis. At least one of these lights should be displayed on the highest point at each end of the obstruction. Additional lights should be displayed at approximately equal intervals not to exceed 150 feet (46m) on the highest points along the edge between the end lights. If an obstruction is located near a landing area and two or more edges are the same height, the edge nearest the landing area should be lighted.

c. ***Structures Exceeding 150 Feet (46m) AGL***. Steady burning red obstruction lights should be installed on the highest point at each end. At intermediate levels, steady burning red lights should be displayed for each 150 feet (46m) or fraction thereof. The vertical position of these lights should be equidistant between the top lights and the ground level as the shape and type of obstruction will permit. One such light should be displayed at each outside corner on each level with the remaining lights evenly spaced between the corner lights.

d. ***Exceptions***. Flashing red beacons (L-864) may be used instead of steady burning obstruction lights if early or special warning is necessary. These beacons should be displayed on the highest points of an extensive obstruction at intervals not exceeding 3,000 feet (915m). At least three beacons should be displayed on one side of the extensive obstruction to indicate a line of lights.

e. ***Ice Shields***. Where icing is likely to occur, metal grates or similar protective ice shields should be installed directly over each light unit to prevent falling ice or accumulations from damaging the light units. The light should be mounted in a manner to ensure an unobstructed view of at least one light by a pilot approaching from any direction.

CHAPTER 6. MEDIUM INTENSITY FLASHING WHITE OBSTRUCTION LIGHT SYSTEMS

60. PURPOSE

Medium intensity flashing white (L-865) obstruction lights may provide conspicuity both day and night. Recommendations on lighting structures can vary depending on terrain features, weather patterns, geographic location, and in the case of wind turbines, number of structures and overall layout of design.

61. STANDARDS

The medium intensity flashing white light system is normally composed of flashing omnidirectional lights. Medium intensity flashing white obstruction lights may be used during daytime and twilight with automatically selected reduced intensity for nighttime operation. When this system is used on structures 500 feet (153m) AGL or less in height, other methods of marking and lighting the structure may be omitted. Aviation orange and white paint is always required for daytime marking on structures exceeding 500 feet (153m) AGL. This system is not normally recommended on structures 200 feet (61m) AGL or less.

The use of a 24-hour medium intensity flashing white light system in urban/populated areas in not normally recommended due to their tendency to merge with background lighting in these areas at night. This makes it extremely difficult for some types of aviation operations, i.e., med-evac, and police helicopters to see these structures. The use of this type of system in urban and rural areas often results in complaints. In addition, this system is not recommended on structures within 3 nautical miles of an airport.

62. RADIO AND TELEVISION TOWERS AND SIMILAR SKELETAL STRUCTURES

a. ***Mounting Lights***. The number of levels recommended depends on the height of the structure, including antennas and similar appurtenances.

1. ***Top Levels***. One or more lights should be installed at the highest point to provide 360-degree coverage ensuring an unobstructed view.

2. ***Appurtenances 40 feet (12m) or less***. If a rod, antenna, or other appurtenance 40 feet (12m) or less in height is incapable of supporting the medium intensity flashing white light, then it may be placed at the base of the appurtenance. If the mounting location does not allow unobstructed viewing of the medium intensity flashing white light by a pilot, then additional lights should be added.

3. ***Appurtenances Exceeding 40 feet (12m)***. If a rod, antenna, or other appurtenance exceeds 40 feet (12m) above the tip of the main structure, a medium intensity flashing white light should be placed within 40 feet (12m) from the top of the appurtenance. If the appurtenance (such as a whip antenna) is incapable of supporting the light, one or more lights should be mounted on a pole adjacent to the appurtenance. Adjacent installations should not exceed the height of the appurtenance and be within 40 feet (12m) of the tip to allow the pilot an unobstructed view of at least one light.

b. ***Intermediate Levels***. At intermediate levels, two beacons (L-865) should be mounted outside at diagonally or diametrically opposite positions of intermediate levels. The lowest light level should not be less than 200 feet (61m) AGL.

c. ***Lowest Levels***. The lowest level of light units may be installed at a higher elevation than normal on a structure if the surrounding terrain, trees, or adjacent building(s) would obscure the lights. In certain instances, as determined by an FAA aeronautical study, the lowest level of lights may be eliminated.

d. ***Structures 500 Feet (153m) AGL or Less***. When white lights are used during nighttime and twilight only, marking is required for daytime. When operated 24 hours a day, other methods of marking and lighting are not required.

e. ***Structures Exceeding 500 Feet (153m) AGL***. The lights should be used during nighttime and twilight and may be used 24 hours a day. Marking is always required for daytime.

f. ***Ice Shields***. Where icing is likely to occur, metal grates or similar protective ice shields should be installed directly over each light unit to prevent falling ice or accumulations from damaging the light units. The light should be mounted in a manner to ensure an unobstructed view of at least one light by a pilot approaching from any direction.

63. CONTROL DEVICE

The light intensity is controlled by a device that changes the intensity when the ambient light changes. The system should automatically change intensity steps when the northern sky illumination in the Northern Hemisphere on a vertical surface is as follows:

a. ***Twilight-to-Night***. This should not occur before the illumination drops below five foot-candles (53.8

lux) but should occur before it drops below two foot-candles (21.5 lux).

b. ***Night-to-Day***. The intensity changes listed in subparagraph 63a above should be reversed when changing from the night to day mode.

64. CHIMNEYS, FLARE STACKS, AND SIMILAR SOLID STRUCTURES

a. *Number of Light Units*. The number of units recommended depends on the diameter of the structure at the top. Normally, the top level is on the highest point of a structure. However, the top level of chimney lights may be installed as low as 20 feet (6m) below the top to minimize deposit build-up due to emissions. The number of lights recommended are the minimum. When the structure diameter is:

1. *20 Feet (6m) or Less*. Three light units per level.

2. *Exceeding 20 Feet (6m) But Not More Than 100 Feet (31m).* Four light units per level.

3. *Exceeding 100 Feet (31m) But Not More Than 200 Feet (61m).* Six light units per level.

4. *Exceeding 200 Feet (61m).* Eight light units per level.

65. GROUP OF OBSTRUCTIONS

When individual objects within a group of obstructions are not the same height and are spaced a maximum of 150 feet (46m) apart, the prominent objects within the group should be lighted in accordance with the standards for individual obstructions of a corresponding height. If the outer structure is shorter than the prominent, the outer structure should be lighted in accordance with the standards for individual obstructions of a corresponding height. Light units should be placed to ensure that the light is visible to a pilot approaching from **any** direction. In addition, at least one medium intensity flashing white light should be installed at the top of a prominent center obstruction or on a special tower located near the center of the group.

66. SPECIAL CASES

Where lighting systems are installed on structures located near highways, waterways, airport approach areas, etc., caution should be exercised to ensure that the lights do not distract or otherwise cause a hazard to motorists, vessel operators, or pilots on an approach to an airport. In these cases, shielding may be necessary. This shielding should not derogate the intended purpose of the lighting system.

67. PROMINENT BUILDINGS AND SIMILAR EXTENSIVE OBSTRUCTIONS

When objects within a group of obstructions are approximately the same overall height above the surface and are located a maximum of 150 feet (46m) apart, the group of obstructions may be considered an extensive obstruction. Install light units on the same horizontal plane at the highest portion or edge of prominent obstructions. Light units should be placed to ensure that the light is visible to a pilot approaching from **any** direction. Lights should be displayed to indicate the extent of the obstruction as follows:

a. *Structures 150 Feet (46m) or Less in Any Horizontal Direction.* If the structure/extensive obstruction is 150 feet (46m) or less horizontally, at least one light should be displayed on the highest point at each end of the major axis of the obstruction. If this is impractical because of the overall shape, display a double obstruction light in the center of the highest point.

b. ***Structures Exceeding 150 Feet (46m) in at Least One Horizontal Direction***. If the structure/extensive obstruction exceeds 150 feet (46m) horizontally, display at least one light for each 150 feet (46m) or fraction thereof, of the overall length of the major axis. At least one of these lights should be displayed on the highest point at each end of the obstruction. Additional lights should be displayed at approximately equal intervals not to exceed 150 feet (46m) on the highest points along the edge between the end lights. If an obstruction is located near a landing area and two or more edges are the same height, the edge nearest the landing area should be lighted.

c. ***Structures Exceeding 150 Feet (46m) AGL***. Lights should be installed on the highest point at each end. At intermediate levels, lights should be displayed for each 150 feet (46m), or fraction thereof. The vertical position of these lights should be equidistant between the top lights and the ground level as the shape and type of obstruction will permit. One such light should be displayed at each outside corner on each level with the remaining lights evenly spaced between the corner lights.

CHAPTER 7. HIGH INTENSITY FLASHING WHITE OBSTRUCTION LIGHT SYSTEMS

70. PURPOSE

Lighting with high intensity (L-856) flashing white obstruction lights provides the highest degree of conspicuity both day and night. Recommendations on lighting structures can vary depending on terrain features, weather patterns, geographic location, and in the case of wind turbines, number of structutes and overall layout of design.

71. STANDARDS

Use high intensity flashing white obstruction lights during daytime with automatically selected reduced intensities for twilight and nighttime operations. When high intensity white lights are operated 24 hours a day, other methods of marking and lighting may be omitted. This system should not be recommended on structures 500 feet (153m) AGL or less unless an FAA aeronautical study shows otherwise.

72. CONTROL DEVICE

Light intensity is controlled by a device that changes the intensity when the ambient light changes. The use of a 24-hour high intensity flashing white light system in urban/populated areas is not normally recommended due to their tendency to merge with background lighting in these areas at night. This makes it extremely difficult for some types of aviation operations, i.e., med-evac, and police helicopters to see these structures. The use of this type of system in urban and rural areas often results in complaints.

The system should automatically change intensity steps when the northern sky illumination in the Northern Hemisphere on a vertical surface is as follows:

a. ***Day-to-Twilight***. This should not occur before the illumination drops to 60 foot-candles (645.8 lux), but should occur before it drops below 35 foot-candles (376.7 lux). The illuminance-sensing device should, if practical, face the northern sky in the Northern Hemisphere.

b. ***Twilight-to-Night***. This should not occur before the illumination drops below five foot-candles (53.8 lux), but should occur before it drops below two foot-candles (21.5 lux).

c. ***Night-to-Day***. The intensity changes listed in subparagraph 72 a and b above should be reversed when changing from the night to day mode.

73. UNITS PER LEVEL

One or more light units is needed to obtain the desired horizontal coverage. The number of light units recommended per level (except for the supporting structures of catenary wires and buildings) depends upon the average outside diameter of the specific structure, and the horizontal beam width of the light fixture. The light units should be installed in a manner to ensure an unobstructed view of the system by a pilot approaching from any direction. The number of lights recommended are the minimum. When the structure diameter is:

a. *20 Feet (6m) or Less.* Three light units per level.

b. *Exceeding 20 Feet (6m) But Not More Than 100 Feet (31m).* Four light units per level.

c. *Exceeding 100 Feet (31m).* Six light units per level.

74. INSTALLATION GUIDANCE

Manufacturing specifications provide for the effective peak intensity of the light beam to be adjustable from zero to 8 degrees above the horizon. Normal installation should place the top light at zero degrees to the horizontal and all other light units installed in accordance with Table 2:

Light Unit Elevation Above the Horizontal

Height of Light Unit Above Terrain	Degrees of Elevation Above the Horizontal
Exceeding 500 feet AGL	0
401 feet to 500 feet AGL	1
301 feet to 400 feet AGL	2
300 feet AGL or less	3

TBL 2

a. ***Vertical Aiming***. Where terrain, nearby residential areas, or other situations dictate, the light beam may be further elevated above the horizontal. The main beam of light at the lowest level should not strike the ground closer than 3 statute miles (5km) from the structure. If additional adjustments are necessary, the lights may be individually adjusted upward, in 1-degree increments, starting at the bottom. Excessive elevation may reduce its conspicuity by raising the beam above a collision course flight path.

b. ***Special Cases***. Where lighting systems are installed on structures located near highways, waterways, airport approach areas, etc., caution should be exercised to ensure that the lights do not distract or otherwise cause a hazard to motorists, vessel operators, or pilots on an approach to an airport. In these cases,

shielding or an adjustment to the vertical or horizontal light aiming may be necessary. This adjustment should not derogate the intended purpose of the lighting system. Such adjustments may require review action as described in Chapter 1, paragraph 5.

c. ***Relocation or Omission of Light Units***. Light units should not be installed in such a manner that the light pattern/output is disrupted by the structure.

1. ***Lowest Level***. The lowest level of light units may be installed at a higher elevation than normal on a structure if the surrounding terrain, trees, or adjacent building(s) would obscure the lights. In certain instances, as determined by an FAA aeronautical study, the lowest level of lights may be eliminated.

2. ***Two Adjacent Structures***. Where two structures are situated within 500 feet (153m) of each other and the light units are installed at the same levels, the sides of the structures facing each other need not be lighted. However, all lights on both structures must flash simultaneously, except for adjacent catenary support structures. Adjust vertical placement of the lights to either or both structures' intermediate levels to place the lights on the same horizontal plane. Where one structure is higher than the other, complete level(s) of lights should be installed on that part of the higher structure that extends above the top of the lower structure. If the structures are of such heights that the levels of lights cannot be placed in identical horizontal planes, then the light units should be placed such that the center of the horizontal beam patterns do not face toward the adjacent structure. For example, structures situated north and south of each other should have the light units on both structures installed on a northwest/southeast and northeast/southwest orientation.

3. ***Three or More Adjacent Structures***. The treatment of a cluster of structures as an individual or a complex of structures will be determined by the FAA as the result of an aeronautical study, taking into consideration the location, heights, and spacing with other structures.

75. ANTENNA OR SIMILAR APPURTENANCE LIGHT

When a structure lighted by a high intensity flashing light system is topped with an antenna or similar appurtenance exceeding 40 feet (12m) in height, a medium intensity flashing white light (L-865) should be placed within 40 feet (12m) from the tip of the appurtenance. This light should operate 24 hours a day and flash simultaneously with the rest of the lighting system.

76. CHIMNEYS, FLARE STACKS, AND SIMILAR SOLID STRUCTURES

The number of light levels depends on the height of the structure excluding appurtenances. Three or more lights should be installed on each level in such a manner to ensure an unobstructed view by the pilot. Normally, the top level is on the highest point of a structure. However, the top level of chimney lights may be installed as low as 20 feet (6m) below the top to minimize deposit build-up due to emissions.

77. RADIO AND TELEVISION TOWERS AND SIMILAR SKELETAL STRUCTURES

a. ***Mounting Lights***. The number of levels recommended depends on the height of the structure, including antennas and similar appurtenances. At least three lights should be installed on each level and mounted to ensure that the effective intensity of the full horizontal beam coverage is not impaired by the structural members.

b. ***Top Level***. One level of lights should be installed at the highest point of the structure. If the highest point is a rod or antenna incapable of supporting a lighting system, then the top level of lights should be installed at the highest portion of the main skeletal structure. When guy wires come together at the top, it may be necessary to install this level of lights as low as 10 feet (3m) below the top. If the rod or antenna exceeds 40 feet (12m) above the main structure, a medium intensity flashing white light (L-865) should be mounted on the highest point. If the appurtenance (such as a whip antenna) is incapable of supporting a medium intensity light, one or more lights should be installed on a pole adjacent to the appurtenance. Adjacent installation should not exceed the height of the appurtenance and be within 40 feet (12m) of the top to allow an unobstructed view of at least one light.

c. ***Ice Shields***. Where icing is likely to occur, metal grates or similar protective ice shields should be installed directly over each light unit to prevent falling ice or accumulations from damaging the light units.

78. HYPERBOLIC COOLING TOWERS

Light units should be installed in a manner to ensure an unobstructed view of at least two lights by a pilot approaching from **any** direction.

a. ***Number of Light Units***. The number of units recommended depends on the diameter of the structure

at the top. The number of lights recommended in the following table are the minimum. When the structure diameter is:

1. *20 Feet (6m) or Less.* Three light units per level.

2. *Exceeding 20 Feet (6m) But Not More Than 100 Feet (31m).* Four light units per level.

3. *Exceeding 100 Feet (31m) But Not More Than 200 Feet (61m).* Six light units per level.

4. *Exceeding 200 Feet (61m).* Eight light units per level.

b. ***Structures Exceeding 600 Feet (183m) AGL***. Structures exceeding 600 feet (183m) AGL should have a second level of light units installed approximately at the midpoint of the structure and in a vertical line with the top level of lights.

79. PROMINENT BUILDINGS AND SIMILAR EXTENSIVE OBSTRUCTIONS

When objects within a group of obstructions are approximately the same overall height above the surface and are located not more than 150 feet (46m) apart, the group of obstructions may be considered an extensive obstruction. Install light units on the same horizontal plane at the highest portion or edge of prominent obstructions. Light units should be placed to ensure that the light is visible to a pilot approaching from **any** direction. These lights may require shielding, such as louvers, to ensure minimum adverse impact on local communities. Extreme caution in the use of high intensity flashing white lights should be exercised.

a. ***If the Obstruction is 200 feet (61m) or Less in Either Horizontal*** *Dimension*, install three or more light units at the highest portion of the structure in a manner to ensure that at least one light is visible to a pilot approaching from **any** direction. Units may be mounted on a single pedestal at or near the center of the obstruction. If light units are placed more than 10 feet (3m) from the center point of the structure, use a minimum of four units.

b. ***If the Obstruction Exceeds 200 Feet (61m) in One Horizontal Dimension***, but is 200 feet (61m) or less in the other, two light units should be placed on each of the shorter sides. These light units may either be installed adjacent to each other at the midpoint of the edge of the obstruction or at (near) each corner with the light unit aimed to provide 180 degrees of coverage at each edge. One or more light units should be installed along the overall length of the major axis. These lights should be installed at approximately equal intervals not to exceed a distance of 100 feet (31m) from the corners or from each other.

c. ***If the Obstruction Exceeds 200 Feet (61m) in Both Horizontal Dimensions***, light units should be equally spaced along the overall perimeter of the obstruction at intervals of 100 feet (31m) or fraction thereof.

CHAPTER 8. DUAL LIGHTING WITH RED/MEDIUM INTENSITY FLASHING WHITE SYSTEMS

80. PURPOSE

This dual lighting system includes red lights (L-864) for nighttime and medium intensity flashing white lights (L-865) for daytime and twilight use. This lighting system may be used in lieu of operating a medium intensity flashing white lighting system at night. There may be some populated areas where the use of medium intensity at night may cause significant environmental concerns. The use of the dual lighting system should reduce/mitigate those concerns. Recommendations on lighting structures can vary depending on terrain features, weather patterns, geographic location, and in the case of wind turbines, number of structutes and overall layout of design.

81. INSTALLATION

The light units should be installed as specified in the appropriate portions of Chapters 4, 5, and 6. The number of light levels needed may be obtained from Appendix 1.

82. OPERATION

Lighting systems should be operated as specified in Chapter 3. Both systems should not be operated at the same time; however, there should be no more than a 2-second delay when changing from one system to the other. Outage of one of two lamps in the uppermost red beacon (L-864 incandescent unit) or outage of any uppermost red light shall cause the white obstruction light system to operate in its specified ”night” step intensity.

83. CONTROL DEVICE

The light system is controlled by a device that changes the system when the ambient light changes. The system should automatically change steps when

the northern sky illumination in the Northern Hemisphere on a vertical surface is as follows:

a. ***Twilight-to-Night***. This should not occur before the illumination drops below 5 foot-candles (53.8 lux) but should occur before it drops below 2 foot-candles (21.5 lux).

b. ***Night-to-Day***. The intensity changes listed in subparagraph 83 a above should be reversed when changing from the night to day mode.

84. ANTENNA OR SIMILAR APPURTENANCE LIGHT

When a structure utilizing this dual lighting system is topped with an antenna or similar appurtenance exceeding 40 feet (12m) in height, a medium intensity flashing white (L-865) and a red flashing beacon (L-864) should be placed within 40 feet (12m) from the tip of the appurtenance. The white light should operate during daytime and twilight and the red light during nighttime. These lights should flash simultaneously with the rest of the lighting system.

85. OMISSION OF MARKING

When medium intensity white lights are operated on structures 500 feet (153m) AGL or less during daytime and twilight, other methods of marking may be omitted.

CHAPTER 9. DUAL LIGHTING WITH RED/HIGH INTENSITY FLASHING WHITE SYSTEMS

90. PURPOSE

This dual lighting system includes red lights (L-864) for nighttime and high intensity flashing white lights (L-856) for daytime and twilight use. This lighting system may be used in lieu of operating a flashing white lighting system at night. There may be some populated areas where the use of high intensity lights at night may cause significant environmental concerns and complaints. The use of the dual lighting system should reduce/mitigate those concerns. Recommendations on lighting structures can vary depending on terrain features, weather patterns, geographic location, and in the case of wind turbines, number of structutes and overall layout of design.

91. INSTALLATION

The light units should be installed as specified in the appropriate portions of Chapters 4, 5, and 7. The number of light levels needed may be obtained from Appendix 1.

92. OPERATION

Lighting systems should be operated as specified in Chapters 4, 5, and 7. Both systems should not be operated at the same time; however, there should be no more than a 2-second delay when changing from one system to the other. Outage of one of two lamps in the uppermost red beacon (L-864 incandescent unit) or outage of any uppermost red light shall cause the white obstruction light system to operate in its specified "night" step intensity.

93. CONTROL DEVICE

The light intensity is controlled by a device that changes the intensity when the ambient light changes. The system should automatically change intensity steps when the northern sky illumination in the Northern Hemisphere on a vertical surface is as follows:

a. ***Day-to-Twilight***. This should not occur before the illumination drops to 60 foot-candles (645.8 lux) but should occur before it drops below 35 foot-candles (376.7 lux). The illuminance-sensing device should, if practical, face the northern sky in the Northern Hemisphere.

b. ***Twilight-to-Night***. This should not occur before the illumination drops below 5 foot-candles (53.8 lux) but should occur before it drops below 2 foot-candles (21.5 lux).

c. ***Night-to-Day***. The intensity changes listed in subparagraph 93 a and b above should be reversed when changing from the night to day mode.

94. ANTENNA OR SIMILAR APPURTENANCE LIGHT

When a structure utilizing this dual lighting system is topped with an antenna or similar appurtenance exceeding 40 feet (12m) in height, a medium intensity flashing white light (L-865) and a red flashing beacon (L-864) should be placed within 40 feet (12m) from the tip of the appurtenance. The white light should operate during daytime and twilight and the red light during nighttime.

95. OMISSION OF MARKING

When high intensity white lights are operated during daytime and twilight, other methods of marking may be omitted.

CHAPTER 10. MARKING AND LIGHTING OF CATENARY AND CATENARY SUPPORT STRUCTURES

100. PURPOSE

This chapter provides guidelines for marking and lighting catenary and catenary support structures. The recommended marking and lighting of these structures is intended to provide day and night conspicuity and to assist pilots in identifying and avoiding catenary wires and associated support structures.

101. CATENARY MARKING STANDARDS

Lighted markers are available for increased night conspicuity of high-voltage (69KV or greater) transmission line catenary wires. These markers should be used on transmission line catenary wires near airports, heliports, across rivers, canyons, lakes, etc. The lighted markers should be manufacturer certified as recognizable from a minimum distance of 4,000 feet (1219m) under nighttime conditions, minimum VFR conditions or having a minimum intensity of at least 32.5 candela. The lighting unit should emit a steady burning red light. They should be used on the highest energized line. If the lighted markers are installed on a line other than the highest catenary, then markers specified in paragraph 34 should be used in addition to the lighted markers. (The maximum distance between the line energizing the lighted markers and the highest catenary above the lighted marker should be no more than 20 feet (6m).) Markers should be distinctively shaped, i.e., spherical, cylindrical, so they are not mistaken for items that are used to convey other information. They should be visible in all directions from which aircraft are likely to approach. The area in the immediate vicinity of the supporting structure's base should be clear of all items and/or objects of natural growth that could interfere with the line-of-sight between a pilot and the structure's lights. Where a catenary wire crossing requires three or more supporting structures, the inner structures should be equipped with enough light units per level to provide a full coverage.

a. ***Size and Color***. The diameter of the markers used on extensive catenary wires across canyons, lakes, rivers, etc., should be not less than 36 inches (91cm). Smaller 20-inch (51cm) markers are permitted on less extensive power lines or on power lines below 50 feet (15m) above the ground and within 1,500 feet (458m) of an airport runway end. Each marker should be a solid color such as aviation orange, white, or yellow.

b. ***Installation.***

1. ***Spacing.*** Lighted markers should be spaced equally along the wire at intervals of approximately 200 feet (61m) or a fraction thereof. Intervals between markers should be less in critical areas near runway ends, i.e., 30 to 50 feet (10m to 15m). If the markers are installed on a line other than the highest catenary, then markers specified in paragraph 34 should be used in addition to the lighted markers. The maximum distance between the line energizing the lighted markers and the highest catenary above the markers can be no more than 20 feet (6m). The lighted markers may be installed alternately along each wire if the distance between adjacent markers meets the spacing standard. This method allows the weight and wind loading factors to be distributed.

2. ***Pattern***. An alternating color scheme provides the most conspicuity against all backgrounds. Mark overhead wires by alternating solid colored markers of aviation orange, white, and yellow. Normally, an orange marker is placed at each end of a line and the spacing is adjusted (not to exceed 200 feet (61m)) to accommodate the rest of the markers. When less than four markers are used, they should all be aviation orange.

102. CATENARY LIGHTING STANDARDS

When using medium intensity flashing white (L-866), high intensity flashing white (L-857), dual medium intensity (L-866/L-885) or dual high intensity (L-857/885) lighting systems, operated 24 hours a day, other marking of the support structure is not necessary.

a. ***Levels***. A system of three levels of sequentially flashing light units should be installed on each supporting structure or adjacent terrain. Install one level at the top of the structure, one at the height of the lowest point in the catenary and one level approximately midway between the other two light levels. The middle level should normally be at least 50 feet (15m) from the other two levels. The middle light unit may be deleted when the distance between the top and the bottom light levels is less than 100 feet (30m).

1. ***Top Levels***. One or more lights should be installed at the top of the structure to provide 360-degree coverage ensuring an unobstructed view. If the installation presents a potential danger to maintenance personnel, or when necessary for lightning protection, the top level of lights may be mounted as low as 20 feet (6m) below the highest point of the structure.

2. ***Horizontal Coverage***. The light units at the middle level and bottom level should be installed so as to provide a minimum of 180-degree coverage centered perpendicular to the flyway. Where a catenary crossing is situated near a bend in a river, canyon, etc., or is not perpendicular to the flyway, the

horizontal beam should be directed to provide the most effective light coverage to warn pilots approaching from either direction of the catenary wires.

3. ***Variation.*** The vertical and horizontal arrangements of the lights may be subject to the structural limits of the towers and/or adjacent terrain. A tolerance of 20 percent from uniform spacing of the bottom and middle light is allowed. If the base of the supporting structure(s) is higher than the lowest point in the catenary, such as a canyon crossing, one or more lights should be installed on the adjacent terrain at the level of the lowest point in the span. These lights should be installed on the structure or terrain at the height of the lowest point in the catenary.

b. ***Flash Sequence***. The flash sequence should be middle, top, and bottom with all lights on the same level flashing simultaneously. The time delay between flashes of levels is designed to present a unique system display. The time delay between the start of each level of flash duration is outlined in FAA AC 150/5345-43, Specification for Obstruction Lighting Equipment.

c. ***Synchronization***. Although desirable, the corresponding light levels on associated supporting towers of a catenary crossing need not flash simultaneously.

d. ***Structures 500 feet (153m) AGL or Less***. When medium intensity white lights (L-866) are operated 24 hours a day, or when a dual red/medium intensity system (L-866 daytime & twilight/L-885 nighttime) is used, marking can be omitted. When using a medium intensity while light (L-866) or a flashing red light (L-885) during twilight or nighttime only, painting should be used for daytime marking.

e. *Structures Exceeding 500 Feet (153m) AGL.* When high intensity white lights (L-857) are operated 24 hours a day, or when a dual red/high intensity system (L-857 daytime and twilight/L-885 nighttime) is used, marking can be omitted. This system should not be recommended on structures 500 feet (153m) or less unless an FAA aeronautical study shows otherwise. When a flashing red obstruction light (L-885), a medium intensity (L-866) flashing white lighting system or a high intensity white lighting system (L-857) is used for nighttime and twilight only, painting should be used for daytime marking.

103. CONTROL DEVICE

The light intensity is controlled by a device (photocell) that changes the intensity when the ambient light changes. The lighting system should automatically change intensity steps when the northern sky illumination in the Northern Hemisphere on a vertical surface is as follows:

a. ***Day-to-Twilight (L-857 System)***. This should not occur before the illumination drops to 60 foot-candles (645.8 lux), but should occur before it drops below 35 foot-candles (376.7 lux). The illuminant-sensing device should, if practical, face the northern sky in the Northern Hemisphere.

b. ***Twilight-to-Night (L-857 System).*** This should not occur before the illumination drops below 5 foot-candles (53.8 lux), but should occur before it drops below 2 foot-candles (21.5 lux).

c. ***Night-to-Day***. The intensity changes listed in subparagraph 103 a. and b. above should be reversed when changing from the night to day mode.

d. ***Day-to-Night (L-866 or L-885/L-866).*** This should not occur before the illumination drops below 5 foot-candles (563.8 lux) but should occur before it drops below 2 foot-candles (21.5 lux).

e. ***Night-to-Day***. The intensity changes listed in subparagraph d. above should be reversed when changing from the night to day mode.

f. ***Red Obstruction (L-885).*** The red lights should not turn on until the illumination drops below 60 foot-candles (645.8 lux) but should occur before reaching a level of 35 foot-candles (367.7 lux). Lights should not turn off before the illuminance rises above 35 foot-candles (367.7 lux), but should occur before reaching 60 foot-candles (645.8 lux).

104. AREA SURROUNDING CATENARY SUPPORT STRUCTURES

The area in the immediate vicinity of the supporting structure's base should be clear of all items and/or objects of natural growth that could interfere with the line-of-sight between a pilot and the structure's lights.

105. THREE OR MORE CATENARY SUPPORT STRUCTURES

Where a catenary wire crossing requires three or more supporting structures, the inner structures should be equipped with enough light units per level to provide a full 360-degree coverage.

CHAPTER 11. MARKING AND LIGHTING MOORED BALLOONS AND KITES

110. PURPOSE

The purpose of marking and lighting moored balloons, kites, and their cables or mooring lines is to indicate the presence and general definition of these objects to pilots when converging from any normal angle of approach.

111. STANDARDS

These marking and lighting standards pertain to all moored balloons and kites that require marking and lighting under 14 CFR, part 101.

112. MARKING

Flag markers should be used on mooring lines to warn pilots of their presence during daylight hours.

a. ***Display.*** Markers should be displayed at no more than 50-foot (15m) intervals and should be visible for at least 1 statute mile.

b. ***Shape.*** Markers should be rectangular in shape and not less than 2 feet (0.6m) on a side. Stiffeners should be used in the borders so as to expose a large area, prevent drooping in calm wind, or wrapping around the cable.

c. ***Color Patterns***. One of the following color patterns should be used:

1. ***Solid Color***. Aviation orange.

2. ***Orange and White.*** Two triangular sections, one of aviation orange and the other white, combined to form a rectangle.

113. PURPOSE

Flashing obstruction lights should be used on moored balloons or kites and their mooring lines to warn pilots of their presence during the hours between sunset and sunrise and during periods of reduced visibility. These lights may be operated 24 hours a day.

a. ***Systems***. Flashing red (L-864) or white beacons (L-865) may be used to light moored balloons or kites. High intensity lights (L-856) are not recommended.

b. ***Display***. Flashing lights should be displayed on the top, nose section, tail section, and on the tether cable approximately 15 feet (4.6m) below the craft so as to define the extremes of size and shape. Additional lights should be equally spaced along the cable's overall length for each 350 feet (107m) or fraction thereof.

c. ***Exceptions.*** When the requirements of this paragraph cannot be met, floodlighting may be used.

114. OPERATIONAL CHARACTERISTICS

The light intensity is controlled by a device that changes the intensity when the ambient light changes. The system should automatically turn the lights on and change intensities as ambient light condition change. The reverse order should apply in changing from nighttime to daytime operation. The lights should flash simultaneously.

CHAPTER 12. MARKING AND LIGHTING EQUIPMENT AND INFORMATION

120. PURPOSE

This chapter lists documents relating to obstruction marking and lighting systems and where they may be obtained.

121. PAINT STANDARD

Paint and aviation colors/gloss, referred to in this publication should conform to Federal Standard FED-STD-595. Approved colors shall be formulated without the use of Lead, Zinc Chromate or other heavy metals to match International Orange, White and Yellow. All coatings shall be manufactured and labeled to meet Federal Environmental Protection Act Volatile Organic Compound(s) guidelines, including the National Volatile Organic Compound Emission Standards for architectural coatings.

a. **Exterior Acrylic Waterborne Paint.** Coating should be a ready mixed, 100% acrylic, exterior latex formulated for application directly to galvanized surfaces. Ferrous iron and steel or non-galvanized surfaces shall be primed with a manufacturer recommended primer compatible with the finish coat.

b. **Exterior Solventborne Alkyd Based Paint**. Coating should be ready mixed, alkyd-based, exterior enamel for application directly to non-galvanized surfaces such as ferrous iron and steel. Galvanized surfaces shall be primed with a manufacturer primer compatible with the finish coat.

Paint Standards Color Table

COLOR	NUMBER
Orange	12197
White	17875
Yellow	13538

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Note-
1. Federal specification T1-P-59, aviation surface paint, ready mixed international orange.

2. Federal specification T1-102, aviation surface paint, oil titanium zinc.

3. Federal specification T1-102, aviation surface paint, oil, exterior, ready mixed, white and light tints.

122. AVAILABILITY OF SPECIFICATIONS

Federal specifications describing the technical characteristics of various paints and their application techniques may be obtained from:

GSA- Specification Branch
470 L'Enfant Plaza
Suite 8214
Washington, DC 20407
Telephone: (202) 619-8925

123. LIGHTS AND ASSOCIATED EQUIPMENT

The lighting equipment referred to in this publication should conform to the latest edition of one of the following specifications, as applicable:

a. ***Obstruction Lighting Equipment.***

1. AC 150/5345-43, FAA Specification for Obstruction Lighting Equipment.

2. Military Specifications MIL-L-6273, Light, Navigational, Beacon, Obstacle or Code, Type G-1.

3. Military Specifications MIL-L-7830, Light Assembly, Markers, Aircraft Obstruction.

b. ***Certified Equipment.***

1. AC 150/5345-53, Airport Lighting Certification Program, lists the manufacturers that have demonstrated compliance with the specification requirements of AC 150/5345-43.

2. Other manufacturers' equipment may be used provided that equipment meets the specification requirements of AC 150/5345-43.

c. ***Airport Lighting Installation and Maintenance.***

1. AC 150/5340-21, Airport Miscellaneous Lighting Visual Aids, provides guidance for the installation, maintenance, testing, and inspection of obstruction lighting for airport visual aids such as airport beacons, wind cones, etc.

2. AC 150/5340-26, Maintenance of Airport Visual Aid Facilities, provides guidance on the maintenance of airport visual aid facilities.

d. ***Vehicles.***

1. AC 150/5210-5, Painting, Marking, and Lighting of Vehicles Used on an Airport, contains provisions for marking vehicles principally used on airports.

2. FAA Facilities**.** Obstruction marking for FAA facilities shall conform to FAA Drawing Number D-5480, referenced in FAA Standard FAA-STD-003, Paint Systems for Structures.

124. AVAILABILITY

The standards and specifications listed above may be obtained free of charge from the below-indicated office:

a. ***Military Specifications:***

Standardization Document Order Desk
700 Robbins Avenue
Building #4, Section D
Philadelphia, PA 19111-5094

b. ***FAA Specifications:***

Manager, ASD-110
Department of Transportation
Document Control Center
Martin Marietta/Air Traffic Systems
475 School St., SW.
Washington, DC 20024
Telephone: (202) 646-2047
FAA Contractors Only

c. ***FAA Advisory Circulars:***

Department of Transportation
TASC
Subsequent Distribution Office, SVC-121.23
Ardmore East Business Center
3341 Q 75th Avenue
Landover, MD 20785
Telephone: (301) 322-4961

CHAPTER 13. MARKING AND LIGHTING WIND TURBINE FARMS

130. PURPOSE

This chapter provides guidelines for the marking and lighting of wind turbine farms. For the purposes of this advisory circular, wind turbine farms are defined as a wind turbine development that contains more than three (3) turbines of heights over 200 feet above ground level. The recommended marking and lighting of these structures is intended to provide day and night conspicuity and to assist pilots in identifying and avoiding these obstacles.

131. GENERAL STANDARDS

The development of wind turbine farms is a very dynamic process, which constantly changes based on the differing terrain they are built on. Each wind turbine farm is unique; therefore it is important to work closely with the sponsor to determine a lighting scheme that provides for the safety of air traffic. The following are guidelines that are recommended for wind turbine farms. Consider the proximity to airports and VFR routes, extreme terrain where heights may widely vary, and local flight activity when making the recommendation.

a. Not all wind turbine units within an installation or farm need to be lighted. Definition of the periphery of the installation is essential; however, lighting of interior wind turbines is of lesser importance unless they are taller than the peripheral units.

b. Obstruction lights within a group of wind turbines should have unlighted separations or gaps of no more than ½ statute mile if the integrity of the group appearance is to be maintained. This is especially critical if the arrangement of objects is essentially linear.

c. Any array of flashing or pulsed obstruction lighting should be synchronized or flash simultaneously.

d. Nighttime wind turbine obstruction lighting should consist of the preferred FAA L-864 aviation red-colored flashing lights.

e. White strobe fixtures (FAA L-865) may be used in lieu of the preferred L-864 red flashing lights, but must be used alone without any red lights, and must be positioned in the same manner as the red flashing lights.

f. The white paint most often found on wind turbine units is the most effective daytime early warning device. Other colors, such as light gray or blue, appear to be significantly less effective in providing daytime warning. Daytime lighting of wind turbine farms is not required, as long as the turbine structures are painted in a bright white color or light off-white color most often found on wind turbines.

132. WIND TURBINE CONFIGURATIONS – Prior to recommending marking and lighting, determine the configuration and the terrain of the wind turbine farm. The following is a description of the most common configurations.

a. Linear – wind turbine farms in a line-like arrangement, often located along a ridge line, the face of a mountain or along borders of a mesa or field. The line may be ragged in shape or be periodically broke, and may vary in size from just a few turbines up to 20 miles long.

b. Cluster – turbine farms where the turbines are placed in circles like groups on top of a mesa, or within a large field. A cluster is typically characterized by having a pronounced perimeter, with various turbines placed inside the circle at various, erratic distances throughout the center of the circle.

c. Grid – turbine farms arranged in a geographical shape such as a square or a rectangle, where each turbine is set a consistent distance from each other in rows, giving the appearance that they are part of a square like pattern.

133. MARKING STANDARDS

The bright white or light off-white paint most often found on wind turbines has been shown to be most effective, and if used, no lights are required during the daytime. However, if darker paint is used, wind turbine marking should be supplemented with daytime lighting, as required.

134. LIGHTING STANDARDS

a. Flashing red (L864), or white (L-865) lights may be used to light wind turbines. Studies have shown that red lights are most effective, and should be the first consideration for lighting recommendations of wind turbines.

b. Obstruction lights should have unlighted separations or gaps of no more than ½ mile. Lights should flash simultaneously. Should the synchronization of the lighting system fail, a lighting outage report should be made in accordance with paragraph 23 of this advisory circular. Light fixtures should be placed as high as possible on the turbine nacelle, so as to be visible from 360 degrees.

c. Linear Turbine Configuration. Place a light on each turbine positioned at each end of the line or string of turbines. Lights should be no more than ½ statute mile, or 2640 feet from the last lit turbine. In the event the last segment is significantly short, push the lit turbines back towards the starting point to present a well balanced string of lights. High concentrations of lights should be avoided.

d. Cluster Turbine Configuration. Select a starting point among the outer perimeter of the cluster. This turbine should be lit, and a light should be placed on the next turbine so that no more than a ½ statute mile gap exists. Continue this pattern around the perimeter. If the distance across the cluster is greater than 1 mile, and/or the terrain varies by more than 100 feet, place one or more lit turbines at locations throughout the center of the cluster.

e. Grid Turbine Configuration. Select each of the defined corners of the layout to be lit, and then utilize the same concept of the cluster configuration as outlined in paragraph d.

f. Special Considerations. On occasion, one or two turbines may be located apart from the main grouping of turbines. If one or two turbines protrude from the general limits of the turbine farm, these turbines should be lit.

APPENDIX 1: Specifications for Obstruction Lighting Equipment Classification

APPENDIX

Type	Description
L-810	Steady-burning Red Obstruction Light
L-856	High Intensity Flashing White Obstruction Light (40 FPM)
L-857	High Intensity Flashing White Obstruction Light (60 FPM)
L-864	Flashing Red Obstruction Light (20-40 FPM)
L-865	Medium Intensity Flashing White Obstruction Light (40-FPM)
L-866	Medium Intensity Flashing White Obstruction Light (60-FPM)
L-864/L-865	Dual: Flashing Red Obstruction Light (20-40 FPM) and Medium Intensity Flashing White Obstruction Light (40 FPM)
L-885	Red Catenary 60 FPM
FPM = Flashes Per Minute	

TBL 4

PAINTING AND/OR DUAL LIGHTING OF CHIMNEYS, POLES, TOWERS, AND SIMILAR STRUCTURES

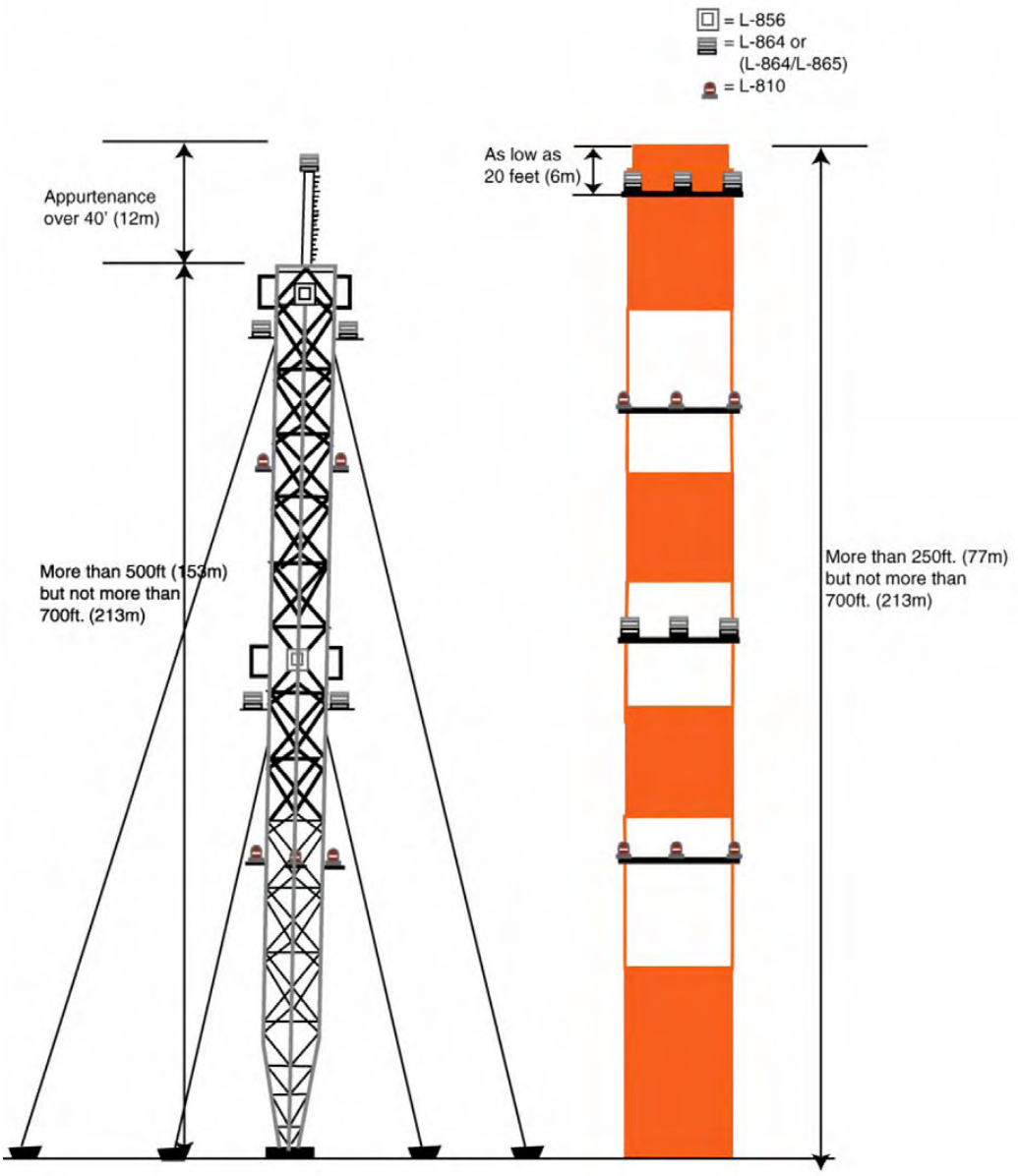
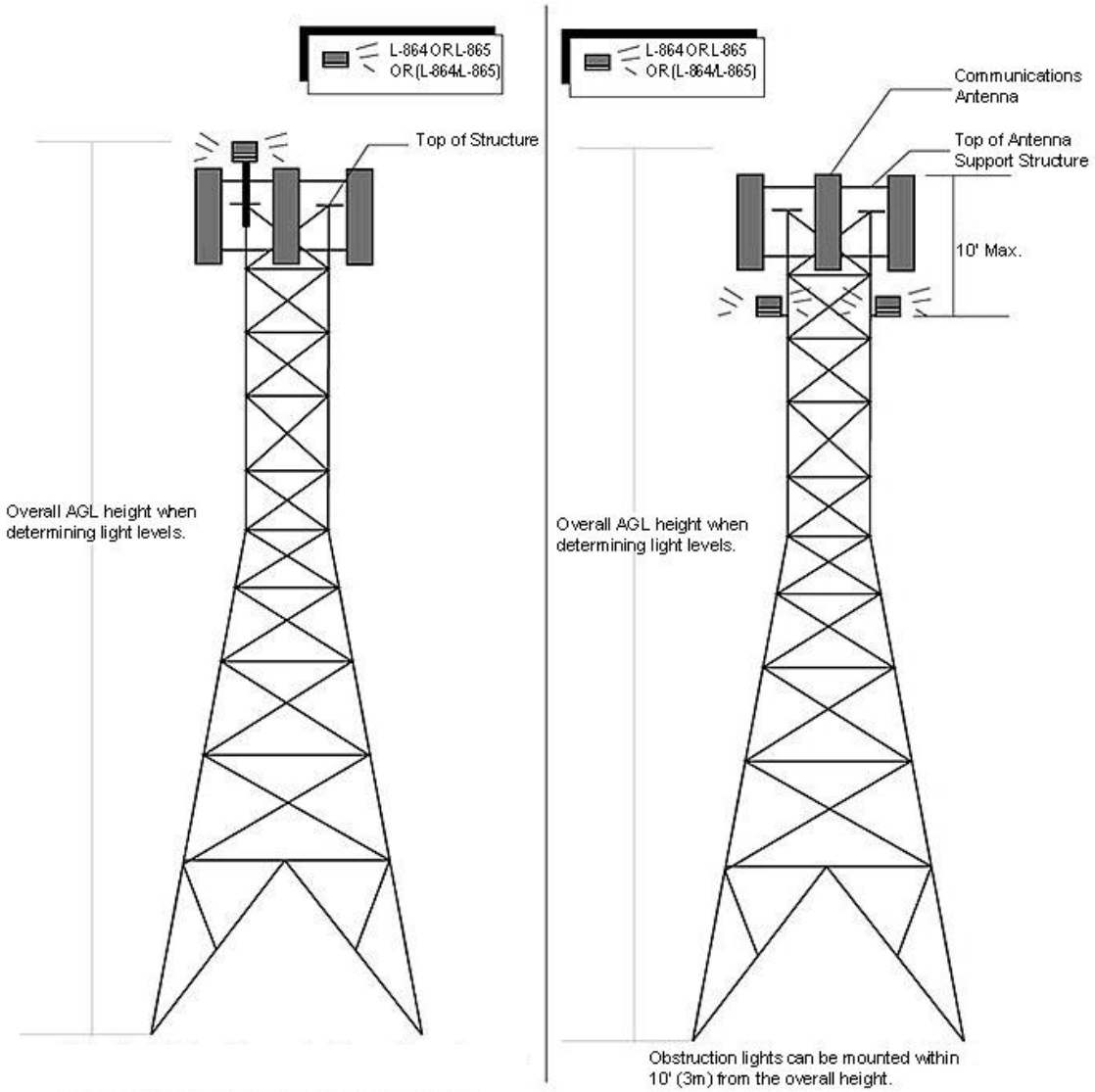


FIG 1



Intermediate lighting not shown. Overall AGL height if more than 200' (61m), but not more than 500' (153m).

FIG 2

PAINTING AND LIGHTING OF WATER TOWERS, STORAGE TANKS, AND SIMILAR STRUCTURES

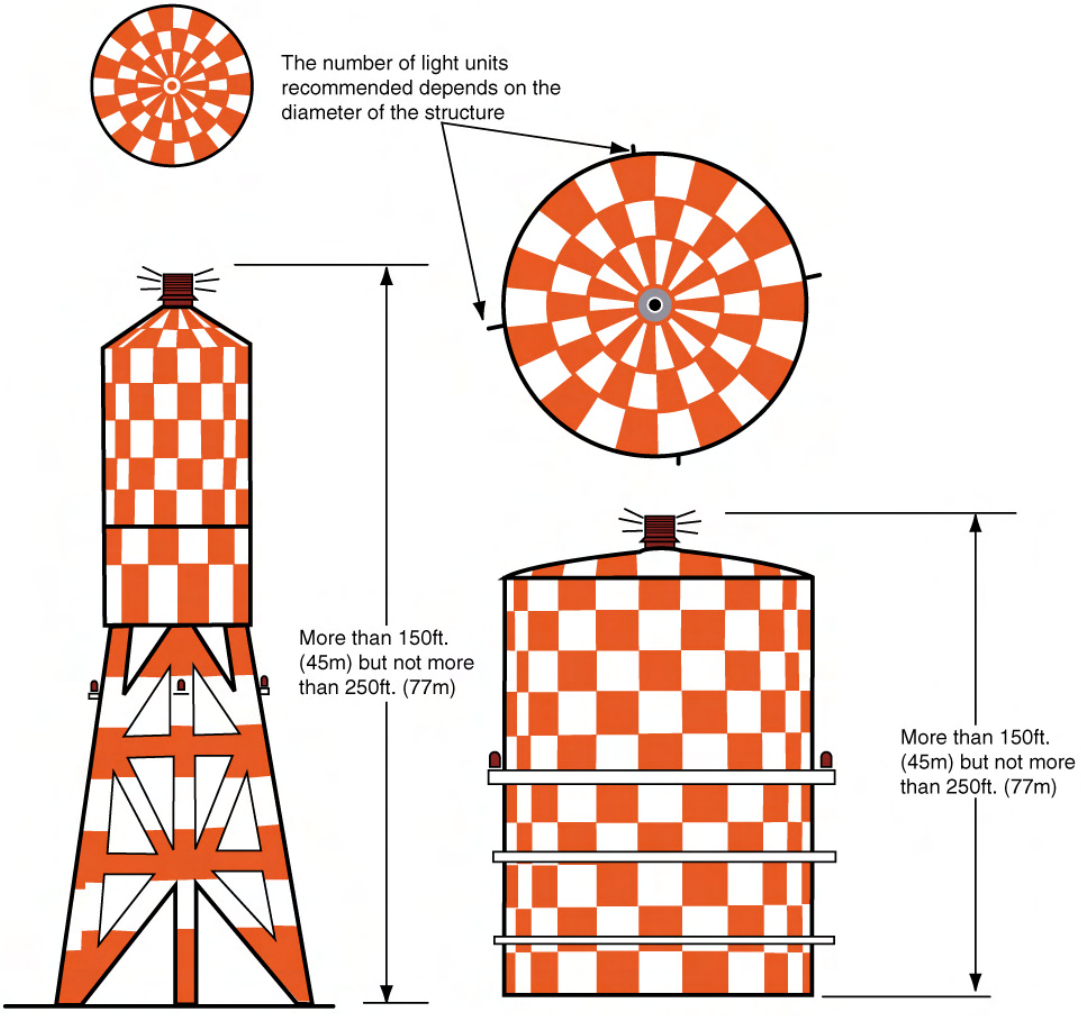


FIG 3

PAINTING AND LIGHTING OF WATER TOWERS ANDE SIMILAR STRUCTURES

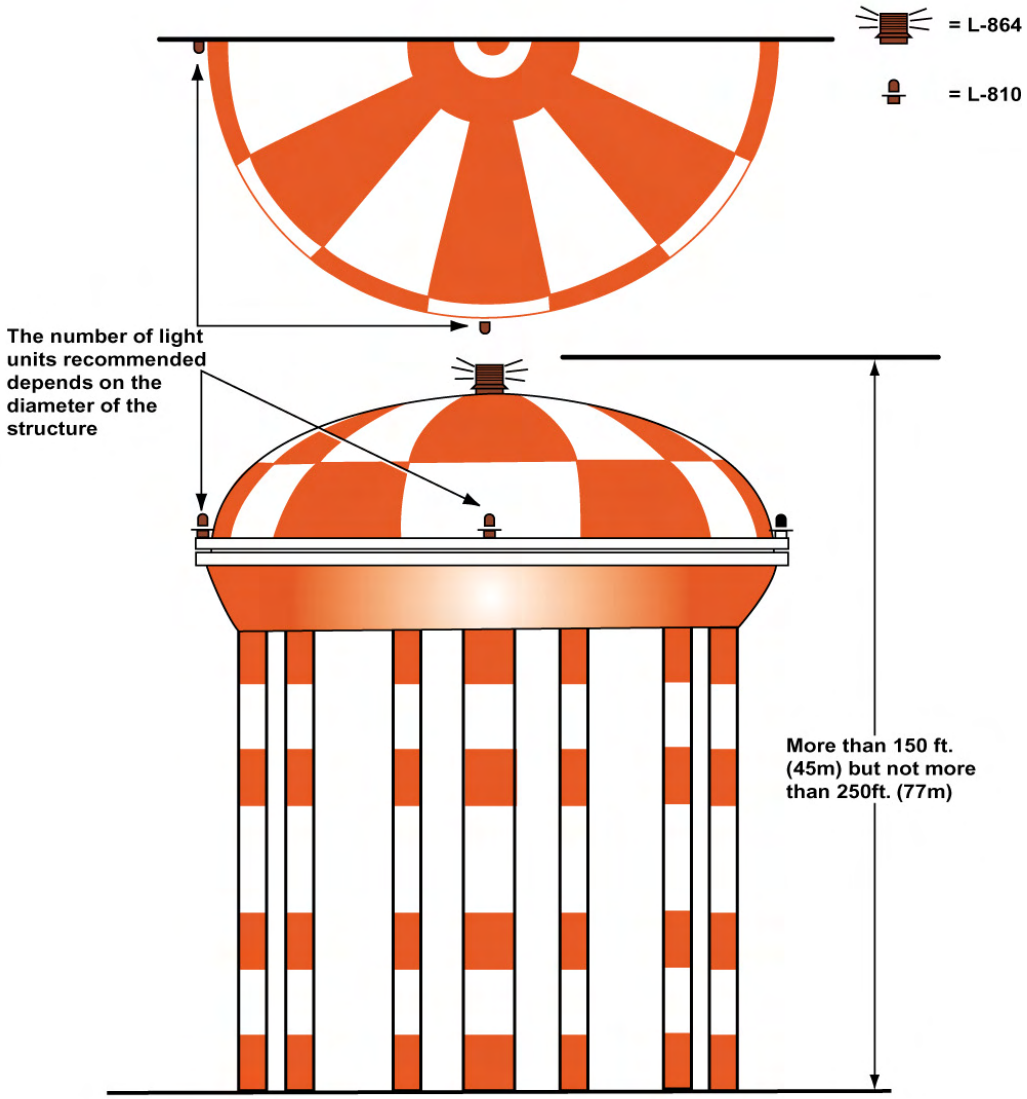


FIG 4

PAINTING OF SINGLE PEDESTAL WATER TOWER BY TEARDROP PATTERN

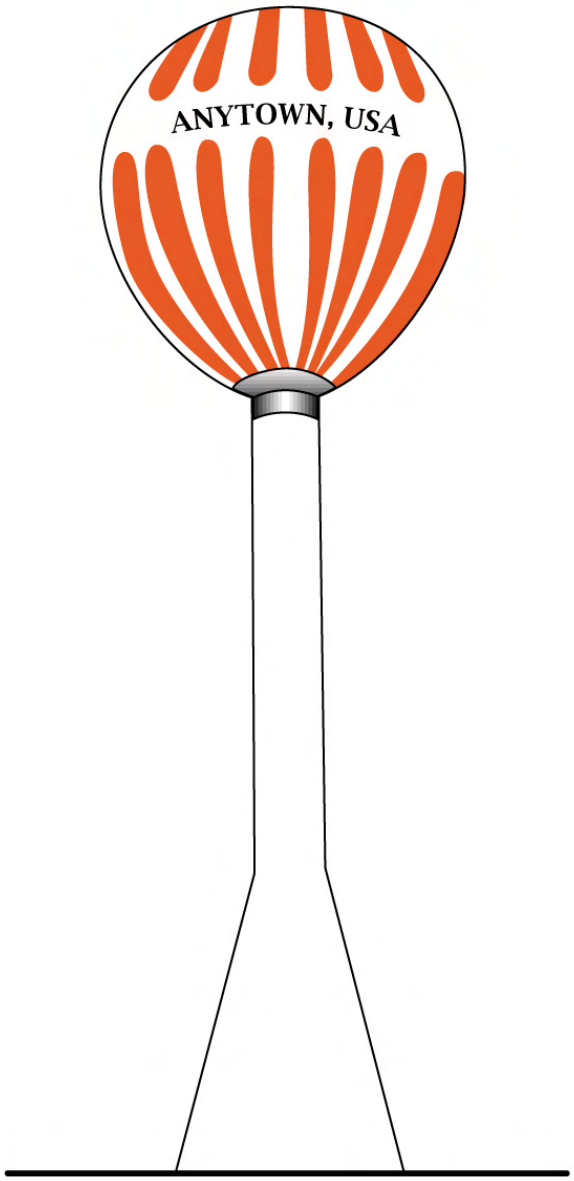
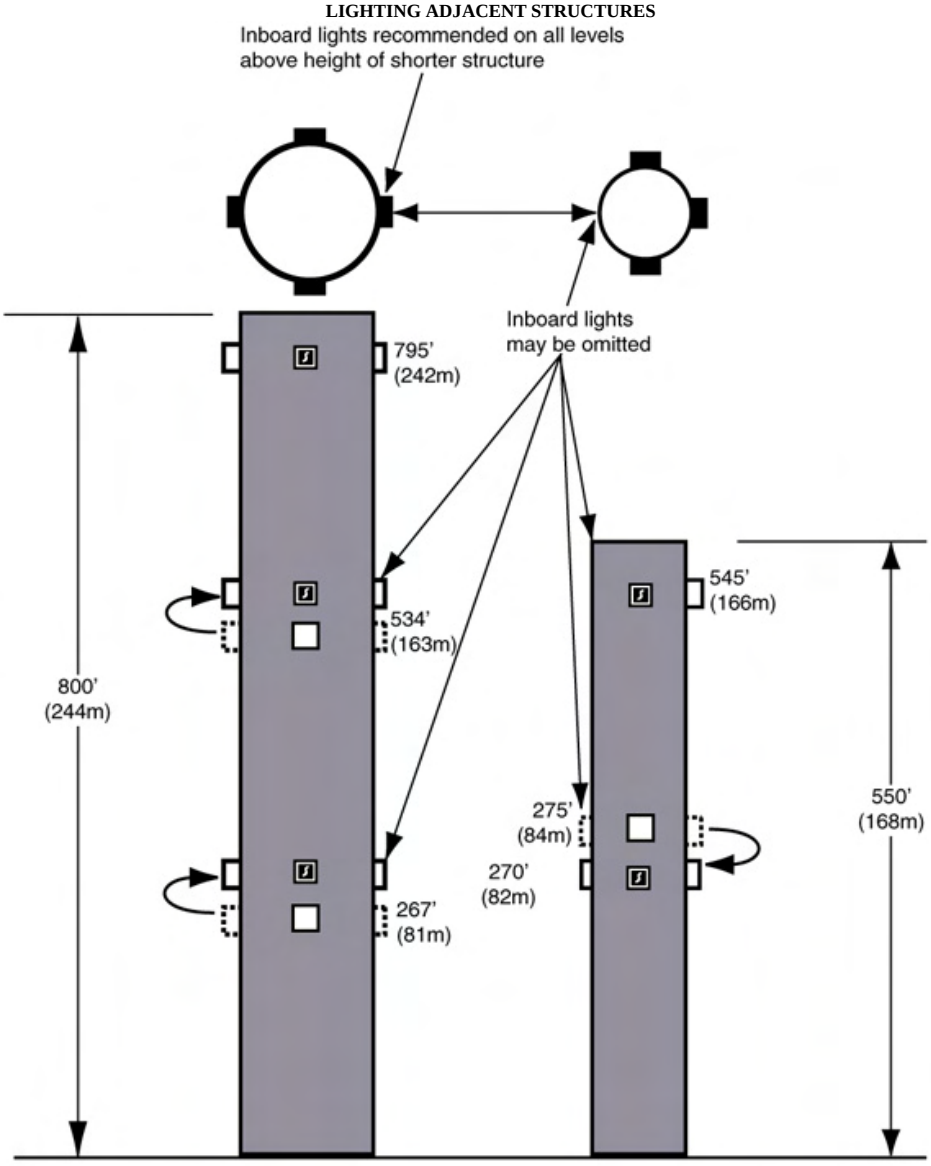


FIG 5

LIGHTING ADJACENT STRUCTURES



Minor adjustments in vertical placement may be made to place lights on same horizontal plane. Lights on both structures be synchronized

FIG 6

Lighting Adjacent Structure

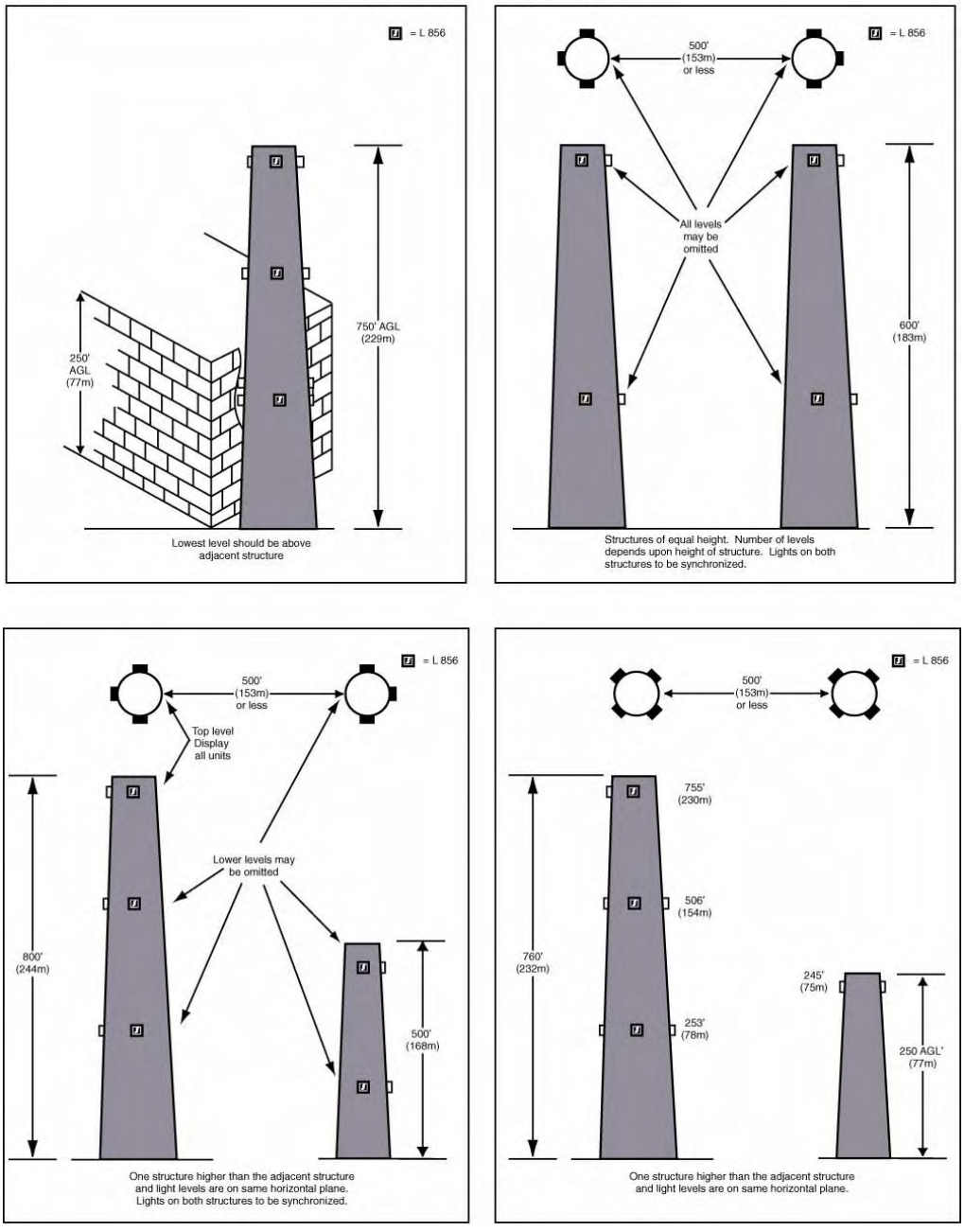


FIG 7

Lighting Adjacent Structure

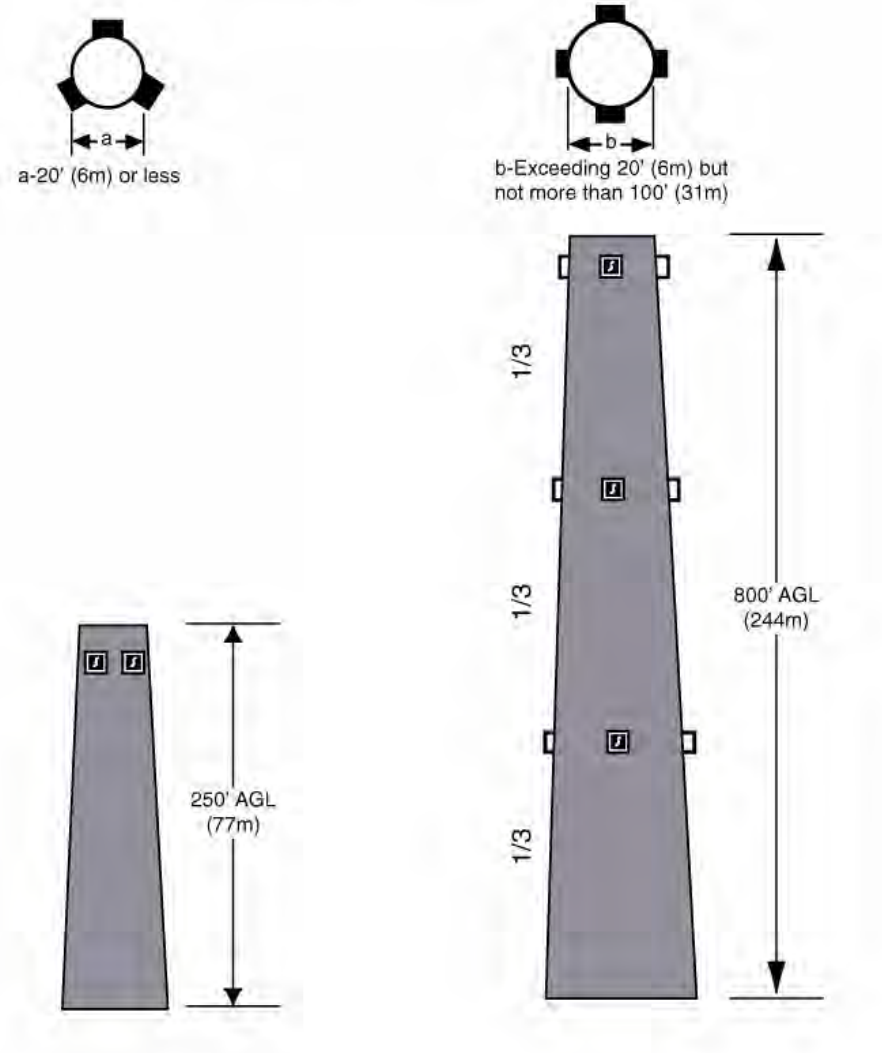


FIG 8

HYPERBOLIC COOLING TOWER

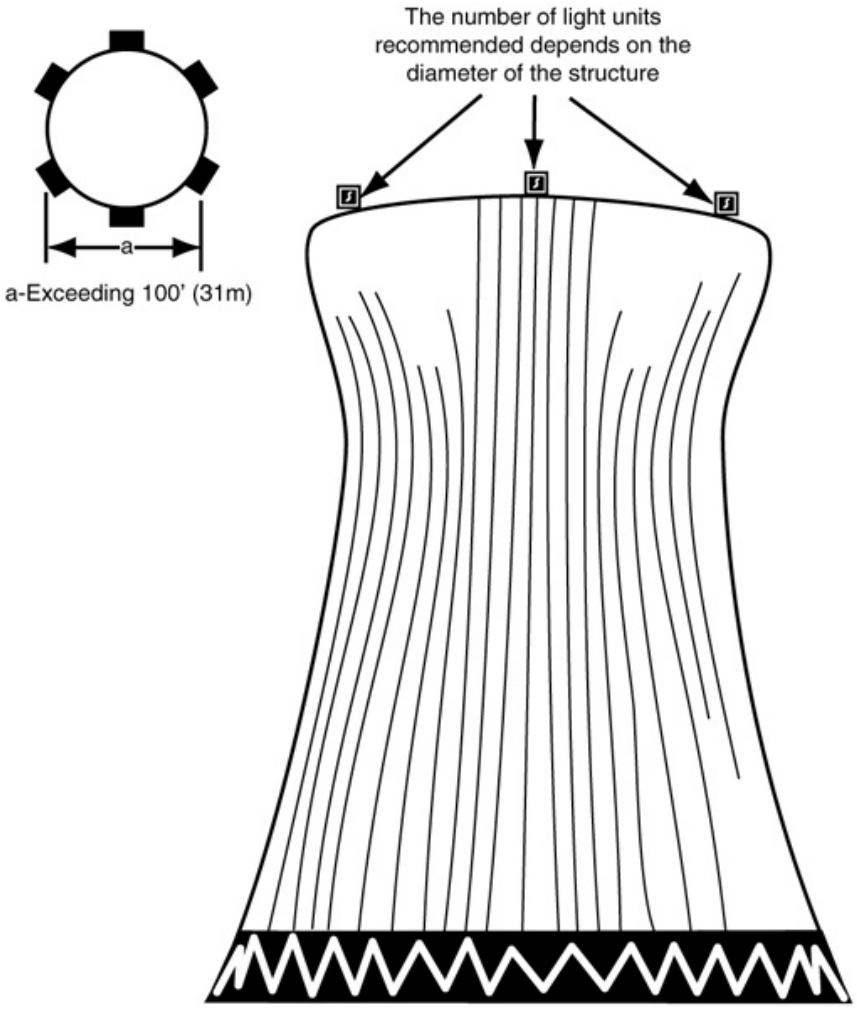


FIG 9

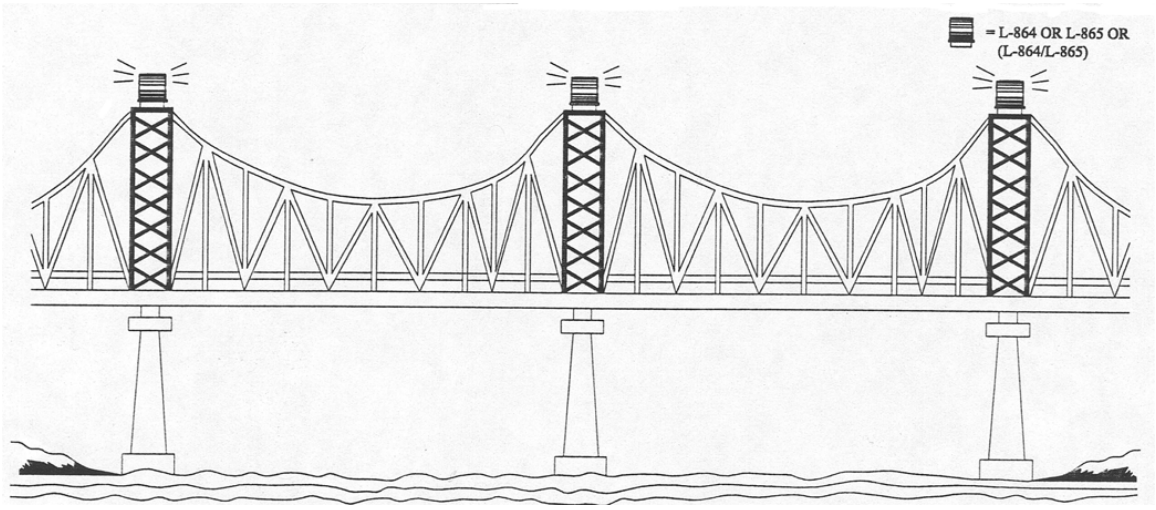
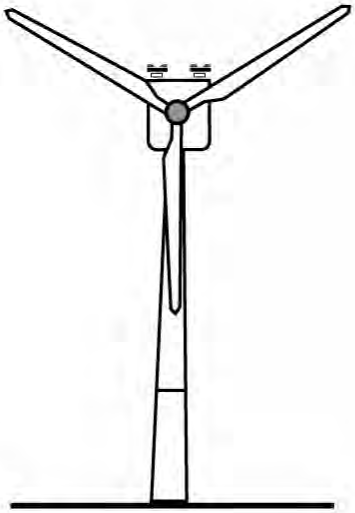
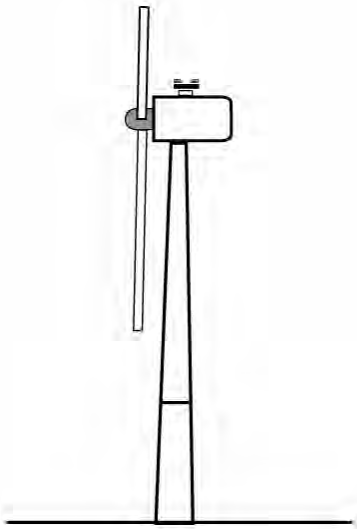


FIG 10

TYPICAL LIGHTING OF A STAND ALONE WIND TURBINE



Front View



Side View

FIG 11

WIND TURBINE GENERATOR

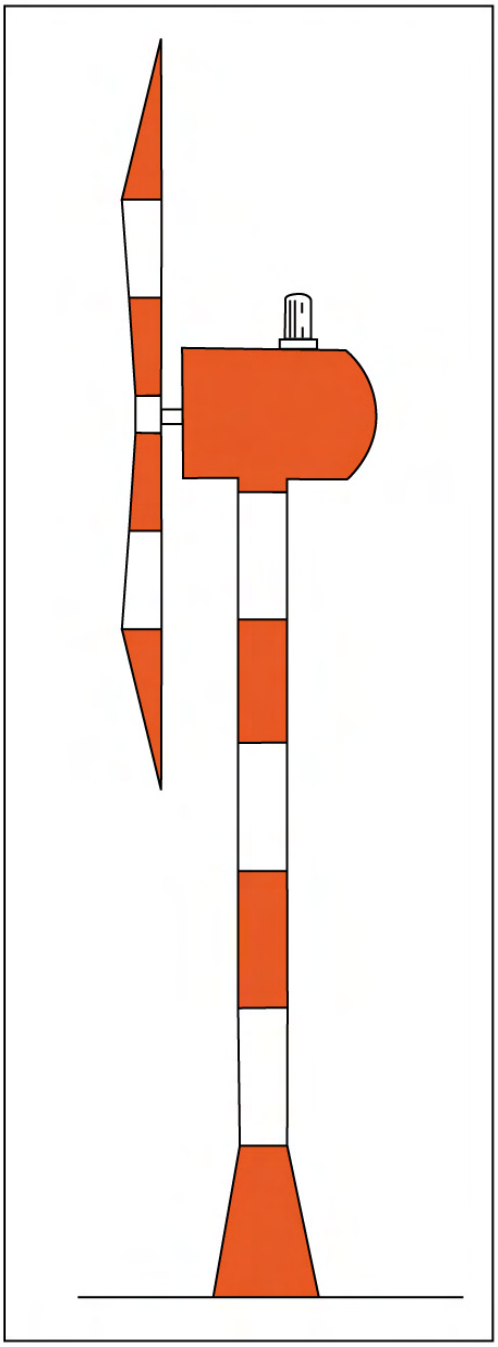


FIG 12

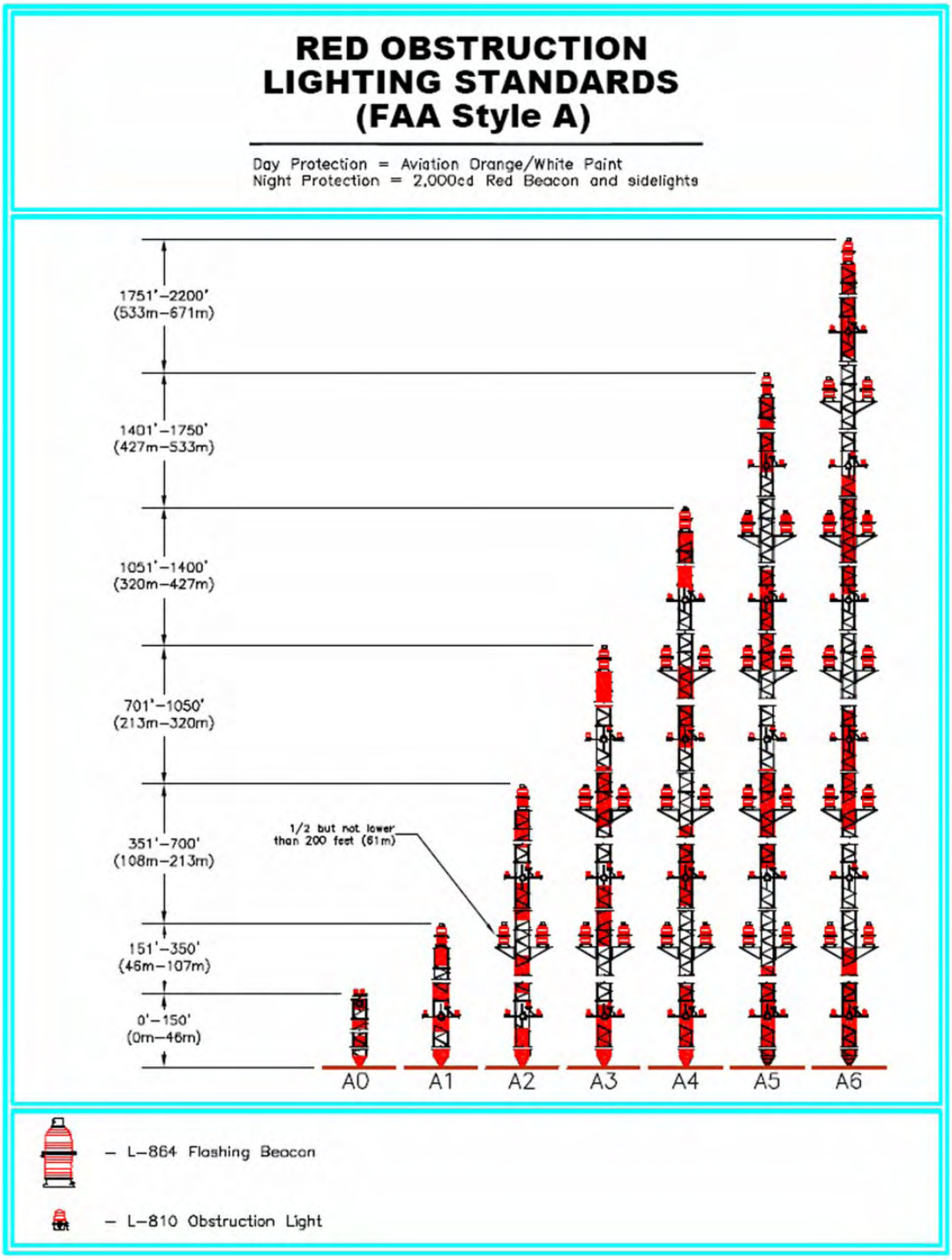

RED OBSTRUCTION
LIGHTING STANDARDS
(FAA Style A)
Day Protection = Aviation Orange/White Paint
Night Protection = 2,000cd Red Beacon and sidelights
1751'–2200'
(533m–671m)
1401'–1750'
(427m–533m)
1051'–1400'
(320m–427m)
701'–1050'
(213m–320m)
351'–700'
(108m–213m)
151'–350'
(46m–107m)
0'–150'
(0m–46m)
1/2 but not lower than 200 feet (61m)
A0
A1
A2
A3
A4
A5
A6
– L–864 Flashing Beacon
– L–810 Obstruction Light

FIG 13

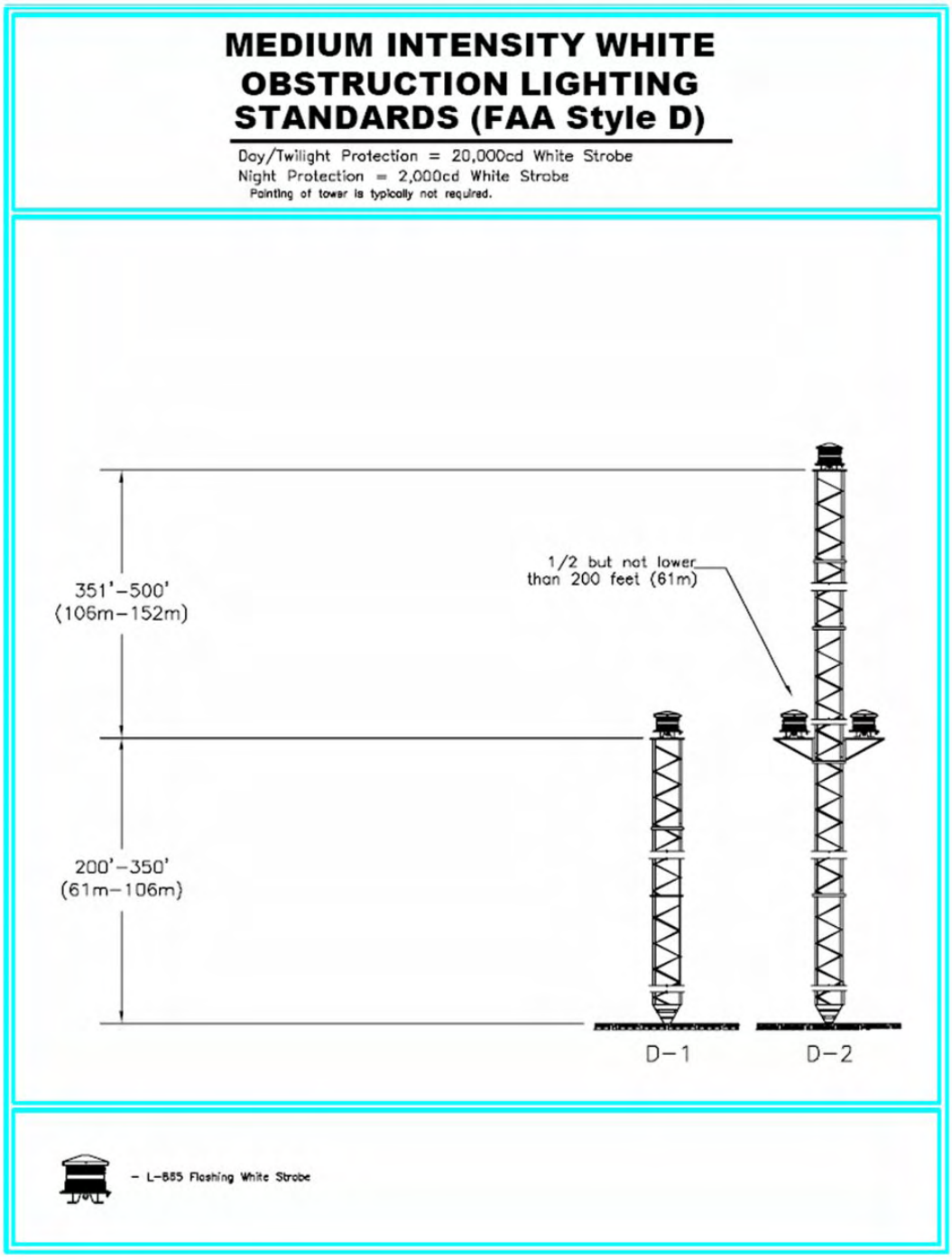

MEDIUM INTENSITY WHITE
OBSTRUCTION LIGHTING
STANDARDS (FAA Style D)
Day/Twilight Protection = 20,000cd White Strobe
Night Protection = 2,000cd White Strobe
Painting of tower is typically not required.
351'–500'
(106m–152m)
200'–350'
(61m–106m)
1/2 but not lower
than 200 feet (61m)
D–1
D–2
– L–865 Flashing White Strobe

FIG 14

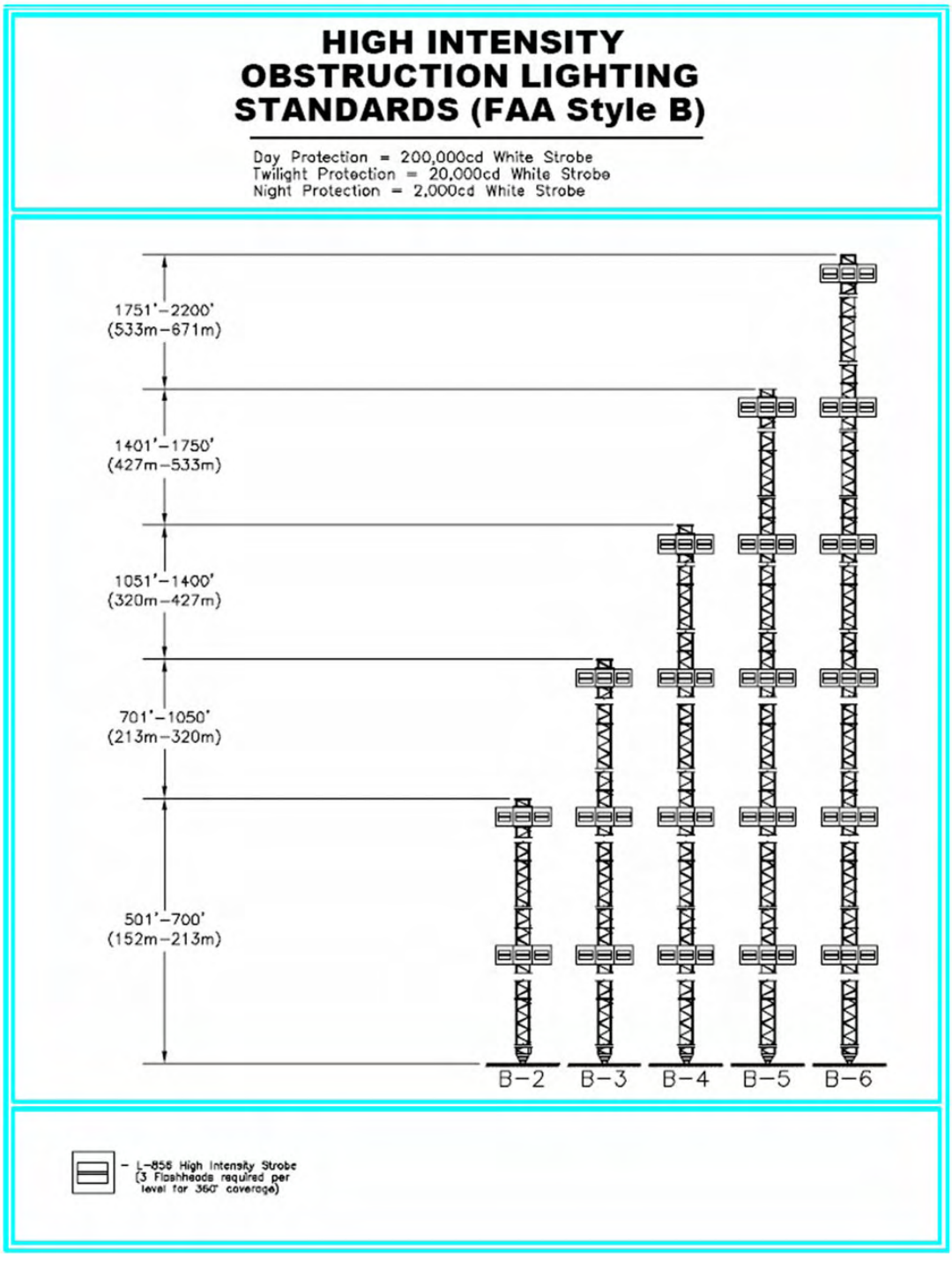

HIGH INTENSITY
OBSTRUCTION LIGHTING
STANDARDS (FAA Style B)
Day Protection = 200,000cd White Strobe
Twilight Protection = 20,000cd White Strobe
Night Protection = 2,000cd White Strobe
1751'–2200'
(533m–671m)
1401'–1750'
(427m–533m)
1051'–1400'
(320m–427m)
701'–1050'
(213m–320m)
501'–700'
(152m–213m)
B–2
B–3
B–4
B–5
B–6
– L–856 High Intensity Strobe
(3 Flashheads required per
level for 360° coverage)

FIG 15

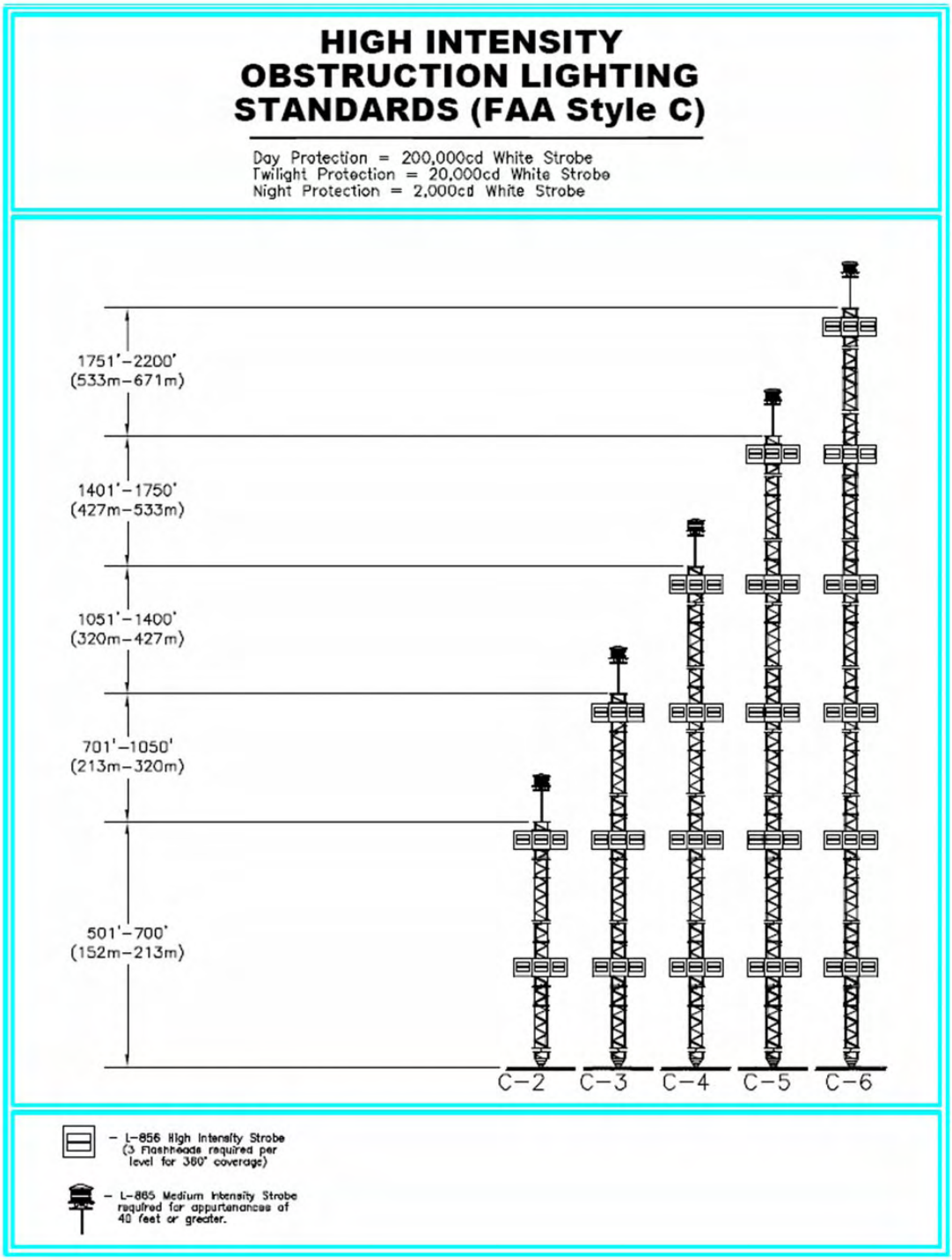

HIGH INTENSITY
OBSTRUCTION LIGHTING
STANDARDS (FAA Style C)
Day Protection = 200,000cd White Strobe
Twilight Protection = 20,000cd White Strobe
Night Protection = 2,000cd White Strobe
1751'–2200'
(533m–671m)
1401'–1750'
(427m–533m)
1051'–1400'
(320m–427m)
701'–1050'
(213m–320m)
501'–700'
(152m–213m)
C–2
C–3
C–4
C–5
C–6
– L–856 High Intensity Strobe
(3 Flashheads required per
level for 360° coverage)
– L–865 Medium Intensity Strobe
required for appurtenances of
40 feet or greater.

FIG 16

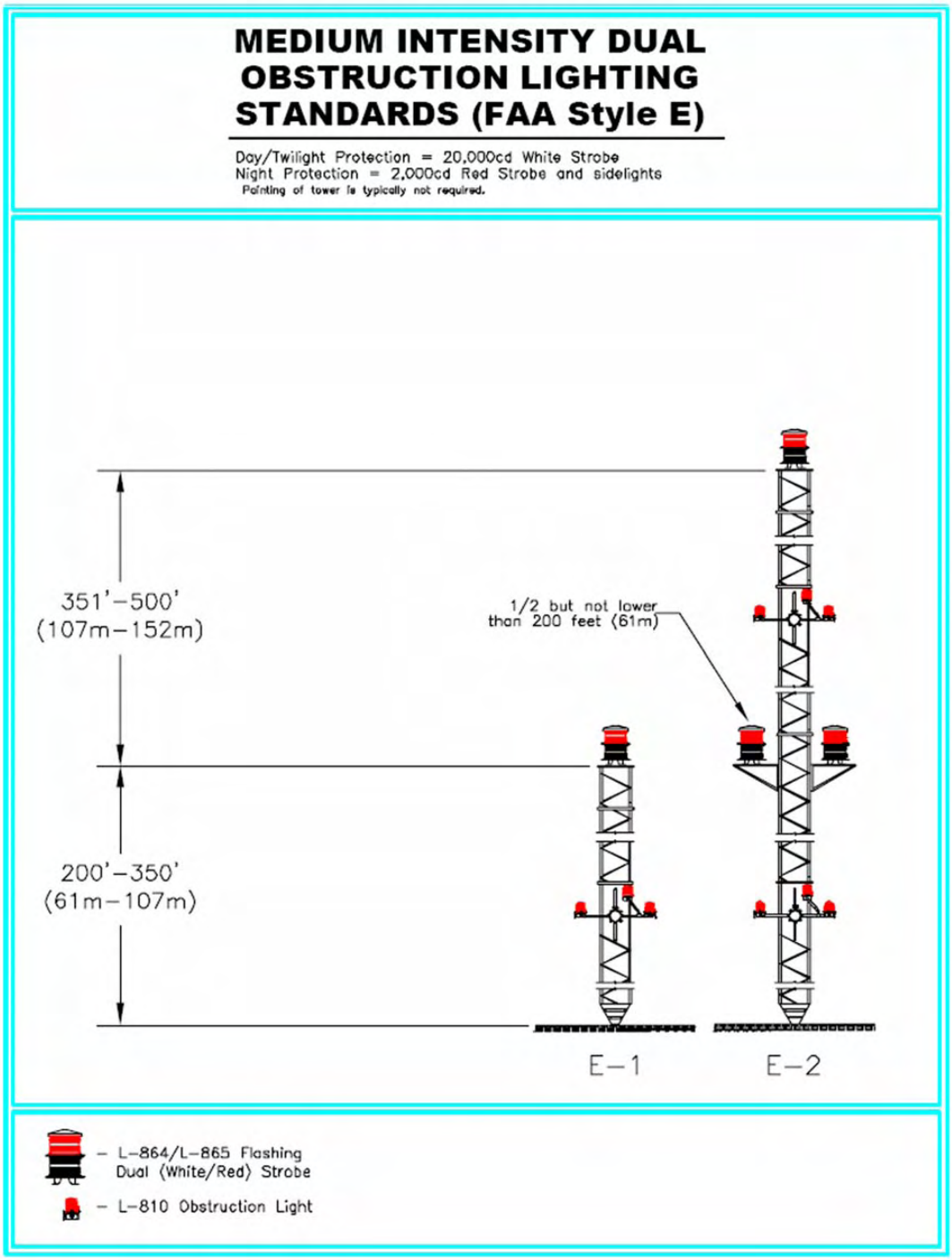

MEDIUM INTENSITY DUAL OBSTRUCTION LIGHTING STANDARDS (FAA Style E)
Day/Twilight Protection = 20,000cd White Strobe
Night Protection = 2,000cd Red Strobe and sidelights
Painting of tower is typically not required.
351'–500'
(107m–152m)
200'–350'
(61m–107m)
1/2 but not lower than 200 feet (61m)
E–1
E–2
– L–864/L–865 Flashing Dual (White/Red) Strobe
– L–810 Obstruction Light

FIG 17

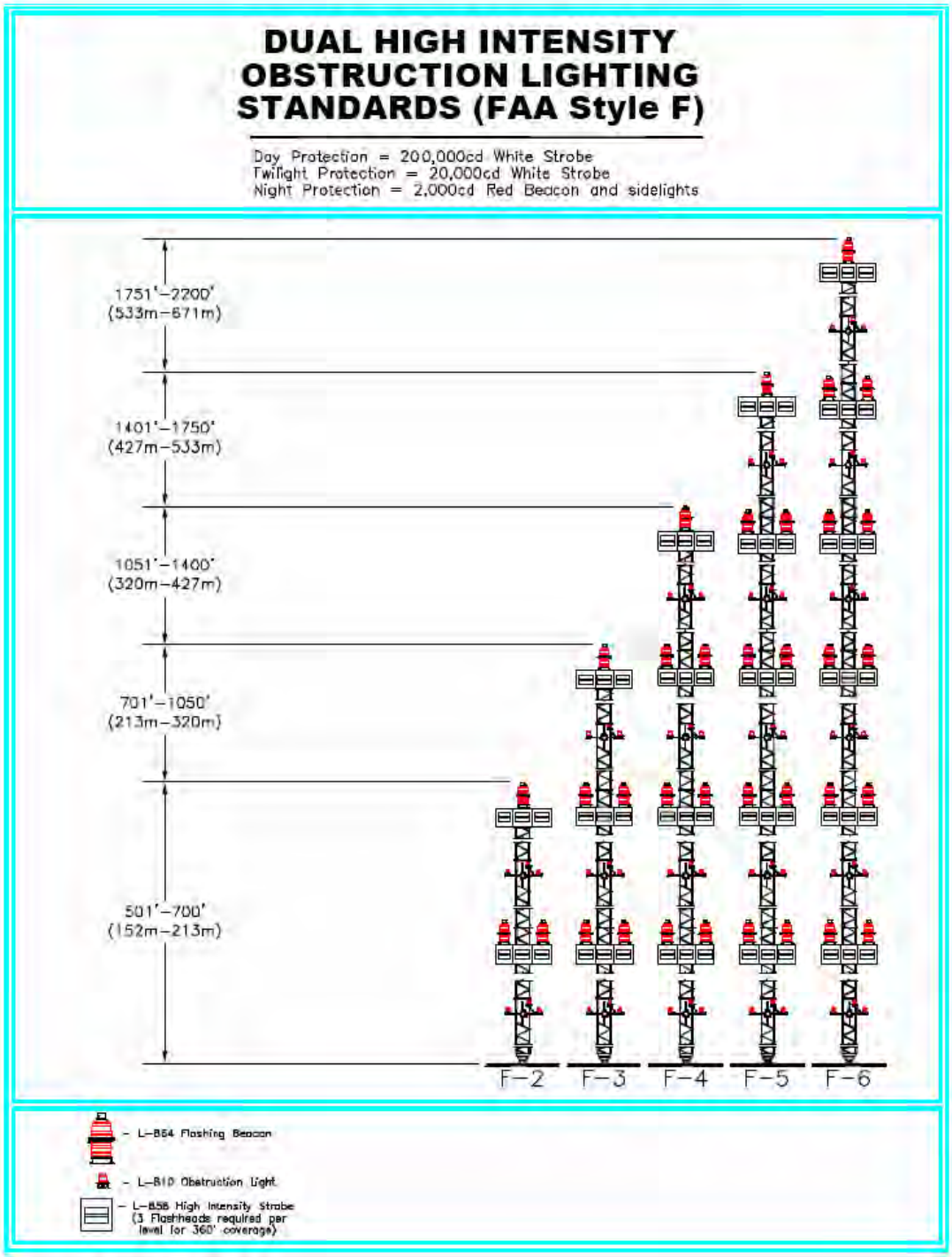

DUAL HIGH INTENSITY
OBSTRUCTION LIGHTING
STANDARDS (FAA Style F)
Day Protection = 200,000cd White Strobe
Twilight Protection = 20,000cd White Strobe
Night Protection = 2,000cd Red Beacon and sidelights
1751'–2200'
(533m–671m)
1401'–1750'
(427m–533m)
1051'–1400'
(320m–427m)
701'–1050'
(213m–320m)
501'–700'
(152m–213m)
F–2
F–3
F–4
F–5
F–6
– L–864 Flashing Beacon
– L–810 Obstruction Light
– L–858 High Intensity Strobe
(3 Flashheads required per
level for 360° coverage)

FIG 18

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APPENDIX 2. Miscellaneous

1. RATIONALE FOR OBSTRUCTION LIGHT INTENSITIES.

Sections 91.117, 91.119 and 91.155 of the FAR Part 91, General Operating and Flight Rules, prescribe aircraft speed restrictions, minimum safe altitudes, and basic visual flight rules (VFR) weather minimums for governing the operation of aircraft, including helicopters, within the United States.

2. DISTANCE VERSUS INTENSITIES.

TBL 5 depicts the distance the various intensities can be seen under 1 and 3 statute miles meteorological visibilities:

Distance/Intensity Table

Time Period	*Meteorological Visibility Statute Miles*	*Distance Statute Miles*	*Intensity Candelas*
Night		**2.9 (4.7km)**	**1,500 (+/- 25%)**
	3 (4.8km)	**3.1 (4.9km)**	**2,000 (+/- 25%)**
		1.4 (2.2km)	**32**
Day		**1.5 (2.4km)**	**200,000**
	1 (1.6km)	**1.4 (2.2km)**	**100,000**
		1.0 (1.6km)	**20,000 (+/- 25%)**
Day		**3.0 (4.8km)**	**200,000**
	3 (4.8km)	**2.7 (4.3km)**	**100,000**
		1.8 (2.9km)	**20,000 (+/- 25%)**
Twilight	**1 (1.6km)**	**1.0 (1.6km) to 1.5 (2.4km)**	**20,000 (+/- 25%)**?
Twilight	**3 (4.8km)**	**1.8 (2.9km) to 4.2 (6.7km)**	**20,000 (+/- 25%)**?

Note-
1. DISTANCE CALCULATED FOR NORTH SKY ILLUMINANCE.

TBL 5

3. CONCLUSION.

Pilots of aircraft travelling at 165 knots (190 mph/306kph) or less should be able to see obstruction lights in sufficient time to avoid the structure by at least 2,000 feet (610m) horizontally under all conditions of operation, provided the pilot is operating in accordance with FAR Part 91. Pilots operating between 165 knots (190 mph/303 km/h) and 250 knots (288 mph/463 kph) should be able to see the obstruction lights unless the weather deteriorates to 3 statute miles (4.8 kilometers) visibility at night, during which time period 2,000 candelas would be required to see the lights at 1.2 statute miles (1.9km). A higher intensity, with 3 statute miles (4.8 kilometers) visibility at night, could generate a residential annoyance factor. In addition, aircraft in these speed ranges can normally be expected to operate under instrument flight rules (IFR) at night when the visibility is 1 statute mile (1.6 kilometers).

4. DEFINITIONS.

a. Flight Visibility. The average forward horizontal distance, from the cockpit of an aircraft in flight, at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night.

Reference-
AIRMAN'S INFORMATION MANUAL
PILOT/CONTROLLER GLOSSARY.

b. Meteorological Visibility. A term that denotes the greatest distance, expressed in statute miles, that selected objects (visibility markers) or lights of moderate intensity (25 candelas) can be seen and identified under specified conditions of observation.

5. LIGHTING SYSTEM CONFIGURATION.

a. *Configuration A.* Red lighting system.

b. *Configuration B.* High Intensity White Obstruction Lights (including appurtenance lighting).

c. *Configuration C.* Dual Lighting System - High Intensity White & Red (including appurtenance lighting).

d. *Configuration D.* Medium Intensity White Lights (including appurtenance lighting).

e. *Configuration E.* Dual Lighting Systems - Medium Intensity White & Red (including appurtenance lighting).

Example-
''CONFIGURATION B 3'' DENOTES A HIGH INTENSITY LIGHTING SYSTEM WITH THREE LEVELS OF LIGHT.

APPENDIX K
AIR QUALITY

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Table 1 - AIRCRAFT EMISSION FACTORS

Aircraft	# of Engines	Aircraft Engine	Power Setting	Fuel Flow rate	Pounds/1000 pounds Fuel					kg/lb fuel	g/lb fuel	
				Lb/HR	THC	CO	NO_X	SO_2	PM_{10}	CO_2	CH_4	N_2O
KC-135R	4	F108-CF-100	Idle	1,136	0.92	27.19	3.94	1.06	9.08	1.41	0.04	0.05
			Approach	2,547	0.04	6.39	6.96	1.06	1.55	1.41	0.04	0.05
			Intermediate	5,650	0.03	1.61	13.53	1.06	0.65	1.41	0.04	0.05
			Military	**6,458**	**0.03**	**0.63**	**15.28**	1.06	**1.59**	1.41	0.04	0.05
				6,458	**0.03**	**0.63**	**15.28**	**1.06**	**1.59**	**1.41**	**0.04**	**0.05**
F-15 A/B/C/D	1	F100-PW-100	Idle	1,097	8.60	35.29	4.38		2.06			
			Approach	2,746	0.16	3.49	12.33		2.63			
			Intermediate	7,617	0.14	0.91	30.89		2.06			
			Military	10,104	0.28	0.90	39.44		1.33			
			AB-5	54,074	0.05	9.57	6.62		1.15			
F-15 C/D/E	1	F100-PW-200	Idle	1,016	8.26	26.61	4.99	1.06	2.06	1.41	0.04	0.05
			Approach	3,135	17.62	1.38	13.82	1.06	2.63	1.41	0.04	0.05
			Intermediate	5,406	4.97	0.49	27.60	1.06	2.06	1.41	0.04	0.05
			Military	8,717	3.47	0.86	39.12	1.06	1.33	1.41	0.04	0.05
			AB-5	40,247	0.32	9.47	7.03	1.06	1.15	1.41	0.04	0.05
F-15 E	1	F100-PW-229	Idle	1,087	0.38	10.16	3.80		2.06			
			Approach	3,098	0.21	1.17	15.08		2.63			
			Intermediate	5,838	0.30	0.15	17.53		2.06			
			Military	11,490	0.54	0.66	57.65		1.33			
			AB-1	20,793	16.26	76.62	50.92		1.15			
			Average[2]	**10,104**	**1.43**	**0.81**	**45.40**	**1.06**	**1.33**	**1.41**	**0.04**	**0.05**
F-16A/B	1	F100-PW-200	Idle	1,016	8.26	26.61	4.99	1.06	2.06	1.41	0.04	0.05
			Approach	3,135	17.62	1.38	13.82	1.06	2.63	1.41	0.04	0.05
			Intermediate	5,406	4.97	0.49	27.60	1.06	2.06	1.41	0.04	0.05
			Military	8,717	3.47	0.86	39.12	1.06	1.33	1.41	0.04	0.05
			AB-5	40,247	0.32	9.47	7.03	1.06	1.15	1.41	0.04	0.05
F-16C/D	1	F110-GE-129	Idle	1,036	2.64	34.58	3.19	1.06	2.61	1.41	0.04	0.05
			Approach	4,956	0.05	3.85	11.60	1.06	1.37	1.41	0.04	0.05
			Intermediate	7,136	0.01	2.49	17.33	1.06	0.57	1.41	0.04	0.05
			Military	9,985	0.54	2.42	27.13	1.06	0.14	1.41	0.04	0.05
			AB-1	16,826	64.80	104.60	15.08	1.06	3.34	1.41	0.04	0.05
F-16N	1	F110-GE-100	Idle	1,044	2.10	31.06	4.33	1.06	1.84	1.41	0.04	0.05
			Approach	4,128	0.36	4.00	10.87	1.06	0.95	1.41	0.04	0.05
			Intermediate	6,598	0.19	2.20	18.25	1.06	0.57	1.41	0.04	0.05
			Military	9,974	0.62	2.05	30.35	1.06	0.14	1.41	0.04	0.05
			AB-1	16,374	69.33	97.50	15.55	1.06	3.34	1.41	0.04	0.05
			Idle	1,032	4.33	30.75	4.17	1.06	2.17	1.41	0.04	0.05
			Approach	4,073	6.01	3.08	12.10	1.06	1.65	1.41	0.04	0.05
			Intermediate	6,380	1.72	1.73	21.06	1.06	1.07	1.41	0.04	0.05
			Military	9,559	1.54	1.78	32.20	1.06	0.54	1.41	0.04	0.05
			AB-1	24,482	44.82	70.52	12.55	1.06	2.61	1.41	0.04	0.05
			Average[2]	**9,559**	**1.54**	**1.78**	**32.20**	**1.06**	**0.54**	**1.41**	**0.04**	**0.05**
B-1B	4	F101-GE-102	Idle	1,117		24.47	4.10	1.06	2.17	1.41	0.04	0.05
			Approach	4,533	0.14	1.03	9.16	1.06	4.23	1.41	0.04	0.05
			Intermediate	6,557	0.13	0.85	13.15	1.06	1.35	1.41	0.04	0.05
			Military	**7,828**	**0.11**	**0.83**	**12.83**	1.06	**1.68**	1.41	0.04	0.05
			AB-1	15,314	61.82	43.47	16.91	1.06	2.86	1.41	0.04	0.05
				7,828	**0.11**	**0.83**	**12.83**	**1.06**	**1.68**	**1.41**	**0.04**	**0.05**
B-2	4	F118-GE-100	Idle	1,097	0.59	20.98	4.30	1.06	1.25	1.41	0.04	0.05
			Approach	3,773	0.87	2.02	11.09	1.06	4.47	1.41	0.04	0.05
			Intermediate	6,350	ND	0.84	18.01	1.06	1.78	1.41	0.04	0.05
			Military	**10,887**	**ND**	**0.65**	**33.12**	1.06	**1.64**	1.41	0.04	0.05
				10,887	**ND**	**0.65**	**33.12**	**1.06**	**1.64**	**1.41**	**0.04**	**0.05**
B-52H	8	TF33-P-3	Idle	900	90.91	95.06	1.39	1.06	4.98	1.41	0.04	0.05
			Approach	3,800	1.37	5.24	6.37	1.06	3.55	1.41	0.04	0.05
			Intermediate	6,240	1.50	2.11	7.88	1.06	3.15	1.41	0.04	0.05
			Military	**7,440**	**0.55**	**1.19**	**12.08**	1.06	**3.67**	1.41	0.04	0.05
				7,440	**0.55**	**1.19**	**12.08**	**1.06**	**3.67**	**1.41**	**0.04**	**0.05**

Notes:

(1) Unless otherwise cited, all data on this page are from Table 3-3 of "Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations" IERA-RS-BR-SR-2001-0010, AF IERA, Brooks Air Force Base TX, January 2002, except SO2 emission factors obtained from AFCEC January 2013.

(2) Millitary Mode Averages were not taken from the AF IERA

(3) JP-8 (jet fuel density) - 6.8 lb/gallon

Table 2A -Baseline - Airspace Operations

AirspaceUnit	Aircraft	Annual Hours of Operation within Airspace	Altitude AGL (Feet)			Total Hours
			500 - 1,000	1,000 - 2,000	2,000 - 5,000	
Powder River A MOA	B-1	125.0	25.0	56.3	25.0	106.3
	B-52	-	-	0.0	-	0.0
	Tankers [1]	-	-	-	-	-
	Transient	5.0	0.9	0.9	-	1.8
Powder River B MOA	B-1	125.0	25.0	56.3	25.0	106.3
	B-52	-	-	-	-	-
	Tankers [1]	-	-	-	-	-
	Transient	5.0	0.9	0.9	-	1.8

Table 2B - Modified Alternative A - Airspace Operations

AirspaceUnit	Aircraft	Annual Hours of Operation within Airspace	Altitude AGL (Feet)			Total Hours
			500 - 1,000	1,000 - 2,000	2,000 - 5,000	
Powder River 1 MOA	B-1	419.0	21.0	47.2	21.0	89.2
	B-52	33.0	-	2.3	0.4	2.7
	Tankers [1]	69.0	-	-	-	-
	Transient	36.0	2.0	2.0	-	4.0
Powder River 2 MOA	B-1	779.7	39.0	87.7	39.0	165.7
	B-52	97.3	-	13.8	2.4	16.2
	Tankers [1]	5.6	-	-	-	-
	Transient	39.9	2.2	2.2	-	4.3
Powder River 3 MOA	B-1	389.2	19.5	43.8	19.5	82.8
	B-52	25.8	-	2.3	0.4	2.7
	Tankers [1]	3.7	-	-	-	-
	Transient	25.1	1.4	1.4	-	2.7
Powder River 4 MOA	B-1	405.6	-	-	-	-
	B-52	92.1	-	-	-	-
	Tankers [1]	68.6	-	-	-	-
	Transient	31.2	-	-	-	-
GAP A MOA	B-1	13.0	0.7	1.5	0.7	2.8
	B-52	2.9	-	-	-	-
	Tankers [1]	0.6	-	-	-	-
	Transient	4.9	0.3	0.3	-	0.5
GAP B MOA	B-1	17.6	0.9	2.0	0.9	3.7
	B-52	4.0	-	-	-	-
	Tankers [1]	0.8	-	-	-	-
	Transient	6.6	0.4	0.4	-	0.7
GAP C MOA	B-1	9.1	0.5	1.0	0.5	1.9
	B-52	2.1	-	-	-	-
	Tankers [1]	0.4	-	-	-	-
	Transient	3.4	0.2	0.2	-	0.4

Notes: 1. Tankers = KC-135

Table 2C - Alternative B - Airspace Operations

AirspaceUnit	Aircraft	Annual Hours of Operation within Airspace	Altitude AGL (Feet)			Total Hours
			500 - 1,000	1,000 - 2,000	2,000 - 5,000	
Powder River 2 MOA	B-1	793.6	39.7	89.3	39.7	168.6
	B-52	247.3	-	41.4	7.3	48.7
	Tankers [1]	5.6	-	-	-	-
	Transient	44.1	2.4	2.4	-	4.8
Powder River 3 MOA	B-1	437.2	21.9	49.2	21.9	92.9
	B-52	38.3	-	4.6	0.8	5.4
	Tankers [1]	3.7	-	-	-	-
	Transient	28.2	1.5	1.5	-	3.0
Powder River 4 MOA	B-1	455.9	22.8	51.3	22.8	96.9
	B-52	154.6	-	25.3	4.4	29.7
	Tankers [1]	68.6	-	-	-	-
	Transient	35.2	1.9	1.9	-	3.8
GAP B MOA	B-1	20.1	1.0	2.3	1.0	4.3
	B-52	4.0	-	-	-	-
	Tankers [1]	0.8	-	-	-	-
	Transient	7.6	0.4	0.4	-	0.8
GAP C MOA	B-1	10.4	0.5	1.2	0.5	2.2
	B-52	2.1	-	-	-	-
	Tankers [1]	0.4	-	-	-	-
	Transient	3.9	0.2	0.2	-	0.4

Table 2D - Alternative C - Airspace Operations

AirspaceUnit	Aircraft	Annual Hours of Operation within Airspace	Altitude AGL (Feet)			Total Hours
			500 - 1,000	1,000 - 2,000	2,000 - 5,000	
Powder River 1 MOA	B-1	469.3	23.5	52.8	23.5	99.7
	B-52	158.2	-	25.3	4.4	29.7
	Tankers [1]	68.6	-	-	-	-
	Transient	39.2	2.1	2.1	-	4.2
Powder River 2 MOA	B-1	791.3	45.0	101.3	45.0	191.3
	B-52	247.3	-	41.4	7.3	48.7
	Tankers [1]	5.6	-	-	-	-
	Transient	43.3	2.3	2.3	-	4.7
Powder River 3 MOA	B-1	435.8	21.8	49.0	21.8	92.6
	B-52	38.3	-	4.6	0.8	5.4
	Tankers [1]	3.7	-	-	-	-
	Transient	27.7	1.5	1.5	-	3.0
GAP A MOA	B-1	14.5	0.7	1.6	0.7	3.1
	B-52	2.9	-	-	-	-
	Tankers [1]	0.6	-	-	-	-
	Transient	5.4	0.3	0.3	-	0.6
GAP B MOA	B-1	19.7	1.0	2.2	1.0	4.2
	B-52	4.0	-	-	-	-
	Tankers [1]	0.8	-	-	-	-
	Transient	7.4	0.4	0.4	-	0.8

Table 3 - Baseline Airspace Emissions

			TONS PER YEAR						METRIC TONS PER YEAR			
AirspaceUnit	**Aircraft**	**Total Hours**	**VOC**	**CO**	**NO_X**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Powder River A MOA	B-1	106.3	0.18	1.38	21.34	1.76	2.79	2.79	4,682.05	0.13	0.15	4,731.84
	B-52	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.00	0.00	0.45
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	1.8	0.01	0.02	0.28	0.01	0.00	0.00	79.32	0.00	0.00	80.16
AIRSPACE TOTAL			**0.20**	**1.40**	**21.62**	**1.77**	**2.80**	**2.80**	**4,761.81**	**0.13**	**0.15**	**4,812.45**
Powder River B MOA	B-1	106.3	0.18	1.38	21.34	1.76	2.79	2.79	4,682.05	0.13	0.15	4,731.84
	B-52	-	-	-	-	-	-	-	-	-	-	-
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	1.8	0.01	0.02	0.28	0.01	0.00	0.00	79.32	0.00	0.00	80.16
AIRSPACE TOTAL			**0.18**	**1.38**	**21.34**	**1.76**	**2.79**	**2.79**	**4,761.37**	**0.13**	**0.15**	**4,812.00**
TOTAL BASELINE EMISSIONS			**0.38**	**2.78**	**42.96**	**3.54**	**5.59**	**5.59**	**9,523.18**	**0.27**	**0.31**	**9,624.45**

Note: CH4 has a GWP of 21 and N2O has a GWP of 310

Table 4A - Modified Alternative A Airspace Emissions

			TONS PER YEAR						METRIC TONS PER YEAR			
AirspaceUnit	**Aircraft**	**Total Hours**	**VOC**	**CO**	**NO_X**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Powder River 1 MOA	B-1	89.2	0.15	1.16	17.92	1.48	2.35	2.35	3,930.72	0.11	0.13	3,972.52
	B-52	2.7	0.04	0.10	0.97	0.09	0.29	0.29	118.98	0.00	0.00	120.24
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	4.0	0.03	0.03	0.62	0.02	0.01	0.01	176.27	0.00	0.01	178.14
AIRSPACE TOTAL			**0.23**	**1.29**	**19.50**	**1.59**	**2.65**	**2.65**	**4,225.96**	**0.12**	**0.14**	**4,270.90**
Powder River 2 MOA	B-1	165.7	0.29	2.15	33.28	2.75	4.36	4.36	7,300.47	0.21	0.24	7,378.11
	B-52	16.2	0.27	0.57	5.82	0.51	1.77	1.77	713.87	0.02		714.30
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	4.3	0.03	0.04	0.66	0.02	0.01	0.01	189.49	0.01	0.01	191.50
AIRSPACE TOTAL			**0.58**	**2.76**	**39.76**	**3.28**	**6.14**	**6.14**	**8,203.83**	**0.23**	**0.24**	**8,283.90**
Powder River 3 MOA	B-1	82.8	0.14	1.08	16.63	1.37	2.18	2.18	3,648.69	0.10	0.12	3,687.49
	B-52	2.7	0.04	0.10	0.97	0.09	0.29	0.29	118.98	0.00	0.00	120.24
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	2.7	0.02	0.02	0.42	0.01	0.01	0.01	118.98	0.00	0.00	120.24
AIRSPACE TOTAL			**0.21**	**1.19**	**18.02**	**1.47**	**2.48**	**2.48**	**3,886.65**	**0.11**	**0.13**	**3,927.98**
Powder River 4 MOA	B-1	-	-	-	-	-	-	-	-	-	-	-
	B-52	-	-	-	-	-	-	-	-	-	-	-
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	-	-	-	-	-	-	-	-	-	-	-
AIRSPACE TOTAL			-	-	-	-	-	-	-	-	-	-
GAP A MOA	B-1	2.8	0.00	0.04	0.55	0.05	0.07	0.07	121.62	0.00	0.00	122.92
	B-52	-	-	-	-	-	-	-	-	-	-	-
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	0.5	0.00	0.00	0.08	0.00	0.00	0.00	22.91	0.00	0.00	23.16
AIRSPACE TOTAL			**0.01**	**0.04**	**0.63**	**0.05**	**0.07**	**0.07**	**144.54**	**0.00**	**0.00**	**146.07**
GAP B MOA	B-1	3.7	0.01	0.05	0.75	0.06	0.10	0.10	164.81	0.00	0.01	166.56
	B-52	-	-	-	-	-	-	-	-	-	-	-
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	0.7	0.01	0.01	0.11	0.00	0.00	0.00	31.73	0.00	0.00	32.07
AIRSPACE TOTAL			**0.01**	**0.05**	**0.86**	**0.07**	**0.10**	**0.10**	**196.54**	**0.01**	**0.01**	**198.63**
GAP C MOA	B-1	1.9	0.00	0.03	0.39	0.03	0.05	0.05	85.49	0.00	0.00	86.40
	B-52	-	-	-	-	-	-	-	-	-	-	-
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	0.4	0.00	0.00	0.06	0.00	0.00	0.00	15.86	0.00	0.00	16.03
AIRSPACE TOTAL			**0.01**	**0.03**	**0.45**	**0.03**	**0.05**	**0.05**	**101.35**	**0.00**	**0.00**	**102.43**
TOTAL ALTERNATIVE A EMISSIONS			**1.04**	**5.37**	**79.23**	**6.49**	**11.49**	**11.49**	**16,758.87**	**0.47**	**0.52**	**16,929.92**

Note: CH4 has a GWP of 21 and N2O has a GWP of 310

Table 4B - Alternative B Airspace Emissions

			TONS PER YEAR						METRIC TONS PER YEAR			
AirspaceUnit	**Aircraft**	**Total Hours**	**VOC**	**CO**	**NO_X**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
												-
Powder River 2 MOA	B-1	168.6	0.29	2.19	33.87	2.80	4.44	4.44	7,431.35	0.21	0.24	7,510.38
	B-52	48.7	0.80	1.72	17.49	1.53	5.31	5.31	2,143.83	0.06	0.07	2,166.63
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	4.8	0.04	0.04	0.73	0.02	0.01	0.01	209.76	0.01	0.01	211.99
AIRSPACE TOTAL			**1.12**	**3.95**	**52.10**	**4.36**	**9.76**	**9.76**	**9,784.93**	**0.28**	**0.32**	**9,888.99**
Powder River 3 MOA	B-1	92.9	0.16	1.21	18.66	1.54	2.44	2.44	4,094.20	0.12	0.13	4,137.74
	B-52	5.4	0.09	0.19	1.94	0.17	0.59	0.59	238.40	0.01	0.01	240.93
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	3.0	0.02	0.03	0.47	0.02	0.01	0.01	133.96	0.00	0.00	135.39
AIRSPACE TOTAL			**0.27**	**1.42**	**21.08**	**1.73**	**3.04**	**3.04**	**4,466.56**	**0.13**	**0.14**	**4,514.06**
Powder River 4 MOA	B-1	96.9	0.17	1.26	19.46	1.61	2.55	2.55	4,269.59	0.12	0.14	4,314.99
	B-52	29.7	0.49	1.05	10.69	0.94	3.25	3.25	1,310.09	0.04	0.04	1,324.02
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	3.8	0.03	0.03	0.58	0.02	0.01	0.01	167.45	0.00	0.01	169.23
AIRSPACE TOTAL			**0.68**	**2.34**	**30.73**	**2.57**	**5.81**	**5.81**	**5,747.13**	**0.16**	**0.19**	**5,808.25**
GAP B MOA	B-1	4.3	0.01	0.06	0.86	0.07	0.11	0.11	189.04	0.01	0.01	191.05
	B-52	-	-	-	-	-	-	-	-	-	-	-
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	0.8	0.01	0.01	0.13	0.00	0.00	0.00	36.13	0.00	0.00	36.52
AIRSPACE TOTAL			**0.01**	**0.06**	**0.99**	**0.08**	**0.11**	**0.11**	**225.18**	**0.01**	**0.01**	**227.57**
GAP C MOA	B-1	2.2	0.00	0.03	0.44	0.04	0.06	0.06	97.39	0.00	0.00	98.42
	B-52	-	-	-	-	-	-	-	-	-	-	-
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	0.4	0.00	0.00	0.06	0.00	0.00	0.00	18.51	0.00	0.00	18.70
AIRSPACE TOTAL			**0.01**	**0.03**	**0.51**	**0.04**	**0.06**	**0.06**	**115.89**	**0.00**	**0.00**	**117.13**
TOTAL ALTERNATIVE B EMISSIONS			**2.09**	**7.82**	**105.40**	**8.76**	**18.78**	**18.78**	**20,339.70**	**0.57**	**0.66**	**20,556.00**

Note: CH4 has a GWP of 21 and N2O has a GWP of 310

Table 4C - Alternative C Airspace Emissions

			TONS PER YEAR						METRIC TONS PER YEAR			
AirspaceUnit	**Aircraft**	**Total Hours**	**VOC**	**CO**	**NO_X**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Powder River 1 MOA	B-1	99.7	0.17	1.30	20.03	1.66	2.62	2.62	4,395.18	0.12	0.14	4,441.92
	B-52	29.7	0.49	1.05	10.69	0.94	3.25	3.25	1,310.09	0.04	0.04	1,324.02
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	4.2	0.03	0.04	0.65	0.02	0.01	0.01	186.84	0.01	0.01	188.83
AIRSPACE TOTAL			**0.69**	**2.38**	**31.37**	**2.61**	**5.88**	**5.88**	**5,892.11**	**0.17**	**0.19**	**5,954.77**
Powder River 2 MOA	B-1	191.3	0.33	2.49	38.42	3.17	5.03	5.03	8,427.69	0.24	0.27	8,517.31
	B-52	48.7	0.80	1.72	17.49	1.53	5.31	5.31	2,143.83	0.06	0.07	2,166.63
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	4.7	0.03	0.04	0.72	0.02	0.01	0.01	206.23	0.01	0.01	208.42
AIRSPACE TOTAL			**1.16**	**4.25**	**56.63**	**4.73**	**10.36**	**10.36**	**10,777.75**	**0.30**	**0.35**	**10,892.36**
Powder River 3 MOA	B-1	92.6	0.16	1.20	18.60	1.54	2.44	2.44	4,080.98	0.12	0.13	4,124.38
	B-52	5.4	0.09	0.19	1.94	0.17	0.59	0.59	238.40	0.01	0.01	240.93
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	3.0	0.02	0.03	0.46	0.02	0.01	0.01	131.32	0.00	0.00	132.71
AIRSPACE TOTAL			**0.27**	**1.42**	**21.01**	**1.72**	**3.03**	**3.03**	**4,450.70**	**0.13**	**0.14**	**4,498.03**
												-
GAP A MOA	B-1	3.1	0.01	0.04	0.62	0.05	0.08	0.08	136.17	0.00	0.00	137.61
	B-52	-	-	-	-	-	-	-	-	-	-	-
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	0.6	0.00	0.00	0.09	0.00	0.00	0.00	25.56	0.00	0.00	25.83
AIRSPACE TOTAL			**0.01**	**0.05**	**0.71**	**0.05**	**0.08**	**0.08**	**161.72**	**0.00**	**0.01**	**163.44**
GAP B MOA	B-1	4.2	0.01	0.05	0.84	0.07	0.11	0.11	185.08	0.01	0.01	187.05
	B-52	-	-	-	-	-	-	-	-	-	-	-
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	0.8	0.01	0.01	0.12	0.00	0.00	0.00	35.25	0.00	0.00	35.63
AIRSPACE TOTAL			**0.01**	**0.06**	**0.97**	**0.07**	**0.11**	**0.11**	***220.33***	***0.01***	***0.01***	***222.67***
TOTAL ALTERNATIVE C EMISSIONS			**2.14**	**8.16**	**110.68**	**9.20**	**19.47**	**19.47**	**21,502.61**	**0.61**	**0.70**	**21,731.28**

Notes:

Note: CH4 has a GWP of 21 and N2O has a GWP of 310

1. Tankers = KC-135

2. Transient: Average Emission Factors B-1, B-2, B-52, KC-135, F-15, F-16

Table 5 - Modified Alternative A Emissions - Powder River 1B and 1D MOA/ATCAA Airspaces

			TONS PER YEAR						METRIC TONS PER YEAR			
AirspaceUnit	**Aircraft**	**Total Hours**	**VOC**	**CO**	**NO_X**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Powder River 1B MOA	B-1	21.2	0.04	0.27	4.25	0.35	0.56	0.56	932	0.03	0.03	942
	B-52	0.7	0.01	0.02	0.24	0.02	0.07	0.07	30	0.00	0.00	30
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	0.8	0.01	0.01	0.13	0.00	0.00	0.00	36	0.00	0.00	37
AIRSPACE TOTAL			**0.05**	**0.31**	**4.62**	**0.38**	**0.63**	**0.63**	**998**	**0.03**	**0.03**	**1,009**
Emissions within Rosebud County			**0.04**	**0.22**	**3.37**	**0.27**	**0.46**	**0.46**	**728.62**	**0.02**	**0.02**	**736.36**
Powder River 1D MOA	B-1	48.1	0.08	0.63	9.66	0.80	1.27	1.27	2,120	0.06	0.07	2,142
	B-52	1.5	0.02	0.05	0.52	0.05	0.16	0.16	64	0.00	0.00	65
	Tankers [1]	-	-	-	-	-	-	-	-	-	-	-
	Transient[2]	2.2	0.02	0.02	0.33	0.01	0.01	0.01	95	0.00	0.00	96
AIRSPACE TOTAL			**0.12**	**0.69**	**10.52**	**0.85**	**1.43**	**1.43**	**2,279**	**0.06**	**0.07**	**2,303**
Emissions within Rosebud County			**0.04**	**0.21**	**3.15**	**0.26**	**0.43**	**0.43**	**683.60**	**0.02**	**0.02**	**690.87**
Emissions within Sheridan County			**0.01**	**0.05**	**0.78**	**0.06**	**0.11**	**0.11**	**169.47**	**0.00**	**0.01**	**171.27**
Total Emissions within Rosebud County			**0.08**	**0.43**	**6.53**	**0.53**	**0.89**	**0.89**	**1,412.22**	**0.04**	**0.05**	**1,427.23**
Emissions over N. Cheyenne Indian Reservation			-	-	-	-	-	-	-	-	-	-
Big Horn County			4,925		4,995	602	17,997					
Rosebud County			1,782		27,562	15,510	10,551					
Combined Counties			6,707		32,557	16,112	28,548					
Airspace PR 1D Fraction of Combined Counties			-		-	-	-					
Airspace PR 1D % of Combined Counties			-		-	-	-					

MJU Flare Emission Factors

Table 15.8.16-1 EMISSION FACTORS FOR THE USE OF DODIC L410,
M206 AIRCRAFT COUNTERMEASURE FLARE - CARBON DIOXIDE, CRITERIA POLLUTANTS,
TOTAL NONMETHANE HYDROCARBONS, AND TOTAL SUSPENDED PARTICULATEa
EMISSION FACTOR RATING: B (except as noted)

CASRNb	Pollutant	lb per item	lb per lb NEWc
124-38-9	CO2	0.011	0.034
630-08-0	Carbon monoxide (CO)	0.001	0.004
--	Oxides of Nitrogen (NOx)	0.000	0.000
--	PM-2.5	0.006	0.020
--	PM-10	0.006	0.020
7446-05-09	Sulfur dioxide (SO2)	0.000	0.000
--	TNMHC	0.000	0.001
12789-66-1	TSPf	0.009	0.028

M206 was used for approximation to MJU Flares
http://www.globalsecurity.org/military/systems/aircraft/systems/m206.htm

Chaff Emission Factor

Source: Air Force. 1997. Environmental Effects of Self-Protection Chaff and Flares. Prepared for Headquarters Air Combat Command, Langley AFB, Virginia

PM10/PM2.5 EF 95 gm per item

		Chaffs	Flares
Existing	Powder River A MOA	N/A	N/A
	Powder River B MOA	N/A	N/A
	Gateway ATCAA	N/A	N/A
	Black Hills ATCAA	N/A	N/A
	TOTAL	N/A	N/A
Alternative A	Powder River 1 MOA/ATCCA	8300	820
	Powder River 2 MOA/ATCAA	11000	1100
	Powder River 3 MOA/ATCAA	4200	420
	Powder River 4 MOA/ATCAA	5500	550
	Gap A MOA/ATCAA	200	20
	Gap B MOA/ATCAA	260	30
	Gap C MOA/ATCAA	140	10
	Gap B Extension MOA/ATCAA		
	Gateway ATCAA	3400	350
	TOTAL	33,000	3,300
Alternative B	Powder River 1 MOA/ATCCA	4004	400
	Powder River 2 MOA/ATCAA	11489	1149
	Powder River 3 MOA/ATCAA	4574	457
	Powder River 4 MOA/ATCAA	5850	585
	Gap A MOA/ATCAA	131	13
	Gap B MOA/ATCAA	291	29
	Gap C MOA/ATCAA	150	15
	Gap B Extension MOA/ATCAA		
	Gateway ATCAA	3541	354
	TOTAL	*30,030*	*3,002*
Alternative C	Powder River 1 MOA/ATCCA	6055	606
	Powder River 2 MOA/ATCAA	11464	1146
	Powder River 3 MOA/ATCAA	4559	456
	Powder River 4 MOA/ATCAA	3833	383
	Gap A MOA/ATCAA	211	21
	Gap B MOA/ATCAA	287	29
	Gap C MOA/ATCAA	90	9
	Gap B Extension MOA/ATCAA		
	Gateway ATCAA	3531	353
	TOTAL	*30,030*	*3,003*

Table 6 - Alternative A Chaff and Flare Emissions

Emissions by Area (Alternative A) Pounds/year							
	VOC/TNMHC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$	CO_2
Powder River A MOA	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Powder River B MOA	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gateway ATCAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Black Hills ATCAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Powder River 1 MOA/ATCCA	0.33	1.07	0.11	0.01	0.87	0.87	9.02
Powder River 2 MOA/ATCAA	0.44	1.43	0.14	0.01	1.16	1.16	12.10
Powder River 3 MOA/ATCAA	0.17	0.55	0.05	0.00	0.44	0.44	4.62
Powder River 4 MOA/ATCAA	0.22	0.72	0.07	0.00	0.58	0.58	6.05
Gap A MOA/ATCAA	0.01	0.03	0.00	0.00	0.02	0.02	0.22
Gap B MOA/ATCAA	0.01	0.04	0.00	0.00	0.03	0.03	0.33
Gap C MOA/ATCAA	0.00	0.01	0.00	0.00	0.01	0.01	0.11
Gateway ATCAA	0.14	0.46	0.05	0.00	0.36	0.36	3.85
Total	1.32	4.29	0.43	0.03	3.47	3.47	36.30

Table 7 - Alternative B Chaff and Flare Emissions

Emissions by Area (Alternative B) tons/year							
	VOC/TNMHC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$	CO_2
Powder River A MOA	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Powder River B MOA	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gateway ATCAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Black Hills ATCAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Powder River 1 MOA/ATCCA	0.16	0.52	0.05	0.00	2.90	2.90	4.40
Powder River 2 MOA/ATCAA	0.46	1.49	0.15	0.01	8.33	8.33	12.64
Powder River 3 MOA/ATCAA	0.18	0.59	0.06	0.00	3.31	3.31	5.03
Powder River 4 MOA/ATCAA	0.23	0.76	0.08	0.00	4.24	4.24	6.44
Gap A MOA/ATCAA	0.01	0.02	0.00	0.00	0.09	0.09	0.14
Gap B MOA/ATCAA	0.01	0.04	0.00	0.00	0.21	0.21	0.32
Gap C MOA/ATCAA	0.01	0.02	0.00	0.00	0.11	0.11	0.17
Gateway ATCAA	0.14	0.46	0.05	0.00	2.57	2.57	3.89
Total (lbs/yr)	1.20	3.90	0.39	0.02	21.76	21.76	33.02

Table 8 - Alternative C Chaff and Flare Emissions

Emissions by Area (Alternative C) tons/year							
	VOC/TNMHC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$	CO_2
Powder River A MOA	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Powder River B MOA	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gateway ATCAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Black Hills ATCAA	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Powder River 1 MOA/ATCCA	0.24	0.79	0.08	0.00	4.39	4.39	6.67
Powder River 2 MOA/ATCAA	0.46	1.49	0.15	0.01	8.31	8.31	12.61
Powder River 3 MOA/ATCAA	0.18	0.59	0.06	0.00	3.30	3.30	5.02
Powder River 4 MOA/ATCAA	0.15	0.50	0.05	0.00	2.78	2.78	4.21
Gap A MOA/ATCAA	0.01	0.03	0.00	0.00	0.15	0.15	0.23
Gap B MOA/ATCAA	0.01	0.04	0.00	0.00	0.21	0.21	0.32
Gap C MOA/ATCAA	0.00	0.01	0.00	0.00	0.07	0.07	0.10
Gateway ATCAA	0.14	0.46	0.05	0.00	2.56	2.56	3.88
Total (lbs/yr)	1.20	3.90	0.39	0.02	21.76	21.76	33.03

Table 9 - State Airspace Allocations

BASELINE

Powder River A MOA/ATCCA		3,047
Montana	87%	
N. Dakota	0%	
S. Dakota	13%	
Wyoming	0%	
Total		1.00
Powder River B MOA/ATCAA		1,385
Montana	36%	
N. Dakota	0%	
S. Dakota	5%	
Wyoming	59%	
Total		1.00

PROPOSED

Powder River 1 MOA/ATCCA		5,974
Montana	89%	
N. Dakota	0%	
S. Dakota	0%	
Wyoming	11%	
Powder River 2 MOA/ATCAA		8,163
Montana	63%	
N. Dakota	0%	
S. Dakota	19%	
Wyoming	18%	1.00
Powder River 3 MOA/ATCAA		4,547
Montana	37%	
N. Dakota	50%	
S. Dakota	13%	
Wyoming	0%	1.00
Powder River 4 MOA/ATCAA		5,281
Montana	0%	
N. Dakota	55%	
S. Dakota	45%	
Wyoming	0%	1.00
Gap A MOA/ATCAA		949
Montana	83%	
N. Dakota	0%	
S. Dakota	0%	
Wyoming	17%	1.00
Gap B MOA/ATCAA		1,694
Montana	52%	
N. Dakota	0%	
S. Dakota	48%	
Wyoming	0%	1.00
Gap C MOA/ATCAA		670
Montana	0%	
N. Dakota	49%	
S. Dakota	51%	
Wyoming	0%	1.00

Table 10 Airspace Square Mile Allocations by State - Modified Alternative A

	PR 1A	PR 1B	PR 1C	PR 1D	Total PR 1	PR 2	PR 3	PR 4	Gap A	Gap B	Gap C
MT	765	1,222	680	2,673	5,340	5,147	1,696	-	783	875	-
ND	-	-	-	-	-	-	2,264	2,907	-	-	331
SD	-	-	-	-	-	1,561	587	2,374	-	819	339
WY	-	-	-	634	634	1,455	-	-	166	-	-
Total	765	1,222	680	3,307	5,974	8,163	4,547	5,281	949	1,694	670

Table 11 Baseline Emissions (tons/year)

	VOC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e
Montana	0.24	1.72	26.58	2.18	3.45	3.45	5,875	0.17	0.19	5,938
North Dakota	-	-	-	-	-	-	-	-	-	-
South Dakota	0.03	0.25	3.80	0.31	0.49	0.49	840	0.02	0.03	849
Wyoming	0.11	0.81	12.59	1.04	1.65	1.65	2,808	0.08	0.09	2,838
Total (tpy)	0.38	2.78	42.96	3.54	5.59	5.59	9,523	0.27	0.31	9,624

Table 12 Annual Emissions from the Proposed Training Modified Alternative A (tons/year)

	VOC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e
Montana	0.66	3.40	50.19	4.11	7.28	7.28	10,638	0.30	0.33	10,729
Net Change from Existing Conditions	0.42	1.68	23.62	1.93	3.83	3.83	4,763	0.13	0.14	4,791
North Dakota	0.11	0.61	9.19	0.75	1.26	1.26	1,991	0.06	0.06	2,006
Net Change from Existing Conditions	0.11	0.61	9.19	0.75	1.26	1.26	1,991	0.06	0.06	2,006
South Dakota	0.15	0.72	10.57	0.87	1.57	1.57	2,223	0.06	0.07	2,239
Net Change from Existing Conditions	0.11	0.48	6.77	0.55	1.08	1.08	1,383	0.04	0.04	1,390
Wyoming	0.13	0.64	9.27	0.76	1.39	1.39	1,939	0.05	0.06	1,955
Net Change from Existing Conditions	0.02	(0.18)	(3.32)	(0.28)	(0.26)	(0.26)	(869)	(0.02)	(0.03)	(882)
Total Alternative A	1.04	5.37	79.23	6.49	11.50	11.50	16,791	0.47	0.52	16,930
Total Net Change - Alt A minus	0.66	2.59	36.26	2.95	5.90	5.90	7,268	0.20	0.21	7,305
NEPA Significance Thresholds	100	100	100	100	100	100	NA	NA	NA	NA

Table 13 Annual Emissions from the Proposed Training Alternative B (tons/year)

	VOC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e
Montana	0.82	3.06	41.22	3.43	7.35	7.35	7,961.99	0.22	0.26	8,046.56
Net Change from Existing Conditions	0.58	1.34	14.64	1.25	3.90	3.90	2,086.51	0.06	0.07	2,108.59
North Dakota	0.51	2.02	27.66	2.29	4.74	4.74	5,450.92	0.15	0.18	5,508.82
Net Change from Existing Conditions	0.51	2.02	27.66	2.29	4.74	4.74	5,450.92	0.15	0.18	5,508.82
South Dakota	0.57	2.04	27.23	2.27	4.96	4.96	5,205.02	0.15	0.17	5,260.31
Net Change from Existing Conditions	0.53	1.80	23.43	1.95	4.46	4.46	4,365.07	0.12	0.14	4,411.42
Wyoming	0.20	0.71	9.29	0.78	1.74	1.74	1,746.35	0.05	0.06	1,764.90
Net Change from Existing Conditions	0.09	(0.11)	(3.30)	(0.26)	0.09	0.09	(1,061.39)	(0.03)	(0.03)	(1,072.70)
NEPA Significance Thresholds	100	100	100	100	100	100	N/A	N/A	N/A	N/A
Total (tpy)	1.72	5.04	62.44	5.23	13.20	13.20	10,841.11	0.31	0.35	10,956.14

Table 14 Annual Emissions from the Proposed Training Alternative C (tons/year)

	VOC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e
Montana	1.46	5.41	72.67	6.05	13.05	13.05	13,985.93	0.39	0.45	14,134.49
Net Change from Existing Conditions	1.23	3.69	46.09	3.86	9.60	9.60	8,110.45	0.23	0.26	8,196.52
North Dakota	0.13	0.71	10.46	0.86	1.51	1.51	2,218.55	0.06	0.07	2,242.12
Net Change from Existing Conditions	0.13	0.71	10.46	0.86	1.51	1.51	2,218.55	0.06	0.07	2,242.12
South Dakota	0.26	1.03	14.01	1.16	2.43	2.43	2,745.32	0.08	0.09	2,774.48
Net Change from Existing Conditions	0.23	0.78	10.21	0.85	1.93	1.93	1,905.36	0.05	0.06	1,925.59
Wyoming	0.28	1.02	13.55	1.13	2.49	2.49	2,577.65	0.07	0.08	2,605.03
Net Change from Existing Conditions	0.17	0.20	0.96	0.09	0.84	0.84	(230.08)	(0.01)	(0.01)	(232.56)
NEPA Significance Thresholds	100	100	100	100	100	100	N/A	N/A	N/A	N/A
Total (tpy)	1.76	5.38	67.72	5.66	13.88	13.88	12,004.27	0.34	0.39	12,131.67

APPENDIX L
SPECIAL STATUS PLANT AND ANIMAL SPECIES AND SCIENTIFIC NAMES

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APPENDIX L SPECIAL STATUS PLANT AND ANIMAL SPECIES AND SCIENTIFIC NAMES

State Listed *Special Status Species with Potential to Occur Under the Proposed Airspace and Their Counties of Occurrence (Page 1 of 9)

Common Name	Scientific Name	Project Area States and Counties				Protection Status	Habitat
		ND	SD	MT	WY		
Birds							
American bittern	*Botaurus lentiginosus*	All Counties		Carter	Crook	MT S3[1]	Seasonal or semi-permanent wetlands
American dipper	*Cinclus mexicanus*		Lawrence, Meade		Sheridan		Fast, clear, cold mountain streams
American white pelican	*Pelicanus erythrorhynchos*					MT S3[1]	Lakes, marshes, Rivers, reservoirs
Baird's sparrow	*Ammodramus bairdii*	Bowman			Campbell	MT S3[1], S[2]	Native mixed-grass prairie
Bald eagle	*Heliaetus leucocephalus*	All Counties (migrant)	Lawrence, Meade, Ziebach	All Counties (migrant)	Sheridan, Campbell	ND E[1], SD T[1]	Riparian and lacustrine
Black-backed woodpecker	*Picoides arcticus*			Powder River	Crook, Westin	MT S3[1], S[2], S[3]	Early successional burned forest of mixed conifer
Black-billed cuckoo	*Coccyzus erythropthalmus*	All Counties		Big Horn, Fallon	Crook, Campbell, Sheridan	MT S3[1]	Woodlands, thickets, prairie shrubs, wooded urban areas
Black tern	*Chlidonias niger*			Carter		MT S3[1], S[2]	Wetlands, marshes, small ponds
Burrowing owl	*Speotyto cunicularia*			All Counties	All Counties	MT S3[1], ND SOC[1] , S[2] S[3]	Open grasslands, associated with animal burrows
Common loon	*Gavia immer*				Crook, Sheridan	MT S3[1]	Clear, secluded mid-elevational lakes >4 acres

State Listed *Special Status Species with Potential to Occur Under the Proposed Airspace and Their Counties of Occurrence (Page 2 of 9)

Common Name	Scientific Name	Project Area States and Counties				Protection Status	Habitat
		ND	SD	MT	WY		
Ferruginous hawk	*Buteo regalis*	All Counties		Carter, Custer, Fallon, Powder River, Rosebud	All Counties	ND SOC[1], MT S3[1],S[2]	Native grasslands and shrublands
Grasshopper sparrow	*Ammodramus savannarum*		All Counties		All Counties	WY S3[1], SD S4[1]	Lightly-grazed mixed-grass prairie, meadows, hayfields
Horned grebe	*Podiceps auritus*			Passage migrant		MT S3[1]	large sized bodies of water, including rivers and small lakes
Lark bunting	*Calamospiza melanocorys*	All Counties				MT S4[1]	Sagebrush/sage prairie, secondary mixed-grass with dispersed shrubs
Long-billed curlew	*Numenius americanus*	Golden Valley, Bowman, Sioux, Slope		All Counties	Campbell, Crook, Sheridan, Westin	MT S3[1], S[2]	Short-grass prairie or grazed mixed-grass
Marbled godwit	*Limosa fedoa*	All Counties (migrant)				ND SOC[1]	Wetlands, streams, lakes, native prairie often heavily grazed
Mountain plover	*Charadrius montanus*			Big Horn, Treasure	Campbell, Crook, Westin	MT S3[1], S[2]	Prairie dog colonies, shortgrass prairies
Northern goshawk	*Accipiter gentilis*	All Counties (winter range)	Black Hills area	Carter, Powder River, Rosebud	Crook, Sheridan	ND SOC[1], MT S3[1], S[2]	Coniferous and aspen forests in mid-altitudes
Osprey	*Pandion haliaetus*		Lawrence		All Counties	SD T[1]	Near large rivers and lakes
Swainson's hawk	*Buteo swainsoni*	All Counties				ND SOC[1],SD SOC[1]	prairies

State Listed *Special Status Species with Potential to Occur Under the Proposed Airspace and Their Counties of Occurrence (Page 3 of 9)

Common Name	Scientific Name	Project Area States and Counties				Protection Status	Habitat
		ND	SD	MT	WY		
Upland sandpiper	*Bartramia longicauda*	Grant, Hettinger, Morton				ND SOC[1]	Dry, open mixed- grass prairie
Western yellow-billed cuckoo	*Coccyzus americanus americanus*		Lawrence	Big Horn, Carter, Custer, Rosebud	Rare - Crook, Sheridan	MT S3[1], S[2]	Cottonwood – riparian areas
Willet	*Tringa semipalmata*	All Counties				ND SOC[1]	Wetlands, uplands; native prairies
Wilson's phalarope	*Phalaropus tricolor*	All Counties				ND SOC[1]	Shallow wetlands or mudflats
Mammals							
Black-tailed prairie dog	*Cynomys ludovicianus*	Bowman		All Counties	All Counties	MT S3[1], S[2], S[3]	Short grass grazedrangeland
Hoary Bat	*Lasiurus cinereus*			All Counties		MT S3[1]	Riparian and forest
Meadow jumping mouse	*Zapus hudsonius*				Bear Lodge sub species in Crook, Westin	SOC[1]	Dense, tall, lush grasses in marshy areas, riparian upland slopes within ponderosa pine
Pallid bat	*Antrozous pallidus*			Big Horn, Carbon, Rosebud		MT S3[1], S[2], S[3]	Ponderosa pine and big sagebrush with rock outcrops
River otter	*Lutra canadensis*		Meade		Sheridan	SD T[1]	Rivers
Spotted bat	*Euderma maculatum*			Big Horn, Treasure		MT S3[1], S[2], S[3]	Open, arid habitats close to tall cliffs
Swift fox	*Vulpes velox*	Slope	Corson, Perkins, Butte		Crook, Campbell, Westin	ND SOC[1], MT S3[1], S[2]	Shortgrass prairies, grasslands
Townsend's big-eared bat	*Corynorhinus townsendii*			Big Horn, Carter, Custer, Powder River, Rosebud	All Counties	ND SOC[1], MT S3[1], WY S2[1], S[2], S[3]	Caves and abandoned mines nears conifer and bottomland woodlands

State Listed *Special Status Species with Potential to Occur Under the Proposed Airspace and Their Counties of Occurrence (Page 4 of 9)

Common Name	Scientific Name	Project Area States and Counties				Protection Status	Habitat
		ND	SD	MT	WY		
Fish							
Blue sucker	*Cycleptus elongates*	Morton, Sioux		Custer, Powder River, Rosebud, Treasure		ND SOC[1], MT S3[1], S[2]	Swift current turbid rivers w/ rocky or gravel bottoms
Burbot	*Lota lota*			Big Horn, Custer, PowderRiver, Rosebud		ND SOC[1]	Large rivers and cold, deep lakes and reservoirs
Longnose sucker	*Catostomus catostomus*		Butte, Meade			SD T[1]	Clear, cold, deep water of lakes and tributary streams
Northern redbelly dace	*Phoxinus eos*		Corson				Quiet waters from beaver ponds, bogs and clear streams
Paddlefish	*Polyodon spathula*	Morton, Sioux		Custer, Rosebud		ND SOC[1], MT S2[1], S[2]	Large rivers
Sauger	*Stizostedion canadense*			All Counties	Campbell, Sheridan	MT S2[1], S[2]	Large turbid rivers and shallow turbid lakes
Sturgeon chub	*Macrhybopsis gelida*	Billings, Bowman, Golden Valley, Slope, Sioux	Harding, Zeibach	Custer, PowderRiver, Rosebud	Campbell, Sheridan	ND C[1], MT S2S3[1], S[2]	Turbid rivers w/ sand or gravel bottoms
Yellowstone cutthroat trout	*Oncorhynchuys clarki bouvieri*			Rosebud	Sheridan	MT S2[1], S[2],S[3]	Clear, cold streams, rivers and lakes
Amphibians and Reptiles							
False map turtle	*Graptemys pseudogeographica*	Sioux	Corson			ND SOC[1], SD T[1]	Slow portion of larger rivers
Milksnake	*Lampropeltis triangulum*			Big Horn, Custer, Powder River, Rosebud		MT S2[1], S[2],S[3]	Open sagebrush grasslands, ponderosa pine, rocky outcrops and hillsides

State Listed *Special Status Species with Potential to Occur Under the Proposed Airspace and Their Counties of Occurrence (Page 5 of 9)

Common Name	Scientific Name	Project Area States and Counties				Protection Status	Habitat
		ND	SD	MT	WY		
Northern leopard frog	*Rana pipiens*				All Counties	S[2],S[3]	Low-elevation and valley bottom ponds, lakes, creeks, springs, marshes.
Plains spadefoot	*Spea bombifrons*	All Counties		Big Horn, Carter, Custer, Powder River, Rosebud, Treasure		MT S3[1], S[2],S[3]	Dry grasslands
Smooth green snake	*Liochlorophis vernalis*	All Counties			Crook,Westin	SD SOC[1]	Grasslands
Snapping turtle	*Chelydra serpentina*			Big Horn, Carter, Custer, Fallon, Powder River, Rosebud		MT S3[1], S[2]	Major rivers, smaller reservoirs and streams with sandy or muddy bottoms
Spiny softshell	*Apalone spinifera*			Big Horn, Carter, Custer, Powder River, Rosebud, Treasure	Campbell, Crook, Sheridan, Westin	MT S3[1], S[2]	Prairie rivers and larger streams.
Western hog-nosed snake	*Heterodon nasicus*	All Counties		All Counties		MT S2[1], S[2], S[3]	Sandy or gravelly habitats, often by rivers
Plants							
Alderleaf mountain-mahogany	*Cercocarpus montanus*			Treasure		MT S2S3[1]	Open slopes and breaks on the plains

State Listed *Special Status Species with Potential to Occur Under the Proposed Airspace and Their Counties of Occurrence (Page 6 of 9)

Common Name	Scientific Name	Project Area States and Counties				Protection Status	Habitat
		ND	SD	MT	WY		
American trailplant	*Adenocaulon bicolor*				Crook	WY SOC[1]	Moist, shady birch/hazelnut woods
Blue toadflax	*Nuttallanthus texanus*			Carter		MT S1S2[1], S[2]	Shale soils of plains grassland and woodland
Bractless hedge-hyssop	*Gratiola ebracteata*			Yellowstone		MT S2[1]	Dry mud around ponds in foothills and plains
Bractless mentzelia	*Mentzelia nuda*			Custer, Powder River, Rosebud		MT SOC[1]	Sandy or gravelly soil of open hills and roadsides
Bur oak	*Quercus macrocarpa*			Carter		MT S2[1], S[2]	Co-dominant with Rocky Mtn. juniper and ponderosa pine or with green ash.
Cottongrass bulrush	*Scirpus cyperinus*				Crook	WY SOC[1]	Wet low ground
Desert groundsel	*Senecio eremophilus*			Big Horn		MT S1S2[1]	Streambanks and riparian forests
Dwarf scouring rush	*Equisetum scirpoides*				Crook	SD M[1]	Shaded, damp, moss-covered rocks along streams in white spruce and fir woods.
Foxtail sedge	*Carex alopecoidea*				Crook	SD M[1]	Wet meadows and willow-sedge communities
Large flowered beardtongue	*Penstemon grandiflorus*			Custer		MT S1[1]	Sandy soil of valley on the plains
Letterman's needlegrass	*Stipa lettermanii*			Big Horn		MT S1S3[1]	Limestone talus and dry fescue grasslands
Marsh muhly	*Muhlenbergia glomerata*				Crook	SD M[1]	Limestone talus and dry fescue grasslands

State Listed *Special Status Species with Potential to Occur Under the Proposed Airspace and Their Counties of Occurrence (Page 7 of 9)

Common Name	Scientific Name	Project Area States and Counties				Protection Status	Habitat
		ND	SD	MT	WY		
Nannyberry	*Viburnum lentago*			Big Horn		MT S2S3[1], S[2]	Openings in riparian forests in the plains.
Narrowleaf milkweed	*Asclepias stenophylla*			Carter, Rosebud		MT S2[1], S[2]	Openings in riparian forests in the plains
Narrowleaf penstemon	*Penstemon angustifolius*			Carter, Fallon		MT S2S3[1], S[2]	Sandy prairie grasslands
Nine-anther prairie clover	*Dalea enneandra*			Big Horn, Custer, Fallon		MT S2S3[1]	Gravelly-soiled grasslands on the plains
Nuttall desert-parsley	*Lomatium nuttallii*			Big Horn, Rosebud		SD M[1], MT S2[1], S[2]	Open, rocky pine woodlands in mid to lower elevation.
Ovalleaf milkweed	*Asclepias ovalifolia*			Carter		MT S1S2[1], S[3]	Open pine woodlands, prairies and dry riparian terraces
Persistent-sepal yellow- cress	*Rorippa calycina*			Big Horn, Custer, Rosebud, Treasure, Yellowstone		MT SH[1], S[2]	Moist sandy to muddy banks of streams, ponds, reservoirs near high water line.
Prairie aster	*Aster ptarmicoides*			Carter			Open, dry grasslands on sandy or limestone plains
Prairie moonwort	*Botrychium campestre*				Crook	SD M[1], MT S1S2[1]	Prairies, dunes, and fields over limestone
Pregnant sedge	*Carex gravida*			Big Horn, Carter, Powder River, Rosebud			Green ash ravines and wooded draws
Sand cherry	*Prunus pumila*			Fallon		MT S1S3[1]	Sandy or rocky soils in grasslands on the plains.

State Listed *Special Status Species with Potential to Occur Under the Proposed Airspace and Their Counties of Occurrence (Page 8 of 9)

Common Name	Scientific Name	Project Area States and Counties				Protection Status	Habitat
		ND	SD	MT	WY		
Scribner's panic grass	*Dichanthelium oligosanthes var. scribnerianum*			Powder River		MT S1S2[1], S[2]	Sandy pinelands and wooded draws will well-drained soils.
Slender wedgegrass	*Sphenopholis intermedia*			Carter			Wet areas in valleys or foothills
Slender-branched popcorn-flower	*Plagiobothrys leptocladus*			Custer		MT S2S3[1], S[2]	Drying mud on shores of ponds in plains and foothills.
Smooth goosefoot	*Chenopodium subglabrum*			Custer		SD M[1]	Loose, sandy soils in early successional sparsely vegetated habitats.
Spotted Joepye-weed	*Eupatorium maculatum*			Big Horn		MT S1S2[1]	Moist meadows, springs, swamp thickets
Sweetwater milkvetch	*Astragalus aretioides*			Big Horn		MT S2S3[1], S[2]	Exposed ridges & slopes often in opening of Douglas fir
Trailing clubmoss	*Lycopodium complanatum*				Crook	SD M[1]	Semi-shady white spruce/paper birch forest
Treelike clubmoss	*Lycopodium dendroideum*				Crook	SD M[1], MT S2[1], S[3]	Moist coniferous forests
Visher's buckwheat	*Eriogonum visheri*			Carter, Powder River		SD M[1], MT S2[1], S[2]	Barren rock outcrops or clay outwash
White-bract stickleaf	*Mentzelia montana*			Custer			Grasslands and sparsely vegetated slopes in the plains.
Woolly twinpod	*Physaria didymocarpa var. lanata*			Big Horn, Rosebud		MT S2S3[1], S[2]	Sandy open grasslands or shrubland slopes in plains

State Listed *Special Status Species with Potential to Occur Under the Proposed Airspace and Their Counties of Occurrence (Page 9 of 9)

Common Name	Scientific Name	Project Area States and Counties				Protection Status	Habitat
		ND	SD	MT	WY		
Wyoming thistle	*Cirsium pulcherrimum*			Powder River		MT S3[1]	Sparsely-vegetated soils of washes and gullies.
Yellow bee plant	*Cleome lutea*			Big Horn		MT S1S2[1], S[2]	Open sandy sagebrush steppe

([1] = State Status/Ranking; [2] = BLM; [3] = USFS)

Sources: MTFWP 2005; MTNHP 2007; MTNHP 2014; Hagen et al. 2005; Nature Serve 2007; SDGFP 2008; SDGFP 2002; SDGFP 2014; SDB 2008; WYGF 2005; Fertig et al. 1994; WYNDD 2003; WYNDD 2014)

***Note**: Special Status Species are species that have some legal or policy protections in place (whether by state resource agencies or federal entities such as the BLM or USFS), but are not listed or proposed for protection under the Endangered Species Act.

C=candidate; D=delisted; E=endangered; PE = Proposed Endangered; HS=highly safeguarded; LE= listed endangered; LT= listed threatened; T=threatened; PT=proposed threatened; S=sensitive; SOC=species of concern; SR=salvage restricted; WSC=wildlife of special concern; XN= Experimental Nonessential population; M = Monitored

Values and their definitions:

State rank characterizes the relative rarity or endangerment within the state of Washington. Factors including, but not limited to, number of known occurrences are considered when assigning a rank. Two codes together represent an inexact range (e.g., S1S2) or different ranks for breeding and non-breeding populations (e.g., S1B, S3N).

S1 = Critically imperiled in the state because of extreme rarity or other factors making it especially vulnerable to extirpation from the state. (Typically 5 or fewer occurrences or very few remaining individuals or acres)

S2 = Imperiled in the state because of rarity or other factors making it very vulnerable to extirpation from the state. (Typically 6 to 20 occurrences or few remaining individuals or acres)

S3 = Rare or uncommon in the state. (Typically 21 to 100 occurrences)

S4 = Widespread, abundant, and apparently secure in state, with many occurrences, but the taxon is of long-term concern. (Usually more than 100 occurrences)

S5 = Demonstrably widespread, abundant, and secure in the state; believed to be ineradicable under present conditions.

SH = Historical occurrences only are known, perhaps not verified in the past 20 years, but the taxon is suspected to still exist in the state.

SP = Potential for occurrence of the taxon in the state but no occurrences have been reported.

SR = Reported in the state but without persuasive documentation which would provide a basis for either accepting or rejecting the report (e.g., misidentified specimen).

SRF = Reported falsely in the state but the error persists in the literature.

SU = Uncertain. Possibly in peril in the state, but status is uncertain. More information is need.

SX = Believed to be extirpated from the state with little likelihood that it will be rediscovered.

S? = Not yet ranked. Sufficient time and effort have not yet been devoted to ranking of this taxon.

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APPENDIX M
LETTERS OF AGREEMENT

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Denver Air Route Traffic Control Center/Salt Lake City Air Route Traffic Control Center/ 28th Bomb Wing, Ellsworth AFB

LETTER OF AGREEMENT

Effective: December 10, 2006

SUBJECT: POWDER RIVER TRAINING COMPLEX AND CROSSBOW ATCAA

1. PURPOSE: This Letter of Agreement defines areas, responsibilities, and procedures for the Powder River "A" and "B" Military Operations Areas (MOA), the Powder River Air Traffic Control Assigned Airspace (ATCAA), the Gateway ATCAA, the Black Hills ATCAA, and the Crossbow ATCAA, among Denver Air Route Traffic Control Center (Center), Salt Lake City Air Route Traffic Control Center (Center), and the 28th Bomb Wing, Ellsworth Air Force Base, South Dakota.

2. BACKGROUND: The 28th Bomb Wing (28 BW) has the operational requirement to perform high and low altitude training with, and without, support from the Belle Fourche Electronic Scoring Site located within the Powder River Training (PRT) Complex. Composite and multi-force exercises are also performed in the PRT Complex. The Crossbow ATCAA airspace redesign was developed to allow training aircraft to use only a small block of airspace needed for the exercise. It is not intended for use of large altitude blocks.

3. CANCELLATION: This agreement cancels the Letter of Agreement (LOA) among Denver Center, Salt Lake City Center, and the 28th Bomb Wing, Powder River Training Complex and Crossbow ATCAA, dated June 12, 2005.

4. SCOPE:

a. The provisions of this agreement are applicable to Denver Center, Salt Lake City Center, and the 28 BW and are supplemental to FAA Order 7610.4, Special Military Operations, and FAA Order 7110.65, Air Traffic Control, and appropriate military regulations. The provisions of this agreement may be canceled or amended by any one signatory notifying the others through written coordination.

b. The MOAs and ATCAAs are depicted in Attachments 1 through 4. The altitudes designated are described as follows:

(1) Powder River “A” MOA – Surface up to, but not including, FL180.

(2) Powder River “B” MOA – 1,000 feet AGL up to, but not including, FL180.

(3) Powder River ATCAA – FL180 to FL260 inclusive, or as assigned.

(4) Gateway ATCAA – FL180 to FL260 inclusive, or as assigned.

(5) Black Hills ATCAA – FL200 to FL230 inclusive.

(6) Crossbow ATCAA – FL270 to FL450 inclusive, or as assigned. (See paragraph 6b(7) for non-usable times and intended use of airspace.)

c. The Powder River "A" MOA, Powder River "B" MOA, Powder River ATCAA, Gateway ATCAA, and Black Hills ATCAA are all parts of the PRT Complex. Reference to the PRT Complex may include any one area or combinations of areas. The Crossbow ATCAA is not part of the PRT Complex.

5. RESPONSIBILITIES:

a. The 28 BW shall:

(1) Be the scheduling agency.

(2) Be responsible for the overall airspace management of the airspace within the complex.

(3) Ensure that all participating aircrews are familiar with and adhere to the provisions of this agreement.

b. Salt Lake City Center is the controlling agency for the Powder River "A" MOA.

c. Denver Center is the controlling agency for:

(1) Powder River "B" MOA.

(2) Powder River ATCAA.

(3) Gateway ATCAA.

(4) Black Hills ATCAA.

(5) Crossbow ATCAA.

6. PROCEDURES: Unless otherwise coordinated:

a. Time Conversion. The symbol ‡ indicates that during periods of Daylight Savings Time, effective hours will be 1 hour earlier than shown.

b. Airspace Coordination.

(1) The 28 BW shall ensure that the Denver Center Military Coordinator (MC) and the Salt Lake City Center MC receive the daily schedule for the planned activity in the PRT Complex and/or the Crossbow ATCAA by 2200Z‡ (1500 local), the day prior, for the next 24-hour period that starts at 0700Z‡ (0000 local). All changes and/or modifications to the schedule shall be coordinated at least 2 hours in advance.

(2) Only the airspace, time period, and altitude blocks needed to accomplish the desired maneuvers shall be requested.

(3) When cleared to operate in the Crossbow ATCAA at and above FL270, aircrews shall maintain a listening watch on Denver Center frequency 133.67/322.5. Should it become necessary for Denver Center or Salt Lake City Center to recall the airspace at and above FL270, it is expected that the aircrews will be able to return the airspace within a maximum of 30 minutes.

NOTE: Salt Lake City Center should coordinate with Denver Center MC position for recall of airspace at and above FL270.

(4) The 28 BW airspace manager shall provide Denver Center and Salt Lake City Center a current telephone list of personnel to contact in the event either Center must recall or restrict the use of scheduled airspace. If either Center recalls or restricts the use of scheduled airspace, they shall inform the other Center as soon as practicable.

(5) The Powder River "A" and "B" MOAs shall be scheduled simultaneously, not separately.

(6) "Time of Use" for the Powder River "A" and "B" MOAs are "Intermittent by NOTAM."

(7) The Crossbow ATCAA is not usable at and above FL270 between 1500-1800Z‡ (0800-1100 local) and 2130-2330Z‡ (1430-1630 local) daily. The airspace will be given in block altitudes of 1000 feet per aircraft (i.e., A flight of two aircraft will generally be approved for a 2000 foot block). When a climb from lower altitude is required within the lateral confines of the ATCAA, an expanded block may be temporarily granted by the controller until the formation is established within the requested block.

(8) Scheduling of the Powder River MOAs are predicated on the procedures in paragraph 6b(1) and (4); however, the areas are not released to the user until the pilot(s) have received a clearance into the area by Denver Center or Salt Lake City Center.

NOTE: If an aircraft is scheduled to enter the Powder River MOAs via a Military Training Route (MTR), the pilot shall request clearance into the MTR and the Powder River MOA simultaneously. Entry into the Powder River MOA is not automatic with the MTR clearance.

(9) The Black Hills ATCAA will only be used for marshalling or aerial refueling for multi-force exercises, in conjunction with the remaining PRT Complex airspace, with at least 3 administrative working days notification to Denver Center.

(10) For aircraft other than on an MTR, each FAA facility is responsible for notifying the other facility whenever participating aircraft have requested entry into the PRT Complex or Crossbow ATCAA. This can be accomplished through the facilities' operations supervisors or from controller to controller.

(11) Denver Center:

For aircraft entering PRT Complex area(s) from RAP308069 (ARCOT) or from RAP326036:

(a) Sector 31 shall coordinate activation, changes of assigned altitude blocks, and deactivation of the PRT Complex area(s) with Salt Lake City Center Sector 17 and the adjacent Minneapolis Center Sector(s), and when appropriate, Sectors 22 and 32.

(b) Sector 32 shall coordinate activation, changes of assigned altitude blocks, and deactivation of the Crossbow ATCAA with Salt Lake City Center Sector 17 and the adjacent Minneapolis Center Sector(s).

(12) Salt Lake City Center:

For aircraft entering PRT Complex area(s) from MLS146037:

(a) Sector 17 shall coordinate activation, changes of assigned altitude blocks, and deactivation of the PRT Complex area(s) with Denver Center Sectors 22 and 31 and the adjacent Minneapolis Center Sector(s), and when appropriate, Denver Center Sector 32.

(b) Sector 17 shall coordinate with Denver Center Sectors 22 and 31 prior to approving altitude changes within the PRT Complex, and with Denver Center Sector 32 prior to approving altitude changes within the Crossbow ATCAA, and shall advise the adjacent Minneapolis Center sector(s) of any altitude changes.

(13) When Denver Center and or Salt Lake City Center grant approval for operations in the Powder River MOAs, air traffic control (ATC) responsibility does not include Class G airspace. The Aeronautical Information Manual, Chapter 3, Section 4, defines ATC and VFR/IFR pilot responsibilities within MOAs.

c. Flight Planning and En Route Procedures.

(1) Flights shall enter the MOAs at 16,000 feet MSL using the standard entry point (ARCOT) when utilizing only the MOAs or when entering below FL180. When entering at or above FL180, flights shall enter within the scheduled ATCAA altitude block.

(2) Two navigation fixes, MLS119074 (LIBON) and RAP301089 (PLAAT), are required as a minimum when flight planning into the PRT Complex and/or the Crossbow ATCAA so that Denver Center and Salt Lake City Center receive proper flight plan information. Two unnamed fix/radial distances and four named fixes have been associated with Fix/Radial/Distance to simplify internal flight planning (see Attachment 2, Powder River ATCAA and Attachment 3, Crossbow ATCAA). They are identified as:

(a) ARCOT	RAP308069	(44° 51.9' - 104° 01.8') – standard entry fix
(b) LIBON	MLS119074	(45° 31.1' - 104° 41.5') – navigation fix
(c) PLAAT	RAP301089	(44° 59.8' - 104° 31.0') – navigation fix
(d) DRAGG	RAP295077	(44° 45.5' - 104° 25.9') – standard exit fix
(e)	RAP326036	(44° 32.0' - 103° 19.0') – southeast entry/exit fix
(f)	MLS146037	(45° 48.0' - 105° 40.0') – northwest entry/exit fix

(3) The aircraft shall file using the following format at a minimum (entry to exit): ..ARCOT..LIBON..PLAAT/D(hr)+(min)..DRAGG.. Other entry and exit fixes may be used prior to and after this required format.

Example:
..MLS146037..ARCOT..LIBON..PLAAT/D(hr)+(min)..DRAGG..RAP326036..

(4) Flight plan "Remarks" should include the airspace, entry and exit times, and MARSA, if appropriate.

(5) It shall be the responsibility of each pilot cleared to operate in the addressed airspace to remain within the confines of the airspace and to remain on the assigned Denver Center or Salt Lake City Center frequency unless approved to change frequency for a specified period of time. Radio communications are severely reduced below 16,000 feet MSL in the Powder River area.

NOTE: See Attachment 5 for communications frequencies of interest for the PRT Complex and the Crossbow ATCAA.

(6) Military Authority Assumes Responsibility for Separation of Aircraft (MARSA) shall apply between participating aircraft while operating in the PRT Complex and the Crossbow ATCAA and aircraft operating on MTRs that traverse the MOAs.

(7) Pilots shall use the current Rapid City, South Dakota, altimeter setting while operating below FL180 and an altimeter setting of 29.92 while operating at and above FL180 within the MOAs/ATCAAs. The altimeter setting shall be issued to participating aircraft as part of the clearance into the Powder River MOAs.

(8) All aircraft proposing to use the defined airspace shall have an operating transponder. The lead aircraft of formation flights shall remain on the assigned discrete beacon code. While operating within the PRT Complex and the Crossbow ATCAA, wingmen not previously assigned a discrete beacon code shall squawk code 4000 after formation breakup. After the aircraft have joined up in formation, and prior to exiting the airspace, wingmen shall squawk standby.

(9) Unless otherwise coordinated, pilots shall operate into and out of the PRT Complex on an IFR flight plan. Aircraft requesting to depart the airspace VFR are responsible for notifying either Denver Center or Salt Lake City Center, as appropriate.

(10) Stereo flight routes are available for local sorties from Ellsworth AFB.

(a) PRT1: RCA..RAP110060..ARCOT..LIBON..PLAAT/D1+00..DRAGG..RCA

(b) PRT2:
RCA..RAP110060..ARCOT..LIBON..PLAAT/D1+00..DRAGG..RAP179037..
BFF018067..BFF327070..CDR291055.IR499.JAC186035..PIH069090..DDY..
RCA

(c) PRT3:
RCA..RAP152027..RAP336053..RAP285081..RAP273070..RAP212070/D0+45
.AR678.RAP199082..RAP345042..ARCOT..LIBON..PLAAT/D1+00..DRAGG..
RCA

(d) PRT4:
RCA..RAP110060..ARCOT..LIBON..PLAAT/D1+00..DRAGG..SHR098087..
RAP285081..RAP273070..RAP212070/D0+45.AR678.RAP199082..RCA

(e) PRT5:
RCA..RAP213061..BFF018067..BFF327070..CDR291055.IR499.JAC186035..
PIH069090..DDY..RAP297035..ARCOT..LIBON..PLAAT/D1+00..DRAGG..RCA

d. Exit Procedures.

(1) Aircraft on an MTR shall exit the Powder River area at the expiration of the filed delay time and at an altitude within the published vertical limits of the MTR.

(2) Aircrews should inform ATC of their exit time at least 10 minutes prior to exiting the airspace. All aircraft shall remain within the PRT Complex or the Crossbow ATCAA until an IFR clearance to exit the airspace has been issued by either Denver Center or Salt Lake City Center.

(3) Use of the standard exit point (DRAGG) at 17,000 MSL is expected for aircraft returning directly to Ellsworth AFB; however, the other entry/exit fixes may be used in Class A for flights with follow-on activities or desiring a high approach into Ellsworth.

(4) Pilots shall, when requesting to exit the Powder River MOAs/ATCAA, contact Denver Center on 127.95 or 338.2 MHz, at or below FL260. When exiting the Crossbow ATCAA at and above FL270, pilots shall contact Denver Center on 133.67 or 322.4 MHz. Pilots shall, when exiting the Powder River MOAs/ATCAA at the MLS146037 fix (northwest exit fix), contact Salt Lake City Center on 126.85 or 305.2 MHz.

(5) If there is no contact with Denver Center on frequency 127.95 or 338.2 MHz, attempt contact with Denver Center on 135.6 or 363.02 MHz or Salt Lake City Center on 364.8 MHz (Tactical).

(6) The PRT Complex and Crossbow ATCAA area airspaces are automatically released back to the controlling agencies when the last aircraft has exited the airspace.

7. LOST COMMUNICATIONS:

a. If radio failure occurs before a delay clearance in the PRT Complex or the Crossbow ATCAA is received, follow the procedures specified in CFR part 91.185 and the DOD Flight Information Handbook.

b. If radio failure occurs after the delay clearance has been issued, aircraft shall exit the airspace at the expiration of the delay time.

c. If recovering VFR to Ellsworth AFB, the aircraft shall climb or descend to 15,500 feet MSL prior to departing the area and proceed directly to the Initial Approach Fix for the runway of departure or active runway, if known, and execute the approach in accordance with the procedures specified in the DOD Flight Information Handbook.

d. If recovering IFR to Ellsworth AFB, the aircraft shall climb or descend to 17,000 feet MSL or the lowest altitude of the assigned block, whichever is highest, prior to departing the area and proceed directly to the Initial Approach Fix for the runway of departure or active runway, if known, and execute the approach in accordance with procedures specified in the DOD Flight Information Handbook.

e. If not recovering to Ellsworth AFB, follow the procedures specified in CFR part 91.185 and the DOD Flight Information Handbook.

8. ATTACHMENTS:

a. Attachment 1. Powder River "A" MOA and Powder River "B" MOA.
b. Attachment 2. Powder River ATCAA and Gateway ATCAA.
c. Attachment 3. Crossbow ATCAA.
d. Attachment 4. Black Hills ATCAA and PRT Complex.
e. Attachment 5. Communications Frequencies.

9. APPROVED:

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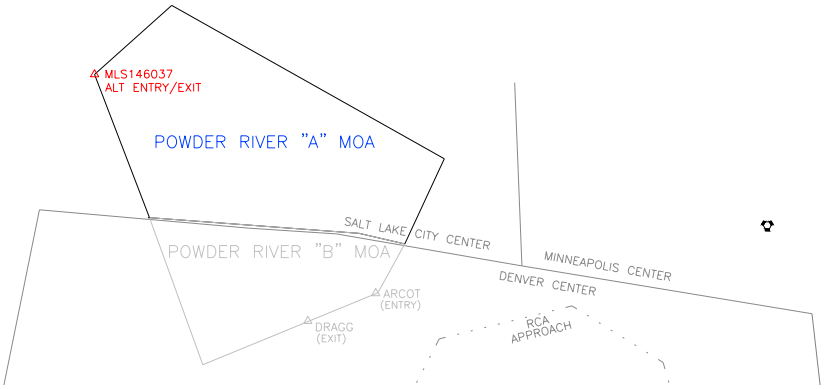
Denver Air Route Traffic Control Center/Salt Lake City Air Route Traffic Control Center/28th BW, Ellsworth AFB – Letter of Agreement

Attachment 1

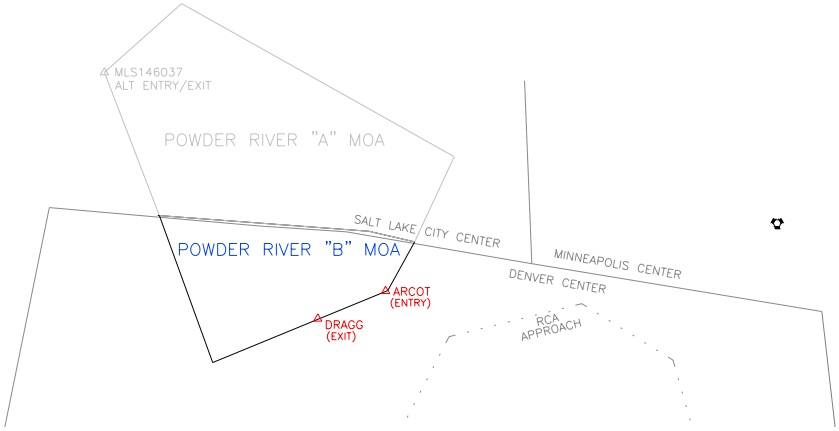
The **POWDER RIVER "A" MOA** is designated from the surface up to, but not including, FL180. The boundaries are:

Beginning at
46°05'00"N - 105°12'02"W (MLS 104036) to 45°25'00"N - 103°36'02"W (RAP 331090) to
45°04'00"N - 103°51'02"W (RAP 318075) to 45°07'00"N - 104°07'02"W (GCC 041076) to
45°12'00"N - 105°21'02"W (GCC 357052) to 45°48'00"N - 105°40'02"W (MLS 146037) to
the point of beginning.



The **POWDER RIVER "B" MOA** is designated from 1,000 feet AGL up to, but not including, FL180. The boundaries are:

Beginning at
45°04'00"N - 103°51'02"W (RAP 318075) to 44°52'00"N - 104°01'02"W (RAP 308069) to
44°35'00"N - 105°03'02"W (GCC 044025) to 45°12'00"N - 105°21'02"W (GCC 357052) to
45°07'00"N - 104°07'02"W (GCC 041076) to the point of beginning.

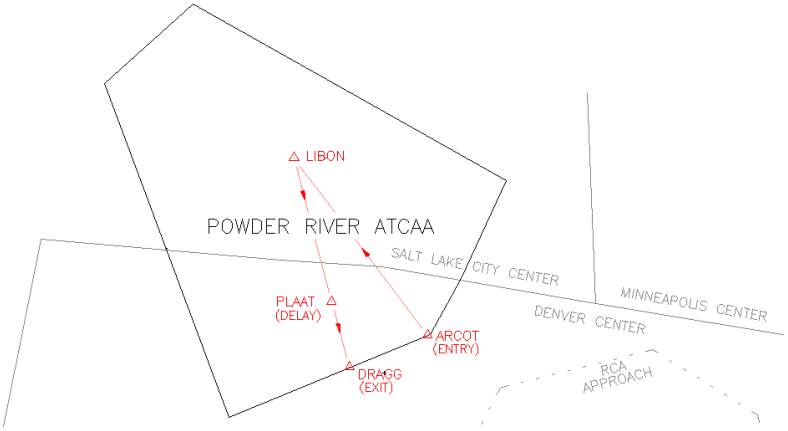


REV 1
01/15/2010

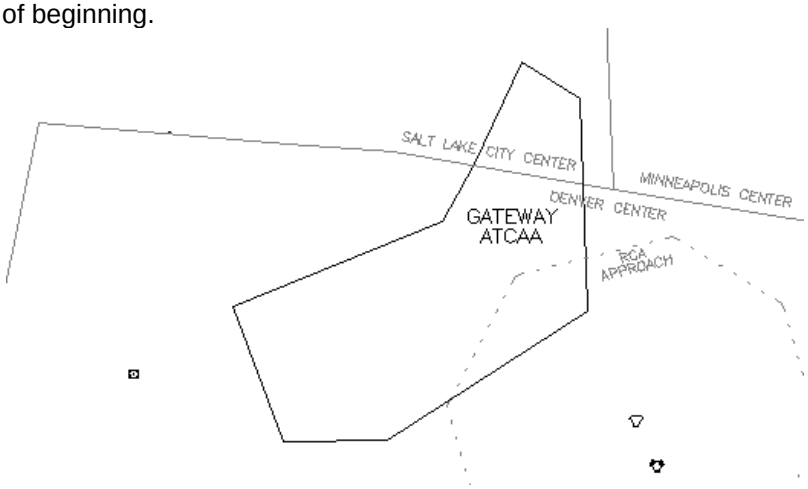
Denver Air Route Traffic Control Center/Salt Lake City Air Route Traffic Control Center/28th BW, Ellsworth AFB – Letter of Agreement

Attachment 2

The POWDER RIVER ATCAA is designated from FL180 through FL260 inclusive, or as assigned. The boundaries are:
Beginning at
46°05'00"N - 105°12'02"W (MLS 104036) to 45°25'00"N - 103°36'02"W (RAP 331090) to
45°04'00"N - 103°51'02"W (RAP 318075) to 44°52'00"N - 104°01'02"W (RAP 308069) to
44°35'00"N - 105°03'02"W (GCC 044025) to 45°48'00"N - 105°40'02"W (MLS 146037) to
the point of beginning.



The GATEWAY ATCAA is designated from FL180 through FL260 inclusive, or as assigned. The boundaries are:
Beginning at
44°35'00"N - 105°03'02"W (GCC 044025) to 44°52'00"N - 104°01'02"W (RAP 308069) to
45°04'00"N - 103°51'02"W (RAP 318075) to 45°25'00"N - 103°36'02"W (RAP 331090) to
45°17'00"N - 103°19'02"W (RAP 338080) to 44°32'00"N - 103°19'02"W (RAP 326036) to
44°06'00"N - 104°19'02"W (RAP 265057) to 44°06'00"N - 104°49'02"W (GCC 103035) to
the point of beginning.



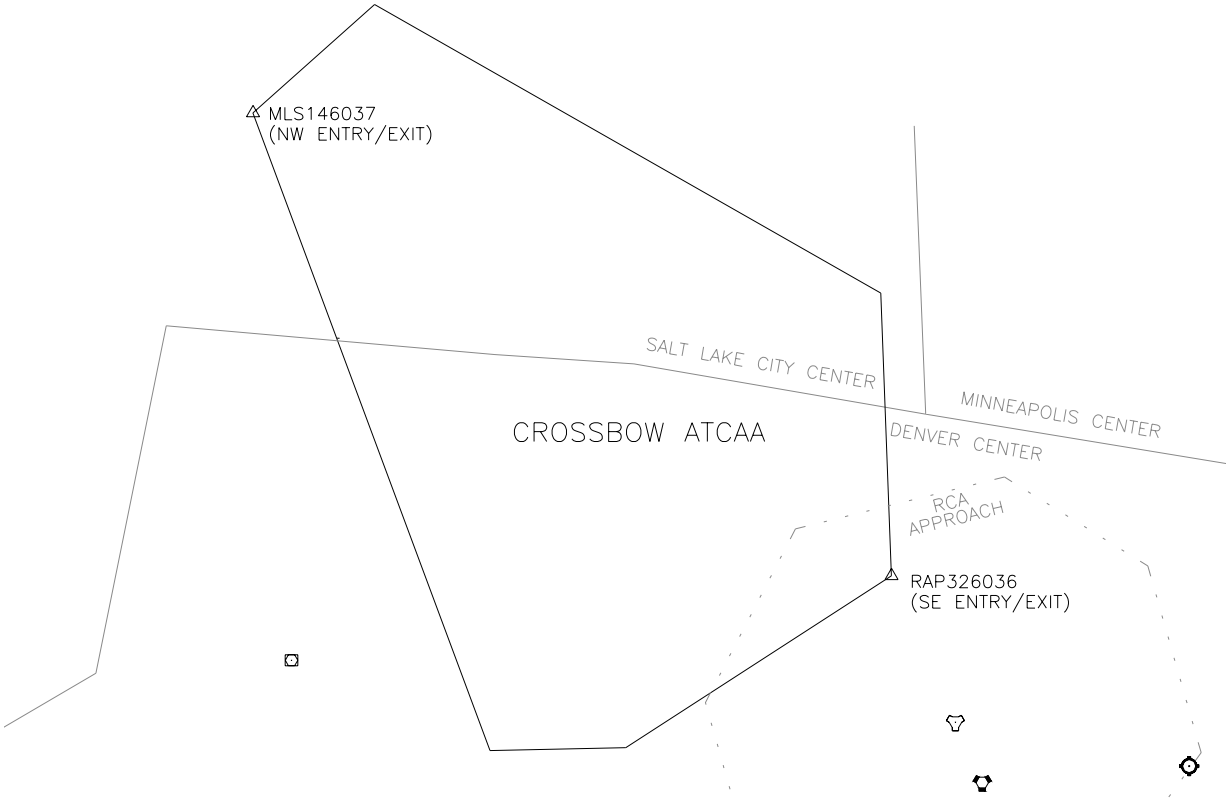
REV 1
01/15/2010

Denver Air Route Traffic Control Center/Salt Lake City Air Route Traffic Control Center/28th BW, Ellsworth AFB – Letter of Agreement

Attachment 3

The **CROSSBOW ATCAA** is designated from FL270 through FL450 inclusive, or as assigned. The boundaries are:

Beginning at
46°05'00"N - 105°12'02"W (MLS 104036) to 45°17'00"N - 103°19'02"W (RAP 338080) to
44°32'00"N - 103°19'02"W (RAP 326036) to 44°06'00"N - 104°19'02"W (RAP 265057) to
44°06'00"N - 104°49'02"W (GCC 103035) to 45°48'00"N - 105°40'02"W (MLS 146037) to
the point of beginning.



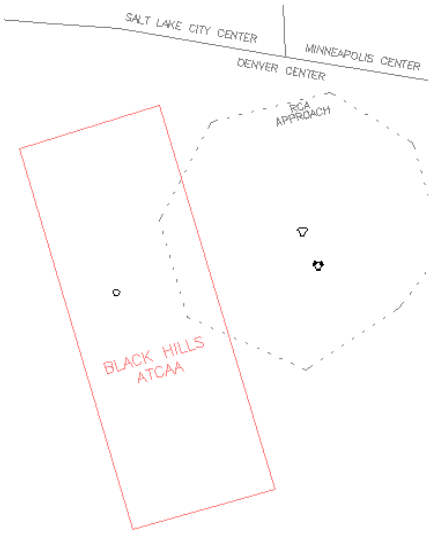
REV 1
01/15/2010

Denver Air Route Traffic Control Center/Salt Lake City Air Route Traffic Control Center/28th BW, Ellsworth AFB – Letter of Agreement

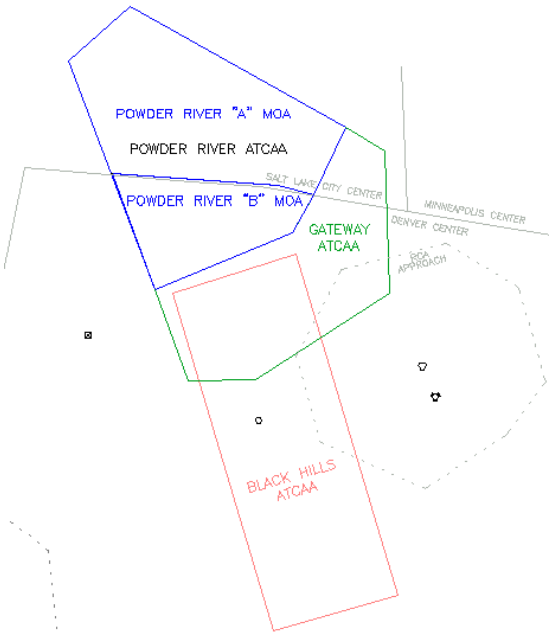
Attachment 4

The **BLACK HILLS ATCAA** is designated from FL200 through FL230 inclusive. The boundaries are:

Beginning at
44°45'06"N - 104°00'00"W (RAP 305063) to 44°33'48"N - 104°54'48"W (RAP 281089) to
42°46'12"N - 104°14'30"W (RAP 204090) to 42°56'12"N - 103°20'24"W (RAP 180064) to
the point of beginning.



POWDER RIVER TRAINING COMPLEX



REV 1
01/15/2010

Denver Air Route Traffic Control Center/Salt Lake City Air Route Traffic Control Center/28th BW, Ellsworth AFB – Letter of Agreement

Attachment 5

Communications Frequencies

Note: Radio communications are severely reduced below 16,000 feet MSL in the Powder River area.

Denver Center:

Sector 31, Powder River "B" MOA/ATCAA/Black Hills ATCAA areas below FL260 127.95/338.2 MHz. (If unable use 135.6 or 363.02 MHZ).

Sector 32, Crossbow ATCAA above FL270
133.67/322.5 MHz.

Tactical, 296.7 MHz.

Salt Lake City Center:

Sector 17, Powder River "A" MOA/ATCAA surface and up
126.85/305.2 MHz.

Tactical, 364.8 MHz.

REV 1
01/15/2010

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BLM-MOU- MT925- 1001

MEMORANDUM OF UNDERSTANDING

between
Department of the Interior,
Bureau of Land Management, Montana State Office
and
the United States Air Force 28th Operations Group
Ellsworth Air Force Base, South Dakota
concerning
Airspace Coordination of Powder River Military Operating Area

1. PURPOSE

To provide procedures and guidance for the coordination of aerial operations within Powder River A and B Military Operations Areas hereinafter referred to as PRMOA, between the 28th Operations Support Squadron, (28 0SS) of Ellsworth Air Force Base (AFB), South Dakota hereinafter referred to as 28th OSS, and the Bureau of Land Management (BLM), Miles City Dispatch Center (MCDC), Miles City, Montana hereinafter referred to as MCDC.

2. AUTHORITIES / REFERENCES

Title 14 CFR, Sections 91, 73,
Federal Aviation Administration (FAA) Order JO 7610.4M Special Operations Training Guide
Federal Aviation Order JO7110.65 Air Traffic Control
AFI 25-201, Support Agreements Procedures, 1 May 2005
AFI 10-802, Military Support to Civil Authorities, 19 April 2002
BLM Departmental Manual 9400
Interagency Airspace Coordination Guide
Taylor Grazing Act of June 28, 1924 (48 Stat. 1269; 43 U.S.C. 315)
Federal Land Policy and Management Act of 1976, Sec. 307 (b) (43 U.S.C. 1737)
Federal Wildland Fire Management Policy and Program Review, 1995, 2000

3. SCOPE

This MOU applies to PRMOA airspace managed and controlled by the 28th OSS for joint-use by military aircraft of all service branches.

The MCDC authorities are responsible for conducting and coordinating aerial operations within the PRMOA airspace. All aircraft under BLM operational control shall adhere to Title 14 CFR Parts 91, 133, 137 and this document.

4. ADMINISTRATION

Nothing in this MOU shall obligate the BLM or the United States Air Force to expend appropriations or to enter into any contract or other obligation. Specific work projects or activities that involve the transfer of funds, services, or property between the parties to this MOU will require the execution of separate agreements or contracts, contingent upon the availability of funds as appropriated by Congress. Each subsequent agreement or arrangement involving the transfer of funds, services, or property shall be made in writing and shall be independently authorized by appropriate statutory authority and regulations, including those applicable to procurement activities.

Any records or documents generated as a result of this MOU shall become part of the official BLM record maintained in accordance with applicable BLM Records Management policies. Any request for release of records associated with the implementation of this MOU to anyone outside the parties must be determine based on applicable laws, including the Freedom of Information Act and the Privacy Act. The BLM cannot agree to maintain the confidentiality of information received from the Cooperating Agency except to the extent that it is permitted under the Freedom of Information Act and the Privacy Act.

5. RESPONSIBILITIES

A. The BLM is responsible for the following:

a. MCDC services as the focal point and primary contact for the coordination of all BLM aerial operations to include the issuance and cancellation of Temporary Flight Restrictions (TFRs), Title 14 CFR Section91.193. The BLM shall also be responsible for informing 28th OSS of any TFR changes.

b. Contact 28th OSS, as appropriate, to obtain prior approval for aircraft having an operational need to operate during Wildland fire incidents or other emergency operations within the PRMOA using the National Firefighting transponder Code of 1255.

c. Provide the 28th OSS with the up-to-date information concerning BLM activity within the PRMOA when requested.

d. Initiate the notification process for BLM activities affecting PRMOA in accordance with Flight Information publication (FLIP) AP/1B.

e. The BLM Montana Dakotas State Aviation Manager or assigned agency airspace coordination specialist shall:

1. Be the focal point for resolving difficulties in in scheduling airspace with the 28th OSS.
2. Coordination with 28th OSS Airspace Manager on all conflicts or incidents occurring within PRMOA.
3. Service as the focal point for administrative change sor additiosn to the MOU.

B. The 28th Operations Support Squadron will be responsible for:

a. Ensure TFR information is distributed to all flying unties utilizing the PRMOA.

b. Coordinate routine requests from BLM dispatchers that need to conduct aviation operation within PRMOA with other affected agencies.

c. Provide BLM with the up-too-date schedule information concerning DOD activity within the PRMOA when requested.

d. The Airspace manager at Ellsworth AFB is the Military focal point for administrative changes or additions to this document.

e. Provide BLM with a current copy of the 28 BW "Mid-Air Collision Avoidance (MACA) Program Guide"

6. COORDINATION PROCIEDRUES FOR NON-FIRE OPERATIONS

A. BLM Requirements:
When BLM dispatchers or aviation managers become aware of situations that my necessitate flight within the PRMOA , they shall:

a. Coordinate all BLM aviation operations affecting PRMOA with 28th OSS in a timely manner.

b. A pre-flight briefing of BLM aircrews will include scheduled PRMOA activity.

c. Notify 28th OSS of the completion of all flight activity at the end of each day as appropriate.

B. The 28th OSS, upon notification of BLM proposed aerial operations within PRMOA will:

a. Update military units scheduled for PRMOA, of non-military aviation operations scheduled for simultaneous activity. This advisory will include times, altitudes, and locations of non-military operations as well as a de-confliction plan.

b. Coordinate the current airspace status with MCDC and any scheduled flights for the requested time period.

c. Advise MCDC of any changes in PRMOA status that will not be conducive to joint operations and provide an estimate when operations can begin, or be resumed.

7. COORDINATION PROCEDURES FOR FIRE RESPONSE WITH (TFR): The BLM shall:

a.) Check status of PRMOA airspace using the FAA Special Use Area (SUA) website and confirm with 28th OSS.

b.) Notify 28th OSS of a fire location or upon the request of a TFR within the PRMOA

c.) Request a TFR with the appropriate FAA Air Route Traffic Control Center (ARTCC).

d.) Advise 28th OSS of any modification, changes, or cancellation of the TFR.

8. CANCELLATION OF TFRs

The TFRs will be canceled by BLM through established procedures at the appropriate ARTCC. The MCDC will notify 28th OSS, as appropriate, when air operations for the TFT are complete.

9. INCIDENT /ACCIDENT

In the event of an airspace incident involving BLM and DOD aircraft, the BLM and 28th OSS will notify the other agency immediately.

The BLM and the 28th OSS will follow their standard incident/accident or hazard reporting procedures and coordinate appropriately as needed.

Incidents shall be cooperatively reviewed between the BLM and Ellsworth AFB and reported appropriately.

10. EDUCATION AND AWARENESS

Education and awareness is essential to the mutual efforts to enhance interagency flight safety. Meetings between BLM and USAF personnel are encouraged to foster open communication.

11. POINTS OF CONTACT:

Ellsworth AFB
28th Operations Support Squadron
Scott Drive, Suite 200
Ellsworth AFB, SD 57706-4710

Airspace Manager

Office	605-385-1230
Fax Unclassified	605-685-1241
After hours	605-431-3580

28th OSS Scheduling

Office	605-352-4746
After hours	605-431-3025

BLM Aviation Management

Montana Dakotas Aviation Office
Aviation Officer
1299 Rim Top Drive
Billings, MT 59105
Work: 406-896-2912

BLM Miles City Fire Operations Zone
111 Garryowen Road
Miles City, MT 59301

Unit Aviation Officer
Work: 406-233-2909

Miles City Dispatch Center
Dispatch Office

Normal Hours	406-233-2900
After Hours	406-233-0148
Fax	406-233-2945

Center Manager

Office	406-233-2905

Aircraft Dispatcher

Office	406-233-2908

12. **APPROVALS / SIGNATURES**

Approved _____ Oct 7, 2009
GENE TERLAND Date
Montana/Dakotas BLM State Director

Approved _____ 22SEP09
WILLIAM G. ELDRIDGE, Colonel, USAF Date
Commander, 28th Operations Group, Ellsworth AFB, SD

APPENDIX N
GOVERNMENT-TO-GOVERNMENT AND SECTION 106 CORRESPONDENCE

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SUMMARY OF FORMAL TRIBAL COMMUNICATIONS

Several laws and regulations address the requirement of federal agencies to notify or consult with American Indian tribes or otherwise consider their interests when planning and implementing federal undertakings. A series of letters, emails, and phone calls were made to the four American Indian Reservations partially or wholly located under the airspace—the Crow Indian Reservation, the Northern Cheyenne Indian Reservation, the Standing Rock Indian Reservation, and the Cheyenne River Reservation. Letters drafted by the Department of the Air Force were mailed to each Tribal Historic Preservation Office (THPO) and relevant Bureau of Indian Affairs offices in addition to tribal councils, tribal chairmen, and committees in order to inform of the proposed Powder River Training Complex (PRTC) airspace and inquire about the arrangement of government to government meetings, and ask how tribal lands might be affected by the project.

Table N-1 is a summary of all formal contact with the Crow, Northern Cheyenne, Standing Rock Sioux, and Cheyenne River Sioux Tribes. Next is a series of tables summarizing e-mails (Table N-2), and letters to other Tribes (Table N-3), as well as a list of formal Section 106 Consultation correspondence to public agencies (Table N-4).

Table N-1. Summary of Formal Contacts by Ellsworth AFB with Crow, Northern Cheyenne, Standing Rock Sioux, and Cheyenne River Sioux Tribes

Date of Contact	*Type of Contact*	*Contact Information*	*Comments*
Crow Tribe			
15 Feb 2008	Letter	Col Vander Hamm to Chairman Venne	Requesting Government-to-Government Consultation Regarding PRTC (prior to Notice of Intent)
09 May 2008	Visit	Col Vander Hamm to Crow Agency	Prior to Notice of Intent; Briefed Tribal Secretary Mr. Old Coyote (assigned as PRTC POC) and Chairman Black Eagle
12 Jun 2008	Letter	ACC/A7 to Crow Legal Counsel	Requesting Information to be Used for EIS
23 Jun 2008	Scoping Meeting	Held in Crow Agency	Chairman Black Eagle Spoke of Future Coal Gasification Plant and Pipeline to RCA
05 Aug 2009	Letter	Col Taliaferro to Chairman Venne	Introduction and Request to Continue Consultations and Invitation to Visit RCA
13 Jul 2010	Letter	Col Taliaferro to Mr. Old Horn (THPO)	Introducing the Section 106 Document from ACC/A7 and upcoming Public Hearings
25 Oct 2010	Public Hearing	Col Hiss was Wing Rep (Held in Crow Agency)	A Statement of Support for PRTC was given by Mr. Scott Russell (Secretary, Crow Nation)
05 Oct 2011	Letter	Col Weatherington to Chairman Black Eagle	Introduction Letter, Effects, Offer of Contact and Contact Information
12 Jan 2012	Letter	Col Weatherington to Chairman Black Eagle	Update, Summary, Thank you for Support, Offer of Contact and Contact Information
20 Aug 2012	Letter	Col Weatherington to Mr. Hubert Two Leggins (THPO)	Invitation to ACHP Hosted Virtual Consultation #1
21 Sep 2012	Virtual Consultation #1	No participation noted	

Table N-1. Summary of Formal Contacts by Ellsworth AFB with Crow, Northern Cheyenne, Standing Rock Sioux, and Cheyenne River Sioux Tribes

Date of Contact	*Type of Contact*	*Contact Information*	*Comments*
02 Nov 2012	Letter	Col Weatherington to Mr. Hubert Two Leggins (THPO)	Invitation to ACHP Hosted Virtual Consultation #2 and #3
30 Nov 2012	Virtual Consultation #2	No participation noted	
12 Apr 2013	Letter	Col. Kennedy to Chairman Old Coyote	Intro Letter, Thank you for Support, Request for Consultation, Announce Bear Butte Avoidance Procedure
25 Jun 2013	Visit	Col. Kennedy to Crow Agency	Meeting with Chairman Old Coyote, Chairman Old Coyote Confirmed Crow Support for PRTC to Include 500' and Agreed to Work PA
06 Nov 2013	Package	Col. Kennedy to Vice Secretary Backbone	PRTC NHPA Section 106 PA with supporting documentation for coordination – With CC Cover Letter
30 Jun 2014	Package	Col. Kennedy to Vice Secretary Backbone	PRTC NHPA Section 106 PA with supporting documentation Read-Ahead – With CC Cover Letter
08 Jul 2014	Package	Col. Kennedy to Vice Secretary Backbone	PRTC NHPA Section 106 PA Request for signature – With CC Cover Letter
Major Conflicting Events - Little Bighorn Battlefield National Monument (coordinated through NPS) - Crow Fair Powwow and Rodeo (August 15-19, 2013) - Crow Native Days (with LBH Reenactment) June 21-23, 2013 - Sundance and other sacred ceremonies			
Northern Cheyenne Tribe			
15 Feb 2008	Letter	Col. Vander Hamm to President Wolfname	Requesting Government-to-Government Consultation Regarding PRTC (prior to Notice of Intent)
09 May 2008	Visit	Col. Vander Hamm to Lame Deer	Briefed President Small (prior to Notice of Intent)
12 Jun 2008	Letter	ACC/A7 to Northern Cheyenne Legal Counsel	Requesting Information to be Used for EIS
24 Jun 2008	Scoping Meeting		Held in Lame Deer
28 Jul 2008	Letter	President Small to ACC/A7	
08 Sep 2008	Letter	President Small to ACC/A7	
05 Aug 2009	Letter	Col. Taliaferro to President Spang	Introduction and Request to Continue Consultations and Invitation to Visit RCA
17 Aug 2009	Government-to-Government Meeting	Col. Taliaferro and Full Tribal Council	
13 Jul 2010	Letter	Col Taliaferro to Mr. Fisher (THPO)	Introducing the Section 106 Document from ACC/A7 and Upcoming Public Hearings
07 Dec 2010	Public Hearing	Col Hiss was Wing Rep	Held in Lame Deer
22 Dec 2010	Letter	President Spang to ACC/A7	Tribal Council Resolution Requesting the No-Action Alternative
05 Oct 2011	Letter	Col. Weatherington to President Spang	Introduction Letter, Effects, Offer of Contact and Contact Information

Table N-1. Summary of Formal Contacts by Ellsworth AFB with Crow, Northern Cheyenne, Standing Rock Sioux, and Cheyenne River Sioux Tribes

Date of Contact	*Type of Contact*	*Contact Information*	*Comments*
12 Jan 2012	Letter	Col. Weatherington to President Spang	Update, summary, thank you for support, offer of contact and contact information
20 Aug 2012	Letter	Col. Weatherington to Mr. Conrad Fisher (THPO)	Invitation to ACHP Hosted Virtual Consultation #1
21 Sep 2012	Virtual Consultation #1	Attended by Mr. Conrad Fisher (THPO)	
02 Nov 2012	Letter	Col. Weatherington to Mr. Conrad Fisher (THPO)	Invitation to ACHP Hosted Virtual Consultation #2 and #3
30 Nov 2012	Virtual Consultation #2	Attended by Mr. Conrad Fisher (THPO)	
12 Apr 2013	Letter	Col. Kennedy to President Robinson	Intro Letter, Request for Consultation, Announcement of Bear Butte Avoidance Procedure
06 Nov 2013	Package	Col. Kennedy to President Fisher	PRTC NHPA Section 106 PA with supporting documentation for coordination – With CC Cover Letter
30 Jun 2014	Package	Col. Kennedy to President Fisher	PRTC NHPA Section 106 PA with supporting documentation Read-Ahead – With CC Cover Letter
08 Jul 2014	Package	Col. Kennedy to President Fisher	PRTC NHPA Section 106 PA Request for signature – With CC Cover Letter
Major Conflicting Events - American Indian World Peace Day - 4th of July Chiefs Powwow and Rodeo Celebration - White River Christmas Powwow - Sundance and other sacred ceremonies			
Standing Rock Sioux Tribe			
15 Feb 2008	Letter	Col. Vander Hamm to Chairman His Horse Is Thunder	Requesting Government-to-Government Consultation Regarding PRTC (prior to Notice of Intent)
17 Apr 2008	Visit @ RCA	Col. Vander Hamm hosted Mr. Richard Bird, Mr. Frank White Bull, Mr. Frank Jamerson	Briefings and Base Tour (prior to Notice of Intent)
12 Jun 2008	Letter	ACC/A7 to Standing Rock Economic Committee	Information Request
11 Jul 2008	2 Scoping Meetings		Held in Fort Yates, ND and McLaughlin, SD
05 Oct 2008	Resolution		Council Resolution #670-08 Opposing PRTC (see 2 Feb 2012)
05 Aug 2009	Letter	Col. Taliaferro to Chairman His Horse Is Thunder	Introduction and Request to Continue Consultations and Invitation to Visit RCA
13 Jul 2010	Letter	Col. Taliaferro to Ms. Young, THPO	Introducing the Section 106 Document from ACC/A7 and Upcoming Public Hearings
27 Sep 2010	Public Hearing	Col. Eldridge was Wing Rep	Held in Fort Yates
11 Oct 2010	Letter	Chairman Murphy to ACC/A7	Requesting 30 Day Extension to Comment Period
09 Dec 2010	Letter	Chairman Murphy to ACC/A7	Corrections to the Draft EIS

Table N-1. Summary of Formal Contacts by Ellsworth AFB with Crow, Northern Cheyenne, Standing Rock Sioux, and Cheyenne River Sioux Tribes

Date of Contact	*Type of Contact*	*Contact Information*	*Comments*
12 Jan 2012	Letter	Col. Weatherington to Chairman Murphy	Update, Summary, Thank you for Support, Offer of Contact and Contact Information
20 Feb 2012	Letter	Chairman Murphy to Col. Weatherington	Re-affirmed Council Resolution #670-08 Opposing PRTC
20 Aug 2012	Letter	Col. Weatherington to Ms. Wašté Wiŋ Young (THPO)	Invitation to ACHP Hosted Virtual Consultation #1
21 Sep 2012	Virtual Consultation #1	Attended by Ms. Phyllis Young, Council Member and Ms. Wašté Wiŋ Young, (THPO)	
02 Nov 2012	Letter	Col Weatherington to Ms. Wašté Wiŋ Young (THPO)	Invitation to ACHP Hosted Virtual Consultation #2 and #3
30 Nov 2012	Virtual Consultation #2	Attended by Mr. Terry Clouthier	
19 Dec 2012	Letter	Ms. Wašté Wiŋ Young (THPO) to Col. Weatherington	Requesting Face-to-Face Meeting
19 Dec 2012	Letter	Col. Weatherington to Ms. Wašté Wiŋ Young (THPO)	Accepting Face-to-Face Meeting Invitation
07 Feb 2013	Visit	Col. Weatherington met with Mr. Terry Clouthier (THPO Staff) and Mr. Dean DePountis (Tribal Legal)	At Fort Yates, North Dakota
12 Apr 2013	Letter	Col. Kennedy to Chairman Murphy	Intro Letter, Request for Consultation, Announcement of Bear Butte Avoidance Procedure
06 Nov 2013	Package	Col. Kennedy to Chairman Archambault	PRTC NHPA Section 106 PA with supporting documentation for coordination – With CC Cover Letter
30 Jun 2014	Package	Col. Kennedy to Chairman Archambault	PRTC NHPA Section 106 PA with supporting documentation Read-Ahead – With CC Cover Letter
08 Jul 2014	Package	Col. Kennedy to Chairman Archambault	PRTC NHPA Section 106 PA Request for signature – With CC Cover Letter
Major Conflicting Events - Kenel, Cannon Ball, Porcupine, Little Eagle, Bear Soldier, Fort Yates, Rock Creek, Wakpala, United Tribes, and SBC Powwows - Chief Sitting Bull Day - Sundance and other sacred ceremonies			
Cheyenne River Sioux Tribe			
15 Feb 2008	Letter	Col. Vander Hamm to Chairman Brings Plenty	Requesting Government-to-Government Consultation Regarding PRTC (prior to Notice of Intent)
28 Mar 2008	Visit	Col. Vander Hamm hosted Chairman Brings Plenty	Base Tour and PRTC Brief/Discussion at Ellsworth (prior to Notice of Intent)
27 May 2008	Visit	Col. Vander Hamm Meet with Vice-Chairman Mr. Bob Walters and Mr. Ted Knife Jr.	In Eagle Butte

Table N-1. Summary of Formal Contacts by Ellsworth AFB with Crow, Northern Cheyenne, Standing Rock Sioux, and Cheyenne River Sioux Tribes

Date of Contact	*Type of Contact*	*Contact Information*	*Comments*
12 Jun 2008	Letter	ACC/A7 to Chairman Brings Plenty	Requesting Information to be Used for EIS
16 Jul 2008	Scoping Meeting		Held in Dupree
03 Sep 2008	Visit	Col. Vander Hamm briefed to the full Council	Additional Meeting Requested by Council in Eagle Butte
05 Aug 2009	Letter	Col. Taliaferro to Chairman Brings Plenty	Introduction and Request to Continue Consultations and Invitation to Visit RCA
13 Jul 2010	Letter	Col. Taliaferro to Mr. Vance (THPO)	Introducing the Section 106 Document from ACC/A7 and Upcoming Public Hearings
09 Dec 2010	Public Hearing	Col. Eldridge was Wing Rep	Held in Eagle Butte
18 Oct 2011	Visit	Col. Weatherington, Chairman Keckler, Mr. In the Woods	Reaffirmed Request for No-Action Alternative. However, Agreed to Draft MOA Just in Case
03 Jan 2012	Draft MOA	Sent to POC Mr. In the Woods to staff	
12 Jan 2012	Letter	Col. Weatherington to Chairman Keckler	Update, Summary, Thank you for Support, Offer of Contact and Contact Information
20 Aug 2012	Letter	Col. Weatherington to Mr. Steve Vance (THPO)	Invitation to ACHP Hosted Virtual Consultation #1
21 Sep 2012	Virtual Consultation #1	Attended by Mr. Bryce In the Woods, Council Member and Mr. Steve Vance (THPO)	
02 Nov 2012	Letter	Col. Weatherington to Mr. Steve Vance (THPO)	Invitation to ACHP Hosted Virtual Consultation #2 and #3
30 Nov 2012	Virtual Consultation #2	No participation noted	
12 April 2013	Letter	Col. Kennedy to Chairman Keckler	Intro Letter, Request for Consultation, Announcement of Bear Butte Avoidance Procedure
06 Nov 2013	Package	Col. Kennedy to Chairman Keckler	PRTC NHPA Section 106 PA with supporting documentation for coordination – With CC Cover Letter
30 Jun 2014	Package	Col. Kennedy to Chairman Keckler	PRTC NHPA Section 106 PA with supporting documentation Read-Ahead – With CC Cover Letter
08 Jul 2014	Package	Col. Kennedy to Chairman Keckler	PRTC NHPA Section 106 PA Request for signature – With CC Cover Letter

Major Conflicting Events

- Sundance and other sacred ceremonies

Notes:

- New Cheyenne River Health Center to open recently (geothermal heated facility)
- Ziebach county is the poorest County in the U.S.

Table N-2. Summary of all E-Mails To and From Tribal Groups

Recipient	*From*	*Date*	*Subject*
Cheyenne River Sioux Tribe			
Arlin Whirlwindhorse	Chairman Brings Plenty, Cheyenne River Sioux	07 Aug 2008	Scoping Meeting Planning
Chairman Brings Plenty, Cheyenne River	Arlin Whirlwindhorse	07 Aug 2008	Scoping Meeting Planning
Steve Vance, Cheyenne River THPO[1]	George "Chia" Stone, PRTC Tribal Liaison	25 Jun 2010	Proposed Schedules for Public Hearings
Steve Vance, Cheyenne River THPO[1]	George "CHIA" Stone, PRTC Tribal Liaison	01 Jul 2010	Public Hearing Request
[1] *Note*: It was discovered via phone coordination that two E-Mails above did not get through – switched to Web Mail			
Steve Vance, Cheyenne River THPO	George "CHIA" Stone, PRTC Tribal Liaison	11 Jul 2010	Public Hearing Request
George "CHIA" Stone, PRTC Tribal Liaison	Steve Vance, Cheyenne River THPO	12 Jul 2010	Affirmative - Public Hearing
Steve Vance, Cheyenne River THPO	George "CHIA" Stone, PRTC Tribal Liaison	12 Jul 2010	Confirmed Tribe's Request for Public Hearing
Steve Vance, Cheyenne River THPO	George "CHIA" Stone, PRTC Tribal Liaison	02 Aug 2010	Sec 106 Package Receipt Confirmation
Steve Vance, Cheyenne River THPO	George "CHIA" Stone, PRTC Tribal Liaison	07 Sep 2010	Connectivity Check
Steve Vance, Cheyenne River THPO	George "CHIA" Stone, PRTC Tribal Liaison	14 Dec 2010	Attached - Preliminary Draft MOA
Steve Vance, Cheyenne River THPO	George "CHIA" Stone, PRTC Tribal Liaison	28 Jan 2011	Status of Draft MOA from December Meeting
George "CHIA" Stone, PRTC Tribal Liaison	Steve Vance, Cheyenne River THPO	05 May 2011	Checking Dates for Proposed Meeting
Steve Vance, Cheyenne River THPO	George "CHIA" Stone, PRTC Tribal Liaison	10 May 2011	Government-to-Government Section 106 Consultation Request
George "CHIA" Stone, PRTC Tribal Liaison	Steve Vance, Cheyenne River THPO	21 Jul 2011	Status for Missouri River Flooding
Bryce In the Woods, Cheyenne River	George "CHIA" Stone, PRTC Tribal Liaison	03 Jan 2012	Attached – Draft LOA
George "CHIA" Stone, PRTC Tribal Liaison	Bryce In the Woods, Cheyenne River	03 Jan 2012	Confirmed Receipt
Bryce In the Woods, Cheyenne River	George "CHIA" Stone, PRTC Tribal Liaison	24 Jan 2012	Status Check of Draft LOA and 12 January 2012 CC Letter
Bryce In the Woods, Cheyenne River	George "CHIA" Stone, PRTC Tribal Liaison	28 Mar 2012	Status Check of Draft LOA and Announcement of PA
Bryce In the Woods, Cheyenne River	George "CHIA" Stone, PRTC Tribal Liaison	22 May 2012	Status Check of Draft LOA
Steve Vance, Cheyenne River THPO	George "CHIA" Stone, PRTC Tribal Liaison	04 Sep 2012	ACHP Host Virtual Consultation Attached – Invite, Draft PA
Bryce In the Woods, Cheyenne River	George "CHIA" Stone, PRTC Tribal Liaison	04 Sep 2012	ACHP Host Virtual Consultation Attached – Invite, Draft PA
Chairman Keckler, Cheyenne River	George "CHIA" Stone, PRTC Tribal Liaison	04 Sep 2012	ACHP Host Virtual Consultation Attached – Invite, Draft PA
Steve Vance, Cheyenne River THPO	George "CHIA" Stone, PRTC Tribal Liaison	25 Oct 2012	Proposed Dates for 2nd and 3rd ACHP Host Virtual Consultations
Bryce In the Woods, Cheyenne River	George "CHIA" Stone, PRTC Tribal Liaison	25 Oct 2012	Proposed Dates for 2nd and 3rd ACHP Host Virtual Consultations

Table N-2. Summary of all E-Mails To and From Tribal Groups

Recipient	*From*	*Date*	*Subject*
Steve Vance, Cheyenne River THPO	George "CHIA" Stone, PRTC Tribal Liaison	29 Oct 2012	Invite and Final Dates for 2nd and 3rd ACHP Host Virtual Consultations
Bryce In the Woods, Cheyenne River	George "CHIA" Stone, PRTC Tribal Liaison	29 Oct 2012	Invite and Final Dates for 2nd and 3rd ACHP Host Virtual Consultations
Steve Vance, Cheyenne River THPO	George "CHIA" Stone, PRTC Tribal Liaison	27 Nov 2012	Reminder of 2nd ACHP Hosted Virtual Consultation
Bryce In the Woods, Cheyenne River	George "CHIA" Stone, PRTC Tribal Liaison	27 Nov 2012	Reminder of 2nd ACHP Hosted Virtual Consultation
Steve Vance, Cheyenne River THPO	George "CHIA" Stone, PRTC Tribal Liaison	29 Nov 2012	Reminder of 2nd ACHP Hosted Virtual Consultation
Bryce In the Woods, Cheyenne River	George "CHIA" Stone, PRTC Tribal Liaison	29 Nov 2012	Reminder of 2nd ACHP Hosted Virtual Consultation
Bryce In the Woods, Cheyenne River	George "CHIA" Stone, PRTC Tribal Liaison	12 Dec 2012	Cancellation of 3rd ACHP Hosted Virtual Consultation
Bryce In the Woods, PRTC POC (cc: Steve Vance, Cheyenne River THPO)	George "CHIA" Stone, PRTC Tribal Liaison	13 Feb 2014	Email confirmation. Check on status of POC Bryce In the Woods.
George "CHIA" Stone, PRTC Tribal Liaison	Steve Vance, Cheyenne River THPO	18 Feb 2014	Received new Email address and confirmed his
Steve Vance, Cheyenne River THPO	George "CHIA" Stone, PRTC Tribal Liaison	18 Feb 2014	Confirmed email update and Bryce In the Woods is no longer with the Council so also no longer PRTC POC
Steve Vance, Cheyenne River THPO	George "CHIA" Stone, PRTC Tribal Liaison	01 Jul 2014	Connectivity check
George "CHIA" Stone, PRTC Tribal Liaison	Steve Vance, Cheyenne River THPO	01 Jul 2014	Email received, will forward photos of aircraft seen overflying Cheyenne River Reservation
Steve Vance, Cheyenne River THPO	George "CHIA" Stone, PRTC Tribal Liaison	01 Jul 2014	Received, wilco on the photos
Steve Vance, Cheyenne River THPO	George "CHIA" Stone, PRTC Tribal Liaison	07 Jul 2014	Electronic copy of PA Pkg attached as requested during phone conversation
Chairman Kevin Keckler (cc: Steve Vance, Cheyenne River THPO; Bryce In the Woods, PRTC POC)	George "CHIA" Stone, PRTC Tribal Liaison	09 Jul 2014	Heads up [with respect to] PA signature request
Crow Tribe			
Dale Old Horn, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	09 Mar 2010	Date Request for Public Hearing
Dale Old Horn, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	09 Apr 2010	Refined Dates for Public Hearing
Dale Old Horn, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	03 May 2010	Site Visit Request
Dale Old Horn, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	25 Jun 2010	Proposed Date for Public Hearing
George "CHIA" Stone, PRTC Tribal Liaison	Tim Cleary, Crow Tribe Archaeologist	06 Aug 2010	PRTC Draft EIS Review Completion – No Issues
Dale Old Horn, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	06 Aug 2010	Thank you for Coordinating with Mr. Cleary - Public Hearing?
Tim Cleary, Crow Tribe Archaeologist	George "CHIA" Stone, PRTC Tribal Liaison	06 Aug 2010	Acknowledgement of EIS Review – Will Forward

Table N-2. Summary of all E-Mails To and From Tribal Groups

Recipient	*From*	*Date*	*Subject*
Dale Old Horn, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	25 Aug 2010	Proposed Date for Public Hearing
Dale Old Horn, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	07 Apr 2011	Consultation Request
Dale Old Horn, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	08 Apr 2011	Re-transmit – Connectivity Check
Dale Old Horn, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	16 Nov 2011	Consultation Request
George "CHIA" Stone, PRTC Tribal Liaison	Tim Cleary, Crow Tribe Archaeologist	17 Nov 2011	Re-stated PRTC Package Receipt and Review – No Issues
Tim Cleary, Crow Tribe Archaeologist	George "CHIA" Stone, PRTC Tribal Liaison	17 Nov 2011	Thank you for Prompt Response
Dale Old Horn, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	14 Dec 2011	New E-Mail Address – Connectivity Check
George "CHIA" Stone, PRTC Tribal Liaison	Hubert Two Leggins, Crow Tribe THPO	10 Jan 2012	Letter Receipt Confirmation and Contact Information
Hubert Two Leggins, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	10 Jan 2012	Confirmed Connectivity – Looking Forward to Ongoing Dialog
George "CHIA" Stone, PRTC Tribal Liaison	Melissa Holds the Enemy, Crow Tribe Legal Council	10 Jan 2012	Confirmed Receipt of Letter – Taken to Chairman's Secretary
Rosella Bear Don't Walk, Crow Tribe Staff	George "CHIA" Stone, PRTC Tribal Liaison	10 Jan 2012	Attached - Copy of 5 October 2011 CC Letter
George "CHIA" Stone, PRTC Tribal Liaison	Rosella Bear Don't Walk, Crow Tribe Staff	10 Jan 2012	Receipt Confirmation and Forward to Hubert Two Leggins THPO
Hubert Two Leggins, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	11 Jan 2012	Attached - 13 July 2010 Letter and Crow Nation Cultural Report
Hubert Two Leggins, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	27 Jan 2012	Attached - FedEx Receipt from January 2012
Hubert Two Leggins, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	01 Feb 2012	Attached – 12 January 2012 CC Letter
Melissa Holds the Enemy, Crow Tribe Legal Council	George "CHIA" Stone, PRTC Tribal Liaison	01 Feb 2012	Attached – 12 January 2012 Letter – Thank you for Your Assistance
George "CHIA" Stone, PRTC Tribal Liaison	Melissa Holds the Enemy, Crow Tribe Legal Council	01 Feb 2012	Letter Hand Carried to Chairman's Secretary
Melissa Holds the Enemy, Crow Tribe Legal Council	George "CHIA" Stone, PRTC Tribal Liaison	01 Feb 2012	Acknowledged – Thank you for Your Assistance
Hubert Two Leggins, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	20 Mar 2012	Requested Response from 5 October 2011 and 12 January 2012 CC Letters
Hubert Two Leggins, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	22 May 2012	Physical Address Request from Failed Site Visit (drop-in)
Hubert Two Leggins, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	04 Sep 2012	Invite and Information for First ACHP Hosted Virtual Consultation
Hubert Two Leggins, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	25 Oct 2012	Proposed Dates for 2nd and 3rd ACHP Host Virtual Consultations
Hubert Two Leggins, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	29 Oct 2012	Invite and Final Dates for 2nd and 3rd ACHP Host Virtual Consultations
Hubert Two Leggins, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	27 Nov 2012	Reminder for 2nd ACHP Hosted Virtual Consultation
Hubert Two Leggins, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	29 Nov 2012	Agenda for 2nd ACHP Hosted Virtual Consultation

Table N-2. Summary of all E-Mails To and From Tribal Groups

Recipient	*From*	*Date*	*Subject*
Hubert Two Leggins, Crow Tribe THPO	George "CHIA" Stone, PRTC Tribal Liaison	12 Dec 2012	Cancellation of 3rd ACHP Hosted Virtual Consultation
Patricia R, Crow Tribe Staff	George "CHIA" Stone, PRTC Tribal Liaison	10 May 2013	Attached – 12 April 2013 CC Letter – Meeting Request
Patricia R, Crow Tribe Staff (cc: John Morgenstern, 28 CES/CEIEA)	George "CHIA" Stone, PRTC Tribal Liaison	10 May 2013	Request for meeting between Col. Kennedy and Chairman Old Coyote
Patricia R, Crow Tribe Staff	George "CHIA" Stone, PRTC Tribal Liaison	20 May 2013	Status of Meeting Request
Patricia R, Crow Tribe Staff (cc: David Garrett, 28 OSS/ADO)	George "CHIA" Stone, PRTC Tribal Liaison	20 May 2013	Meeting Coordination
Patricia R, Crow Tribe Staff	George "CHIA" Stone, PRTC Tribal Liaison	06 Jun 2013	Confirming details of meeting, 25 Jun, 1300hrs, Crow Agency, Chairman's Office
Patricia R, Crow Tribe Staff	George "CHIA" Stone, PRTC Tribal Liaison	26 Jun 2013	Thank you for setting up meeting
Melissa Holds the Enemy, Crow Tribe Legal Council	George "CHIA" Stone, PRTC Tribal Liaison	26 Jun 2013	Thank you for her card at meeting. Request for contact info for Vice Secretary Backbone (named by Chairman Old Coyote as PRTC POC)
Shawn Backbone, Vice Secretary (cc: Emerson Bull Chief THPO; Melissa Holds the Enemy, Managing Attorney)	George "CHIA" Stone, PRTC Tribal Liaison	09 Jan 2014	Attached electronic copy of PA Pkg. Inquiry with respect to Tribal response to Nov PA.
Melissa Holds the Enemy, Crow Tribe Legal Council	George "CHIA" Stone, PRTC Tribal Liaison	13 Feb 2014	Email correction and inquiry with respect to Tribal response to PA (Had mentioned earlier that comments were pending).
Shawn Backbone, Vice Secretary (cc: Emerson Bull Chief THPO)	George "CHIA" Stone, PRTC Tribal Liaison	09 Jul 2014	Heads up email with respect to PA signature request
George "CHIA" Stone, PRTC Tribal Liaison	Emerson Bull Chief THPO	10 Jul 2014	Was unable to open attachment
Emerson Bull Chief THPO	George "CHIA" Stone, PRTC Tribal Liaison	10 Jul 2014	No attachment sent
Northern Cheyenne Tribe			
Conrad Fisher, Northern Cheyenne	Linda DeVine, ACC/A7PP	15 Sept 2008	Comments on EIS from Northern Cheyenne Tribal Council
Conrad Fisher, Northern Cheyenne	Linda DeVine, ACC/A7PP	23 Feb 2009	Possible Dates for Presentation at Tribal Council Meeting
Conrad Fisher, Northern Cheyenne	Linda DeVine, ACC/A7PP	07 July 2009	Presentation at Tribal Council Meeting on 17 August 2009
Linda DeVine, ACC/A7PP	Curtis Elkshoulder, Northern Cheyenne	05 Aug 2009	Presentation at Tribal Council Meeting on 17 August 2009
Linda DeVine, ACC/A7PP	Curtis Elkshoulder, Northern Cheyenne	07 Aug 2009	Presentation at Tribal Council Meeting on 17 August 2009
Conrad Fisher, Northern Cheyenne THPO	Linda DeVine, ACC/A7PS	13 Aug 2009	Attached - Preliminary Draft of MOA
Linwood Tall Bull, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	29 Mar 2010	Connectivity Check – Site Visit Request

Table N-2. Summary of all E-Mails To and From Tribal Groups

Recipient	*From*	*Date*	*Subject*
George "CHIA" Stone, PRTC Tribal Liaison	Linwood Tall Bull, Northern Cheyenne THPO	02 Apr 2010	Connectivity Confirmed – Site Visit Approved
Linwood Tall Bull, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	09 Apr 2010	Proposed dates for Public Hearing
Linwood Tall Bull, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	03 May 2010	Site Visit Plan
George "CHIA" Stone, PRTC Tribal Liaison	Linwood Tall Bull, Northern Cheyenne THPO	03 May 2010	Site Visit Plan Confirmed
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	25 Jun 2010	Proposed Date for Public Hearing
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	26 Jun2010	Attached - Preliminary Draft of MOA (same as 13 August 2009)
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	26 Jun2010	Delivery Confirmation – Section 106 Documentation Package
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	11 Aug 2010	Edits to Preliminary Draft of MOA
George "CHIA" Stone, PRTC Tribal Liaison	Conrad Fisher, Northern Cheyenne THPO	12 Aug 2010	Request Retransmit Preliminary Draft of MOA
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	12 Aug 2010	Attached - Preliminary Draft of MOA (same as 13 August 2009)
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	26 Aug 2010	Attached – Section 106 Document Package and CC Letter
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	04 Oct 2010	Coordination Request for Public Hearing
George "CHIA" Stone, PRTC Tribal Liaison	Conrad Fisher, Northern Cheyenne THPO	11 Oct 2010	Referred to Ms. Aleda Spang
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	28 Jan 2011	Request Update on Draft MOA
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	07 Feb 2011	Mr. Fisher's Request (by phone) to "Table" MOA Refer to Full Council
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	09 Feb 2011	Mr. Fisher's request (by phone) to "Table" MOA Refer to Full Council
George "CHIA" Stone, PRTC Tribal Liaison	Conrad Fisher, Northern Cheyenne THPO	09 Feb 2011	Mr. Fisher Confirmed "Table" Plan
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	07 Apr 2011	Consultation Request
George "CHIA" Stone, PRTC Tribal Liaison	Conrad Fisher, Northern Cheyenne THPO	08 Apr 2011	"No-Action Alternative" or Talk Directly to Full Council
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	05 May 2011	Request Government-to-Government Section 106 Consultation with Full Council
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	31 May 2011	Proposed Dates for Meeting, Acknowledge Flooding Threat
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	16 Nov 2011	Request Government-to-Government Section 106 Consultation with Full Council
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	20 Dec 2011	Request Government-to-Government Section 106 Consultation with Full Council
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	20 Dec 2011	Requested/Attached – 22 December 2010 Letter from President Spang
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	20 Dec 2011	Connectivity Check – Received "Recipient's Mail Box Full"

Table N-2. Summary of all E-Mails To and From Tribal Groups

Recipient	*From*	*Date*	*Subject*
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	21 Dec 2011	Connectivity Check – Unable to Make Phone Contact
George "CHIA" Stone, PRTC Tribal Liaison	Conrad Fisher, Northern Cheyenne THPO	22 Dec 2011	Request Receipt Confirmation of all Correspondence to/from Tribe
George "CHIA" Stone, PRTC Tribal Liaison	Conrad Fisher, Northern Cheyenne THPO	30 Dec 2011	Request Receipt Confirmation of all Correspondence to/from Tribe
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	03 Jan 2012	Connectivity Check – E-Mail with Attachment (retry from 20 December)
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	03 Jan 2012	Connectivity Check – Unable to Make Phone Contact
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	04 Jan 2012	Attachment – 10 September 2008 Letter to President Small
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	04 Jan 2012	Attachment – 11 August 2008 Letter to President Small
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	26 Jan 2012	Attachment – FedEx Receipt from 12 January 2012 CC Letter
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	01 Feb 2012	Attachment – 12 January 1012 CC Letter
George "CHIA" Stone, PRTC Tribal Liaison	Conrad Fisher, Northern Cheyenne THPO	24 Feb 2012	Pending Resolution WRT No-Fly Over Reservation/Sacred Sites
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	05 Mar 2012	Acknowledgement
George "CHIA" Stone, PRTC Tribal Liaison	Conrad Fisher, Northern Cheyenne THPO	05 Sep 2012	Attached Invite and Draft PA – ACHP Hosted Virtual Consultation
George "CHIA" Stone, PRTC Tribal Liaison	Conrad Fisher, Northern Cheyenne THPO	21 Sep 2012	Problem Logging into ACHP Hosted Virtual Consultation
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	21 Sep 2012	Thank you for Participation in the ACHP Hosted Virtual Consultation
George "CHIA" Stone, PRTC Tribal Liaison	Conrad Fisher, Northern Cheyenne THPO	25 Sep 2012	Ack. Mr. Fisher's Dissatisfaction with Virtual Consultation Format
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	25 Oct 2012	Proposed Dates for the 2nd and 3rd ACHP Host Virtual Consultations
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	29 Oct 2012	Invite and Dates for 2nd and 3rd ACHP Hosted Virtual Consultations
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	27 Nov 2012	Acknowledge Forward of Mr. Fisher's remarks (30 Oct phone call) to Leadership
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	29 Nov 2012	Agenda for 2nd ACHP Hosted Virtual Consultation
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	10 Jan 2013	Offer of TeleCon dates to answer his questions from 5 Dec 2012
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	20 Jan 2013	Repeat offer for TeleCon
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	13 Feb 2014	Email update. Inquired if he had had time to review the PA to see if we are making headway with respect to addressing the Northern Cheyenne Tribes concerns

Table N-2. Summary of all E-Mails To and From Tribal Groups

Recipient	*From*	*Date*	*Subject*
Conrad Fisher, Northern Cheyenne THPO	David Garrett, Acting PRTC Tribal Liaison	28 Feb 2014	Thank you for your Call. Will FWD concerns regarding lack of opportunity to comment on PA and visit request. Will FWD electronic copy of PA.
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	06 Mar 2014	Thank you for contact, sent PA
Conrad Fisher, Northern Cheyenne THPO (cc: David Garret, 28 OSS/ADO)	George "CHIA" Stone, PRTC Tribal Liaison	06 Mar 2014	Thank you for working with Dave Garrett see attached PA.
George "CHIA" Stone, PRTC Tribal Liaison	Conrad Fisher, Northern Cheyenne THPO	07 Mar 2014	Thank you for follow up. Repeat request to send his office all correspondence received by my office from Northern Cheyenne Tribe.
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	07 Mar 2014	Retransmit – Letter from President Small dated 11 Aug 2008 (attached) (originally sent Wednesday, January 04, 2012 9:44 AM)
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	07 Mar 2014	Retransmit – Letter from President Small dated 10 Sep 2008 (attached) (originally sent Wednesday, January 04, 2012 9:39 AM)
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	07 Mar 2014	Retransmit – Letter from President Spang dated 22 Dec 2010 (attached) (originally sent Tuesday, January 03, 2012 8:29 AM & Tuesday, December 20, 2011 12:00 PM)
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	07 Mar 2014	3 letters forwarded
George "CHIA" Stone, PRTC Tribal Liaison	Conrad Fisher, Northern Cheyenne THPO	07 Mar 2014	Received, Thank you
Conrad Fisher, Northern Cheyenne THPO	George "CHIA" Stone, PRTC Tribal Liaison	09 Jul 2014	Coordinating dates for visit, please forward next opportunity to meet with Council or President.
President Llevando Fisher (cc: Conrad Fisher, Northern Cheyenne THPO)	George "CHIA" Stone, PRTC Tribal Liaison	09 Jul 2014	Heads up with respect to PA signature request
George "CHIA" Stone, PRTC Tribal Liaison	Conrad Fisher, Northern Cheyenne THPO	09 Jul 2014	Thank you for response. Has not reviewed PA. Reiterated Council's Resolution opposing PRTC. Insufficient Consultation. Requested Col. Kennedy Visit ASAP. Refer future coordination/consultation to President Llevando Fisher, beyond THPO authority.
Standing Rock Sioux Tribe			
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	24 Feb 2010	Connectivity Check – Contact Information
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	24 Feb 2010	Connectivity Confirmed – Contact Information
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	09 Apr 2010	Proposed Dates for Public Hearings – Public Hearing Request?
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	09 Apr 2010	Request for Formal Letter with Dates and Options for Council

Table N-2. Summary of all E-Mails To and From Tribal Groups

Recipient	*From*	*Date*	*Subject*
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	09 Apr 2010	Acknowledgment of Letter Request
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	25 Jun 2010	Does Tribe want to Host a Public Hearing? Proposed Date 27 September 2010
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	02 Aug 2010	Proposed Date for Public Hearing
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	02 Aug 2010	Request Confirmation of Receipt of Section 106 Document Package and CC letter
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	12 Aug 2010	Follow up on Package, Letter, and Request for Meeting
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	16 Aug 2010	Delivery Confirmation Information
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	18 Aug 2010	Unable to Find Package
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	18 Aug 2010	Package Found (DEIS) but not 106 Package
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	18 Aug 2010	Attached - Scanned Copies – Section 106 Document Package and CC Letter
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	25 Aug 2010	Firm Date for Public Hearing
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	09 Sep 2010	Tentative Date 27 September – Looking to Finalize Details with Tribe
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	09 Sep 2010	Public Hearing to be LIVE on Tribal Radio
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	09 Sep 2010	Date Confirmed – Location and Time TBD (from Tribe)
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	15 Sep 2010	Status Check on Public Hearing
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	16 Sep 2010	Firmed up Date, Still Awaiting Time/Location from Tribe
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	07 Apr 2011	Consultation Request with Prospective Dates
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	02 May 2011	June Looks Best for Meeting thus Far
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	02 May 2011	Request 2 Meetings Staff Level (June), Leaders (Government-to-Government) 2-3 weeks later
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	31 May 2011	Has Meeting Plan been Overcome by Flooding?
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	06 Jun 2011	Flooding will Not Allow Meeting Plan Now
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	06 Jun 2011	Acknowledgment – Request Consultation when Able
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	21 Jul 2011	Status Check – Flood Waters Receding
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	17 Oct 2011	Status Check – Request Government-to-Government Section 106 Consultation
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	20 Oct 2011	Acknowledged – will Forward Request to Council

Table N-2. Summary of all E-Mails To and From Tribal Groups

Recipient	*From*	*Date*	*Subject*
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	21 Oct 2011	Council Requests Dates, Additional Public (Educational) Meetings
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	31 Oct 2011	Request Government-to-Government Section 106 Consultation ASAP
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	16 Nov 2011	Status Check – request Government-to-Government Section 106 Consultation
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	06 Dec 2011	Status Check – request Government-to-Government Section 106 Consultation
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	04 Sep 2012	Additional information on the Virtual Consultation
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	14 Sep 2012	Attached – Invite to Virtual Consultation and Draft PA
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	19 Sep 2012	Information on ACHP Hosted Virtual Consultation
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	19 Sep 2012	Will be attending the ACHP Hosted Virtual Consultation
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	19 Sep 2012	Attendees Still Pending for ACHP Hosted Virtual Consultation
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	25 Oct 2012	Tentative Dates for 2nd and 3rd ACHP Hosted Virtual Consultations
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	29 Oct 2012	Firm Dates for 2nd and 3rd ACHP Hosted Virtual Consultations
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	27 Nov 2012	Reminder/ Information for 2nd ACHP Hosted Virtual Consultation
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	29 Nov 2012	Agenda for 2nd ACHP Hosted Virtual Consultation
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	12 Dec 2012	Cancelation of 3rd ACHP Hosted Virtual Consultation
George "CHIA" Stone, PRTC Tribal Liaison	Terry Clouthier, Standing Rock Archaeologist	30 Nov 2012	Request for Physical Address for Correspondence
Terry Clouthier, Standing Rock Archaeologist	George "CHIA" Stone, PRTC Tribal Liaison	30 Nov 2012	Included Physical Address for Correspondence
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	04 Jan 2013	Confirmation of 7 Feb 2012 meeting with Col. Weatherington in Fort Yates
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	04 Feb 2013	Confirmation of attendees from Ellsworth coming to the 7 Feb Meeting
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	04 Feb 2013	Lunch recommendation Prairie Knights Casino 15 miles North of Fort Yates
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	04 Feb 2013	Change meeting location to Prairie Knights Casino (Business Lunch)
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	04 Feb 2013	Thank you and accept new location
George "CHIA" Stone, PRTC Tribal Liaison	Shauna Elk, Standing Rock THPO Staff	05 Feb 2013	Confirmation of meeting details
Shauna Elk, Standing Rock THPO Staff	George "CHIA" Stone, PRTC Tribal Liaison	05 Feb 2013	Thank you and confirm details
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	06 Feb 2013	Requested Updated Copy of the Draft PA
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	06 Feb 2013	Previous edition from Virtual Consult is still current

Table N-2. Summary of all E-Mails To and From Tribal Groups

Recipient	*From*	*Date*	*Subject*
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	08 Feb 2013	Thank you for meeting. Thanks to Terry and Dean for staying when all else were called away to Bismarck. Request dates full Council would be available for meeting.
Wašté Wiŋ Young, Standing Rock THPO (cc: Shauna Elk, Standing Rock THPO staff)	George "CHIA" Stone, PRTC Tribal Liaison	01 Mar 2013	Follow up on possible dates for full council meeting
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	08 Jan 2014	Announcement of Chairman Dave Archambault II
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	08 Jan 2014	Inquiry with respect to Tribal response from November PA
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	08 Jan 2014	Will meet with Chairman Archambault next week to discuss and get back to you
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	08 Jan 2014	Thank you for your continued efforts
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	13 Jan 2014	Request text version of PA for Chairman's review
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	28 Jan 2014	Restated request
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	28 Jan 2014	Apology, document attached, new email address included.
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	13 Feb 2014	Check on Chairman's review/comments, and ensure new email address receipt
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	19 Feb 2014	New email received. Test, please respond. Will be submitting comments on PA
Wašté Wiŋ Young, Standing Rock THPO	George "CHIA" Stone, PRTC Tribal Liaison	19 Feb 2014	Received okay
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	19 Feb 2014	Acknowledgement. Will be submitting comments on PA
Wašté Wiŋ Young, Standing Rock THPO (cc: David Garrett, 28 OSS/ADO)	George "CHIA" Stone, PRTC Tribal Liaison	19 Feb 2014	Coordinating POC while on leave
George "CHIA" Stone, PRTC Tribal Liaison	Wašté Wiŋ Young, Standing Rock THPO	19 Feb 2014	Acknowledgement
Chairman Dave Archambault II Sent via – A. Cordova	George "CHIA" Stone, PRTC Tribal Liaison	10 Jul 2014	Heads up with respect to PA signature request
Rosebud Sioux Tribe			
Kathe Arcoren, Rosebud Sioux	Linda DeVine, ACC/A7PP	08 Aug 2008	THPO at Rosebud
John Morgenstern, Natural and Cultural Resource Manager, Ellsworth AFB	Kathe Arcoren, Rosebud Sioux	29 Mar 2011	Powder River Training Complex Meeting
Kathe Arcoren, Rosebud Sioux	John Morgenstern, Natural and Cultural Resource Manager, Ellsworth AFB	05 April 2013	Update on Section 106 Tribal Consultations

Table N-3. Summary of all Letters Sent To and From Other Tribal Groups

Recipient	*From*	*Date of Contact*
Chippewa-Cree Business Committee	Department of the Air Force – HQ ACC-A7PP	03 June 2008
Turtle Mountain Tribal Council	Department of the Air Force – HQ ACC-A7PP	03 June 2008
Three Affiliated Tribes Business Council	Department of the Air Force – HQ ACC-A7PP	03 June 2008
Eastern Shoshone Tribal Council	Department of the Air Force – HQ ACC-A7PP	03 June 2008
Rosebud Sioux Tribe	Department of the Air Force – HQ ACC-A7PP	03 June 2008
Arapaho Business Council	Department of the Air Force – HQ ACC-A7PP	03 June 2008
Oglala Sioux Tribal Council	Department of the Air Force – HQ ACC-A7PP	03 June 2008
Confederated Salish and Kootenai Tribe	Department of the Air Force – HQ ACC-A7PP	03 June 2008
Fort Belknap Community Council	Department of the Air Force – HQ ACC-A7PP	03 June 2008
Fort Peck Tribal Executive Board	Department of the Air Force – HQ ACC-A7PP	03 June 2008
Spirit Lake Sioux Tribal Council	Department of the Air Force – HQ ACC-A7PP	03 June 2008
Bruce W. MacDonald, P. E. Department of the Air Force Headquarters Air Combat Command, A7P	Bureau of Indian Affairs Great Plains Regional Office	08 July 2008
Linda DeVine, PRTC EIS Manager, Langley AFB, VA	Rosebud Sioux Tribe	31 July 2008

Table N-4. Section 106 Agency Correspondence

Recipient	*From*	*Date of Contact*
Donald Red Thunder Land Operations Office Cheyenne River Agency	Department of the Air Force – HQ ACC-A7PP	12 June 2008
Bureau of Indian Affairs Standing Rock Agency	Department of the Air Force – HQ ACC-A7AP	03 June 2008
Bureau of Indian Affairs Cheyenne River Agency	Department of the Air Force – HQ ACC-A7AP	03 June 2008
Bureau of Indian Affairs Pine Ridge Agency	Department of the Air Force – HQ ACC-A7AP	03 June 2008
Bureau of Indian Affairs Rocky Mountain Regional Office	Department of the Air Force – HQ ACC-A7AP	03 June 2008
Bureau of Indian Affairs Midwest Regional Office	Department of the Air Force – HQ ACC-A7AP	03 June 2008
Bureau of Indian Affairs Great Plains Regional Office	Department of the Air Force – HQ ACC-A7AP	03 June 2008
South Dakota State Historic Society	Department of the Air Force – HQ ACC-A7AP	03 June 2008
State Historical Society of North Dakota	Department of the Air Force – HQ ACC-A7AP	03 June 2008

Table N-4. Section 106 Agency Correspondence

Recipient	*From*	*Date of Contact*
State Parks and Cultural Resource Preservation Office (Wyoming)	Department of the Air Force– HQ ACC-A7AP	03 June 2008
Montana Historical Society	Department of the Air Force– HQ ACC-A7AP	03 June 2008
Karen Breslin National Park Service, Intermountain Region	Department of the Air Force – HQ ACC-A7P	03 June 2008
Pat Rooney National Park Service, Midwest Region	Department of the Air Force – HQ ACC-A7P	03 June 2008
Vicki McCuster National Park Service, Natural Sounds Program	Department of the Air Force – HQ ACC-A7P	03 June 2008
Linda DeVine Department of the Air Force PRTC EIS Manager	South Dakota Department of Tourism and State Development	07 July 2008
Linda DeVine Department of the Air Force PRTC EIS Manager	National Park Service Midwest Region	07 August 2008
Nancy Brown Advisory Council on Historic Preservation	Mr. John Morgenstern Natural/Cultural Resources Manager Department of the Air Force 28 CES/CEVP Ellsworth AFB, SD 57706	01 December 2008
Mr. John Morgenstern Natural/Cultural Resources Manager Department of the Air Force 28 CES/CEVP Ellsworth AFB, SD 57706	Raymond V. Wallace Historic Preservation Technician Federal Property Management Section Office of Federal Agency Programs	03 December 2008
Nancy Brown Advisory Council on Historic Preservation	Mr. John Morgenstern Natural/Cultural Resources Manager Department of the Air Force 28 CES/CEVP	04 February 2009

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 28TH BOMB WING (ACC)
ELLSWORTH AIR FORCE BASE SOUTH DAKOTA

15 Feb 08

Colonel Scott A. Vander Hamm
Commander, 28th Bomb Wing
1958 Scott Drive, Ste 1
Ellsworth AFB SD 57706-4710

Rick Wolfname, President
Northern Cheyenne Tribal Council
P.O. Box 128
Lame Deer MT 59043

Dear President Wolfname

I respectfully request a Government-to-Government consultation to discuss a proposal to establish a Military Operations Area (MOA) (Atch 1), in an area that overlies the Northern Cheyenne Indian Reservation.

The 28th Bomb Wing would prefer to personally meet with you and discuss the proposed airspace modifications and alternatives to the proposal to meet training needs of B-1 pilots at Ellsworth AFB SD and B-52 pilots from Minot AFB ND prior to the Air Force publicly releasing a Notice of Intent to prepare an Environmental Impact Statement. Public notification is tentatively scheduled for spring of 2008 and numerous public scoping meetings are being planned shortly after in the affected areas of Montana, Wyoming, North Dakota, and South Dakota (list attached). The scoping meetings were chosen based on their location to the proposed action and in areas we feel would obtain the most comprehensive public outreach. If you would like the Air Force to hold a separate scoping meeting for members of the Northern Cheyenne Tribe, please let me know or have a representative contact Ms. Linda DeVine (Air Combat Command Project Manager) at 757-764-9434 by March 10, 2008 to discuss details.

The scoping meetings will be in held in an open-house format where Air Force representatives will describe the proposed action and alternatives, the National Environmental Policy Act process which we are undertaking, outline opportunities for public involvement, and answer questions the public might have on the proposal. Public notification and details of the scoping meetings will be published in the Federal Register and local papers in advance.

Please contact me at (605) 385-2801 or 1Lt Lauren Wright, public affairs, at (605) 385-5056.

Sincerely,

SCOTT A. VANDER HAMM, COLONEL, USAF

Attachments:
Map
Scoping Locations

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 28TH BOMB WING (ACC)
ELLSWORTH AIR FORCE BASE SOUTH DAKOTA

15 Feb 08

Colonel Scott A. Vander Hamm
Commander, 28th Bomb Wing
1958 Scott Drive, Ste 1
Ellsworth AFB SD 57706-4710

Joseph Brings Plenty, Chairman
Cheyenne River Sioux Tribe
P.O. Box 590
Eagle Butte SD 57625

Dear Chairman Brings Plenty

I respectfully request a Government-to-Government consultation to discuss a proposal to establish a Military Operations Area (MOA) (Atch 1), in an area that overlies a portion of the Cheyenne River Indian Reservation.

The 28th Bomb Wing would prefer to personally meet with you and discuss the proposed airspace modifications and alternatives to the proposal to meet training needs of B-1 pilots at Ellsworth AFB SD and B-52 pilots from Minot AFB ND prior to the Air Force publicly releasing a Notice of Intent to prepare an Environmental Impact Statement. Public notification is tentatively scheduled for spring of 2008 and numerous public scoping meetings are being planned shortly after in the affected areas of Montana, Wyoming, North Dakota, and South Dakota (Atch 2). The scoping meetings were chosen based on their location to the proposed action and in areas we feel would obtain the most comprehensive public outreach. If you would like the Air Force to hold a separate scoping meeting for members of the Cheyenne River Sioux Tribe, please let me know or have a representative contact Ms. Linda DeVine (Air Combat Command Project Manager) at 757-764-9434 by March 10, 2008 to discuss details.

The scoping meetings will be in held in an open-house format where Air Force representatives will describe the proposed action and alternatives, the National Environmental Policy Act process which we are undertaking, outline opportunities for public involvement, and answer questions the public might have on the proposal. Public notification and details of the scoping meetings will be published in the Federal Register and local papers in advance.

Please contact me at (605) 385-2801 or 1Lt Lauren Wright, public affairs, at (605) 385-5056.

Sincerely

Scott A. Vander Hamm

SCOTT A. VANDER HAMM, COLONEL, USAF

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Map
Scoping Locations

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 28TH BOMB WING (ACC)
ELLSWORTH AIR FORCE BASE SOUTH DAKOTA

15 Feb 08

Colonel Scott A. Vander Hamm
Commander, 28th Bomb Wing
1958 Scott Drive, Ste 1
Ellsworth AFB SD 57706-4710

Ron His Horse Is Thunder, Chairman
Standing Rock Sioux Tribal Council
P.O. Box D
Fort Yates ND 58538

Dear Chairman His Horse is Thunder

I respectfully request a Government-to-Government consultation to discuss a proposal to establish a Military Operations Area (MOA) (Atch 1), in an area that overlies or a portion of the Standing Rock Indian Reservation.

The 28th Bomb Wing would prefer to personally meet with you and discuss the proposed airspace modifications and alternatives to the proposal to meet training needs of B-1 pilots at Ellsworth AFB SD and B-52 pilots from Minot AFB ND prior to the Air Force publicly releasing a Notice of Intent to prepare an Environmental Impact Statement. Public notification is tentatively scheduled for spring of 2008 and numerous public scoping meetings are being planned shortly after in the affected areas of Montana, Wyoming, North Dakota, and South Dakota (Atch 2). The scoping meetings were chosen based on their location to the proposed action and in areas we feel would obtain the most comprehensive public outreach. If you would like the Air Force to hold a separate scoping meeting for members of the Standing Rock Sioux Tribe, please let me know or have a representative contact Ms. Linda DeVine (Air Combat Command Project Manager) at 757-764-9434 by March 10, 2008 to discuss details.

The scoping meetings will be in held in an open-house format where Air Force representatives will describe the proposed action and alternatives, the National Environmental Policy Act process which we are undertaking, outline opportunities for public involvement, and answer questions the public might have on the proposal. Public notification and details of the scoping meetings will be published in the Federal Register and local papers in advance.

Please contact me at (605) 385-2801 or 1Lt Lauren Wright, public affairs, at (605) 385-5056.

Sincerely

SCOTT A. VANDER HAMM, COLONEL, USAF

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Map
Scoping Locations

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 28TH BOMB WING (ACC)
ELLSWORTH AIR FORCE BASE SOUTH DAKOTA

15 Feb 08

Colonel Scott A. Vander Hamm
Commander, 28th Bomb Wing
1958 Scott Drive, Ste 1
Ellsworth AFB SD 57706-4710

Carl Venne, Chairman
Crow Tribal Council
P.O. Box 169
Crow Agency MT 59022

Dear Chairman Venne

I respectfully request a Government-to-Government consultation to discuss a proposal to establish a Military Operations Area (MOA) (Atch 1), in an area that overlies a portion of the Crow Indian Reservation.

The 28th Bomb Wing would prefer to personally meet with you and discuss the proposed airspace modifications and alternatives to the proposal to meet training needs of B-1 pilots at Ellsworth AFB SD and B-52 pilots from Minot AFB ND prior to the Air Force publicly releasing a Notice of Intent to prepare an Environmental Impact Statement. Public notification is tentatively scheduled for spring of 2008 and numerous public scoping meetings are being planned shortly after in the affected areas of Montana, Wyoming, North Dakota, and South Dakota (Atch 2). The scoping meetings were chosen based on their location to the proposed action and in areas we feel would obtain the most comprehensive public outreach. If you would like the Air Force to hold a separate scoping meeting for members of the Crow Tribe, please let me know or have a representative contact Ms. Linda DeVine (Air Combat Command Project Manager) at 757-764-9434 by March 10, 2008 to discuss details.

The scoping meetings will be in held in an open-house format where Air Force representatives will describe the proposed action and alternatives, the National Environmental Policy Act process which we are undertaking, outline opportunities for public involvement, and answer questions the public might have on the proposal. Public notification and details of the scoping meetings will be published in the Federal Register and local papers in advance.

Please contact me at (605) 385-2801 or 1Lt Lauren Wright, public affairs, at (605) 385-5056.

Sincerely

SCOTT A. VANDER HAMM, COLONEL, USAF

Attachments:
Map
Scoping Locations

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 12 2008

Ms. Kathleen Burrage
Crow Nation Office of Legal Counsel
Batcheeitche Avenue
PO Box 340
Crow Agency MT 59022

Dear Ms. Burrage

The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

The proposed action would restructure and reconfigure the existing Powder River Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspaces (ATCAAs). The PRTC proposal would establish two air refueling routes, create additional low altitude MOA (500 feet Above Ground Level [AGL] up to, but not including, 18,000 feet above Mean Sea Level [MSL]) and high-altitude ATCAA (18,000-60,000 MSL) combinations in portions of South Dakota, North Dakota, Wyoming and Montana. The proposal would support additional ground-based assets to simulate threats and an increase in aircraft training flights, permit the use of training chaff and flares, and authorize supersonic flight above 10,000 AGL. Three action alternatives and a no-action alternative have currently been identified for analyses and are discussed in the attached meeting brochure (Atch 1).

As part of this Environmental Impact Analysis Process, and in continuance of Government-to-Government consultation initiated by Colonel Scott Vander Hamm, 28 BW/CC, Ellsworth AFB SD, we request your assistance in gathering information concerning previous archaeological and historic studies for the areas under the affected region. We would appreciate any assistance you could provide in identifying and retrieving this important information, as well as concerns you may have about the potential effects of the proposal on significant cultural resources. All or portions of the following locations have the potential of being affected by the proposal's overhead training airspace due to one or more of the alternatives: ***Montana***—Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***—Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***—Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

Global Power For America

The Air Force is committed to community outreach and we appreciate the opportunity to hold a community meeting at the Apsaalooke Center in Crow Agency on Monday, June 23, 2008 from 9:30 – 11:30 a.m. Open communication of issues is a critical element of the EIS process, and we would appreciate your assistance in posting the attached meeting flyer (Atch 2) around the community and encouraging public participation. The Air Force intends to coordinate public involvement for the purpose of Section 106 review under the NHPA with public involvement in the EIS prepared under the Environmental Impact Analysis Process. Meetings with public, agency, and Native American stakeholders during this scoping process will help identify the full range of reasonable alternatives, potential impacts, and key issues to be considered in the environmental impact analysis process.

To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EIS, please provide information and/or comments to Ms. Linda DeVine, HQ ACC/A7PP, 129 Andrews Street, Room 317, Langley AFB VA 23665-2769, not later than August 4, 2008. If you have any specific questions about this request, please feel free to contact Ms. Linda DeVine at (757) 764-9434, or by electronic-mail at acc.prtc@langley.af.mil. You may also obtain information including the two attachments to this letter, from our website at www.accplanning.org. Thank you in advance for your assistance in this matter.

Sincerely,

BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

Attachment:
1. Scoping Meeting Brochure
2. Flyer

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 12 2008

Ms. Clara Caufield
Northern Cheyenne Tribal Administration Offices
600 S. Cheyenne Ave.
Lame Deer, MT 59043

Dear Ms. Caufield,

The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

The proposed action would restructure and reconfigure the existing Powder River Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspaces (ATCAAs). The PRTC proposal would establish two air refueling routes, create additional low altitude MOA (500 feet Above Ground Level [AGL] up to, but not including, 18,000 feet above Mean Sea Level [MSL]) and high-altitude ATCAA (18,000-60,000 MSL) combinations in portions of South Dakota, North Dakota, Wyoming and Montana. The proposal would support additional ground-based assets to simulate threats and an increase in aircraft training flights, permit the use of training chaff and flares, and authorize supersonic flight above 10,000 AGL. Three action alternatives and a no-action alternative have currently been identified for analyses and are discussed in the attached meeting brochure (Atch 1).

As part of this Environmental Impact Analysis Process, and in continuance of Government-to-Government consultation initiated by Colonel Scott Vander Hamm, 28 BW/CC, Ellsworth AFB SD, we request your assistance in gathering information concerning previous archaeological and historic studies for the areas under the affected region. We would appreciate any assistance you could provide in identifying and retrieving this important information, as well as concerns you may have about the potential effects of the proposal on significant cultural resources. All or portions of the following locations have the potential of being affected by the proposal's overhead training airspace due to one or more of the alternatives: ***Montana***—Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***—Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***—Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

Global Power For America

The Air Force is committed to community outreach and we appreciate the opportunity to hold a community meeting at the Northern Cheyenne Tribal Administration Building Council Chambers on Tuesday, June 24, 2008 from 9:30 – 11:30 a.m. Open communication of issues is a critical element of the EIS process, and we would appreciate your assistance in posting the attached meeting flyers (Atch 2) around the community and encouraging public participation. The Air Force intends to coordinate public involvement for the purpose of Section 106 review under the NHPA with public involvement in the EIS prepared under the Environmental Impact Analysis Process. Meetings with public, agency, and Native American stakeholders during this scoping process will help identify the full range of reasonable alternatives, potential impacts, and key issues to be considered in the environmental impact analysis process.

To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EIS, please provide information and/or comments to Ms. Linda DeVine, HQ ACC/A7PP, 129 Andrews Street, Rm 317, Langley AFB VA 23665-2769 not later than August 4, 2008. If you have any specific questions about this request, please feel free to contact Ms. Linda DeVine at (757) 764-9434, or by electronic-mail at acc.prtc@langley.af.mil. You may also obtain information including the two attachments to this letter, from our website at www.accplanning.org. Thank you in advance for your assistance in this matter.

Sincerely,

BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

Attachment:
1. Scoping Meeting Brochure
2. Flyer

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 12 2008

Mr. Donald Red Thunder
Land Operations Office
Building 2001
Main Street
Eagle Butte SD 57625

Dear Mr. Red Thunder,

The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

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Global Power For America

The Air Force is committed to community outreach and we appreciate the opportunity to hold a community meeting at the Multi-Purpose Building in Dupree on Wednesday, July 16, 2008 from 4:00 – 7:00 p.m. Open communication of issues is a critical element of the EIS process, and we would appreciate your assistance in posting the attached meeting flyers (Atch 2) around the community and encouraging public participation. The Air Force intends to coordinate public involvement for the purpose of Section 106 review under the NHPA with public involvement in the EIS prepared under the Environmental Impact Analysis Process. Meetings with public, agency, and Native American stakeholders during this scoping process will help identify the full range of reasonable alternatives, potential impacts, and key issues to be considered in the environmental impact analysis process.

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Sincerely,

BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

Attachment:
1. Scoping Meeting Brochure
2. Flyer

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 12 2008

Mr. Richard Bird
Chairman, Economic Committee
PO Box D
Fort Yates ND 58538

Dear Mr. Bird,

The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

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Global Power For America

The Air Force is committed to community outreach and we appreciate the opportunity to hold a community meeting at the Bear Soldier District Gym in McLaughlin, SD on Friday, July 11, 2008 from 3:00 – 5:00 p.m. and at the Community Center in Fort Yates on Friday, July 11, 2008 from 6:00 – 8:00 p.m. Open communication of issues is a critical element of the EIS process, and we would appreciate your assistance in posting the attached meeting flyers (Atch 2) around the community and encouraging public participation. The Air Force intends to coordinate public involvement for the purpose of Section 106 review under the NHPA with public involvement in the EIS prepared under the Environmental Impact Analysis Process. Meetings with public, agency, and Native American stakeholders during this scoping process will help identify the full range of reasonable alternatives, potential impacts, and key issues to be considered in the environmental impact analysis process.

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Acting Chief, Programs Division

Attachment:
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2. Flyer

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 12 2008

Chairman Joseph Brings Plenty
Cheyenne River Sioux Tribal Council
PO Box 5690
Eagle Butte SD 57625

Dear Mr. Brings Plenty,

The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

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Global Power For America

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Sincerely,

BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

Attachment:
1. Scoping Meeting Brochure
2. Flyer

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

MEMORANDUM FOR Bureau of Indian Affairs
Standing Rock Agency
PO Box E
Fort Yates, ND 58538

FROM: HQ ACC/A7P
129 Andrews Street
Langley AFB VA 23665-2769

SUBJECT: Powder River Training Complex, Environmental Impact Statement (EIS)

1. The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

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Global Power For America

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BRUCE W. MACDONALD, P.E.
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2. Flyer

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

MEMORANDUM FOR Bureau of Indian Affairs
Cheyenne River Agency
PO Box 325
Eagle Butte, SD 57625

FROM: HQ ACC/A7P
129 Andrews Street
Langley AFB VA 23665-2769

SUBJECT: Powder River Training Complex, Environmental Impact Statement (EIS)

1. The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

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Acting Chief, Programs Division

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Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

MEMORANDUM FOR Bureau of Indian Affairs
Pine Ridge Agency
PO Box 1203
Pine Ridge, SD 57770

FROM: HQ ACC/A7P
129 Andrews Street
Langley AFB VA 23665-2769

SUBJECT: Powder River Training Complex, Environmental Impact Statement (EIS)

1. The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

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Global Power For America

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BRUCE W. MCDONALD, P.E.
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Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

MEMORANDUM FOR Bureau of Indian Affairs
Rocky Mt Regional Office
316 N. 26th St.
Billings, MT 59101

FROM: HQ ACC/A7P
129 Andrews Street
Langley AFB VA 23665-2769

SUBJECT: Powder River Training Complex, Environmental Impact Statement (EIS)

1. The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

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Global Power For America

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Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

MEMORANDUM FOR Bureau of Indian Affairs
Midwest Regional Office
One Federal Drive, Rm. 550
Ft. Snelling, MN 55111-4007

FROM: HQ ACC/A7P
129 Andrews Street
Langley AFB VA 23665-2769

SUBJECT: Powder River Training Complex, Environmental Impact Statement (EIS)

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BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

Attachment:
1. Scoping Meeting Brochure
2. Flyer

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

MEMORANDUM FOR Bureau of Indian Affairs
Great Plains Regional Office
115 4th Ave. SE
Aberdeen, SD 57401

FROM: HQ ACC/A7P
129 Andrews Street
Langley AFB VA 23665-2769

SUBJECT: Powder River Training Complex, Environmental Impact Statement (EIS)

1. The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

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3. All or portions of the following locations have the potential of being affected by the proposal's overhead training airspace due to one or more of the alternatives: ***Montana***—Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***—Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***—Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

MEMORANDUM FOR South Dakota State Historical Society
900 Governors Drive
Pierre, SD 57501-2217

FROM: HQ ACC/A7P
129 Andrews Street
Langley AFB VA 23665-2769

SUBJECT: Powder River Training Complex, Environmental Impact Statement (EIS)

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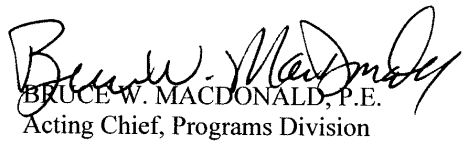

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

MEMORANDUM FOR State Historical Society of North Dakota
612 East Boulevard Avenue
Bismarck, ND 58505-0830

FROM: HQ ACC/A7P
129 Andrews Street
Langley AFB VA 23665-2769

SUBJECT: Powder River Training Complex, Environmental Impact Statement (EIS)

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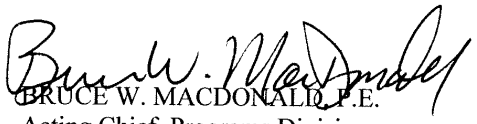

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

MEMORANDUM FOR State Parks & Cultural Resources Historic Preservation Office
2301 Central Avenue
Cheyenne, WY 82002

FROM: HQ ACC/A7P
129 Andrews Street
Langley AFB VA 23665-2769

SUBJECT: Powder River Training Complex, Environmental Impact Statement (EIS)

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

MEMORANDUM FOR Montana Historical Society
225 N. Roberts
PO Box 20121
Helena, MT 59620

FROM: HQ ACC/A7P
129 Andrews Street
Langley AFB VA 23665-2769

SUBJECT: Powder River Training Complex, Environmental Impact Statement (EIS)

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HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

MEMORANDUM FOR Wyoming State Parks/Historic Sites HQ
2301 Central Avenue
Cheyenne, WY 82002

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129 Andrews Street
Langley AFB VA 23665-2769

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

Chippewa-Cree Business Committee
Rocky Boy Route, Box 544
Box Elder, MT 59521

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Acting Chief, Programs Division

Attachment:
1. Scoping Meeting Brochure
2. Flyer

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

Turtle Mountain Tribal Council
PO Box 900
Highway 5 West
Belcourt, ND 58316

Dear Sir/Madam,

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BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

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Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

Three Affiliated Tribes Business Council
404 Frontage Road
New Town, ND 58763

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

Eastern Shoshone Tribal Council
15 North Fork Road
PO Box 538
Fort Washakie, WY 82514

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

Rosebud Sioux Tribe
PO Box 430
Rosebud, SD 57570

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

Arapaho Business Council
PO Box 396
Fort Washakie, WY 82514

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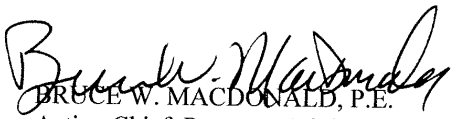

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Oglala Sioux Tribal Council
PO Box 2070
Pine Ridge, SD 57770

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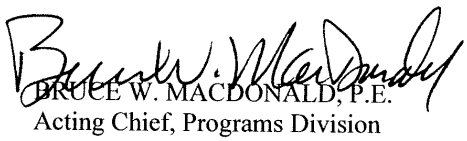

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HEADQUARTERS AIR COMBAT COMMAND
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JUN 3 2008

Confederated Salish and Kootenai Tribe
PO Box 278
51383 Highway 93 North
Pablo, MT 59855

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LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

Fort Belknap Community Council
RR1, Box 66
Harlem, MT 59526

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meetings in communities underlying and/or adjacent to the proposed airspace as identified in the meeting flyer at attachment 2. The Air Force intends to coordinate public involvement for the purpose of Section 106 review under the NHPA with public involvement in the EIS prepared under the Environmental Impact Analysis Process. Meetings with public, agency, and Native American stakeholders during this scoping process will help identify the full range of reasonable alternatives, potential impacts, and key issues to be considered in the environmental impact analysis process.

To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EIS, please provide information and/or comments to Ms. Linda DeVine, HQ ACC/A7PP at the above address not later than August 4, 2008. If you have any specific questions about this proposal, please feel free to contact Ms. Linda DeVine at (757) 764-9434, or by electronic-mail at acc.prtc@langley.af.mil. You may also obtain information including the two attachments to this letter, from our website at www.accplanning.org. Thank you in advance for your assistance in this matter.

Sincerely,

BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

Attachment:
1. Scoping Meeting Brochure
2. Flyer

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

Fort Peck Tribal Executive Board
PO Box 1027
501 Medicine Bear Road
Poplar, MT 59255

Dear Sir/Madam,

The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

The proposed action would restructure and reconfigure the existing Powder River Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspaces (ATCAAs). The PRTC proposal would establish two air refueling routes, create additional low altitude MOA (500 feet Above Ground Level [AGL] up to, but not including, 18,000 feet above Mean Sea Level [MSL]) and high-altitude ATCAA (18,000-60,000 MSL) combinations in portions of South Dakota, North Dakota, Wyoming and Montana. The proposal would support additional ground-based assets to simulate threats and an increase in aircraft training flights, permit the use of training chaff and flares, and authorize supersonic flight above 10,000 AGL. Three action alternatives and a no-action alternative have currently been identified for analyses and are discussed in the attached meeting brochure (Atch 1).

As part of this Environmental Impact Analysis Process, the Air Force would like to consider your concerns and initiate Government-to-Government consultation regarding the proposed action. We are in the early stages of gathering information concerning previous archaeological and historic studies for the areas under the affected region. We would appreciate any assistance you could provide in identifying and retrieving this important information, as well as concerns you may have about the potential effects of the proposal on significant cultural resources. All or portions of the following locations have the potential of being affected by the proposal's overhead training airspace due to one or more of the alternatives: ***Montana***—Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***—Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***—Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

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Sincerely,

BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

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1. Scoping Meeting Brochure
2. Flyer

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

Spirit Lake Sioux Tribal Council
PO Box 359
Fort Totten, ND 58335

Dear Sir/Madam,

The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

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As part of this Environmental Impact Analysis Process, the Air Force would like to consider your concerns and initiate Government-to-Government consultation regarding the proposed action. We are in the early stages of gathering information concerning previous archaeological and historic studies for the areas under the affected region. We would appreciate any assistance you could provide in identifying and retrieving this important information, as well as concerns you may have about the potential effects of the proposal on significant cultural resources. All or portions of the following locations have the potential of being affected by the proposal's overhead training airspace due to one or more of the alternatives: ***Montana***—Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***—Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***—Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

The Air Force is committed to community outreach. Recognizing that open communication of issues is a critical element of the EIS process, the Air Force will host public

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To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EIS, please provide information and/or comments to Ms. Linda DeVine, HQ ACC/A7PP at the above address not later than August 4, 2008. If you have any specific questions about this proposal, please feel free to contact Ms. Linda DeVine at (757) 764-9434, or by electronic-mail at acc.prtc@langley.af.mil. You may also obtain information including the two attachments to this letter, from our website at www.accplanning.org. Thank you in advance for your assistance in this matter.

Sincerely,

BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

Attachment:
1. Scoping Meeting Brochure
2. Flyer

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JUN 3 2008

MEMORANDUM FOR DISTRIBUTION

FROM: HQ ACC/A7P
129 Andrews Street, Room 317
Langley AFB VA 23665-2769

SUBJECT: Powder River Training Complex, Environmental Impact Statement (EIS)

1. The United States Air Force (Air Force) is in the process of preparing an EIS to assess the potential environmental consequences of a proposal to expand and enhance the existing Powder River Complex (PRC) near Ellsworth Air Force Base (AFB) SD. The proposal would create the Powder River Training Complex (PRTC). The PRTC would more effectively use limited resources and finite flying hours by providing locally the realistic training needed by B-1 and B-52 aircrews flying from Ellsworth AFB SD and Minot AFB ND, respectively. This airspace proposal addresses the training and other limitations affecting the existing PRC training assets as they are currently configured.

2. The proposed action would restructure and reconfigure the existing Powder River Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspaces (ATCAAs). The PRTC proposal would establish two air refueling routes, create additional low altitude MOA (500 feet Above Ground Level [AGL] up to, but not including, 18,000 feet above Mean Sea Level [MSL]) and high-altitude ATCAA (18,000-60,000 MSL) combinations in portions of South Dakota, North Dakota, Wyoming and Montana. The proposal would support additional ground-based assets to simulate threats and an increase in aircraft training flights, permit the use of training chaff and flares, and authorize supersonic flight above 10,000 AGL. Three action alternatives and a no-action alternative have currently been identified for analyses and are discussed in the attached meeting brochure (Atch 1). All or portions of the following locations have the potential of being affected by the proposal's overhead training airspace due to one or more of the alternatives: ***Montana***—Crow and Northern Cheyenne Reservations and the counties of Big Horn, Carter, Custer, Fallon, Powder River, Rosebud, Treasure, and Yellowstone; ***North Dakota***—Standing Rock Reservation and Adams, Billings, Bowman, Golden Valley, Grant, Hettinger, Morton, Sioux, Slope, and Stark counties; ***South Dakota***—Standing Rock and Cheyenne River Reservations, and Butte, Corson, Harding, Lawrence, Meade, Pennington, Perkins, Ziebach counties; and ***Wyoming***: Campbell, Crook, Sheridan, and Weston counties.

3. Recognizing that open communication of issues is a critical element of the EIS process, the Air Force will host numerous public meetings in communities underlying and/or adjacent to the proposed action (Atch 2). The scoping meetings will be in held in an open-house format, where Air Force representatives will describe the proposed action and alternatives, the National Environmental Policy Act process which we are undertaking, outline opportunities for public involvement, and answer questions on the proposal. The meetings will last from 4:00 to 7:00 pm

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at all locations, and interested parties or citizens are welcome to come at any time since information will be provided throughout the duration of the open house.

4. Meetings with public and agency stakeholders during this scoping process will help identify the full range of reasonable alternatives, potential impacts, and key issues throughout the environmental impact analysis process. The Air Force intends to coordinate public involvement for the purpose of Section 106 review under the National Historic Preservation with public involvement in the EIS prepared under this Environmental Impact Analysis Process. The Federal Aviation Administration has accepted the Air Force's request to be a cooperating agency for this action and has appointed the Central Service Area as their office of primary responsibility for this EIS.

5. The Air Force will accept comments at any time during the environmental process and any information you feel would assist us in this process would be appreciated. To ensure the Air Force has sufficient time to consider public input in the preparation of the draft EIS, information and comments should be submitted to Ms. Linda DeVine, HQ ACC/A7PP, 129 Andrews Street, Room 317, Langley AFB VA 23665-2769 by August 4, 2008.

6. If you have any specific questions about this proposal, please feel free to contact Ms. DeVine at (757) 764-9434, by electronic-mail at acc.prtc@langley.af.mil or contact the public affairs office at Ellsworth AFB SD, 605-385-5056. You may also obtain information including the two attachments to this letter, from our website at www.accplanning.org. Thank you in advance for your assistance in this matter.

BRUCE W. MACDONALD, P.E.
Acting Chief, Programs Division

Attachments:
1. Scoping Meeting Brochure
2. Flyer

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DISTRIBUTION LIST

Nadenicek Joe
SD Dept. of Environmental and Natural Resources
523 E Capitol Avenue
Pierre, SD 57501

James Boyd
ND Division of Community Service
PO Box 2057
600 E Boulevard Ave, Dept 105
Bismarck, ND 58502

Vicki McCusker
NPS Natural Sounds Program
1201 Oakridge Dr., Suite 100
Fort Collins, CO 80525

Chris Hanson
Bureau of Land Management
Buffalo Field Office
1425 Fort Street
Buffalo, WY 82834

Stephen Potts
U.S. Environmental Protection Agency,
Region 8 - Montana Office
10 W 15th St, Ste. 3200
Helena, MT 59626

Barry Cooper
Federal Aviation Administration
Great Lakes Region
2300 East Devon Avenue
Des Plaines, IL 60018

Dennis Roberts
Federal Aviation Administration
Northwest Mountain Region
1601 Lind Avenue Southwest
Renton, WA 98057

Mary Sexton
Department of Natural Resources and Conservation
1625 Eleventh Avenue
Helena, MT 59620

Gary Preszler
North Dakota State Land Dept.
1707 North 9th Street
PO Box 5523
Bismarck, ND 58506-5523

Everts Tom
Legislative Environmental Quality Council
Room 171 State Capitol
PO Box 201704
Helena, MT 59620

Willie R. Taylor, PhD
Office of Environmental Policy and Compliance
U.S. Department of the Interior
1849 "C" Street NW, M/S 2342
Washington, DC 20240

Vi Hillman
Bureau of Land Management
Newcastle Field Office
1101 Washington Blvd
Newcastle, WY 82701-2968

Lonny Bagley
Bureau of Land Management
North Dakota Field Office
99 23rd Avenue West, Suite A
Dickinson, ND 58601

Gene Terland
Bureau of Land Management
5001 Southgate Drive
Billings, MT 59101

Ron de Yong
Montana Department of Agriculture
303 N Roberts Street
Helena, MT 59620

Marian Atkins
Bureau of Land Management
South Dakota Field Office
310 Roundup Street
Belle Fourche, SD 57717-1698

Mark Baumler
Montana Historical Society
225 N. Roberts
PO Box 20121
Helena, MT 59620

Cheryl Kulas
ND Indian Affairs Commission
600 East Boulevard Avenue
1st Floor - Judicial Wing
Bismarck, ND 58505-0300

Karen Breslin
National Park Service, Intermountain Region
12795 Alameda Pkwy
Denver, CO 80225

Patty Rooney
National Park Service, Midwest Region
601 Riverfront Drive
Omaha, NE 68102

Larry Svoboda
US Environmental Protection Agency,
Region 8
1595 Wynkoop Street
Denver, CO 80202-1129

Elaine Raper
Bureau of Land Management
Miles City Field Office
111 Garryowen Road
Miles City, MT 59301-0940

Don Simpson
Bureau of Land Management
5353 Yellowstone
Cheyenne, WY 82009

Tom Tidwell
USDA Forest Service
Northern Region One
PO Box 7669
Missoula, MT 59807

Richard Opper
MT DEQ
1520 E Sixth Avenue
PO Box 200901
Helena, MT 59620-0901

Jeff Hagener
Montana Fish, Wildlife, and Parks
1420 E 6th Avenue
PO Box 200701
Helena, MT 59620

John Hoeven
North Dakota Governor's Office
600 East Boulevard Avenue
Bismarck, ND 58505-0001

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Roger Johnson
North Dakota Department of Agriculture
600 E Boulevard Ave Dept 602
Bismarck, ND 58505-0020

Steven Pirner, P.E.
SD DENR
PMB 2020
Joe Foss Building
523 E Capitol
Pierre, SD 57501

Steven Doohen
South Dakota Department of Military & Veterans Affairs
Soldiers & Sailors Memorial Building
425 East Capitol Avenue
Pierre, SD 57501-5070

Mary Hopkins
State Parks & Cultural Resources
Historic Preservation Office
2301 Central Avenue
Cheyenne, WY 82002

Karl Altenburg
North Dakota Wing Civil Air Patrol
PO Box 608
Bismarck, ND 58502-0608

John Etchepare
Wyoming Department of Agriculture
2219 Carey Avenue
Cheyenne, WY 82002-0100

Joe Moore
Wyoming Office of Homeland Security
122 West 25th Street
Herschler Bldg, 1st Floor East
Cheyenne, WY 82002

Mike Rounds
State of South Dakota
Office of the Governor
500 E Capitol Avenue
Pierre, SD 57501

Larry Kotchman
North Dakota Forest Service
Molberg Center
307 First Street East
Bottineu, ND 58318

David Freudenthal
State of Wyoming
State Capitol, 200 West 24th Street
Cheyenne, WY 82002-0010

Jeff Vonk
South Dakota Game, Fish and Parks
523 East Capitol Avenue
Pierre, SD 57501

Tom Dravland
South Dakota Department of Public Safety
118 West Capitol Avenue
Pierre, SD 57501

Douglass Prchal
North Dakota Parks and Recreation Department
1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649

Bruce Lindholm
South Dakota DOT
Office of Aeronautics
700 E Broadway Avenue
Pierre, SD 57501-2586

John Cox
WYDOT Headquarters
5300 Bishop Blvd
Cheyenne, WY 82009-3340

John Corra
Department of Environmental Quality
122 West 25th Street
Herschler Building, 4th Floor West
Cheyenne, WY 82002

Terry Cleveland
Wyoming Game and Fish
5400 Bishop Boulevard
Cheyenne, WY 82006

William Even
South Dakota Department of Agriculture
523 E Capitol Avenue
Pierre, SD 57501-3182

Mike Kintigh
South Dakota Game, Fish and Parks
3305 W South Street
Rapid City, SD 57702

Roger Campbell
South Dakota Office of Tribal Government Relations
Capitol Lake Plaza
711 East Wells Avenue
Pierre, SD 57501-3369

Paul Schadewald
North Dakota Game and Fish Department
100 North Bismarck Expressway
Bismarck, ND 58501-5095

Richard Benda
Department of Tourism and State Development
711 E Wells Avenue
Pierre, SD 57501-3369

Barry Bowersox
WYDOT
District 4
3540 Warlow Drive
Gillette, WY 82716

Tanner Shatto
Department of Environmental Quality,
Sheridan Field Office
1866 S Sheridan Avenue
Sheridan, WY 82801

Jim Boyd
North Dakota Department of Commerce
1600 E Century Avenue, Ste. 2
PO Box 2057
Bismarck, ND 58502-2057

Global Power For America

Department of Tourism and State Development

July 7, 2008

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Room 317
Langley AFB, VA 23665-2769

Project: 080604006F – Power River Training Complex, Environmental Impact Statement
Location: Multiple Counties
(DOD/Air Force)

Dear Ms. DeVine:

Thank you for the opportunity to comment on the above referenced project. The South Dakota Office of the State Historic Preservation Officer (SHPO) would like to provide the following list of areas in South Dakota that may be considered Traditional Cultural Properties and/or places of religious and cultural significance to Indian Tribes. The list also includes contact information for each land managing agency associated with the resource.

Bear Butte National Historic Landmark:	Bear Butte State Park PO Box 688; E Hwy 79 Sturgis, SD 57785
National Park Service:	Ernest Quintana, Regional Director National Park Service, MWRO 601 River Front Drive Omaha, NE 68102
Black Hills:	District Ranger Black Hills National Forest Northern Hills Ranger District 2014 N. Main Street Spearfish, SD 57783
Custer National Forest:	Forest Supervisor Custer National Forest 1310 Main Street Billings, MT 59105

Office of Tourism
Governor's Office of Economic Development
Tribal Government Relations
711 E Wells Ave / Pierre, SD 57501-3369
Phone: 605-773-3301 / Fax: 605-773-3256
travelsd.com / sdgreatprofts.com /
sdtribalrelations.com

South Dakota Arts Council
800 Governors Dr. / Pierre, SD 57501-2294
Phone: 605-773-3131 or 1-800-423-6665 in SD
Fax: 605-773-6962
sdac@state.sd.us / sdarts.org

South Dakota State Historical Society
900 Governors Dr. / Pierre, SD 57501-2217
Phone: 605-773-3458 / Fax: 605-773-6041
sdhistory.org

South Dakota Housing Development Authority
PO Box 1237 / Pierre, SD 57501-1237
Phone: 605-773-3181 / Fax: 605-773-5154
sdhda.org

Please note the above list is not all inclusive. For additional information concerning the identification of historic properties, we recommend contacting the appropriate consulting parties as outlined in 36 CFR part 800 – Protection of historic properties. For your convenience a list of Indian Tribes and contact information has been included.

Should you require additional information, please contact Paige Hoskinson Olson, Review and Compliance Coordinator, at (605) 773-6004. Your concern for the non-renewable cultural heritage of our state is appreciated.

Sincerely,

Jay D. Vogt
State Historic Preservation Officer

Paige Hoskinson Olson
Review and Compliance Coordinator

Enclosure: South Dakota Tribal Chairman and Tribal Historic Preservation Offices

South Dakota Tribal Chairman and Tribal Historic Preservation Offices

Chairman: Joseph Brings Plenty
Cheyenne River Sioux Tribe
PO Box 590
Eagle Butte, SD 57625-0590
Phone (605) 964-4155
Fax (605) 964-4151

THPO:
Cheyenne River Sioux Tribe
Tribal Historic Preservation Office
PO Box 590
Eagle Butte, SD 57625
Phone (605) 964-7554
Fax (605) 964-7552

Chairman: Brandon Sazue Sr.
Crow Creek Sioux Tribe
PO Box 50
Ft. Thompson, SD 57339-0050
Phone (605) 245-2221
Fax (605) 245-2470

Chairman: Josh Weston
Flandreau-Santee Sioux Tribe
PO Box 283
Flandreau, SD 57028-0283
Phone (605) 997-3512
Fax (605) 997-3878

Chairman: Michael Jandreau
Lower Brule Sioux Tribe
PO Box 187
Lower Brule, SD 57548-0187
Phone (605) 473-5561
Fax (605) 473-5606

Cultural Resources: Scott Jones
Lower Brule Sioux Tribe
PO Box 187
Lower Brule, SD 57548-0187
Phone (605) 473-5561
Fax (605) 473-5606

Chairman: John Yellow Bird Steele
Oglala Sioux Tribe
PO Box 2070
Pine Ridge, SD 57770-2070
Phone (605) 867-5821
Fax (605) 867-1449

Cultural Resources: Joyce Whiting
Oglala Sioux Tribe
US Highway 18
Behind Tribal Building
Pine Ridge, SD 57770
(605) 867-1271

Chairman: Rodney Bordeaux
Rosebud Sioux Tribe
PO Box 430
Rosebud, SD 57570-0430
Phone (605) 747-2381
Fax (605) 747-2243

THPO: Russell Eagle Bear
Rosebud Sioux Tribe
Tribal Historic Preservation Office
PO Box 658
Rosebud, SD 57570-0658
Phone (605) 747-2381
Fax (605) 747-4227
Kathy Arcoren
Phone (605) 747-4255
rstthpo@yahoo.com

Chairman: Mike Selvage
Sisseton-Wahpeton Oyate
PO Box 509
Agency Village, SD 57262-0509
Phone (605) 698-3911
Fax (605) 698-3708

Chairman: Ron His Horse Is Thunder
Standing Rock Sioux Tribe
PO Box D
Ft. Yates, ND 58538-0522
Phone (701) 854-8500
Fax (701) 854-7299

Chairman: Robert Cournoyer
Yankton Sioux Tribe
PO Box 248
Marty, SD 57361-0248
Phone (605) 384-3641
Fax (605) 384-5687

Chairman: Marcus D. Wells, Jr.
Mandan, Hidatsa & Arikara Nation
Three Affiliated Tribes
404 Frontage Road
New Town, ND 58763
Phone: (701) 627-4781
Fax (701) 627-4748

THPO: Dianne Desrosiers
Sisseton-Wahpeton Oyate
PO Box 907
Sisseton, SD 57262
Phone (605) 698-4972
Fax (605) 698-7054

THPO: Tim Mentz, Sr.
Standing Rock Sioux Tribe
Tribal Historic Preservation Office
PO Box D
Fort Yates, ND 58538
Phone (701) 854-2120
Fax (701) 854-2138

THPO:
Mandan, Hidatsa & Arikara Nation
Three Affiliated Tribes
404 Frontage Road
New Town, ND 58763
Phone: (701) 627-4781
Fax (701) 627-4748

THPO: Brady Grant
Turtle Mountain Band of Chippewa
PO Box 900
Belcourt, North Dakota 58316
(701) 477-2604

THPO: Pam Halverson
Lower Sioux Indian Community
PO Box 308
39527 Res Hwy 1
Morton MN 56270
(507)697-6185

THPO: Curley Youpee
Fort Peck
PO Box 836
Poplar MT 59255
(406) 768-5155

THPO: Joanne White
Northern Arapaho Tribe
533 Ethete Rd
Ethete, WY 82520

-WOHEHIV-
The Morning Star

NORTHERN CHEYENNE TRIBE
ADMINISTRATION
P.O. BOX 128
LAME DEER, MONTANA 59043
(406) 477-6284
FAX (406) 477-6210

-WOHEHIV-
The Morning Star

July 28, 2008

Linda DeVine, PRTC EIS Manager
129 Andrews St., Ste 102
Langley AFB, VA 23665-2769

Dear Ms. DeVine;

The Northern Cheyenne Tribe appreciates your efforts in assuring that all parties are included in the scoping process. We are currently conducting an internal analysis from tribal programs and departments for comments and concerns regarding the Powder River Training Complex (PRTC) and the long term effects on the Northern Cheyenne reservation.

We would like to set up a meeting during the month of August as part of the government to government consultation process with Indian tribes. Specifically, the Northern Cheyenne Tribe would like to meet with the United States Air Force and discuss the effects of the PRTC management plan within the Northern Cheyenne reservation and ancestral lands within the PRTC.

A tentative date during the week of the 11th of August has been suggested. If this date is suitable please let our office know so that we can schedule a meeting with the Northern Cheyenne Tribal Council.

We would also like to request that the comments gathered will be forwarded to your office two (2) weeks after the suggested meeting has occurred.

If you have any questions, please let my office know.

Sincerely,

Geri Small, President
Northern Cheyenne Tribe

LITTLE WOLF AND MORNING STAR - Out of defeat and exile they led us back to Montana and won our Cheyenne homeland that we will keep forever.

6005-3857-4407

United States Department of the Interior

National Park Service

Midwest Region
601 Riverfront Drive
Omaha, Nebraska 68102-4226

7 AUG 2008
ER-08/0406(MWR-PCL/PC)

Ms. Linda DeVine
HQ ACC/A7PP
129 Andrews Street, Suite 317
Langley Air Force Base, Virginia 23665-2769

Dear Ms. DeVine:

The Department of the Interior (Department) has asked the National Park Service (NPS) to review and comment on the Notice of Intent to prepare an Environmental Impact Statement (EIS) for the Powder River Complex expansion located near Ellsworth Air Force Base, South Dakota. We offer the following comments for your consideration:

The proposed Powder River Complex expansion affects the northeast part of Wyoming, the southeast part of Montana, the southwest part of North Dakota, and the northwest part of South Dakota. National parks in the area include Theodore Roosevelt National Park, Mount Rushmore National Memorial, Devils Tower National Monument, Bighorn Canyon National Recreation Area, and Little Bighorn Battlefield, which are located within or very near the expansion area. The NPS is concerned about the potential of the proposed action to adversely affect the soundscapes of these parks.

The NPS evaluates Federal actions which may impact the human and natural environment within our parks with respect to our Organic Act mandates, including:

> ... to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations.

We are different from other Federal land management agencies in that, in addition to our national legislative mandates, each individual park is established under separate legislative authority which identifies specific purposes for the park and often includes the identification of key natural or cultural resources which define the integrity of the park.

Natural and cultural sounds are integral components of the suite of resources and values which NPS managers are charged with preserving and restoring. A soundscape refers to the total acoustic environment of an area. The soundscape (like air, water, scenery, or wildlife) of a national park is a valuable resource that can easily be degraded or destroyed by inappropriate sound levels and frequencies. An area's ability to transmit ecologically significant sounds is a function of the amount of extraneous noise intrusion.

We understand, at this stage in the process, the U.S. Air Force (USAF) would not include information in the Notice of Intent regarding how the environmental impact analysis would be

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conducted. However, we are aware the USAF typically uses the day-night average sound level (DNL) metric in their environmental impact assessments. The DNL is an energy-based noise-averaging metric widely used by the Federal Aviation Administration (FAA) and the Department of Defense as the primary means for determining the cumulative noise energy exposure of individuals to noise resulting from aviation activities. Therefore, thresholds of significance that have been established by the FAA are based on community response. The FAA Order 1050.1E notes that special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within national parks. Since assumptions regarding the DNL levels are community-based in relation to airports, this metric is not adequate to assess impacts of noise to park resources, values, and visitor experience.

The NPS mission to conserve unimpaired park resources and values is a different standard than significance as defined by the FAA and other agencies. In recognition of the agencies' differences in mission and acknowledgement that special consideration needs to be given to the evaluation of noise impacts on noise-sensitive areas, it is imperative to provide information in the EIS for the NPS to be able to characterize the noise impacts from the proposed action and alternatives. Only then can Park Managers make decisions about impacts to park resources, values, and visitor experience. The NPS uses audibility-based, or "time above," metrics in order to express the time the sound level is above ambient. This takes into account the duration of aircraft noise events, the number of aircraft noise events, and the absolute sound level of events. "Time above" metrics correlate better with flight operations than the DNL metrics which obscure the dynamic range of acoustic events (www.fican.org/pdf/HanscomNoise.pdf). These supplemental metrics would also better satisfy the requirements under the National Environmental Policy Act (NEPA) to characterize impacts to the environment in terms of intensity, context, and duration (40 CFR 1508.27). The NPS Natural Sounds Program would be happy to discuss the inclusion of supplemental metrics in the EIS with the USAF.

We are concerned that the proposed expansion of existing military operations airspace would allow flights down to 500 feet above ground level as well as permitting supersonic flights within the proposed Powder River Complex expansion. The NPS would prefer no supersonic or low-level flights over park units. For example, the NPS worked with the FAA to establish a No-Fly Advisory Zone for the Devils Tower National Monument. The existing No-Fly Zone Advisory Bulletin between the Billings Area FAA and the Devils Tower National Monument is enclosed for your reference. Alternative B would appear to support our desire for no low-level flights over park units. We are also concerned about the use of chaff and flares in and near park units.

We seek mutually beneficial solutions related to impacts associated with the proposed project – solutions that articulate how natural and cultural values interrelate in healthy ecosystems/cultural landscapes, and how public enjoyment of these places as well as the need to ensure realistic training needed by the USAF can be part of a strategy for ensuring the resources are protected unimpaired for future generations. The NPS has worked with the USAF through the Regional Airspace/Range Council meetings regarding military overflight issues, and has found the USAF to be very receptive to the NPS concerns and willing to find mutually acceptable solutions. We have

every confidence that this proactive interagency relationship will continue throughout the NEPA process and we look forward to working with the USAF regarding the NPS concerns about the proposed Power River Complex expansion.

The Department has a continuing interest in working with the USAF to ensure impacts to resources of concern to the Department are adequately addressed. For matters related to these comments, please contact Regional Environmental Coordinator Nick Chevance, National Park Service, Midwest Regional Office, 601 Riverfront Drive, Omaha, Nebraska 68102-4226, telephone: 402-661-1844.

We appreciate the opportunity to provide these comments.

Sincerely,

Ernest Quintana
Regional Director

Enclosure

Devils Tower

National Park Service
U.S. Department of Interior

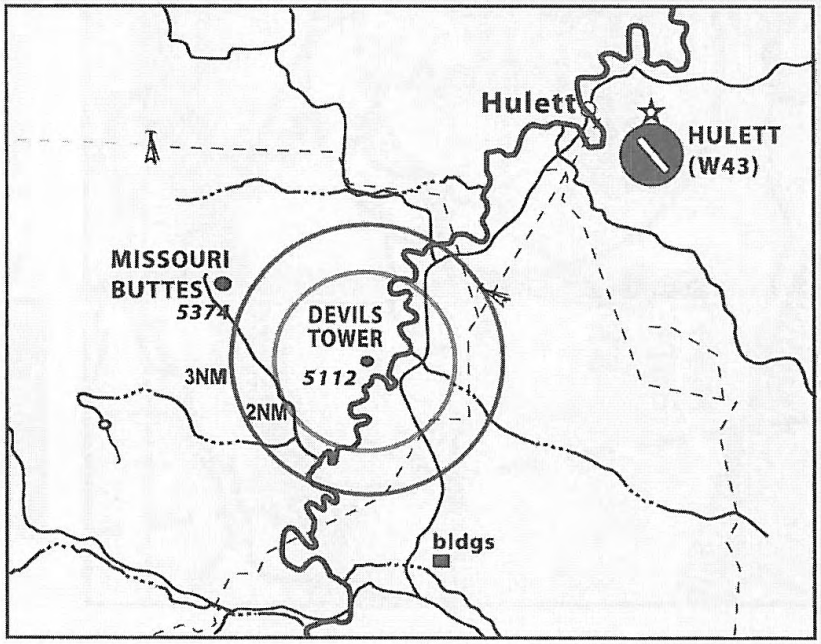
Devils Tower National Monument

No-Fly Advisory Zone

When the airport at Hulett, Wyoming (W43) was established, an agreement between the Federal Aviation Administration, Town of Hulett, Hulett Airport Advisory Board and Devils Tower National Monument created a "No-Fly Advisory Zone".

The No-Fly Advisory Zone recognizes the cultural significance of Devils Tower as a sacred site to over 20 American Indian Tribes, as well as the monument's purpose to preserve the lofty and isolated rock and surrounding public land as an object of historic and scientific interest for the enjoyment, education and inspiration of this and future generations.

The advisory is centered on Devils Tower, (Lat: 44°35'25.86"N, Long: 104°42'54.57"W) and extends for 2 nautical miles (NM) throughout the year, except for the month of June, when it extends for 3 nautical miles. The advisory includes no overflights of the Tower throughout the year. The Hulett (W43) airport is approximately 7.5 nautical miles northeast of Devils Tower. Pilots are advised to fly routes in northeasterly or southeasterly directions when using the airport for arrivals or departures to avoid the no-fly advisory zone.



Visual Flight References for the No-Fly Advisory

-Missouri Buttes
-Wyoming Hwy 24,
-Power lines
-Belle Fourche River

Legend

- 3 mile radius
- 2 mile radius
- major roads
- river
- power lines

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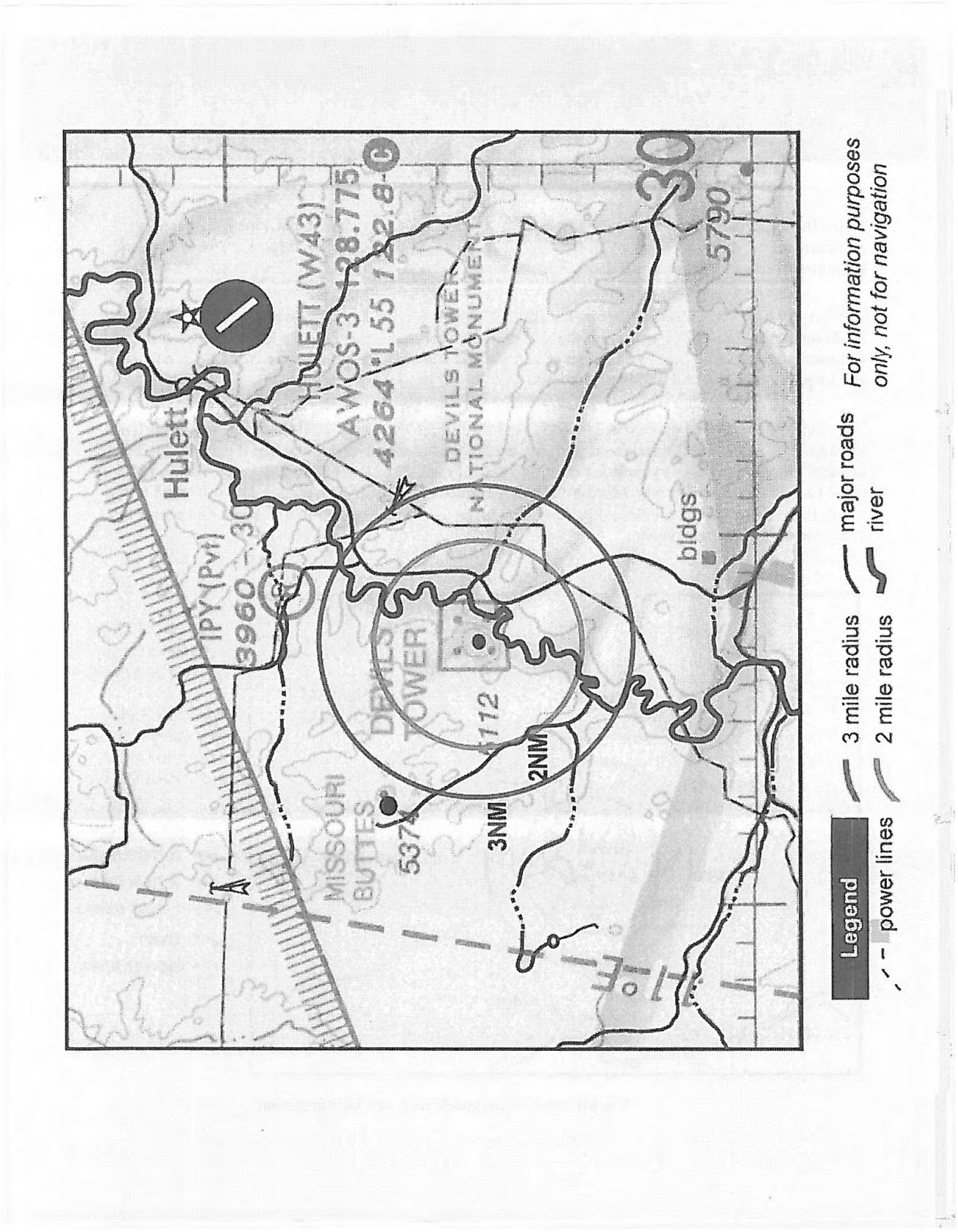

Hulett
IPY(Pvt)
3960
HULETT (W43)
AWOS-3
4264
DEVILS TOWER NATIONAL MONUMENT
DEVILS TOWER
5374
MISSOURI BUTTES
3NM
2NM
bldgs
5790
Legend
3 mile radius
2 mile radius
power lines
major roads
river
For information purposes only, not for navigation

From: Morgenstern, John E Civ USAF ACC 28 CES/CEANN [John.Morgenstern@ellsworth.af.mil]
Sent: Monday, December 01, 2008 1:53 PM
To: Nancy Brown
Cc: Green, Paul R ACC Civ USAF ACC ACC/A7AN; Rudolph, Teresa P; DeVine, Linda A ACC Civ USAF ACC ACC/A7PP; Jensen, Melody A Civ USAF ACC 28 CES/CEAON; Bodine, Douglas P Maj USAF ACC 28 OSS/ADO
Subject: Invitation ot Participate in Sec 106 Consultaion

Nancy,

The Air Force, and more specifically Air Combat Command (ACC) and Ellsworth AFB, proposes to expand its current Powder River Training Complex (PRTC) from a fly-over area of approximately 14,800 square miles to as much as 37,800 square miles. A Notice of Intent to prepare an Environmental Impact Statement for this proposal was published in the Federal Register on 29 May 2008.

The proposed expansion of the PRTC has the potential to directly impact four states (North Dakota, South Dakota, Montana, and Wyoming) and four Indian Reservations (the Cheyenne River in South Dakota, the Standing Rock in North and South Dakota, and the Northern Cheyenne and Crow in Montana). Other tribes not a part of these reservations may also attach religious and/or cultural significance to the areas affected and thus become consulting parties in the Section 106 process.

During June and July 2008, public scoping meetings were held at numerous locations affected by the proposed range expansion both on and off the reservations. Many written public comments were received that will be considered and addressed in the EIS.

Colonel Vander Hamm, Commander, 28th Bomb Wing, Ellsworth AFB, SD, has met on a government-to-government basis with leaders of the four primary tribes to explain the proposal and how they and their reservations may have the potential to be affected by training missions. These meetings were held prior to the public scoping meetings.

Pursuant to CFR 36 Part 800, I would like to take this opportunity to invite the ACHP to participate in further Section 106 consultation along with the appropriate SHPOs and/or THPOs affected by or having an interest in the PRTC expansion proposal. Thank you for your consideration and I look forward to your reply.

Sincerely,

John Morgenstern

John Morgenstern
Natural/Cultural Resources Manager
28 CES/CEVP
Ellsworth AFB SD 57706
(605) 385-2690, DSN: 675-
john.morgenstern@us.af.mil

Preserving America's Heritage

December 3, 2008

Mr. John Morgenstern
Natural/Cultural Resources Manager
Department of the Air Force
28 CES/CEVP
Ellsworth AFB, SD 57706

REF: Proposed Expansion of the Powder River Training Complex

Dear Mr. Morgenstern:

On December 1, 2008, the Advisory Council on Historic Preservation (ACHP) received your notification for the referenced project which was submitted in accordance with Section 800.6(a)(1) of our regulations, "Protection of Historic Properties" (36 CFR Part 800). Unfortunately, the background documentation included with your submission does not meet the specifications listed in Section 800.11(e). We, therefore, are unable to determine whether Appendix A of the regulations, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, applies to this undertaking. Accordingly, we request that you submit the following information so that we can determine whether our participation is warranted:

- A description of the undertaking, including photographs, maps, drawings, as necessary;
- A description of the steps to identify historic properties;
- A description of the affected historic properties;
- A description of the undertaking's effect on historic properties;
- An explanation of why the criteria of adverse effect were found applicable or inapplicable; and
- Copies or summaries of any views provided by consulting parties and the public, including
  comments from the Tribal Historic Preservation Officers, Indian tribes, and the appropriate State Historic Preservation Officers (SHPOs)

Upon receipt of the additional information, we will notify you within 15-days of our decision. Should you have any questions, feel free to contact Nancy Brown at 202-606-8582, or via email at nbrown@achp.gov.

Sincerely,

Raymond V. Wallace

Raymond V. Wallace
Historic Preservation Technician
Federal Property Management Section
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION
1100 Pennsylvania Avenue NW, Suite 803 Washington, DC 20004
Phone: 202-606-8503 ▯ Fax: 202-606-8647 ▯ achp@achp.gov ▯ www.achp.gov

From: Morgenstern, John E Civ USAF ACC 28 CES/CEANN [John.Morgenstern@ellsworth.af.mil]
Sent: Wednesday, February 04, 2009 9:53 AM
To: Nancy Brown
Cc: Rudolph, Teresa P
Subject: Proposed Expansion of the Powder River Training Complex

Nancy,

I am writing to let you know I (we) have not forgotten or overlooked the ACHP letter dated December 3, 2008, (*REF: Proposed Expansion of the Powder River Training Complex*) requesting additional information/background documentation per 36 CRF Part 800, Section 800.11 (e). Most of the additional background documentation has been compiled; however, some significant details of the proposed undertaking are still being developed and coordinated between the Air Force and the FAA.

When details have been finalized, a description of the proposed undertaking along with the other background documentation will be forwarded to your office as requested.

Please feel free to contact me if you have questions or concerns.

Sincerely,

John Morgenstern

John Morgenstern
Natural/Cultural Resources Manager
28 CES/CEVP
Ellsworth AFB SD 57706
(605) 385-2690, DSN: 675-
john.morgenstern@us.af.mil

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 28TH BOMB WING (ACC)
ELLSWORTH AIR FORCE BASE SOUTH DAKOTA

AUG 0 5 2009

Colonel Jeffrey B. Taliaferro
Commander, 28th Bomb Wing
1958 Scott Drive, Ste 1
Ellsworth AFB SD 57706-4710

Mr. Leroy Spang, President
Northern Cheyenne Council
PO Box 128
Lame Deer MT 59043

Dear President Spang

Having recently assumed command of the 28th Bomb Wing, I am writing to introduce myself prior to the scheduled government-to-government consultation with the Northern Cheyenne Tribal Council on August 17.

I believe meeting will help us both better understand our unique perspectives and continue the meaningful dialogue initiated by Colonel Vander Hamm between the Northern Cheyenne Tribe and Team Ellsworth. Our discussions must be open and honest, respecting each other's cultures, and trusting of each other's desire to maintain a healthy relationship. My goal for this consultation is to get to know you and other members of the tribal council, and to help me better understand and address the concerns identified in President Small's letter to the Air Force on September 8, 2008 in response to the scoping process for the proposed Powder River Training Complex (PRTC). If you have other specific issues you'd like to discuss, please feel free to contact me prior to the scheduled meeting so I can arrive more prepared, and we can make the meeting more productive.

We also welcome you and other members of the tribal council to visit Ellsworth Air Force Base as it would give us an opportunity to familiarize you with our base and the B-1 bomber. I look forward to meeting you and learning more about the people of the Northern Cheyenne Tribe.

Please contact me at (605) 385-2801 if you have any questions. If it's helpful, please feel free to have someone contact Mr. John Morgenstern, my natural and cultural resources manager, at (605) 385-2690.

Sincerely

JEFFREY B. TALIAFERRO, Colonel, USAF

Attachment:
Official Biography

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 28TH BOMB WING (ACC)
ELLSWORTH AIR FORCE BASE SOUTH DAKOTA

AUG 0 5 2009

Colonel Jeffrey B. Taliaferro
Commander, 28th Bomb Wing
1958 Scott Drive, Ste 1
Ellsworth AFB SD 57706-4710

Joseph Brings Plenty, Chairman
Cheyenne River Sioux Tribe
PO Box 590
Eagle Butte SD 57625

Dear Chairman Brings Plenty

Having recently assumed command of the 28th Bomb Wing, I am writing to introduce myself and respectfully request a meeting to continue the government-to-government relationship and meaningful dialogue between the Cheyenne River Sioux Tribe and Team Ellsworth.

I believe meeting will help us both better understand our unique perspectives and continue the meaningful dialogue initiated by Colonel Vander Hamm between the Cheyenne River Sioux Tribe and Team Ellsworth. Our discussions must be open and honest, respecting each other's cultures, and trusting of each other's desire to maintain a healthy relationship. My goal for this consultation is to get to know you and other members of the tribal council. If you have other specific issues you'd like to discuss when we meet, please feel free to contact me prior to the scheduled meeting so I can arrive more prepared, and we can make the meeting more productive.

We would be honored to host you and other members of the tribal council again to visit Ellsworth Air Force Base as it would give us an opportunity to provide you with a base tour. If you'd prefer to meet on the reservation or elsewhere, please let me know the dates you are available. I look forward to meeting you and learning more about the Cheyenne River Sioux Tribe.

Please contact me at (605) 385-2801 if you have any questions. If deemed helpful, you may also have someone contact Mr. John Morgenstern, my natural and cultural resources manager, at (605) 385-2690.

Sincerely

JEFFREY B. TALIAFERRO, Colonel, USAF

Attachment:
Official Biography

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 28TH BOMB WING (ACC)
ELLSWORTH AIR FORCE BASE SOUTH DAKOTA

AUG 05 2009

Colonel Jeffrey B. Taliaferro
Commander, 28th Bomb Wing
1958 Scott Drive, Ste 1
Ellsworth AFB SD 57706-4710

Ron His Horse Is Thunder, Chairman
Standing Rock Sioux Tribal Council
PO Box D
Fort Yates ND 58538

Dear Chairman His Horse Is Thunder

Having recently assumed command of the 28th Bomb Wing, I am writing to introduce myself and respectfully request a meeting to continue the government-to-government relationship and meaningful dialogue between the Standing Rock Sioux Tribe and Team Ellsworth.

I believe meeting will help us both better understand our unique perspectives and continue the meaningful dialogue initiated by Colonel Vander Hamm between the Standing Rock Sioux Tribe and Team Ellsworth. Our discussions must be open and honest, respecting each other's cultures, and trusting of each other's desire to maintain a healthy relationship. My goal for this consultation is to get to know you and other members of the tribal council. If you have other specific issues you'd like to discuss when we meet, please feel free to contact me prior to the scheduled meeting so I can arrive more prepared, and we can make the meeting more productive.

We welcome you and other members of the tribal council to visit Ellsworth Air Force Base as it would give us an opportunity to provide you with a base tour. If you'd prefer to meet on the reservation or elsewhere, please let me know the dates you are available. I look forward to meeting you and learning more about the Standing Rock Sioux Tribe.

Please contact me at (605) 385-2801 if you have any questions. If deemed helpful, you may also have someone contact Mr. John Morgenstern, my natural and cultural resources manager, at (605) 385-2690.

Sincerely

JEFFREY B. TALIAFERRO, Colonel, USAF

Attachment:
Official Biography

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 28TH BOMB WING (ACC)
ELLSWORTH AIR FORCE BASE SOUTH DAKOTA

AUG 0 5 2009

Colonel Jeffrey B. Taliaferro
Commander, 28th Bomb Wing
1958 Scott Drive, Ste 1
Ellsworth AFB SD 57706-4710

Carl Venne, Chairman
Crow Tribal Council
PO Box 169
Crow Agency MT 59022

Dear Chairman Venne

Having recently assumed command of the 28th Bomb Wing, I am writing to introduce myself and respectfully request a meeting to continue the government-to-government relationship and meaningful dialogue between the Crow Tribe and Team Ellsworth.

I believe meeting will help us both better understand our unique perspectives and continue the meaningful dialogue initiated by Colonel Vander Hamm between the Crow Tribe and Team Ellsworth. Our discussions must be open and honest, respecting each other's cultures, and trusting of each other's desire to maintain a healthy relationship. My goal for this consultation is to get to know you and other members of the tribal council. If you have other specific issues you'd like to discuss when we meet, please feel free to contact me prior to the scheduled meeting so I can arrive more prepared, and we can make the meeting more productive.

We welcome you and other members of the tribal council to visit Ellsworth Air Force Base as it would give us an opportunity to provide you with a base tour. If you'd prefer to meet on the reservation or elsewhere, please let me know the dates you are available. I look forward to meeting you and learning more about the Crow Tribe.

Please contact me at (605) 385-2801 if you have any questions. If deemed helpful, you may also have someone contact Mr. John Morgenstern, my natural and cultural resources manager, at (605) 385-2690.

Sincerely

JEFFREY B. TALIAFERRO, Colonel, USAF

Attachment:
Official Biography

Global Power For America

PROGRAMMATIC AGREEMENT
AMONG
28th BOMB WING, ELLSWORTH AIR FORCE BASE,
THE STATE HISTORIC PRESERVATION OFFICES OF
MONTANA, NORTH DAKOTA, SOUTH DAKOTA AND WYOMING,
AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE PROPOSED DEVELOPMENT, IMPLEMENTATION AND OPERATION
OF THE POWDER RIVER TRAINING COMPLEX

WHEREAS, the United States Air Force (AF), represented by the 28th Bomb Wing (hereafter "the 28 BW"), operates and maintains Ellsworth Air Force Base (EAFB), South Dakota, and

WHEREAS, the 28 BW is responsible for identifying and managing historic properties at EAFB and identifying and considering effects to historic properties in areas used by the base for training, pursuant to Section 106 of the National Historic Preservation Act (NHPA) (16 USC §470f) and its implementing regulation, 36 CFR Part 800 (hereafter jointly referred to as "Section 106"); and

WHEREAS, the 28 BW proposes to establish the Powder River Training Complex (PRTC) to provide suitable and realistic training for military aircrews of multiple B-1 and B-52 squadrons assigned primarily to EAFB and Minot AFB, North Dakota. It would restructure and reconfigure the existing Powder River Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspaces (ATCAAs) and add airspaces to become the PRTC. The establishment, development, and operation of the PRTC (also referred to in this document as "the undertaking") would overlay about 35,000 square miles or 22.5 million acres in South Dakota, North Dakota, Montana, and Wyoming (Attachment 1), the lands beneath the PRTC airspace constituting the area of potential effect to historic properties; and

WHEREAS, the PRTC would designate the following training areas: Powder River (PR)-1A through 1D, PR-2, PR-3, PR-4 MOA/ATCAA; GAP A, B, and C MOA/ATCAA; and Gateway East and West MOA/ATCAA, as depicted in Attachments 1 and 2;and

WHEREAS, the PRTC would not require construction or other ground disturbance within the complex or at the using installations; supersonic flights for both fighter and bomber aircraft within the PRTC would occur only during Large Force Exercises (LFEs) which could be held quarterly but total no more than ten (10) days per year; an altitude of 10,000 feet above ground level (AGL) is proposed as the supersonic floor for all fighter aircraft during LFEs and 20,000 feet above mean sea level (MSL) is proposed as the floor for B-1 supersonic flight during LFEs; chaff bundles and flares would be employed throughout the PRTC airspace for countermeasures training with flares being used only at or above 2,000 feet AGL and only if conditions are suitable; and

WHEREAS, some 240 National Register of Historic Places (NRHP) listed properties are located beneath the PRTC airspace, including several National Historic Landmarks (NHLs) and Monuments (Attachment 3), as well as hundreds of recorded and unrecorded NRHP eligible archaeological sites, ghost towns, historic ranches, cultural landscapes, and places of traditional, religious, and cultural importance; and

WHEREAS, 28 BW has determined that the undertaking may have potential adverse effects that cannot be identified or anticipated today, that the potential exists for discovery of new historic properties in the PRTC and for changes in how such properties are understood and appreciated; and

WHEREAS, the AF and the Federal Aviation Administration (FAA) , Central Service Center agree that, pursuant to 36 CFR §800.2(a)(2), the AF is hereby designated as the lead federal agency for purposes of compliance with Section 106 for the PRTC undertaking and the FAA is an invited signatory to this programmatic agreement (hereafter "PA"); and

WHEREAS, the AF is the lead agency and the FAA is a cooperating agency under the National Environmental Policy Act (NEPA) for development of the Environmental Impact Statement (EIS) for the PRTC proposal; and

WHEREAS, pursuant to 36 CFR §800.10(b) and 36 CFR §800.6(a)(1)(iii), the 28 BW has requested and received the participation of the Advisory Council on Historic Preservation (ACHP) in consultations leading to the development of this PA and to become a signatory to this PA; and

WHEREAS, the 28 BW has consulted with the State Historic Preservation Officers (hereafter "SHPOs") of Montana, North Dakota, South Dakota, and Wyoming to identify historic properties on lands within said states under the PRTC, and to discuss potential adverse effects from the proposed undertaking, and

WHEREAS, the 28 BW has consulted with the National Park Service (NPS) to identify historic properties on lands managed by it under the PRTC, and to assess adverse effects from overflights associated with the undertaking; and

WHEREAS, the 28 BW recognizes the additional requirements, per 36 CFR §800.10, for NHLs and specifically for Bear Butte, Frawley Historic Ranch, Deadwood Historic District, Deer Medicine Rocks, Wolf Mountains Battlefield/Where Big Crow Walked Back and Forth NHL, and Rosebud Battlefield which are situated on lands under or immediately adjacent to the existing training airspace of PRTC, and that the 28 BW requested and confirmed participation of the NPS and the ACHP in this consultation; and

WHEREAS, the U.S. Air Force Air Combat Command in June 2008 contacted tribes outside the APE that may have traditional cultural and religious affiliations to lands under the PRTC, including Spirit Lake Sioux Tribal Council, the Fort Peck Tribal Executive Board, the Fort Belknap Community Council, the Confederated Salish and Kootenai Tribe, the Oglala Sioux Tribal Council, the Arapaho Business Council, the Rosebud Sioux Tribe, the Eastern Shoshone Tribal Council, the Three Affiliated Tribes Business Council, the Turtle Mountain Tribal Council, and the Chippewa-Cree Business Committee; and

WHEREAS, the 28 BW consulted on the PRTC proposal since 2008 with the Cheyenne River Sioux Tribe, the Crow Tribe, the Northern Cheyenne Tribe, and the Standing Rock Sioux Tribe (hereafter, "Tribes"), each of which have tribal lands underneath the PRTC where military overflights, but no ground activities, would occur and provided each Tribe opportunities to consult on the development of and to become invited signatories to this PA; and

WHEREAS, the 28 BW has provided the Tribes opportunities to identify historic properties of traditional religious and cultural importance under the PRTC airspace, and on which the 28 BW will continue to consult through its devised continual approach to identify and evaluate properties of religious and cultural significance to Indian tribes in conjunction with the operation of the PRTC; and

WHEREAS, 28 BW solicited the views of the public on the PRTC through public hearings and other means associated with NEPA, in accordance with 36 CFR §§800.2(d)(3) and 800.8(a); and

WHEREAS, the NPS, Intermountain Region, and the Little Bighorn Battlefield National Monument intend to undertake a multi-year acoustic monitoring program and a visitor use study that will survey visitors regarding sounds that a visitor would expect at a national battlefield and investigate particular military aircraft noises and associated annoyance levels as a result of the PRTC;

NOW, THEREFORE, the 28 BW, the FAA, the NPS, the SHPOs, and the ACHP agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

I. Avoidance, Minimization, or Mitigation of Adverse Effects to Historic Properties under the PRTC

A. Great Sioux War Battlefields: Little Bighorn Battlefield National Monument (Monument), Montana

1. 28 BW shall:

a) Ensure that all military aircraft, when overflying the area of the Monument indicated on the map in Attachment 4 of this PA:

(1) Maintain an altitude of at least 5,000 feet AGL from one (1) hour before to one (1) hour after posted Hours of Operation of Little Bighorn Battlefield National Monument.

(2) Consider further restrictions of planned and potential PRTC activities during special events at the Monument.

b) Prohibit supersonic operation of aircraft when overflying the Little Bighorn Supersonic Avoidance Area above the area bounded by Powder River 1C, as indicated on the map in Attachment 4.

c) Coordinate on plans for multi-year acoustic monitoring in the Monument when requested by the NPS.

d) Coordinate on plans for a visitor use study when requested by the NPS.

2. NPS shall promptly inform the 28 BW of military aircraft overflights of the Monument that are contrary to the stipulations immediately above, within 24 hours of the overflight event.

B. Great Sioux War Battlefields historic properties in Montana, South Dakota, and North Dakota other than the Monument including, but not limited to, Deer Medicine Rocks and Wolf Mountains Battlefield/Where Big Crow Walked Back and Forth; and archaeological locations containing sensitive rock art throughout the area of potential effect, including the Tongue River Valley, Chalk Butte, and Slim Butte, Montana and North and South Cave Hills, South Dakota

1. 28 BW shall:

a) Work cooperatively with other federal and state agencies, tribal governments, and the public to minimize potential adverse effects to historic properties in the PRTC from routine operations or from LFEs.

b) Energetically comply with the procedures in Stipulations III through V. The effectiveness of these procedures depends in part on the actions of consulting parties and the public to inform the 28 BW of potential adverse effects from military operations or non-compliance with the requirements of this agreement; see Stipulation IX.B.

c) Consult with the relevant consulting parties on appropriate responses, if, as a result of notifications and follow on assessments by the 28 BW, further mitigating actions may be required.

II. Avoidance, Minimization, or Mitigation of Adverse Effects to Historic Properties, Religious Ceremonies, and Important Tribal Events under the PRTC

A. The 28 BW shall continue to consult with the Tribes on appropriate ways to avoid, minimize, or mitigate adverse effects to historic properties, religious ceremonies, and events important to the Tribes.

1. This includes 28 BW authorizing reasonable temporary or seasonal avoidance areas for training objectives during the following events after consulting with the appropriate Tribe:

a) the "Crow Fair" of the Crow Tribe (PR-1A and PR-1C)

b) the "4th of July Chiefs Powwow" of the Northern Cheyenne Tribe (PR-1D)

c) the "Porcupine Powwow" of the Standing Rock Sioux Tribe (PR-4)

d) the "Fair Rodeo and Labor Day Powwow" of the Cheyenne River Tribe (PR-4); or

e) other events, now and in the future as identified by 28 BW in consultation with the Tribes.

2. Within six (6) months of executing this PA, 28 BW shall appoint a a senior-level installation person as a Tribal Liaison to serve as the primary point of contact in facilitation of the government-to-government relationships with the Tribes, and coordinating and directing the 28 BW's participation in joint efforts.

a) Until such position is designated, the 28 BW Airspace Manager shall serve as the interim liaison.

b) The 28 BW will advise the Tribes within one (1) month of any changes to this liaison position.

3. 28 BW shall meet with Tribal leaders at least annually to review PRTC-related activities that may affect historic properties of traditional and religious importance to the Tribes.

B. A Tribe that is an invited signatory to this PA shall:

1. Designate a point of contact (POC) to act as liaison with the 28 BW Tribal Liaison to coordinate and direct tribal participation identified in this PA, and advise the 28 BW in a timely manner of any changes to this position.

2. Provide appropriate information to the 28 BW regarding historic properties, to include properties of traditional religious and cultural importance, which may be affected by military aircraft training that would occur in the PRTC and adjacent areas, when requested by the 28 BW.

3. Review and provide comments on draft Air Force plans, programs, and reports for PRTC training and operations, upon request by the 28 BW. Negative replies are requested if no comments will be forthcoming. Planning responsibilities often require 28 BW to set timelines for responses. The 28 BW leadership will consider all comments received within these timelines when making a decision. Responses received after a timeline expires will be considered if practicable.

III. Awareness Training for Military Trainers and Aircrews Operating in the PRTC

A. 28 BW shall:

1. Prepare, within three (3) months of executing this PA, a comprehensive in-brief presentation covering current operating procedures, to include cultural sensitivities and mitigation procedures for flying units preparing to train in the PRTC airspace prior to their training within the PRTC.

a) Ensure all military aircrews participating in the LFEs be certified by their Unit Commander that they have received this comprehensive in-brief.

b) Include a summary of all training provided in the annual report in accordance with Stipulation VII.

2. Host an annual Cultural Awareness class for military aircrews to ensure tribal, SHPO, and federal agency cultural concerns are communicated properly.

a) Invite each Tribe, SHPO, and federal agency that has signed this PA to produce and present at the Cultural Awareness classes and offer travel and per diem expenses.

b) Include summaries of recent classes in the annual and five year updates of the EAFB Integrated Cultural Resources Management Plan (ICRMP).

IV. Avoidance Protocol

A. Within six (6) months of executing this PA, 28 BW shall develop and implement a program to accept requests from consulting parties to avoid training in portions of the PRTC.

B. The 28 BW shall consider requests from consulting parties to avoid using portions of the PRTC, said requests to include dates and approximate locations, preferably with coordinates, that should be avoided, no later than seven (7) to ten (10) days prior to the date of avoidance being sought.

V. Supersonic/Large Force Exercise (LFE) Notification

The 28 BW shall notify consulting parties fifteen (15) days prior to the use of supersonic operations and an LFE. Supersonic operations will take place only during LFEs, which occur at a maximum of ten days a year.

VI. Integrated Cultural Resource Management Plan (ICRMP) Revision

The 28 BW shall incorporate the activities mandated by the stipulations of this agreement into the procedures, goals, and objectives of the base ICRMP, to be completed by the date of its next five year update, estimated to be 2016. The 28BW shall provide draft, updated versions of the ICRMP to the parties to this PA. These parties may review and comment on the ICRMP and/or provide additional relevant information relevant to PRTC operations and historic properties as they deem appropriate.

VII. Monitoring and Reporting

A. On March 1, starting in 2015, the 28 BW shall send a request to consulting parties, except the ACHP, for information pertaining to any additional historic properties or adverse effects identified during the previous operational year of the PRTC by that consulting party.

B. Each May 1, starting in 2015, the BW shall provide all consulting parties, except for the ACHP, a summary report detailing the following:

1) the number of training exercises completed;

2) any scheduling changes proposed for military training in the PRTC;

3) any problems encountered with implementing the terms of this agreement;

4) any disputes or objections received as appropriate;

5) a summary of newly identified properties;

6) a summary of newly identified adverse effects; and

7) a meeting date to discuss the contents of the summary report.

VIII. Confidentiality

A. Consistent with Section 304 of the NHPA, 36 CFR §800.11(c), the Archaeological Resources Protection Act (ARPA), and other applicable laws, 28 BW, after consultation with the Secretary of the Interior, shall withhold from public disclosure information about the location, character, or ownership of a historic property when disclosure may cause significant invasion of privacy, risk harm to a historic property, or impede the use of a traditional religious site by practitioners.

1. Access to sensitive data, as defined in Section 304 of the NHPA, will be limited within 28 BW to individuals designated by the Wing Commander.

2. Requests from parties external to this agreement for access to sensitive data on PRTC related historic and traditional properties held by the AF shall be considered jointly by 28 BW, SHPO/THPO, Tribes, and NPS as appropriate.

B. All parties shall attempt to resolve disputes regarding access to sensitive data in a timely manner, not to exceed sixty (60) days. If a dispute regarding access to sensitive data cannot be resolved, 28 BW shall defer to the facility manager of public buildings, the land manager on public lands, the tribe on tribal lands, or in the case of privately owned lands, to the SHPO.

IX. Air Force Claims Program/Post Review Discovery

A. The 28 BW, through its Public Affairs Office, shall, in the event of damages, injuries, or complaints associated with military operations in the PRTC, accept descriptive documentation and facilitate processing to the Air Force claims program. Contact the Public Affairs Office at (605) 385-5056 between 8:00 am and 5:00 pm, Monday through Friday, or via email at 28.bw.public.affairs@ellsworth.af.mil. The Public Affairs Office will immediately notify the Office of the Staff Judge Advocate of any potential claims. The Public Affairs Office shall maintain documentation of such reports and actions taken by the Air Force in response. This documentation will be summarized in a report and made available to the consulting parties annually, beginning one year after execution of this PA.

B. In the event of the 28 BW becoming aware of a discovery within the PRTC APE of damage to historic properties as a result of PRTC operations, the discovery of previously unidentified adverse effects, or of non-compliance with the terms of this agreement by any consulting party, the 28 BW shall notify the appropriate SHPO/Tribe within 72 hours, providing a brief but detailed report. The 28 BW, after consultation with the appropriate SHPO/Tribe, will determine the appropriate response to any such discovery.

X. Duration

A. This PA will be valid for five (5) years from the date of execution.

B. At the conclusion of five (5) years from the date of execution, the signatories and invited signatories to the PA may carry out a review of the PA in order to determine if revisions to the PA are needed and to determine if the PA may continue for an additional five (5) years. If the signatories and invited signatories agree to the extension, the agreement will be documented in an amendment to this PA which will be signed by the signatories and invited signatories in accordance with Stipulation XIII.

XI. Compliance with the Anti-Deficiency Act

Any requirement established by the PA for the expenditure of Department of the Air Force funds by the 28 BW shall be subject to the availability of appropriated funds, and no provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act (31 USC 1341). In the event that the 28 BW is unable to carry out one or more terms of this agreement due to the provisions of the Anti-Deficiency Act, the 28 BW shall advise the parties to this PA, and shall otherwise comply with pertinent requirements of this PA as appropriate.

XII. Dispute Resolution

Should any signatory or invited signatory to this PA object at any time to any actions proposed or the manner in which the terms of this PA are implemented, the 28 BW shall consult with such party to resolve the objection. If the 28 BW determines that such objection cannot be resolved, the 28 BW will:

A. Forward all documentation relevant to the dispute, including the 28 BW's proposed resolution, to the ACHP. The ACHP shall provide the 28 BW with its advice on the resolution of the objection within thirty (30) calendar days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the 28 BW shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and consulting parties, and provide them with a copy of this written response. The 28 BW will then proceed according to its final decision.

B. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period, the 28 BW may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the 28 BW shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and consulting parties to the PA, and provide them and the ACHP with a copy of such written response.

C. The 28 BW's responsibility to carry out all other actions subject to the terms of this PA that are not the subject of the dispute remain unchanged.

XIII. Amendments

A. Any signatory to this Agreement may request that it be amended or modified. Any resulting amendments or addenda shall be developed and executed in the same manner as this original PA.

B. The amendment or addenda will become effective on the date a copy is signed by all signatories and is filed with the ACHP.

XIV. Termination

A. If any signatory to this PA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation XIII above. If within (30) calendar days (or another time period agreed to by all signatories) an amendment cannot be reached, any signatory may withdraw from the PA upon written notification to the other signatories. Withdrawal by a SHPO or Tribe will terminate this PA only with respect to matters within the jurisdiction of that SHPO or Tribe.

B. If any signatory withdraws from this PA, the remaining signatories shall consult and determine whether the PA shall continue in force with respect to matters within their jurisdiction. If said parties determine that the PA shall be terminated, the 28 BW must, as soon as practicable, either (a) execute a Memorandum of Agreement pursuant to 36 CFR §800.6, (b) execute a revised PA pursuant to 36 CFR §800.14(b)(3), or (c) request, take into account, and respond to the comments of the ACHP under 36 CFR §800.7. The 28 BW shall notify the signatories as to the course of action it will pursue. The parties agree that all flying activities and measures in this PA to resolve adverse effects will continue in effect while 28 BW implements its decision.

XV. Signatories

A. This PA shall be executed in counterpart, with a separate page for each signatory and invited signatory, and when combined will constitute the whole agreement. 28 BW shall ensure that each party is provided with a fully executed copy. This PA will become effective regarding historic properties in Montana, North Dakota, South Dakota, and Wyoming on the date of the last signature by 28 BW, the SHPO for each of those states, and the ACHP.

B. Additional federal agencies may be included in this PA as an invited signatory without its amendment if 28 BW notifies the current signatories and invited signatories in writing of the proposal and there is no objection from the current signatories or invited signatories within thirty (30) days of 28 BW's written notice. If no response is received within thirty (30) days, 28 BW may assume concurrence with the addition of the federal agency to this PA. 28 BW shall ensure that each consulting party is provided with an updated copy of the PA.

C. If Cheyenne River Sioux Tribe, the Crow Tribe, the Northern Cheyenne Tribe, or the Standing Rock Sioux Tribe chose to sign this PA as an invited signatory after the execution of the PA, it may do so without an amendment to the PA if 28 BW notifies the current signatories and invited signatories in writing of the proposal. 28 BW shall ensure that each consulting party is provided with an updated copy of the PA.

EXECUTION of this PA and implementation of its terms evidence that the 28 BW has taken into account the effects of the PRTC undertaking on historic properties and afforded the ACHP an opportunity to comment.

9/30

PROGRAMMATIC AGREEMENT
AMONG
28th BOMB WING, ELLSWORTH AIR FORCE BASE,
THE STATE HISTORIC PRESERVATION OFFICES OF
MONTANA, NORTH DAKOTA, SOUTH DAKOTA AND WYOMING,
AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE PROPOSED DEVELOPMENT, IMPLEMENTATION AND OPERATION
OF THE POWDER RIVER TRAINING COMPLEX

SIGNATORY

28 BW, UNITED STATES AIR FORCE

By: _____ Date: 8 July 2014
KEVIN B. KENNEDY, COL, USAF
Commander, 28 Bomb Wing

10/30

PROGRAMMATIC AGREEMENT
AMONG
28th BOMB WING, ELLSWORTH AIR FORCE BASE,
THE STATE HISTORIC PRESERVATION OFFICES OF
MONTANA, NORTH DAKOTA, SOUTH DAKOTA AND WYOMING,
AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE PROPOSED DEVELOPMENT, IMPLEMENTATION AND OPERATION
OF THE POWDER RIVER TRAINING COMPLEX

SIGNATORY

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: John M. Fowler Date: 9/4/14
JOHN M. FOWLER

11/30

PROGRAMMATIC AGREEMENT
AMONG
28th BOMB WING, ELLSWORTH AIR FORCE BASE,
THE STATE HISTORIC PRESERVATION OFFICES OF
MONTANA, NORTH DAKOTA, SOUTH DAKOTA AND WYOMING,
AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE PROPOSED DEVELOPMENT, IMPLEMENTATION AND OPERATION
OF THE POWDER RIVER TRAINING COMPLEX

SIGNATORY

MONTANA STATE HISTORIC PRESERVATION OFFICE

By: Mark L. Baumler Date: 7/25/14
MARK BAUMLER
State Historic Preservation Officer

PROGRAMMATIC AGREEMENT
AMONG
28th BOMB WING, ELLSWORTH AIR FORCE BASE,
THE STATE HISTORIC PRESERVATION OFFICES OF
MONTANA, NORTH DAKOTA, SOUTH DAKOTA AND WYOMING,
AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE PROPOSED DEVELOPMENT, IMPLEMENTATION AND OPERATION
OF THE POWDER RIVER TRAINING COMPLEX

SIGNATORY

NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICE

By: _____ Date: 8-4-14
MERLIN E. PAAVERUD, Jr.
State Historic Preservation Officer

PROGRAMMATIC AGREEMENT
AMONG
28th BOMB WING, ELLSWORTH AIR FORCE BASE,
THE STATE HISTORIC PRESERVATION OFFICES OF
MONTANA, NORTH DAKOTA, SOUTH DAKOTA AND WYOMING,
AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE PROPOSED DEVELOPMENT, IMPLEMENTATION AND OPERATION
OF THE POWDER RIVER TRAINING COMPLEX

SIGNATORY

SOUTH DAKOTA STATE HISTORIC PRESERVATION OFFICE

By: Jay D. Vogt Date: 07-11-2014
JAY D. VOGT
State Historic Preservation Officer

PROGRAMMATIC AGREEMENT
AMONG
28th BOMB WING, ELLSWORTH AIR FORCE BASE,
THE STATE HISTORIC PRESERVATION OFFICES OF
MONTANA, NORTH DAKOTA, SOUTH DAKOTA AND WYOMING,
AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE PROPOSED DEVELOPMENT, IMPLEMENTATION AND OPERATION
OF THE POWDER RIVER TRAINING COMPLEX

A. Entirety of Agreement. This PA, consisting of thirty (30) pages, represents the entire and integrated agreement between the parties and supersedes all prior negotiations, representations and agreements, whether written or oral, regarding compliance with Section 106 of the National Historic Preservation Act for those aspects of the Proposed Development, Implementation and Operation of the Powder River Training Complex throughout the visual APE that will or may have adverse effects on the settings of historic properties.

B. Prior Approval. This PA shall not be binding upon any party unless this PA has been reduced to writing before performance begins as described under the terms of this PA, and unless the PA is approved as to form by the Attorney General or his representative.

C. Severability. Should any portion of this PA be judicially determined to be illegal or unenforceable, the remainder of the PA shall continue in full force and effect, and any party may renegotiate the terms affected by the severance.

D. Sovereign Immunity. The State of Wyoming and the WYSHPO do not waive their sovereign or governmental immunity by entering into this PA and each fully retains all immunities and defenses provided by law with respect to any action based on or occurring as a result of the PA.

SIGNATORY FOR THE AIR FORCE
28 BW, UNITED STATES AIR FORCE

By: _____ Date: 31 July 2014
KEVIN B. KENNEDY, COL, USAF
Commander, 28th Bomb Wing

SIGNATORIES FOR THE STATE OF WYOMING
WYOMING STATE HISTORIC PRESERVATION OFFICE

By: Mary Hopkins Date: 8/20/14
MARY HOPKINS
State Historic Preservation Officer

WYOMING ATTORNEY GENERAL

By: Steve Carlson # 11847 Date: 8-19-14

PROGRAMMATIC AGREEMENT
AMONG
28th BOMB WING, ELLSWORTH AIR FORCE BASE,
THE STATE HISTORIC PRESERVATION OFFICES OF
MONTANA, NORTH DAKOTA, SOUTH DAKOTA AND WYOMING,
AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE PROPOSED DEVELOPMENT, IMPLEMENTATION AND OPERATION
OF THE POWDER RIVER TRAINING COMPLEX

INVITED SIGNATORY

FEDERAL AVIATION ADMINISTRATION

By: _____ Date: 7-22-2014

KENT M. WHEELER
Manager
Operations Support Group
ATO Central Service Center, AJV-C2

PROGRAMMATIC AGREEMENT
AMONG
28th BOMB WING, ELLSWORTH AIR FORCE BASE,
THE STATE HISTORIC PRESERVATION OFFICES OF
MONTANA, NORTH DAKOTA, SOUTH DAKOTA AND WYOMING,
AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE PROPOSED DEVELOPMENT, IMPLEMENTATION AND OPERATION
OF THE POWDER RIVER TRAINING COMPLEX

INVITED SIGNATORY

NATIONAL PARK SERVICE

By: Sue E. Masica Date: 8/5/14
SUE E. MASICA
Director, Intermountain Region

PROGRAMMATIC AGREEMENT
AMONG
28th BOMB WING, ELLSWORTH AIR FORCE BASE,
THE STATE HISTORIC PRESERVATION OFFICES OF
MONTANA, NORTH DAKOTA, SOUTH DAKOTA AND WYOMING,
AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE PROPOSED DEVELOPMENT, IMPLEMENTATION AND OPERATION
OF THE POWDER RIVER TRAINING COMPLEX

INVITED SIGNATORY

CHEYENNE RIVER SIOUX TRIBE

By: _____ Date: _____
Name
Title

PROGRAMMATIC AGREEMENT
AMONG
28th BOMB WING, ELLSWORTH AIR FORCE BASE,
THE STATE HISTORIC PRESERVATION OFFICES OF
MONTANA, NORTH DAKOTA, SOUTH DAKOTA AND WYOMING,
AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE PROPOSED DEVELOPMENT, IMPLEMENTATION AND OPERATION
OF THE POWDER RIVER TRAINING COMPLEX

INVITED SIGNATORY

CROW TRIBE

By: _____ Date: 8-28-14
Name
Title

PROGRAMMATIC AGREEMENT
AMONG
28th BOMB WING, ELLSWORTH AIR FORCE BASE,
THE STATE HISTORIC PRESERVATION OFFICES OF
MONTANA, NORTH DAKOTA, SOUTH DAKOTA AND WYOMING,
AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE PROPOSED DEVELOPMENT, IMPLEMENTATION AND OPERATION
OF THE POWDER RIVER TRAINING COMPLEX

INVITED SIGNATORY

NORTHERN CHEYENNE TRIBE

By: _____ Date: _____
Name
Title

PROGRAMMATIC AGREEMENT
AMONG
28th BOMB WING, ELLSWORTH AIR FORCE BASE,
THE STATE HISTORIC PRESERVATION OFFICES OF
MONTANA, NORTH DAKOTA, SOUTH DAKOTA AND WYOMING,
AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE PROPOSED DEVELOPMENT, IMPLEMENTATION AND OPERATION
OF THE POWDER RIVER TRAINING COMPLEX

INVITED SIGNATORY

STANDING ROCK SIOUX TRIBE

By: _____ Date: _____
Name
Tribe

LIST OF ATTACHMENTS

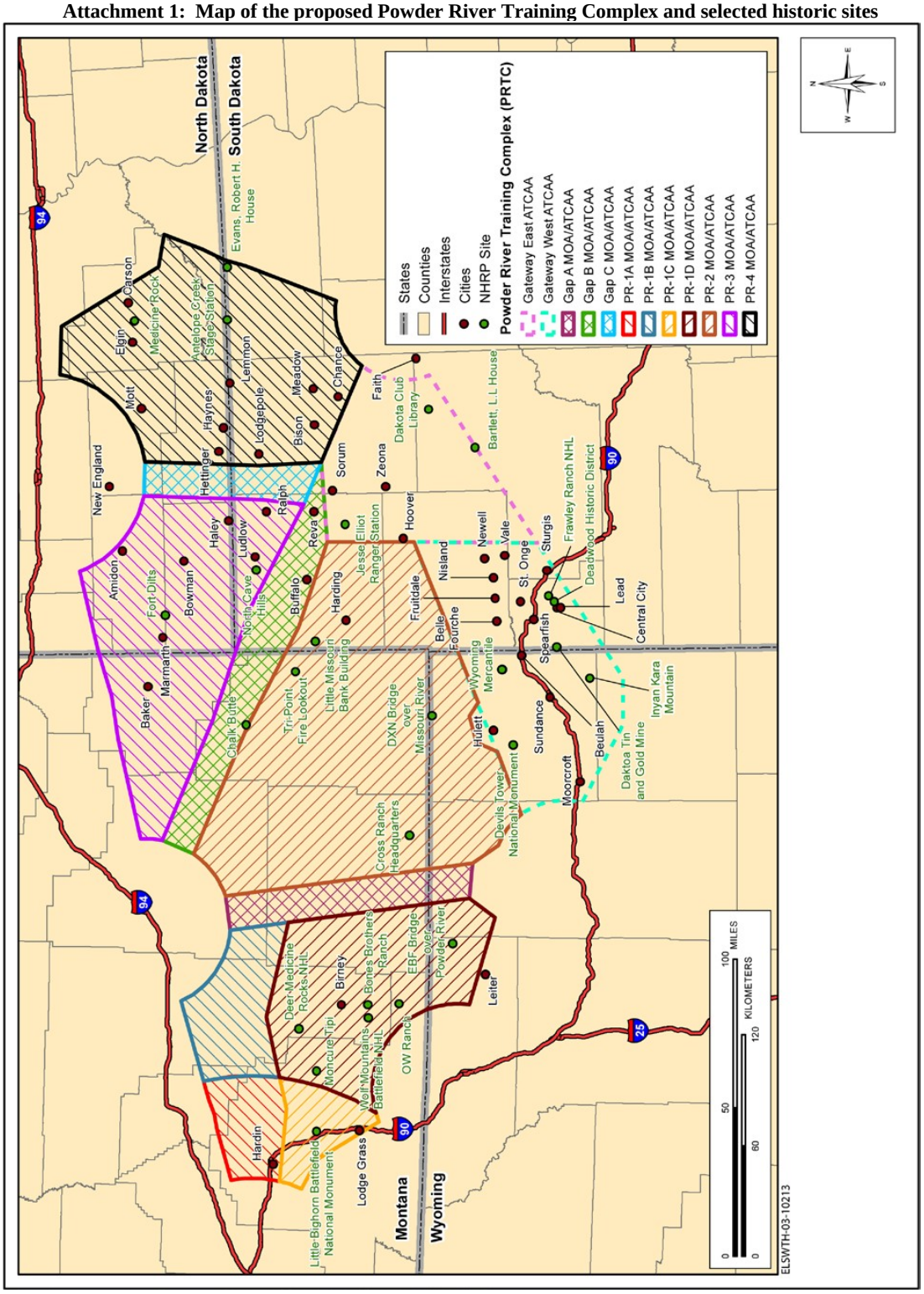
1. Map of the proposed Powder River Training Complex (PRTC) and selected historic sites

2. Proposed PRTC MOA/ATCAA Complexes

3. Table describing National Register of Historic Places listed properties beneath the PRTC airspace (in multiple sub-tables)

4. Map of the Little Bighorn National Battlefield Monument Area per Stipulation I.A.1.

Attachment 1: Map of the proposed Powder River Training Complex and selected historic sites



Attachment 2. Proposed PRTC MOA/ATCAA Complexes	
MOA	**Description**
Powder River 1 MOA complex (PR-1)	Consists of PR-1A, PR-1B, PR-1C, and PR-1D MOAs, each of which would be stratified vertically into a Low MOA, a High MOA, and an ATCAA.*
Powder River 2 MOA complex (PR-2)	Consists of the PR-2 MOAs, which would be stratified vertically into a Low MOA, a High MOA, and an ATCAA*
Powder River 3 MOA complex (PR-3)	Consists of the PR-3 MOAs, which would be stratified vertically into a Low MOA, a High MOA, and an ATCAA*
Powder River 4 MOA	Consists of the PR-4 MOAs, which would be stratified vertically into a High MOA, and an ATCAA*
GAP A MOA	Separate PR-1 and PR-2, would consist of a Low MOA, a High MOA, and an ATCAA*
GAP B MOA	Separate PR-2 and PR-3, would consist of a Low MOA, a High MOA, and an ATCAA*
GAP C MOA	Separate PR-3 and PR-4, would consist of a Low MOA, a High MOA, and an ATCAA*
Gateway ATCAA	Modified and expanded to create the Gateway West and Gateway East ATCAAs*

**Note:* For the purposes of the definitions above: Low MOA = altitudes from 500 feet AGL up to, but not including 12,000 feet MSL High MOA = altitudes from 12,000 feet MSL up to, but not including 18,000 feet MSL ATCAA = altitudes from 18,000 feet MSL up to 26,000 feet MSL

Attachment 3: Historic Properties in the PRTC APE (in multiple sub-tables)

Table 3a. National Register Properties Under Proposed PRTC Airspace **An * indicates that the property is located within the ATCAAs with altitudes from 18,000 feet MSL to 60,000 feet**		
Property Name	**General Location (County/Town)**	**Airspace**
Wyoming		
Arch Creek Petroglyphs*	Crook/Moorcroft	Gateway West ATCAA
DXN Bridge over Missouri River	Crook/Hulett	PR-2
EBF Bridge over Powder River	Sheridan/Leiter	PR-1
Entrance Road—Devils Tower National Monument*	Crook/Devils Tower	Gateway West ATCAA
Entrance Station—Devils Tower National Monument*	Crook/Devils Tower	Gateway West ATCAA
Inyan Kara Mountain*	Crook/Sundance	Gateway West ATCAA
McKean Archaeological Site*	Crook/Moorcroft	Gateway West ATCAA
Old Headquarters Area Historic District*	Crook/Devils Tower	Gateway West ATCAA
Ranch A	Crook/Beulah	Gateway West ATCAA
Sundance School*	Crook/Sundance	Gateway West ATCAA
Sundance State Bank*	Crook/Sundance	Gateway West ATCAA
Tower Ladder-Devils Tower National Monument	Crook/Devils Tower	Gateway West ATCAA
Vore Buffalo Jump*	Crook/Sundance	Gateway West ATCAA
Wyoming Mercantile	Crook/Aladdin	Gateway West ATCAA
Montana		
Baker Hotel	Fallon/Baker	PR-3
Baldwin House	Big Horn/Lodge Grass	PR-1
Bones Brother Ranch	Rosebud/Birney	PR-1
Boyum, John, House	Big Horn/Hardin	PR-1
Burke, Thomas H., House	Big Horn/ Hardin	PR-1
Cammocks's Hotel	Big Horn/Lodge Grass	PR-1
Chivers Memorial Church	Big Horn/Lodge Grass	PR-1
Commercial District	Big Horn/Hardin	PR-1
Cross Ranch Headquarters	Powder River/Broadus	PR-2
Deer Medicine Rocks National Historic Landmark	Rosebud	PR-1
Drew, J. W., Grain Elevator	Big Horn/Lodge Grass	PR-1
Ebeling, William, House	Big Horn/Hardin	PR-1
Eder, Charles S., House	Big Horn/Hardin	PR-1
Fallon County Jail	Fallon/Baker	PR-3
First Baptist Church	Big Horn/Hardin	PR-1
Haverfield Hospital	Big Horn/Hardin	PR-1
Kopriva, Francis, House	Big Horn/Hardin	PR-1
Little Bighorn Battlefield National Monument	Big Horn/Hardin	PR-1
Lodge Grass City Jail	Big Horn/Lodge Grass	PR-1
Lodge Grass Merchandise Company Store	Big Horn/Lodge Grass	PR-1
Moncure Tipi	Big Horn/Busby	PR-1
OW Ranch	Big Horn/Birney	PR-1
Pease's George, Second Store	Big Horn/Lodge Grass	PR-1
Ping, J. J., House	Big Horn/Hardin	PR-1
Reno Apartments	Big Horn/Hardin	PR-1
Residential District	Big Horn/Hardin	PR-1
Ryan's, John, House	Big Horn/ Lodge Grass	PR-1
Sharp's Jay, Store	Big Horn/Lodge Grass	PR-1
Simmonsen's House	Big Horn/Lodge Grass	PR-1
St. Joseph's Catholic Church	Big Horn/Hardin	PR-1
Stevens, Dominic House	Big Horn/Lodge Grass	PR-1
Sullivan Rooming House	Big Horn/Hardin	PR-1
Sullivan, James J., House	Big Horn/Hardin	PR-1
Trytten, J. M., House	Big Horn/Lodge Grass	PR-1
Tupper, J. S., House	Big Horn/Hardin	PR-1
Wolf Mountains Battlefield/Where Big Crow Walked Back and Forth NHL	Rosebud/Birney	PR-1

Table 3a. National Register Properties Under Proposed PRTC Airspace
An * indicates that the property is located within the ATCAAs with altitudes from 18,000 feet MSL to 60,000 feet

Property Name	General Location (County/Town)	Airspace
North Dakota		
Adams County Courthouse	Adams/Hettinger	PR-4
Carson Roller Mill	Grant/Carson	PR-4
Cedar Creek Bridge	Adams/Haynes	PR-4
Fort Dilts	Bowman/Rhame	PR-3
Hettinger County Courthouse	Hettinger/Mott	PR-4
Hettinger U.S. Post Office –	Adams/Hettinger	PR-4
Hope Lutheran Church	Grant/Elgin	PR-4
H-T Ranch	Slope/Amidon	PR-3
Medicine Rock State Historic Site	Grant/Heil	PR-4
Mystic Theatre	Slope/Marmarth	PR-3
Neuburg Congregational Church	Hettinger/Mott	PR-4
Original Slope County Courthouse	Slope/Amidon	PR-3
Riverside	Hettinger/New England	PR-4
Schade, Emma Petznick and Otto, House	Bowman/Bowman	PR-3
Stern, John and Fredricka (Roth), Homestead	Hettinger/Mott	PR-4
South Dakota		
Ainsworth, Oliver N., House*	Lawrence/Spearfish	Gateway West ATCAA
Antelope Creek Stage Station	Corson/Morristown	PR-4
Archaeological Site No. 39HN1	Harding/Ludlow	PR-3
Archaeological Site No. 39HN5	Harding/Ludlow	PR-3
Archaeological Site No. 39HN17	Harding/Ludlow	PR-3
Archaeological Site No. 39HN18	Harding/Ludlow	PR-3
Archaeological Site No. 39HN21	Harding/Ludlow	PR-3
Archaeological Site No. 39HN22	Harding/Ludlow	PR-3
Archaeological Site No. 39HN26	Harding/Ludlow	PR-3
Archaeological Site No. 39HN30	Harding/Ludlow	PR-3
Archaeological Site No. 39HN50	Harding/Ludlow	PR-3
Archaeological Site No. 39HN53	Harding/Ludlow	PR-3
Archaeological Site No. 39HN54	Harding/Ludlow	PR-3
Archaeological Site No. 39MD81*	Meade/Sturgis	Gateway West ATCAA
Archaeological Site No. 39MD82*	Meade/Sturgis	Gateway West ATCAA
Archaeological Site No. 39HN121	Harding/Ludlow	PR-3
Archaeological Site No. 39HN150	Harding/Ludlow	PR-3
Archaeological Site No. 39HN155	Harding/Ludlow	PR-3
Archaeological Site No. 39HN159	Harding/Ludlow	PR-3
Archaeological Site No. 39HN160	Harding/Ludlow	PR-3
Archaeological Site No. 39HN162	Harding/Ludlow	PR-3
Archaeological Site No. 39HN165	Harding/Ludlow	PR-3
Archaeological Site No. 39HN167	Harding/Ludlow	PR-3
Archaeological Site No. 39HN168	Harding/Ludlow	PR-3
Archaeological Site No. 39HN171	Harding/Ludlow	PR-3
Archaeological Site No. 39HN174	Harding/Ludlow	PR-3
Archaeological Site No. 39HN177	Harding/Ludlow	PR-3
Archaeological Site No. 39HN198	Harding/Ludlow	PR-3
Archaeological Site No. 39HN199	Harding/Ludlow	PR-3
Archaeological Site No. 39HN205	Harding/Ludlow	PR-3
Archaeological Site No. 39HN207	Harding/Ludlow	PR-3
Archaeological Site No. 39HN208	Harding/Ludlow	PR-3
Archaeological Site No. 39HN209	Harding/Ludlow	PR-3
Archaeological Site No. 39HN210	Harding/Ludlow	PR-3
Archaeological Site No. 39HN213	Harding/Ludlow	PR-3
Archaeological Site No. 39HN217	Harding/Ludlow	PR-3
Archaeological Site No. 39HN218	Harding/Ludlow	PR-3
Archaeological Site No. 39HN219	Harding/Ludlow	PR-3
Archaeological Site No. 39HN227	Harding/Ludlow	PR-3

Table 3a. National Register Properties Under Proposed PRTC Airspace An * indicates that the property is located within the ATCAAs with altitudes from 18,000 feet MSL to 60,000 feet		
Property Name	**General Location (County/Town)**	**Airspace**
Archaeological Site No. 39HN228	Harding/Ludlow	PR-3
Archaeological Site No. 39HN232	Harding/Ludlow	PR-3
Archaeological Site No. 39HN234	Harding/Ludlow	PR-3
Archaeological Site No. 39HN484	Harding/Ludlow	PR-3
Archaeological Site No. 39HN485	Harding/Ludlow	PR-3
Archaeological Site No. 39HN486	Harding/Ludlow	PR-3
Archaeological Site No. 39HN487	Harding/Ludlow	PR-3
Ashcroft, Thomas, Ranch	Harding/Buffalo	PR-2
Baker Bungalow*	Lawrence/Spearfish	Gateway West ATCAA
Bartlett, L. L., House*	Meade/Stoneville	Gateway East ATCAA
Bear Butte*	Meade/Sturgis	Gateway West ATCAA
Beckon, Donald, Ranch	Perkins/Zeona	Gateway East ATCAA
Belle Fourche Commercial District*	Butte/Belle Fourche	Gateway West ATCAA
Belle Fourche Dam*	Butte/Belle Fourche	Gateway West ATCAA
Belle Fourche Experiment Farm*	Butte/Newell	Gateway West ATCAA
Bethany United Methodist Church	Perkins/Lodgepole	PR-4
Blake Ranch House	Harding/Gustave	PR-2
Bolles, Charles, House*	Butte/Belle Fourche	Gateway West ATCAA
Butte County Courthouse and Historic Jail Building*	Butte/Belle Fourche	Gateway West ATCAA
Butte-Lawrence County Fairgrounds*	Butte/Nisland	Gateway West ATCAA
Carr No. 60 School	Perkins/Lodgepole	PR-4
Carr, Anna, Homestead	Perkins/Bison	PR-4
Cook, Fayette, House*	Lawrence/Spearfish	Gateway West ATCAA
Corbin, James A. House*	Lawrence/Spearfish	Gateway West ATCAA
Court, Henry, House*	Lawrence/Spearfish	Gateway West ATCAA
Dakota Club Library*	Dewey/Eagle Butte	Gateway East ATCAA
Dakota Tin and Gold Mine*	Lawrence/Spearfish	Gateway West ATCAA
Deadwood Historic District*	Lawrence/Deadwood	Gateway West ATCAA
Dickey, Eleazer C. and Gwinnie, House*	Lawrence/Spearfish	Gateway West ATCAA
Dickey, Walter, House*	Lawrence/Spearfish	Gateway West ATCAA
Ditchrider House*	Butte/Nisland	Gateway West ATCAA
Driskill, William D., House*	Lawrence/Spearfish	Gateway West ATCAA
Duck Creek Lutheran Church and Cemetery	Perkins/Lodgepole	PR-4
Emmanuel Lutheran Church and Cemetery	Harding/Ralph	PR-3
Episcopal Church of All Angels*	Lawrence/Spearfish	Gateway West ATCAA
Erskine School*	Meade/Sturgis	Gateway West ATCAA
Evans, Robert H., House*	Corson/	PR-4
Fort Manuel	Corson/ McIntosh	PR-4
Fort Meade District*	Meade/Sturgis	Gateway West ATCAA
Foster Ranch House	Perkins/Chance	PR-4
Fowler Hotel	Harding/Buffalo	PR-2
Frawley Historic Ranch*	Lawrence/Spearfish	Gateway West ATCAA
Frozenman Stage Station	Perkins/Bison	PR-4
Fruitdale School*	Butte/Fruitdale	Gateway West ATCAA
Fruitdale Store*	Butte/Fruitdale	Gateway West ATCAA
Galena School*	Lawrence/Lead	Gateway West ATCAA
Gartner, Carl Frederick, Homestead*	Butte/Newell	Gateway West ATCAA
Gay, Thomas Haskins, House*	Butte/Belle Fourche	Gateway West ATCAA
Giannonatti Ranch	Harding/Ludlow	PR-3
Golden Rule Department Store	Perkins/Lemmon	PR-4
Golden Valley Norwegian Church	Harding/Ralph	PR-3
Graf, Stephen and Maria, House*	Meade/Sturgis	Gateway West ATCAA
Halloran-Matthews-Brady House*	Lawrence/Spearfish	Gateway West ATCAA
Harriman, L. F., House	Perkins/Lemmon	PR-4
Harris, Fred S., House*	Butte/Belle Fourche	Gateway West ATCAA
Harvey, Jerome and Jonetta Homestead Cabin*	Lawrence/Lead	Gateway West ATCAA

Table 3a. National Register Properties Under Proposed PRTC Airspace
An * indicates that the property is located within the ATCAAs with altitudes from 18,000 feet MSL to 60,000 feet

Property Name	General Location (County/Town)	Airspace
Hay Creek Bridge*	Butte/Belle Fourche	Gateway West ATCAA
Hewes, Arthur, House*	Lawrence/Spearfish	Gateway West ATCAA
Homestake Workers House*	Lawrence/Spearfish	Gateway West ATCAA
Hoover, Alexander House*	Butte/Hoover	Gateway East ATCAA
Hoover Store*	Butte/Hoover	Gateway East ATCAA
Immanuel Lutheran Church*	Perkins/Zeona	Gateway East ATCAA
Jesse Elliott Ranger Station	Harding County	Gateway East ATCAA
Johnson, Axel, Ranch	Harding/Reva	Gap B MOA
Johnson, William, House*	Butte/Fruitdale	Gateway West ATCAA
Keets, Henry, House*	Lawrence/Spearfish	Gateway West ATCAA
Kenaston, William G., House*	Butte/Newell	Gateway West ATCAA
Knight, Webb, S., House*	Lawrence/Spearfish	Gateway West ATCAA
Kroll Meat Market and Slaughterhouse*	Lawrence/Spearfish	Gateway West ATCAA
Langdon School*	Butte/Nisland	Gateway West ATCAA
Lead Historic District	Lawrence/Lead	Gateway West ATCAA
Lemmon Petrified Park	Perkins/Lemmon	PR-4
Lemmon, G. E., House	Perkins/Lemmon	PR-4
Lightning Spring	Harding/Ludlow	PR-3
Lincoln School*	Butte/Belle Fourche	Gateway West ATCAA
Little Missouri Bank Building	Harding/Camp Crook	PR-2
Livingston, John and Daisy May, Ranch	Perkins/Sorum	Gateway East ATCAA
Lown, William Ernest, House*	Lawrence/Spearfish	Gateway West ATCAA
McLaughlin Ranch Barn*	Lawrence/Spearfish	Gateway West ATCAA
Minnesela Bridge*	Butte/Belle Fourche	Gateway West ATCAA
Mount Theodore Roosevelt Monument*	Lawrence/Deadwood	Gateway West ATCAA
Newell Depot Bridge*	Butte/Newell	Gateway West ATCAA
Newell High School*	Butte/Newell	Gateway West ATCAA
Nisland Bridge*	Butte/Nisland	Gateway West ATCAA
Old Finnish Lutheran Church*	Lawrence/Lead	Gateway West ATCAA
Old Redwater Bridge*	Lawrence/Spearfish	Gateway West ATCAA
Old Spearfish Post Office*	Lawrence/Spearfish	Gateway West ATCAA
Olson Bridge*	Butte/Belle Fourche	Gateway West ATCAA
Peace Valley Evangelical Church and Cemetery	Harding/Ralph	PR-3
Qullian, Thomas, House*	Lawrence/St. Onge	Gateway West ATCAA
Raskob, Jacob and Elizabeth Ranch*	Meade/Sturgis	Gateway West ATCAA
Richards Cabins*	Perkins/Faith	Gateway East ATCAA
Riley, Almira, House*	Lawrence/Spearfish	Gateway West ATCAA
Rockford No. 40 School	Perkins/Bison	PR-4
Scotney, John Aaron, House*	Butte/Belle Fourche	Gateway West ATCAA
Shevling, L. W., Ranch	Harding/Harding	PR-2
Sittner Farm	Perkins/Meadow	PR-4
Small, Charles and Eleanor House*	Butte/Belle Fourche	Gateway West ATCAA
Snoma Finnish Cemetery*	Butte/Fruitdale	Gateway West ATCAA
Soper-Behymer Ranch*	Butte/Belle Fourche	Gateway West ATCAA
Sorum Cooperative Store	Perkins/Sorum	Gateway East ATCAA
Sorum Hotel	Perkins/Sorum	Gateway East ATCAA
South Dakota Department of Transportation Bridge No. 10-109-360*	Butte/Belle Fourche	Gateway West ATCAA
South Dakota Department of Transportation Bridge No. 10-270-338*	Butte/Newell	Gateway West ATCAA
Spearfish City Hall*	Lawrence/Spearfish	Gateway West ATCAA
Spearfish Filling Station*	Lawrence/Spearfish	Gateway West ATCAA
Spearfish Fisheries Station*	Lawrence/Spearfish	Gateway West ATCAA
Spearfish Historic Commercial District*	Lawrence/Spearfish	Gateway West ATCAA
Spring Creek School*	Perkins/Zeona	Gateway East ATCAA
Stokes, Oliver O., House	Harding/Harding	PR-2
Stonelake Bridge*	Butte/Newell	Gateway West ATCAA
Stomprude Trail Ruts	Perkins/Bison	PR-4

Table 3a. National Register Properties Under Proposed PRTC Airspace An * indicates that the property is located within the ATCAAs with altitudes from 18,000 feet MSL to 60,000 feet		
Property Name	**General Location (County/Town)**	**Airspace**
Sturgis Commercial Block*	Meade/Sturgis	Gateway West ATCAA
Sturgis High School*	Meade/Sturgis	Gateway West ATCAA
St. Onge Schoolhouse*	Lawrence/St. Onge	Gateway West ATCAA
St. Onge State Bank*	Lawrence/St. Onge	Gateway West ATCAA
St. Lawrence O'Toole Catholic Church*	Lawrence/Central City	Gateway West ATCAA
Tallent, Annie, House*	Meade/Sturgis	Gateway West ATCAA
The Mail Building*	Lawrence/Spearfish	Gateway West ATCAA
Toomey House*	Lawrence/Spearfish	Gateway West ATCAA
Tri-State Bakery*	Butte/Belle Fourche	Gateway West ATCAA
Uhlig, Otto L., House*	Lawrence/Spearfish	Gateway West ATCAA
Vale Bridge*	Butte/Vale	Gateway West ATCAA
Vale Cut Off Belle Fourche River Bridge	Butte/Belle Fourche	Gateway West ATCAA
Vale School*	Butte/Vale	Gateway West ATCAA
Veal, Thomas J., Ranch	Perkins/Chance	PR-4
Vessey School	Harding/Haley	PR-3
Viken, Nicholas Augustus Homestead	Butte/Newell	Gateway West ATCAA
Walsh Barn*	Lawrence/Spearfish	Gateway West ATCAA
Walton Ranch*	Lawrence/Spearfish	Gateway West ATCAA
Wenke, John G., House*	Meade/Sturgis	Gateway West ATCAA
Whitewood Historic District*	Lawrence/Whitewood	Gateway West ATCAA
Whitney, Mary, House*	Lawrence/Spearfish	Gateway West ATCAA
Wide Awake Grocery Building*	Butte/Belle Fourche	Gateway West ATCAA
Wolzmuth, John, House*	Lawrence/Spearfish	Gateway West ATCAA
Woodmen Hall*	Lawrence/St. Onge	Gateway West ATCAA

Table 3b. National Monuments Under Proposed PRTC Airspace		
Name	**General Location**	**Airspace**
Wyoming		
Devils Tower	Devils Tower	Gateway West ATCAA
Montana		
Little Bighorn Battlefield	Garryowen	PR-1

Table 3c. National Historic Landmarks Under Proposed PRTC Airspace		
Landmark Name	**General Location**	**Airspace**
Montana		
Deer Medicine Rocks	Rosebud County	PR-1
Wolf Mountains Battlefield/Where Big Crow Walked Back and Forth	Birney, Rosebud County	PR-1
South Dakota		
Bear Butte	Sturgis	Gateway West ATCAA
Deadwood Historic District	Deadwood	Gateway West ATCAA
Frawley Ranch	Whitewood	Gateway West ATCAA

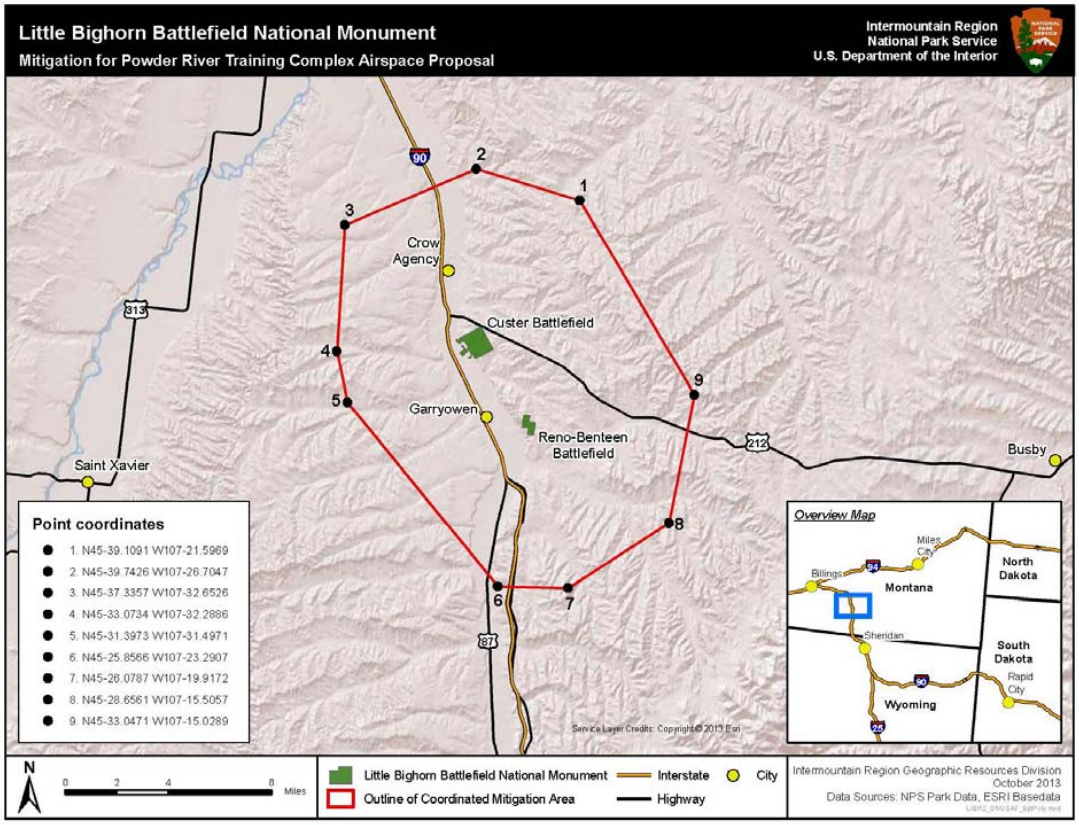
Table 3d. Historic Ranches Under Proposed PRTC Airspace			
Name	**General Location**	**Status**	**Airspace**
Wyoming			
Ranch A	Beulah	National Register Property	Gateway West
Montana			
Bones Brothers Ranch	Rosebud/Birney	National Register Property	PR-1

Table 3d. Historic Ranches Under Proposed PRTC Airspace			
Name	**General Location**	**Status**	**Airspace**
Cross Ranch Headquarters	Powder River/Broadus	National Register Property	PR-2
Drew, J. W., Grain Elevator	Big Horn/Lodge Grass	National Register Property	PR-1
Lee Homestead	Big Horn/Decker	National Register Property	PR-1
OW Ranch	Big Horn/Birney	National Register Property	PR-1
North Dakota			
H-T Ranch	Slope/Amidon	National Register Property	PR-3
South Dakota			
Ashcroft, Thomas, Ranch	Harding/Buffalo	National Register Property	Gap B MOA
Beckon, Donald, Ranch	Perkins/Zeona	National Register Property	Gateway East
Blake Ranch House	Harding/Gustave	National Register Property	PR-2
Carr, Anna, Homestead	Perkins/Bison	National Register Property	PR-4
Foster Ranch House	Perkins/Chance	National Register Property	PR-4
Frawley Ranch	Lawrence	National Historic Landmark	Gateway West
Gartner, Carl Frederick, Homestead	Butte/Newell	National Register Property	Gateway West ATCAA
Giannonatti Ranch	Harding/Ludlow	National Register Property	PR-3
Johnson, Axel, Ranch	Harding/Reva	National Register Property	Gap B MOA
Livingston, John and Daisy May, Ranch	Harding/Sorum	National Register Property	Gateway East ATCAA
McLaughlin Ranch Barn	Lawrence/Spearfish	National Register Property	Gateway West
Raskob, Jacob and Elizabeth Ranch	Meade/Sturgis	National Register Property	Gateway West ATCAA
Shevling, L.W., Ranch	Harding/Harding	National Register Property	PR-2
Soper-Behymer Ranch	Butte/Belle Fourche	National Register Property	Gateway West
Veal, Thomas J., Ranch	Perkins/Chance	National Register Property	PR-4
Viken, Nicholas Augustus Homestead	Butte/Newell	National Register Property	Gateway West ATCAA
Walsh Barn	Lawrence/Spearfish	National Register Property	Gateway West
Walton Ranch	Lawrence/Spearfish	National Register Property	Gateway West
William Holst Farmstead	Meade/Vale	South Dakota State Register Property	Gateway West ATCAA

Table 3e. Traditional Cultural Properties Under Proposed PRTC Airspace		
Area Name	**General Location**	**Airspace**
Wyoming		
Devils Tower National Monument	Devils Tower	Gateway West ATCAA
Inyan Kara Mountain	South of Sundance	Gateway West ATCAA
Unnamed 1	North of Gillette	Gateway West ATCAA
Unnamed 2	Northwest of Hulett	PR-2
Montana		
Chalk Buttes	Ekalaka	Gap B MOA
Wolf Mountains Battlefield/Where Big Crow Walked Back and Forth NHL	Tongue River	PR-1
South Dakota		
Bear Butte NHL	Sturgis	Gateway West ATCAA

Table 3f. Nominated Cultural Landscape Under Proposed PRTC Airspace in Montana		
Area Name	**General Location**	**Airspace**
Tongue River Valley	Ashland	PR-1

Attachment 4: Map of the Little Bighorn Battlefield National Monument Area per Stipulation I.A.1.



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