1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION AND ALTERNATIVES

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

1.1 Overview

Aircrews need to train to become that key asset, and training requires airspace. Historically, the two B-1 squadrons at Ellsworth Air Force Base (AFB) and the two B-52 squadrons at Minot AFB have used the Powder River Military Operations Area (MOA) to train to meet national defense requirements. Due to several factors explained in Section 1.2, the current airspace is inadequate for mission needs. The purpose of the Proposed Action is to establish and configure airspace for B-1 and B-52 training. B-1 and B-52 aircraft have substantial system upgrades which necessitate training airspace with certain size and contour characteristics. Airspace is 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 number of users, 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 B-1 aircrews stationed at Ellsworth AFB, South Dakota (SD), and B-52 aircrews stationed at Minot AFB, North Dakota (ND). The existing Powder River airspace can no longer support realistic training missions for two B-1 squadrons at Ellsworth AFB and two B-52 squadrons at Minot AFB. Transient users of the airspace assets include three B-52 squadrons at Barksdale AFB, one RC-135 squadron at Offutt AFB, as well as many other military units in a surrounding area. The proposed training airspace improvements are collectively named the Powder River Training Complex (PRTC). The proposed 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 during 1 to 3 days per quarter, an expected total of 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 expected 10 days per year of LFEs; and

- authorizing other military units with fighters, primarily from the surrounding area, to conduct supersonic flight above 10,000 feet above ground level (AGL) in the new and modified airspaces to be scheduled only during the expected 10 days per year of LFEs.

Figure 1-1 describes the bases, training, and range assets which were 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. They do not have the dimensions, altitude structure, or electronic capabilities to meet today's or tomorrow's warfighting requirements for training to meet on-going and future Overseas Contingency Operations such as those in Afghanistan. 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, severely limiting 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.

1.2 PURPOSE OF THE PROPOSED ACTION

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. No bombing range is proposed for this action. The purpose of the Proposed Action is to provide adequate airspace to provide capabilities necessitated by the following factors.

The B-1 and B-52 capabilities and combat missions have changed and expanded in recent years. Technological upgrades to B-1s have resulted in the need for responsive, improved training. These upgrades include new target acquisition capabilities, new communication and networking capabilities, new laser targeting capabilities, new optical target tracking capabilities, and new smart weapons. All these capabilities and missions require aircrew training time. 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 United States (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.

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

The number of users has increased. Minot AFB, a frequent user of the current Powder River airspace, has added a 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 airspace into several airspace sections will permit simultaneous airspace use by Minot's squadrons, as well as Ellsworth AFB B-1 squadrons.

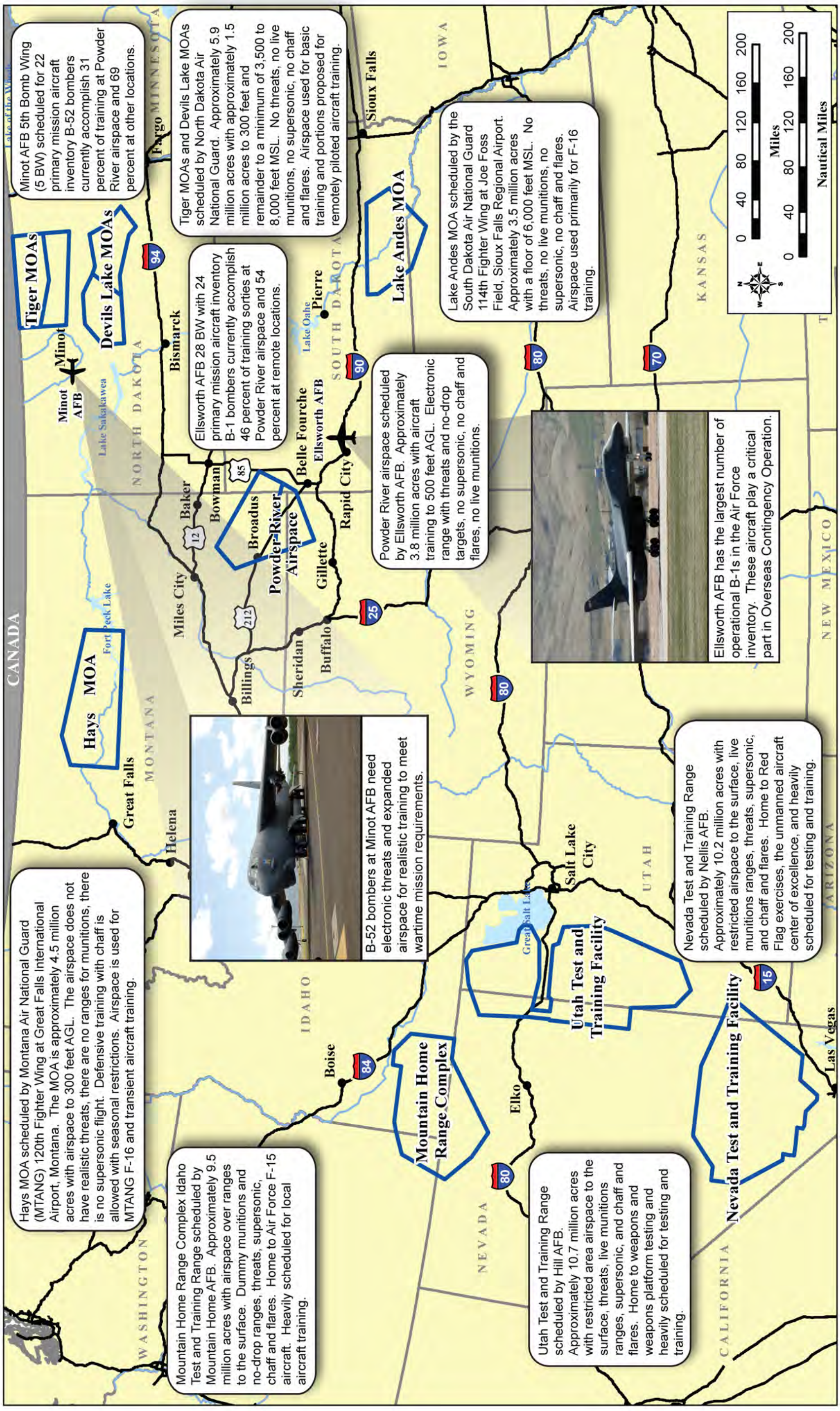


Figure 1-1. Regional Location of Existing Powder River Airspace and Remote Training Airspaces and Ranges

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 a simulated urban area, and the addition of an improvised explosive device simulation area. As a result of these ongoing and planned upgrades, the 28th Operations Group Commander anticipates aircraft with high-fidelity targeting sensors containing substantially expanded video and electronic targeting capabilities, such as F-15Es, F-16s, B-52s, and B-1s, to increase their use of the training airspace. Additionally, RC-135 squadrons have expressed interest in increasing their use of Powder River assets. Expansion of the airspace would allow all of these units access to 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 altitudes as high as Flight Level (FL) 500. Fighter altitude requirements are now as high as FL600. Training scenarios using modern threats in Powder River's current airspace do not have areas for aircraft marshalling or organizing while preparing to exercise battlefield tactics outside of simulated threat ranges. To 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 FL450 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 which could break the sound barrier. Training with chaff, flares, or supersonic operations is not authorized in the existing airspace. 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 LFEs and provide enough space for realistic and modern training scenarios. The proposed airspace would provide adequate airspace and altitude ceilings for multiple simultaneous training areas—many 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 electronic combat simulation. More importantly, the airspace size allows multiple aircraft types to conduct full air-to-air and air-to-ground engagements with simulated deployment of air-to-air or air-to-ground munitions. 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 once quarterly, 1 to 3 day LFEs when various aircraft types would train as they fight.

Fuel conservation necessitating shorter sortie durations has become increasingly important. Fuel is one of the Air Force's biggest expenses. Expanding and improving Powder River airspace would increase Ellsworth AFB 28th Bomb Wing (28 BW) B-1 local training from the current levels of 50 percent to approximately 85 percent. Training at other locations will still be needed in order to accomplish training requirements that are not part of this proposal such as dropping ordnance on ranges. This increase in local training would greatly reduce the need to use airspace further from the base and result in

significant fuel savings which would be used to improve both training quality and quantity and thereby achieve greater efficiency.

Low-altitude training and targeting sensor training requires more diverse airspace. Current combat operations in Iraq and Afghanistan 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. The Powder River airspace requires expansion and modification to meet these diverse training needs.

The B-1 was designed as a low-altitude all-weather day and night bomber. Low-altitude flight remains a requirement to support show-of-force and show-of-presence passes in current combat operations. These passes have proven effective in disrupting enemy operations. Additionally, the B-1 still requires proficiency in low-altitude unguided munitions employment, low-altitude ingress and egress, and terrain following procedures to 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. Training becomes memorized. Expanding the airspace would provide varied and different terrain for training which in turn would permit more challenging scenarios. Sectioning the proposed airspace simulates the sector control airspace measures currently used in combat operations which would also add to training realism. The current Powder River airspace cannot support these required 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 targeting sensor training 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 possible 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.

1.3 Need for the Proposed Action

The Air Force needs to overcome the limitations and deficiencies described in Section 1.2. The bombers' new capabilities and 21st century missions need extended horizontal airspace size, vertical extent, and capacity to adequately support necessary B-1 and B-52 training. Expanded local airspace would allow aircrews to fulfill needed training.

Figure 1-2 presents an overview of the modular nature of the proposed PRTC and describes the airspace segments of the PRTC. The summary of factors which drive the need to implement the Proposed Action is presented in Table 1-1.

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

The proposed Powder River Training Complex (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.

Table 1-1. Summary of Factors Which 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 force aircraft inspections and maintenance sooner than the same number of local mission training. 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. Additionally, supersonic training is required for bomber proficiency as well as fighter tactical employment. Training must detect and react 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.

Table 1-2 summarizes the improved training capabilities of the proposed PRTC depicted on Figure 1-2. Each capability includes the section where the need is addressed in this Environmental Impact Statement (EIS). Figure 1-3 provides an overview of the existing Powder River airspace. A comparison of Tables 1-1 and 1-2 demonstrates that PRTC would provide bomber aircrews adequately sized, configured, and available airspace to train as they would fight during worldwide deployment. The long timeframe 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 1-2. 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 2.2.1). ***Addresses Need Factors 1, 4, 5, 6, 7, and 8 in Table 1-1.***
2. Enables aircrews to conduct diverse training missions while dramatically reducing commuting hours and issues of accessibility to remote ranges (Section 2.2.1.1) and provides locally available airspace with scheduling priority for bombers (Section 2.2.1.3.3). ***Addresses Need Factors 2 and 3 in Table 1-1.***
3. Enables maintenance turnaround of the aircraft to generate adequate training sorties (Section 2.2.2.4) 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 1-1.***
4. Accommodates approximately 85 percent of required aircrew complex multi-mission training sorties for both B-1 and B-52 aircrews (Section 1.2). ***Addresses Need Factors 1, 4, 5, 6, 7, and 8 in Table 1-1.***
5. Increases the proportion of training time for new and diversified training requirements, including defensive chaff and flares, supersonic maneuvers, during LFEs, and diversified areas for low-altitude training (Sections 2.2.1 and 2.2.2). ***Addresses Need Factors 1, 4, 5, 6, 7, and 8 in Table 1-1.***
6. Improves integrated aircrew combat training operations by quarterly support of realistic tactics using various aircraft types and expanded network based operations training (Section 2.3.2.4). ***Addresses Need Factors 4, 5, 6, 7, and 8 in Table 1-1.***
7. Increases the availability of real world training at realistic distances for multiple, concurrent flights of aircraft from Ellsworth and Minot AFBs (Section 2.3.2.2). ***Addresses Need Factors 4, 5, 6, 7, and 8 in Table 1-1.***
8. Restructures and adds local airspace and capabilities to meet the training needs for 28 BW and Minot AFB 5th Bomb Wing (5 BW) aircrews (Section 1.3). ***Addresses Need Factors 1, 2, 3, 4, 5, 6, 7, and 8 in Table 1-1.***

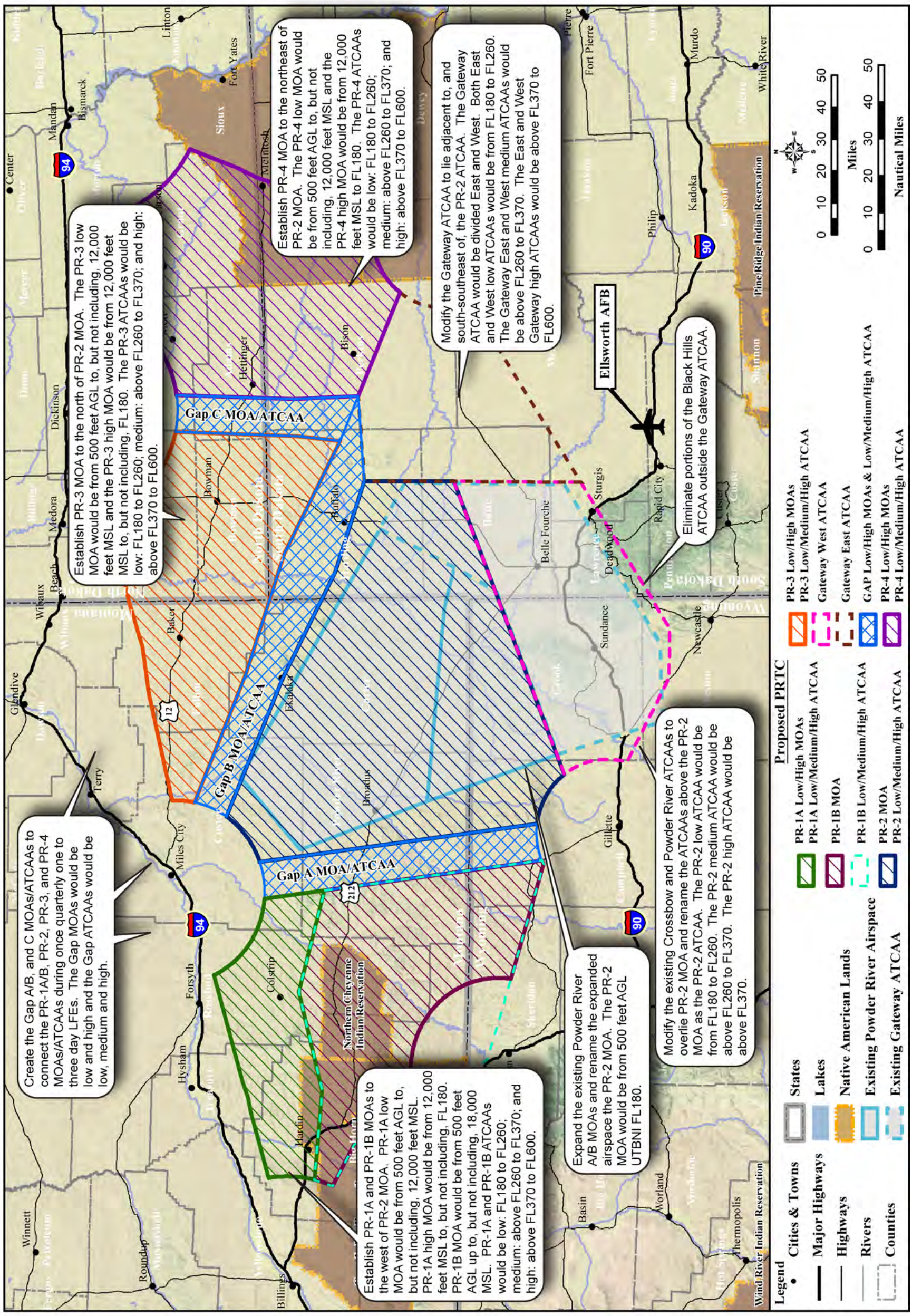
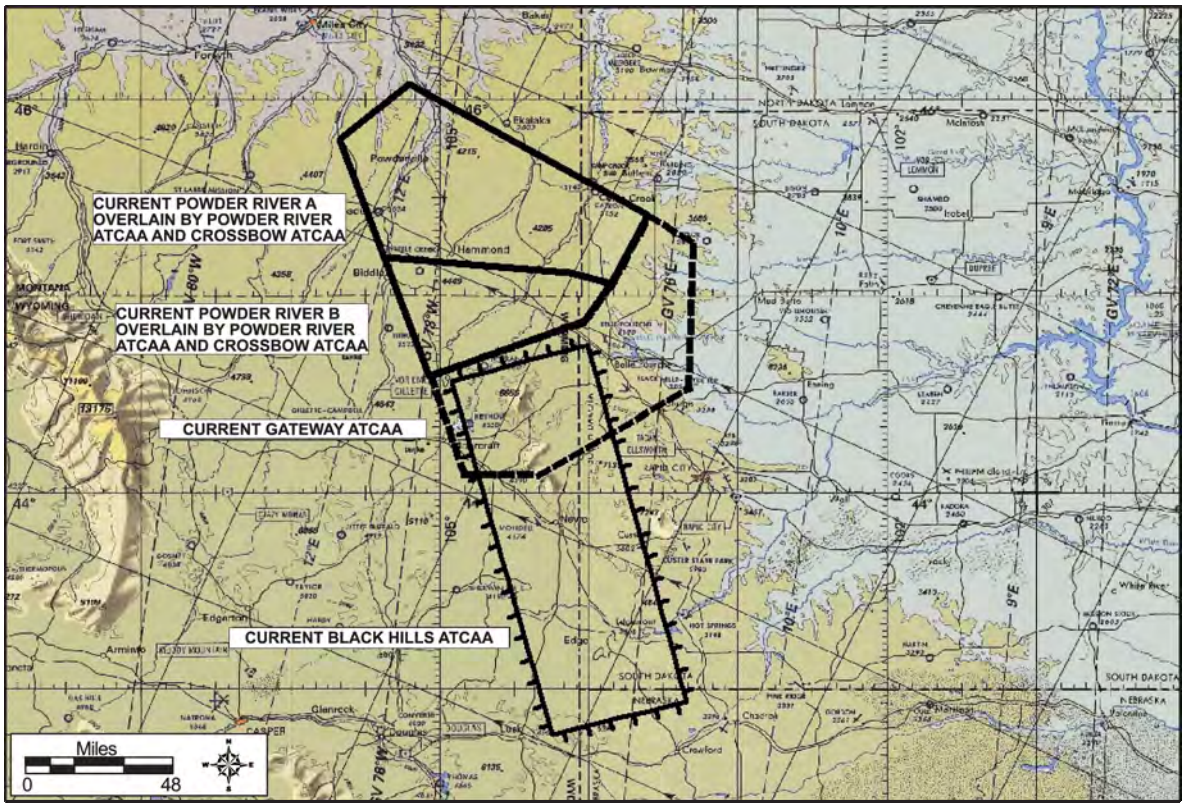
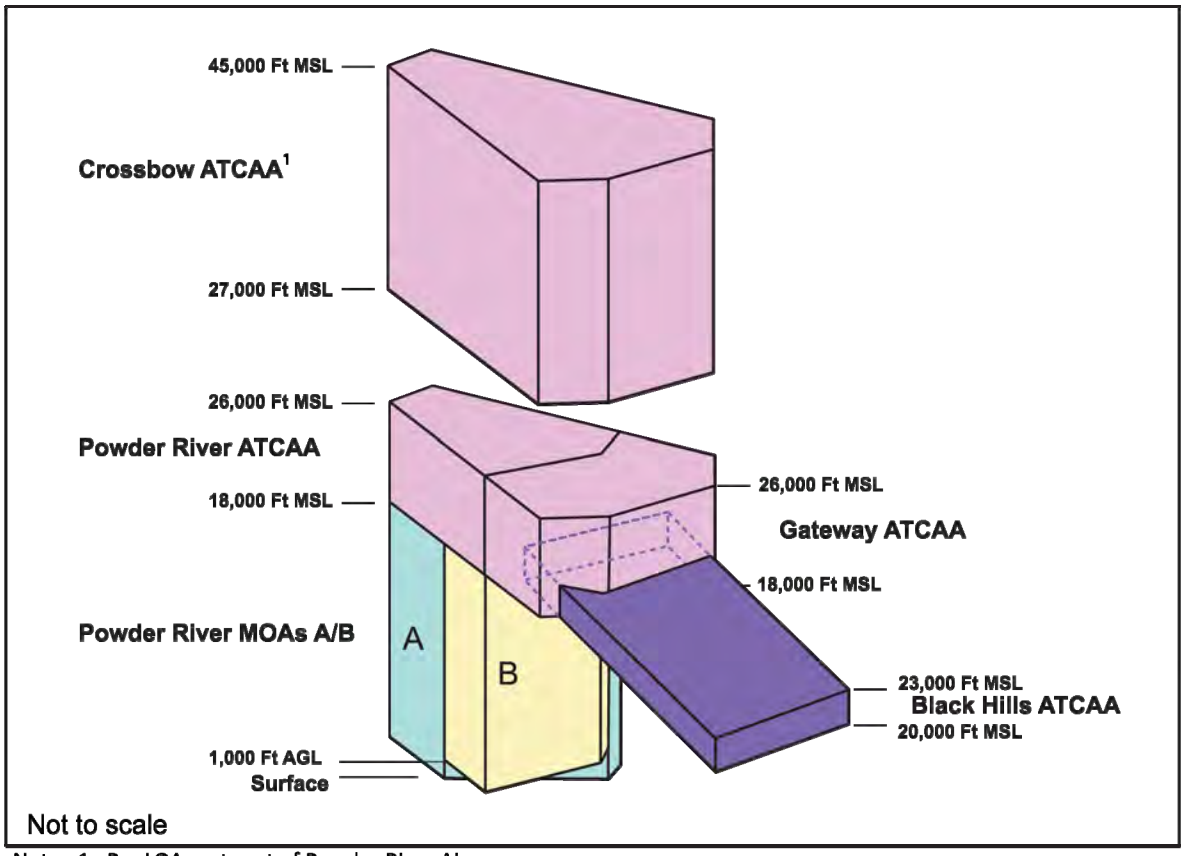


Figure 1-2. Overview of Ellsworth AFB, Minot AFB, and Proposed PRTC Airspace





Note: 1. Per LOA, not part of Powder River Airspace.

Figure 1-3. Existing Powder River Airspace

1.4 Organization of this EIS

This EIS is organized into the following chapters and appendices: Chapter 1.0 describes the purpose and need of the proposal. A detailed description of the Proposed Action, alternatives to the Proposed Action, and the No-Action Alternative is provided in Chapter 2.0. Chapter 2.0 describes the alternatives identification process, discusses the alternatives considered but not carried forward, and describes the proposed airspace expansion, and alternatives. The overall National Environmental Policy Act (NEPA) process is described in Section 2.10. Finally, Chapter 2.0 provides a comparative summary of the effects of the Proposed Action and alternatives with respect to the various environmental resources.

Chapter 3.0 describes the existing conditions of environmental resources that could be affected by the Proposed Action or an alternative. Chapter 4.0 addresses the environmental consequences to those resources that could result from implementing the Proposed Action or an alternative, including the No-Action Alternative. Chapter 5.0 addresses the cumulative effects of the Proposed Action, as well as other recent past, current, and future actions that may be implemented in the region of influence (ROI) for the Proposed Action or alternatives. Chapter 5.0 also presents the relationship between short-term uses and long-term productivity identified for the resources affected, and the irreversible and irretrievable commitment of resources if the Proposed Action or an action alternative were selected. Chapter 6.0 contains references cited in the EIS and lists the individuals and organizations contacted during the preparation of the EIS. A list of the document preparers is included in Chapter 7.0. Chapter 8.0 is a glossary of frequently used terms.

PRTC EIS

Executive Summary
Chapter 1.0 Purpose and Need
Chapter 2.0 Description of Proposed Action and Alternatives
Chapter 3.0 Affected Environment
3.1 Airspace/Air Traffic
3.2 Noise
3.3 Safety
3.4 Air Quality
3.5 Physical Sciences
3.6 Biological Sciences
3.7 Cultural and Historic Resources
3.8 Land Use
3.9 Socioeconomics
3.10 Environmental Justice and Protection of Children
Chapter 4.0 Environmental Consequences
4.1 Airspace/Air Traffic
4.2 Noise
4.3 Safety
4.4 Air Quality
4.5 Physical Sciences
4.6 Biological Sciences
4.7 Cultural and Historic Resources
4.8 Land Use
4.9 Socioeconomics
4.10 Environmental Justice and Protection of Children
Chapter 5.0 Cumulative Effects and Other Environmental Considerations
Chapter 6.0 References
Chapter 7.0 List of Preparers
Chapter 8.0 Glossary
Appendices

A list of frequently used acronyms and abbreviations can be found in the back of this EIS. In addition to the main text, the following appendices are included in this document: Appendix A, Federal Aviation Administration (FAA) Procedures for Processing Airspace Changes; Appendix B, Potential Transient Aircraft; Appendix C, Characteristics of Chaff; Appendix D, Characteristics of Flares; Appendix E, Public Involvement and Agency Correspondence; Appendix F, Relevant Statutes, Regulations, and Guidelines; Appendix G, Reserved; Appendix H, Noise; Appendix I, Obstruction Marking and Lighting; Appendix J, Air Quality; Appendix K, Special-Status Plant and Animal Species and Scientific Names; Appendix L, Letter of Agreement; and Appendix M, Section 106 Correspondence.

1.5 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. 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 scoping and preparation of this Draft EIS. FAA's input has been critical in developing the Proposed Action. Table 1-3 presents a list of relevant correspondence between the Air Force and the FAA (Appendix L).

Table 1-3. Correspondence with the FAA

From	*To*	*Letter Date*	*Subject*
Air Force	FAA	28 September 2007	Request for participation with FAA as a cooperating agency
FAA	Air Force	10 October 2007	Acceptance of participation as a cooperating agency

No charted airspace decision has been made or will be made prior to complete environmental review. The PRTC aeronautical proposal has been submitted by the Air Force to the FAA (see Appendix L). After receipt of the public and agency comments on this Draft EIS, the Air Force will work with the FAA on preparation of the Final EIS. 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 Final EIS and ROD.

FAA will review the aeronautical proposal submitted by the Air Force in accordance with FAA policies and procedures. According to FAA environmental policies and procedures, including Order 1050.1(E) and in accordance with 40 CFR 1506.3, the FAA can adopt the PRTC Final EIS in whole or in part as an official environmental analysis supporting decisions on the aeronautical proposal. If the FAA adopts the PRTC Final EIS, it must still issue its own Record of Decision and notify the U.S. Environmental Protection Agency (USEPA) of the adoption.

Charting of any airspace modification would be performed by the FAA. The Air Force's goal in its cooperative effort with the FAA is for this EIS to fulfill the NEPA requirements of both agencies.

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