
Section 106 Documentation

for the

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

Northern Cheyenne Reservation



Prepared for:
Air Combat Command

May 2010

ACRONYMS AND ABBREVIATIONS

| | |
|-------------------|---|
| ACHP | Advisory Council on Historic Preservation |
| AFB | Air Force Base |
| AGL | above ground level |
| Air Force | United States Air Force |
| AIRFA | American Indian Religious Freedom Act |
| APE | Area of Potential Effect |
| ATCAA | Air Traffic Control Assigned Airspace |
| CFR | Code of Federal Regulations |
| DoD | Department of Defense |
| EIS | Environmental Impact Statement |
| FL | Flight Level |
| LFE | Large Force Exercise |
| MOA | Military Operations Area |
| MSL | mean sea level |
| National Register | National Register of Historic Places |
| NEPA | National Environmental Protection Act |
| NHPA | National Historic Preservation Act |
| NM | nautical mile |
| PRC | Powder River Complex |
| PRTC | Powder River Training Complex |
| TCP | traditional cultural properties |

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1.0 INTRODUCTION

1.1 Executive Summary of Submission and Findings

The United States Air Force (Air Force) is embarking on the Powder River Training Complex (PRTC) Environmental Impact Statement (EIS) to improve airspace assets in the region of Ellsworth Air Force Base (AFB), South Dakota, and Minot AFB, North Dakota. The proposed action would provide local realistic training for aircrews and provide airspace of sufficient size and volume to support the concurrent training needs of multiple B-1 and B-52 squadrons. The proposed action would restructure and reconfigure the existing Powder River Complex's Military Operations Areas (MOAs) and associated Air Traffic Control Assigned Airspaces (ATCAAs) and add airspaces to become the PRTC. The PRTC would overlay approximately 35,164 square miles in Montana, South Dakota, Wyoming, and North Dakota.

A total of 244 National Register of Historic Places (National Register)-listed properties are located beneath the affected airspace. Of these, 94 National Register-listed properties are currently under the existing airspace. The proposed PRTC would overfly 13 National Register-listed properties in Wyoming, 39 in Montana, 15 in North Dakota, and 177 in South Dakota. A number of ghost towns, historic ranches, historic trails, traditional cultural properties, cultural landscapes, and National Historic Landmarks, are also in the area.

1.2 Description of the Undertaking

The undertaking would modify and add to the existing PRC airspace to establish the PRTC with improved training opportunities. The proposed action would expand the Powder River MOA complex into eight MOAs for day-to-day training and 6 additional MOAs which would be used to link the airspace for Large Force Exercises (LFEs) up to four times per year. Each MOA would have overlying Air Traffic Control Assigned Airspace (ATCAAs). The MOAs are proposed as follows: **PR-1A Low** (500' above ground level (AGL) up to, but not including 12,000' above Mean Sea Level (MSL)); **PR-1A High** (12,000' MSL up to, but not including 18,000' MSL); **PR-1B** (500' AGL up to, but not including, 18,000' MSL); **PR-2** (500' AGL up to, but not including, 18,000' MSL); **PR-3 Low** (500' AGL up to, but not including 12,000' MSL); **PR-3 High** (12,000' MSL up to, but not including 18,000' MSL); **PR-4 Low** (500' AGL up to, but not including 12,000' MSL); **PR-4 High** (12,000' MSL up to, but not including 18,000' MSL); **GAP A Low** (500' AGL up to, but not including 12,000' above MSL); **GAP-A High** (12,000' MSL up to, but not including 18,000' MSL); **GAP B Low** (500' AGL up to, but not including 12,000' MSL); **GAP-B High** (12,000' MSL up to, but not including 18,000' MSL); **GAP C Low** (500' AGL up to, but not including 12,000' MSL); and **GAP-C High** (12,000' MSL up to, but not including 18,000' MSL). The proposed PRTC would include Low (18,000' MSL up to, but not including 26,000' MSL), Medium (26,000' MSL up to, but not including 37,000' MSL) and High (37,000' MSL – 60,000'

MSL) Air Traffic Control Assigned Airspace (ATCAA) over each MOA. The GAP ATCAAs would be used in association with the GAP MOAs when connecting the airspace for LFEs. In addition, the Gateway ATCAA would be modified and expanded to create the Gateway West and Gateway East Low, Medium and High ATCAAs with altitudes from 18,000' MSL to 60,000' MSL as defined above.

Large Force Exercises (LFEs) would generally not be scheduled more frequently than once per quarter and would last from 1 to 3 days and occur in a 2 to 4 hour block. The proposed PRTC would also support use of defensive countermeasure (chaff and flares) above 2,000 feet AGL and supersonic flight above 20,000 feet MSL for B-1s and 10,000 feet AGL for fighter aircraft. Supersonic flight authorization would be limited to LFEs.

1.2.1 Establishment of the PRTC

Under the proposed action PRTC would modify the existing PRC, add three additional training areas with each being made up of one or more MOAs and ATCAAs, establish Gap MOAs/ATCAAs to link the airspace up to four times per year for LFEs, and modify the existing Gateway ATCAA to become Gateway West ATCAA and Gateway East ATCAA. The floor of the current PRA MOA would be raised from the surface to 500 feet AGL.

1.2.2 Training Operations in the Proposed PRTC

Sortie-Operations

Under the proposed action, 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, mostly from the surrounding area. 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. Currently, B-1s and B-52s respectively perform 46 percent and 31 percent of their training sorties at PRC. The proposed undertaking would increase that number to 85 percent for each airframe. Training in remote areas such as Utah Test and Training Range, Nevada Test and Training Range, and Mountain Home Range Complex would account for 15 percent of training and would permit aircrews to continue to conduct actual ordnance delivery training in locations where inert or live bombs can be deployed.

Table 1-1 presents projected and baseline 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.

| | <i>Aircraft</i> | | | | |
|------------------|-----------------|-------------|------------------|----------------|--------------|
| | <i>B-1</i> | <i>B-52</i> | <i>Transient</i> | <i>Tankers</i> | <i>Total</i> |
| Baseline | | | | | |
| MOA | 250 | 0 | 10 | 0 | 260 |
| ATCAA | 625 | 300 | 14 | 0 | 939 |
| Projected | | | | | |
| MOA | 539 | 121 | 45 | 0 | 705 |
| ATCAA | 1,822 | 529 | 78 | 153 | 2,582 |
| Increase | | | | | |
| MOA | 289 | 121 | 35 | 0 | 445 |
| ATCAA | 1,197 | 229 | 64 | 153 | 1,643 |

1.2.3 Authorization of Supersonic Flight in the PRTC

The Air Force proposes to conduct training that would involve supersonic flights within the PRTC airspace during LFEs on an estimated 10 days per year. The Air Force proposes supersonic flight training in all PRTC airspace units for air combat, air-to-air engagements, and other tactics. 10,000 feet AGL is proposed as the supersonic floor for all fighters during LFEs only, and 20,000 feet MSL is proposed as the floor for B-1 supersonic flight only during LFEs.

1.2.4 Use of Chaff and Flares

Under the proposed action, an annual estimate of 33,000 chaff bundles and 3,301 flares would be employed throughout all of the PRTC airspace for defensive countermeasure training. Chaff creates a brief electronic cloud of fibers thinner than human hair to confuse enemy radar. Flares create a heat source to decoy heat-seeking missiles away from the aircraft. Different aircraft types employ specific types of chaff and flares in quantities reflective of their missions.

1.2.5 Ground-Based Training Assets

Proposed new 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. There are multiple retired Minuteman Missile sites throughout the region which are representative of the area needed for an electronic site. The degree of construction would depend on the type of site, utility requirements, safety and security parameters, and existing conditions. At this time the Air Force cannot identify the number, nature, or location of any candidate sites. However, areas that are previously disturbed would be preferred. At the time of selection, National Environmental Protection Act (NEPA) analysis tiered to the present EIS would be undertaken and Section 106 procedures would be followed.

1.3 Area of Potential Effects

The Area of Potential Effect (APE) is defined as the lands under the proposed PRTC (Figure 1). The APE covers approximately 17.75 million acres. All proposed training operations, supersonic operations above 10,000 feet MSL, and the use of chaff and flares would occur within this area. Expected project effects include changes in audible and visual setting, overpressures from sonic booms, and changes in setting due to the presence of chaff or flares.

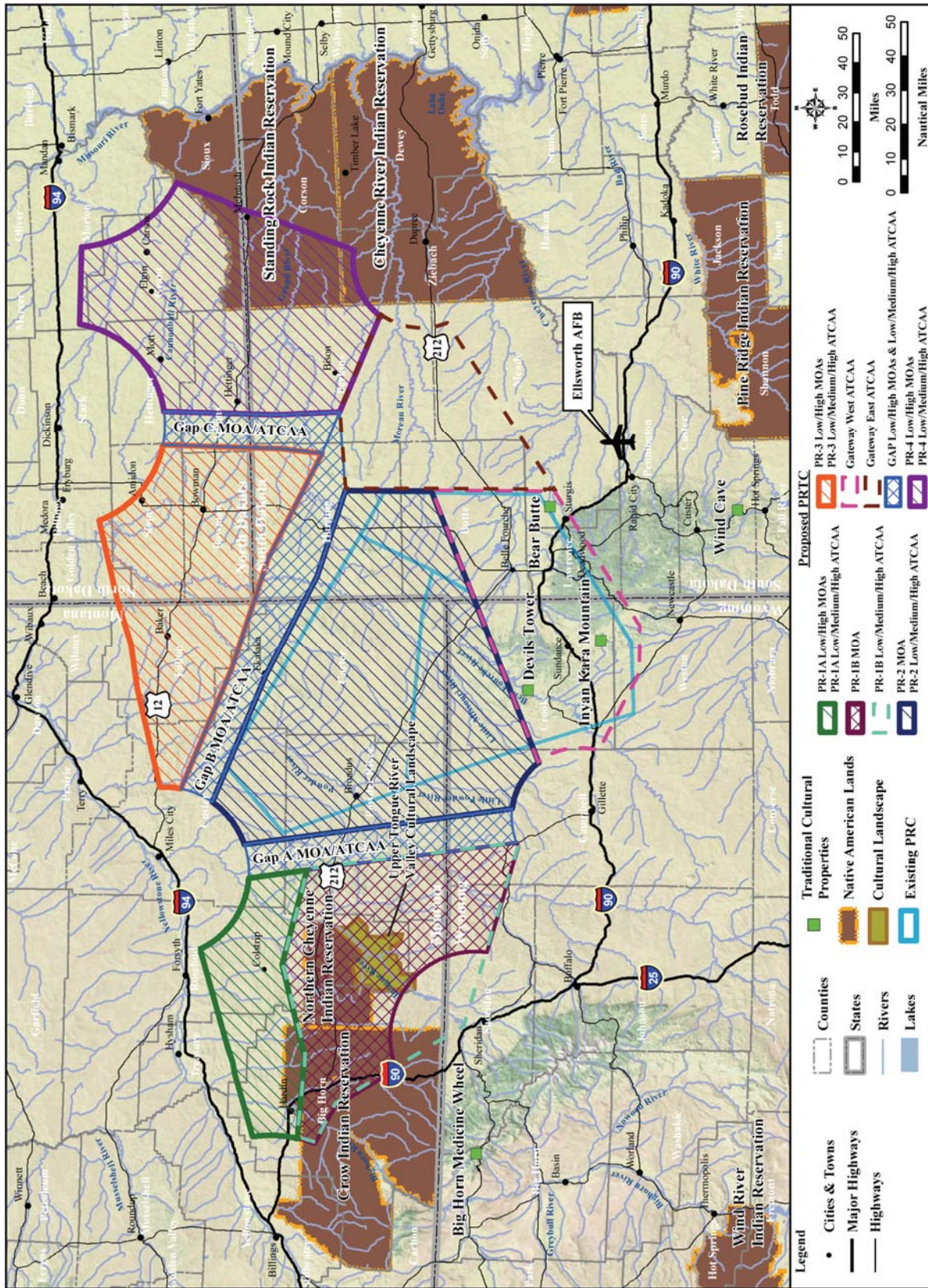


Figure 1. APE Under the Airspace

2.0 IDENTIFICATION

2.1 Previous Work

Information on cultural resources within the APE was derived from conducting background research to identify previously recorded National Register of Historic Places (National Register) and South Dakota State Register of Historic Places (State Register) properties beneath the affected airspace, as well as any ghost towns, historic ranches, National Historic Landmarks, cultural landscapes, National Monuments, historic trails, and American Indian Reservations recorded or known within the same area. No properties on the State Registers for Montana, North Dakota, or Wyoming were located below the proposed airspace.

In some cases resources, such as Devils Tower National Monument, are under the existing PRC training space and effects had been previously assessed.

Record searches were conducted using the National Register Information System and the South Dakota State Register. Additional research was conducted using aerial photographs and various other resources to obtain information on historic ranches, ghost towns, and other areas that contain standing buildings or structures that may be historic in nature.

For areas under the proposed PRTC, cultural resources with standing buildings or structures that are listed on or eligible for listing on the National or State Registers or were listed as known ghost towns were considered. In most cases, the ghost towns are not listed on the National Register and have not been evaluated for National Register eligibility. The Air Force recognizes that hundreds of other cultural resources, some documented and some not yet discovered, may exist under the airspace. However, aircraft operations are most likely to affect historic buildings, structures, and districts where setting is an important aspect of a property's significance and where overpressures from sonic booms form potential effects to those types of resources. These resources are ones typically found on the National Register or State Register. Conversely, if National Register-listed properties are not affected by the project elements, then non-listed resources are unlikely to be affected.

2.2 Research Design and Methods

Effects to cultural resources were evaluated for lands beneath the PRTC (see Figure 1). Because the proposed project is an airspace action, only those cultural resources that would reasonably be affected by visual (overflights, chaff and flares) and noise intrusions are considered. These include architectural resources; archaeological resources with standing buildings or structures, such as historic ranches, ghost towns, and American Indian settlements; and traditional cultural properties (TCPs). Prehistoric and historic archaeological sites lacking standing buildings or structures are not included as they are generally ground surface or even subsurface deposits that would not be affected by the proposed undertaking. Some prehistoric archaeological sites could contain natural structures such as rockshelters or caves. These structures often house petroglyphs or pictographs, which are etched or painted onto the rock surfaces. However, studies have found that these types of natural formations are not affected any more by noise vibrations, such as sonic booms, than by natural erosion, wind, or seismic activity (Battis 1983).

2.3 Acres Surveyed

As described in Section 1.2.5 there will be some ground disturbance associated with this undertaking. However, the exact location of that ground disturbance has yet to be defined. Once defined, the areas that would be subject to ground disturbance would undergo Section 106 survey and review.

3.0 FINDINGS

3.1 Description of Cultural Resources within the APE

Wyoming

Thirteen properties are currently listed on the National Register in Crook and Sheridan Counties, Wyoming beneath the proposed PRTC airspace (Table 3-1). They consist of archaeological sites, historic structures at Devils Tower National Monument, bridges, and historic buildings. No National Register-listed or -eligible properties are located under the proposed PRTC airspace in Campbell or Weston Counties, Wyoming. Devils Tower National Monument (Table 3-2) is also beneath the proposed PRTC airspace and is beneath the existing Powder River airspace.

| Table 3-1. National Register Properties Under Proposed PRTC Airspace | |
|---|-------------------------|
| <i>Property Name</i> | <i>General Location</i> |
| Wyoming | |
| Arch Creek Petroglyphs | Moorcroft |
| DXN Bridge over Missouri River | Hulett |
| EBF Bridge over Powder River | Leiter |
| Entrance Road—Devils Tower National Monument | Devils Tower |
| Entrance Station—Devils Tower National Monument | Devils Tower |
| Inyan Kara Mountain | Sundance |
| McKean Archaeological Site | Moorcroft |
| Old Headquarters Area Historic District | Devils Tower |
| Ranch A | Beulah |
| Sundance School | Sundance |
| Sundance State Bank | Sundance |
| Tower Ladder-Devils Tower National Monument | Devils Tower |
| Vore Buffalo Jump | Sundance |
| Montana | |
| Baker Hotel | Fallon/Baker |
| Baldwin House | Big Horn/Lodge Grass |
| Bones Brother Ranch | Rosebud/Birney |
| Boyum, John, House | Big Horn/Hardin |
| Burke, Thomas H., House | Big Horn/ Hardin |
| Cammocks's Hotel | Big Horn/Lodge Grass |
| Chivers Memorial Church | Big Horn/Lodge Grass |
| Commercial District | Big Horn/Hardin |
| Cross Ranch Headquarters | Powder River/Broadus |
| Drew, J. W., Grain Elevator | Big Horn/Lodge Grass |
| Ebeling, William, House | Big Horn/Hardin |
| Eder, Charles S., House | Big Horn/Hardin |
| Fallon County Jail | Fallon/Baker |
| First Baptist Church | Big Horn/Hardin |
| Haverfield Hospital | Big Horn/Hardin |
| Kopriva, Francis, House | Big Horn/Hardin |
| Lee Homestead | Big Horn/Decker |
| Little Bighorn Battlefield National Monument | Big Horn/Hardin |
| Lodge Grass City Jail | Big Horn/Lodge Grass |
| Lodge Grass Merchandise Company Store | Big Horn/Lodge Grass |
| Moncure Tipi | Big Horn/Busby |
| OW Ranch | Big Horn/Birney |

| Table 3-1. National Register Properties Under Proposed PRTC Airspace | |
|---|-------------------------|
| <i>Property Name</i> | <i>General Location</i> |
| Pease's George, Second Store | Big Horn/Lodge Grass |
| Ping, J. J., House | Big Horn/Hardin |
| Reno Apartments | Big Horn/Hardin |
| Residential District | Big Horn/Hardin |
| Rosebud Battlefield | Big Horn/Kirby |
| Ryan's, John, House | Big Horn/ Lodge Grass |
| Sharp's Jay, Store | Big Horn/Lodge Grass |
| Simmonsens's House | Big Horn/Lodge Grass |
| St. Joesph's Catholic Church | Big Horn/Hardin |
| Stevens, Dominic House | Big Horn/Lodge Grass |
| Sullivan Rooming House | Big Horn/Hardin |
| Sullivan, James J., House | Big Horn/Hardin |
| Teton Crossing on the Whoop-Up Trail | Carter/Albion |
| Trytten, J. M., House | Big Horn/Lodge Grass |
| Tupper, J. S., House | Big Horn/Hardin |
| Wolf Mountain Battlefields | Rosebud/Birney |
| Wyoming Mercantile | Aladdin |
| North Dakota | |
| Adams County Courthouse | Adams/Hettinger |
| Carson Roller Mill | Grant/Carson |
| Cedar Creek Bridge | Adams/Haynes |
| Fort Dilts | Bowman/Rhame |
| Hettinger County Courthouse | Hettinger/Mott |
| Hope Lutheran Church | Grant/Elgin |
| H-T Ranch | Slope/Amidon |
| Medicine Rock State Historic Site | Grant/Heil |
| Mystic Theatre | Slope/Marmarth |
| Neuburg Congregational Church | Hettinger/Mott |
| Original Slope County Courthouse | Slope/Amidon |
| Riverside | Hettinger/New England |
| Schade, Emma Petznick and Otto, House | Bowman/Bowman |
| Stern, John and Fredricka (Roth), Homestead | Hettinger/Mott |
| U.S. Post Office – Hettinger | Adams/Hettinger |
| South Dakota | |
| Ainsworth, Oliver N., House | Lawrence/Spearfish |
| Antelope Creek Stage Station | Corson/Morristown |
| Archaeological Site No. 39HN1 | Harding/Ludlow |
| Archaeological Site No. 39HN5 | Harding/Ludlow |
| Archaeological Site No. 39HN17 | Harding/Ludlow |
| Archaeological Site No. 39HN18 | Harding/Ludlow |
| Archaeological Site No. 39HN21 | Harding/Ludlow |
| Archaeological Site No. 39HN22 | Harding/Ludlow |
| Archaeological Site No. 39HN26 | Harding/Ludlow |
| Archaeological Site No. 39HN30 | Harding/Ludlow |
| Archaeological Site No. 39HN50 | Harding/Ludlow |
| Archaeological Site No. 39HN53 | Harding/Ludlow |
| Archaeological Site No. 39HN54 | Harding/Ludlow |
| Archaeological Site No. 39MD81 | Meade/Sturgis |
| Archaeological Site No. 39MD82 | Meade/Sturgis |
| Archaeological Site No. 39HN121 | Harding/Ludlow |
| Archaeological Site No. 39HN150 | Harding/Ludlow |

| Table 3-1. National Register Properties Under Proposed PRTC Airspace | |
|---|-------------------------|
| <i>Property Name</i> | <i>General Location</i> |
| Archaeological Site No. 39HN155 | Harding/Ludlow |
| Archaeological Site No. 39HN159 | Harding/Ludlow |
| Archaeological Site No. 39HN160 | Harding/Ludlow |
| Archaeological Site No. 39HN162 | Harding/Ludlow |
| Archaeological Site No. 39HN165 | Harding/Ludlow |
| Archaeological Site No. 39HN167 | Harding/Ludlow |
| Archaeological Site No. 39HN168 | Harding/Ludlow |
| Archaeological Site No. 39HN171 | Harding/Ludlow |
| Archaeological Site No. 39HN174 | Harding/Ludlow |
| Archaeological Site No. 39HN177 | Harding/Ludlow |
| Archaeological Site No. 39HN198 | Harding/Ludlow |
| Archaeological Site No. 39HN199 | Harding/Ludlow |
| Archaeological Site No. 39HN205 | Harding/Ludlow |
| Archaeological Site No. 39HN207 | Harding/Ludlow |
| Archaeological Site No. 39HN208 | Harding/Ludlow |
| Archaeological Site No. 39HN209 | Harding/Ludlow |
| Archaeological Site No. 39HN210 | Harding/Ludlow |
| Archaeological Site No. 39HN213 | Harding/Ludlow |
| Archaeological Site No. 39HN217 | Harding/Ludlow |
| Archaeological Site No. 39HN218 | Harding/Ludlow |
| Archaeological Site No. 39HN219 | Harding/Ludlow |
| Archaeological Site No. 39HN227 | Harding/Ludlow |
| Archaeological Site No. 39HN228 | Harding/Ludlow |
| Archaeological Site No. 39HN232 | Harding/Ludlow |
| Archaeological Site No. 39HN234 | Harding/Ludlow |
| Archaeological Site No. 39HN484 | Harding/Ludlow |
| Archaeological Site No. 39HN485 | Harding/Ludlow |
| Archaeological Site No. 39HN486 | Harding/Ludlow |
| Archaeological Site No. 39HN487 | Harding/Ludlow |
| Ashcroft, Thomas, Ranch | Harding/Bufalo |
| Baker Bungalow | Lawrence/Spearfish |
| Bartlett, L. L., House | Meade/Stoneville |
| Bear Butte | Meade/Sturgis |
| Beckon, Donald, Ranch | Perkins/Zeona |
| Belle Fourche Commercial District | Butte/Belle Fourche |
| Belle Fourche Dam | Butte/Belle Fourche |
| Belle Fourche Experiment Farm | Butte/Newell |
| Bethany United Methodist Church | Perkins/Lodgepole |
| Blake Ranch House | Harding/Gustave |
| Bolles, Charles, House | Butte/Belle Fourche |
| Butte County Courthouse and Historic Jail Building | Butte/Belle Fourche |
| Butte-Lawrence County Fairgrounds | Butte/Nisland |
| Carr No. 60 School | Perkins/Lodgepole |
| Carr, Anna, Homestead | Perkins/Bison |
| Cook, Fayette, House | Lawrence/Spearfish |
| Corbin, James A. House | Lawrence/Spearfish |
| Court, Henry, House | Lawrence/Spearfish |
| Dakota Tin and Gold Mine | Lawrence/Spearfish |
| Deadwood Historic District | Lawrence/Deadwood |
| Dickey, Eleazer C. and Gwinnie, House | Lawrence/Spearfish |
| Dickey, Walter, House | Lawrence/Spearfish |

| Table 3-1. National Register Properties Under Proposed PRTC Airspace | |
|---|-------------------------|
| <i>Property Name</i> | <i>General Location</i> |
| Ditchrider House | Butte/Nisland |
| Driskill, William D., House | Lawrence/Spearfish |
| Duck Creek Lutheran Church and Cemetery | Perkins/Lodgepole |
| Emmanuel Lutheran Church and Cemetery | Harding/Ralph |
| Episcopal Church of All Angels | Lawrence/Spearfish |
| Erskine School | Meade/Sturgis |
| Evans, Robert H., House | Lawrence/Spearfish |
| Fort Manuel | Corson/ McIntosh |
| Fort Meade District | Meade/Sturgis |
| Foster Ranch House | Perkins/Chance |
| Fowler Hotel | Harding/Buffalo |
| Frawley Historic Ranch | Lawrence/Spearfish |
| Frozenman Stage Station | Meade/Bison |
| Fruitdale School | Butte/Fruitdale |
| Fruitdale Store | Butte/Fruitdale |
| Galena School | Lawrence/Lead |
| Gartner, Carl Frederick, Homestead | Butte/Newell |
| Gay, Thomas Haskins, House | Butte/Belle Fourche |
| Giannonatti Ranch | Harding/Ludlow |
| Golden Rule Department Store | Perkins/Lemmon |
| Golden Valley Norwegian Church | Harding/Ralph |
| Graf, Stephen and Maria, House | Meade/Sturgis |
| Halloran-Matthews-Brady House | Lawrence/Spearfish |
| Harriman, L. F., House | Perkins/Lemmon |
| Harris, Fred S., House | Butte/Belle Fourche |
| Harvey, Jerome and Jonetta Homestead Cabin | Lawrence/Lead |
| Hay Creek Bridge | Butte/Belle Fourche |
| Hewes, Arthur, House | Lawrence/Spearfish |
| Homestake Workers House | Lawrence/Spearfish |
| Hoover, Alexander House | Butte/Hoover |
| Hoover Store | Butte/Hoover |
| Immanuel Lutheran Church | Perkins/Zeona |
| Johnson, Axel, Ranch | Harding/Reva |
| Johnson, William, House | Butte/Fruitdale |
| Keets, Henry, House | Lawrence/Spearfish |
| Kenaston, William G., House | Butte/Newell |
| Knight, Webb, S., House | Lawrence/Spearfish |
| Kroll Meat Market and Slaughterhouse | Lawrence/Spearfish |
| Langdon School | Butte/Nisland |
| Lead Historic District | Lawrence/Lead |
| Lemmon Petrified Park | Perkins/Lemmon |
| Lemmon, G. E., House | Perkins/Lemmon |
| Lighting Spring | Harding/Ludlow |
| Lincoln School | Butte/Belle Fourche |
| Little Missouri Bank Building | Harding/Camp Crook |
| Livingston, John and Daisy May, Ranch | Harding/Sorum |
| Lown, William Ernest, House | Lawrence/Spearfish |
| McLaughlin Ranch Barn | Lawrence/Spearfish |
| Minnesela Bridge | Butte/Belle Fourche |
| Mount Theodore Roosevelt Monument | Lawrence/Deadwood |
| Newell Depot Bridge | Butte/Newell |

| Table 3-1. National Register Properties Under Proposed PRTC Airspace | |
|---|-------------------------|
| <i>Property Name</i> | <i>General Location</i> |
| Newell High School | Butte/Newell |
| Nisland Bridge | Butte/Nisland |
| Old Finnish Lutheran Church | Lawrence/Lead |
| Old Redwater Bridge | Lawrence/Spearfish |
| Old Spearfish Post Office | Lawrence/Spearfish |
| Olson Bridge | Butte/Belle Fourche |
| Peace Valley Evangelical Church and Cemetery | Harding/Ralph |
| Qullian, Thomas, House | Lawrence/St. Onge |
| Raskob, Jacob and Elizabeth Ranch | Meade/Sturgis |
| Richards Cabins | Perkins/Faith |
| Riley, Almira, House | Lawrence/Spearfish |
| Rockford No. 40 School | Perkins/Bison |
| Scotney, John Aaron, House | Butte/Belle Fourche |
| Shevling, L. W., Ranch | Harding/Harding |
| Sittner Farm | Perkins/Meadow |
| Small, Charles and Eleanor House | Butte/Belle Fourche |
| Snoma Finnish Cemetery | Butte/Fruitdale |
| Soper-Behymer Ranch | Butte/Belle Fourche |
| Sorum Cooperative Store | Perkins/Sorum |
| Sorum Hotel | Perkins/Sorum |
| South Dakota Department of Transportation Bridge No. 05-028-200 | Perkins/Bison |
| South Dakota Department of Transportation Bridge No 10-109-360 | Butte/Belle Fourche |
| South Dakota Department of Transportation Bridge No. 10-270-338 | Butte/Newell |
| South Dakota Department of Transportation Bridge No. 47-151-389 | Meade/Sturgis |
| South Dakota Department of Transportation Bridge No. 53-101-196 | Perkins/Bison |
| Spearfish City Hall | Lawrence/Spearfish |
| Spearfish Filling Station | Lawrence/Spearfish |
| Spearfish Fisheries Station | Lawrence/Spearfish |
| Spearfish Historic Commercial District | Lawrence/Spearfish |
| Spring Creek School | Perkins/Zeona |
| Stokes, Oliver O., House | Harding/Harding |
| Stonelake Bridge | Butte/Newell |
| Stromprude Trail Ruts | Meade/Bison |
| Sturgis Commercial Block | Meade/Sturgis |
| Sturgis High School | Meade/Sturgis |
| St. Onge Schoolhouse | Lawrence/St. Onge |
| St. Onge State Bank | Lawrence/St. Onge |
| St. Lawrence O'Toole Catholic Church | Lawrence/Central City |
| Tallent, Annie, House | Meade/Sturgis |
| The Mail Building | Lawrence/Spearfish |
| Toomey House | Lawrence/Spearfish |
| Tri-State Bakery | Butte/Belle Fourche |
| Uhlig, Otto L., House | Lawrence/Spearfish |
| Vale Bridge | Butte/Vale |
| Vale Cut Off Belle Fourche River Bridge | Butte/Belle Fourche |
| Vale School | Butte/Vale |
| Veal, Thomas J., Ranch | Perkins/Chance |
| Vessey School | Harding/Haley |
| Viken, Nicholas Augustus Homestead | Butte/Newell |
| Walsh Barn | Lawrence/Spearfish |
| Walton Ranch | Lawrence/Spearfish |

| <i>Property Name</i> | <i>General Location</i> |
|-----------------------------|-------------------------|
| Wenke, John G., House | Meade/Sturgis |
| Whitewood Historic District | Lawrence/Whitewood |
| Whitney, Mary, House | Lawrence/Spearfish |
| Wide Awake Grocery Building | Butte/Belle Fourche |
| Wolzmuth, John, House | Lawrence/Spearfish |
| Woodmen Hall | Lawrence/St. Onge |

| <i>Name</i> | <i>General Location</i> |
|----------------------------|-------------------------|
| Wyoming | |
| Devils Tower | Devils Tower |
| Montana | |
| Little Bighorn Battlefield | Garryowen |

A search of ghost towns within the lands beneath the affected airspace in Wyoming revealed the presence of four 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 3-3). Most of the ghost towns have not been subjected to professional archaeological and/or architectural assessments and may be eligible to the National or State Registers pending further investigation by cultural resources professionals.

| <i>Name</i> | <i>County</i> | <i>Remains</i> |
|---------------------|---------------|---|
| Wyoming | | |
| Mineral Hill | Crook | Many original buildings |
| Moskee | Crook | Single standing building |
| Old Upton | Weston | Many shacks, including the first jail |
| Tinton | Crook | 10-12 buildings remain |
| North Dakota | | |
| Amidon | Slope | Many original buildings (some still occupied) |
| Bucyrus | Adams | Many original buildings (some still occupied) |
| Gascoyne | Bowman | Many original buildings, houses, schools, general store |
| Griffin | Bowman | Old school house, general store |
| Marmarth | Slope | Many original buildings (some still occupied) |
| South Dakota | | |
| Astoria | Lawrence | Many original buildings |
| Balmoral (Preston) | Lawrence | Many original buildings |
| Bear Gulch I | Lawrence | Many original buildings |
| Carbonate | Lawrence | Many original buildings |
| Central City | Lawrence | Two blocks of old buildings |
| Crook City | Lawrence | Stone school house |
| Maitland | Lawrence | Many original buildings/ruins |
| Pluma | Lawrence | Mill ruins |
| Reed | Butte | School house |
| Savoy | Lawrence | Many original buildings |
| Terraville | Lawrence | Ruins |
| Tinton | Lawrence | 10-12 buildings |
| Trojan | Lawrence | Portland Mine buildings, several small houses, stores |
| Whitewood | Lawrence | Many original buildings |

There is one historic ranch beneath the proposed airspace (Table 3-4). Ranch A is already listed on the National Register; however, it deserves special consideration due to the large number of standing structures present at the site.

| Table 3-4. Historic Ranches Under Proposed PRTC Airspace | | |
|---|-------------------------|--------------------------------------|
| <i>Name</i> | <i>General Location</i> | <i>Status</i> |
| Wyoming | | |
| Ranch A | Beulah | National Register Property |
| Montana | | |
| Bones Brothers Ranch | Rosebud/Birney | National Register Property |
| Cross Ranch Headquarters | Powder River/Broadus | National Register Property |
| Drew, J. W., Grain Elevator | Big Horn/Lodge Grass | National Register Property |
| Lee Homestead | Big Horn/Decker | National Register Property |
| OW Ranch | Big Horn/Birney | National Register Property |
| North Dakota | | |
| H-T Ranch | Slope/Amidon | National Register Property |
| South Dakota | | |
| Ashcroft, Thomas, Ranch | Harding/Buffalo | National Register Property |
| Beckon, Donald, Ranch | Perkins/Zeona | National Register Property |
| Blake Ranch House | Harding/Gustave | National Register Property |
| Carr, Anna, Homestead | Perkins/Bison | National Register Property |
| Foster Ranch House | Perkins/Chance | National Register Property |
| Frawley Ranch | Lawrence | National Historic Landmark |
| Gartner, Carl Frederick, Homestead | Butte/Newell | National Register Property |
| Giannonatti Ranch | Harding/Ludlow | National Register Property |
| Johnson, Axel, Ranch | Harding/Reva | National Register Property |
| Livingston, John and Daisy May, Ranch | Harding/Sorum | National Register Property |
| McLaughlin Ranch Barn | Lawrence/Spearfish | National Register Property |
| Raskob, Jacob and Elizabeth Ranch | Meade/Sturgis | National Register Property |
| Shevling, L.W., Ranch | Harding/Harding | National Register Property |
| Soper-Behymer Ranch | Butte/Belle Fourche | National Register Property |
| Veal, Thomas J., Ranch | Perkins/Chance | National Register Property |
| Viken, Nicholas Augustus Homestead | Butte/Newell | National Register Property |
| Walsh Barn | Lawrence/Spearfish | National Register Property |
| Walton Ranch | Lawrence/Spearfish | National Register Property |
| William Holst Farmstead | Meade/Vale | South Dakota State Register Property |

A historic vernacular landscape within the area beneath the affected airspace is present in the form of a historic trail (Table 3-5). The Texas Trail runs through Weston, Crook, and Campbell Counties.

| Table 3-5. Historic Trails Under Proposed PRTC Airspace | |
|--|-------------------------|
| <i>Site Name</i> | <i>Counties</i> |
| Wyoming | |
| Texas Trail | Weston, Crook, Campbell |

Several TCPs have been identified within the lands beneath the affected airspace (Table 3-6). The areas of Devils Tower and Inyan Kara Mountain are considered sacred by American Indian peoples of the region. There are also two TCPs that are currently in consultation with unspecified 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.

| Table 3-6. TCPs Under Proposed PRTC Airspace | |
|---|-------------------------|
| <i>Area Name</i> | <i>General Location</i> |
| Wyoming | |
| Devils Tower | Devils Tower |
| Inyan Kara Mountain | South of Sundance |
| Unnamed 1 | North of Gillette |
| Unnamed 2 | Northwest of Hulett |
| Montana | |
| Battle of Wolf Mountain Site | Tongue River |
| Battle of Rosebud Creek Site | Kirby |
| Chalk Buttes | Ekalaka |
| South Dakota | |
| Bear Butte | Sturgis |

Montana

Thirty-nine properties are currently listed on the National Register in Fallon, Powder River, Rosebud, and Big Horn Counties (Table 3-1). They consist of battlefields and historic buildings.

Little Bighorn Battlefield National Monument is located under the proposed airspace (Table 3-2).

Though this property is also listed on the National Register, it deserves special consideration due to its status as a National Monument. In addition, the battlefield itself is held as sacred by many American Indians.

There are five historic ranches beneath the proposed airspace in Montana that are listed or eligible for listing on the National Register (Table 3-4). No ghost towns are under the proposed airspace in Montana.

Several historic battlefields lie beneath the proposed project airspace. The Little Bighorn Battlefield is already a National Monument and the Wolf Mountains Battlefield and the Rosebud Battlefield are on the National Register and also are National Historic Landmarks. The Montana SHPO is currently processing a form to elevate all of the battlefields of the Great Sioux War to the National Register (Kate Hampton, personal communication 2008). These battlefields are also either current TCPs, or in consultation for recognition of that status.

The Tongue River Valley (Table 3-7) in Rosebud County has been the focus of a project to document and nominate the cultural landscape to the National Register. 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), and early ranching settlement contexts (Three Circle Ranch, SH Ranch, and others).

| Table 3-7. Cultural Landscapes Under Proposed PRTC Airspace in Montana | |
|---|-------------------------|
| <i>Area Name</i> | <i>General Location</i> |
| Tongue River Valley | Ashland |

Two TCPs have been specifically identified within the lands beneath the affected airspace in Montana (Table 3-6). The Battle of Rosebud Creek site is also a TCP. The Chalk Buttes are an area considered sacred by American Indian peoples of the region. The location of the Battle of Wolf Mountains is

currently in consultation with tribes for status as a TCP (it is already listed on the National Register). In addition, as many as 48 cultural resources that have ceremonial functions on the Northern Cheyenne Reservation have been recorded (Deaver and Tallbull 2001). The recorded ceremonial sites include vision questing/fasting sites, sweat lodges, and memorials.

North Dakota

Fifteen properties are currently listed on the National Register in Bowman, Slope, Adams, Hettinger, and Grant Counties, North Dakota beneath the proposed PRTC airspace (Table 3-1). They consist of historic buildings and bridges. No National Register-listed or -eligible properties are located under the proposed PRTC airspace in Golden Valley, Sioux, Morton, Stark, and Billings Counties, North Dakota.

A search of ghost towns within the lands beneath the affected airspace in North Dakota revealed the presence of five ghost towns. Several of the ghost towns contain standing wood/log buildings associated with historic mining, ranching, stage or Pony Express routes, or railroad stations (Table 3-3). 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 3-4). The H-T Ranch is already listed on the National Register; however, it deserves special consideration due to the large number of standing buildings and structures present at the site.

South Dakota

One hundred and seventy-seven properties are currently listed on the National or State Register in Harding, Butte, Meade, Lawrence, Perkins, and Corson Counties, South Dakota beneath the proposed PRTC airspace (Table 3-1). They consist of archaeological sites, historic buildings, bridges, districts, monuments, stage stations, and cemeteries. No National or State Register properties are located under the proposed PRTC airspace in Pennington and Ziebach Counties, South Dakota.

Three National Historic Landmarks are located beneath the PRTC airspace (Table 3-8). All three of these properties are also listed on the National Register. Bear Butte is a sacred area, the Frawley Ranch is a historic ranch, and the Deadwood Historic District is an area of historic buildings and features.

| Table 3-8. National Landmarks Under Proposed PRTC Airspace in South Dakota | |
|---|-------------------------|
| <i>Property Name</i> | <i>General Location</i> |
| Bear Butte | Sturgis |
| Frawley Ranch | Whitewood |
| Deadwood Historic District | Deadwood |

Three properties beneath the PRTC airspace are listed on the South Dakota State Register of Historic Places (Table 3-9). Two are composed of historic buildings while the Thoen Stone and Site is the location of an inscribed stone detailing a doomed mining expedition in 1833.

| <i>Site Name</i> | <i>General Location</i> |
|-------------------------|-------------------------|
| Sturgis City Auditorium | Meade/Sturgis |
| William Holst Farmstead | Meade/Vale |
| Thoen Stone and Site | Lawrence/Spearfish |

A search of ghost towns within the lands beneath the affected airspace in South Dakota revealed the presence of fourteen ghost towns. Several of the ghost towns contain standing wood/log buildings associated with historic mining, ranching, stage or Pony Express routes, or railroad stations (Table 3-3). Most of the ghost towns have not been evaluated many may be eligible to the National or State Registers pending further investigation by cultural resources professionals.

Eighteen historic ranches are located under the proposed airspace in South Dakota. A number of these ranches have been found eligible to the National Register (Table 3-4). In addition, one of these properties, the William Holst Farmstead, is listed on the South Dakota State Register.

One TCP has been identified within the lands beneath the affected airspace (Table 3-6). The area of Bear Butte is considered sacred by American Indian peoples of the region.

3.2 APE Maps and Site Locations

Figure 2 includes the locations of National Register-listed properties and American Indian Reservations under the APE.

3.3 National Register Evaluations and Historic Context

Because no new surveys were conducted for this project and no new sites were recorded, no new National Register evaluations were required.

3.4 American Indian Consultation

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. 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, Executive Order 13175 (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. This executive order also seeks to strengthen the U.S. government-to-government relationships with Indian tribes and reduce the imposition

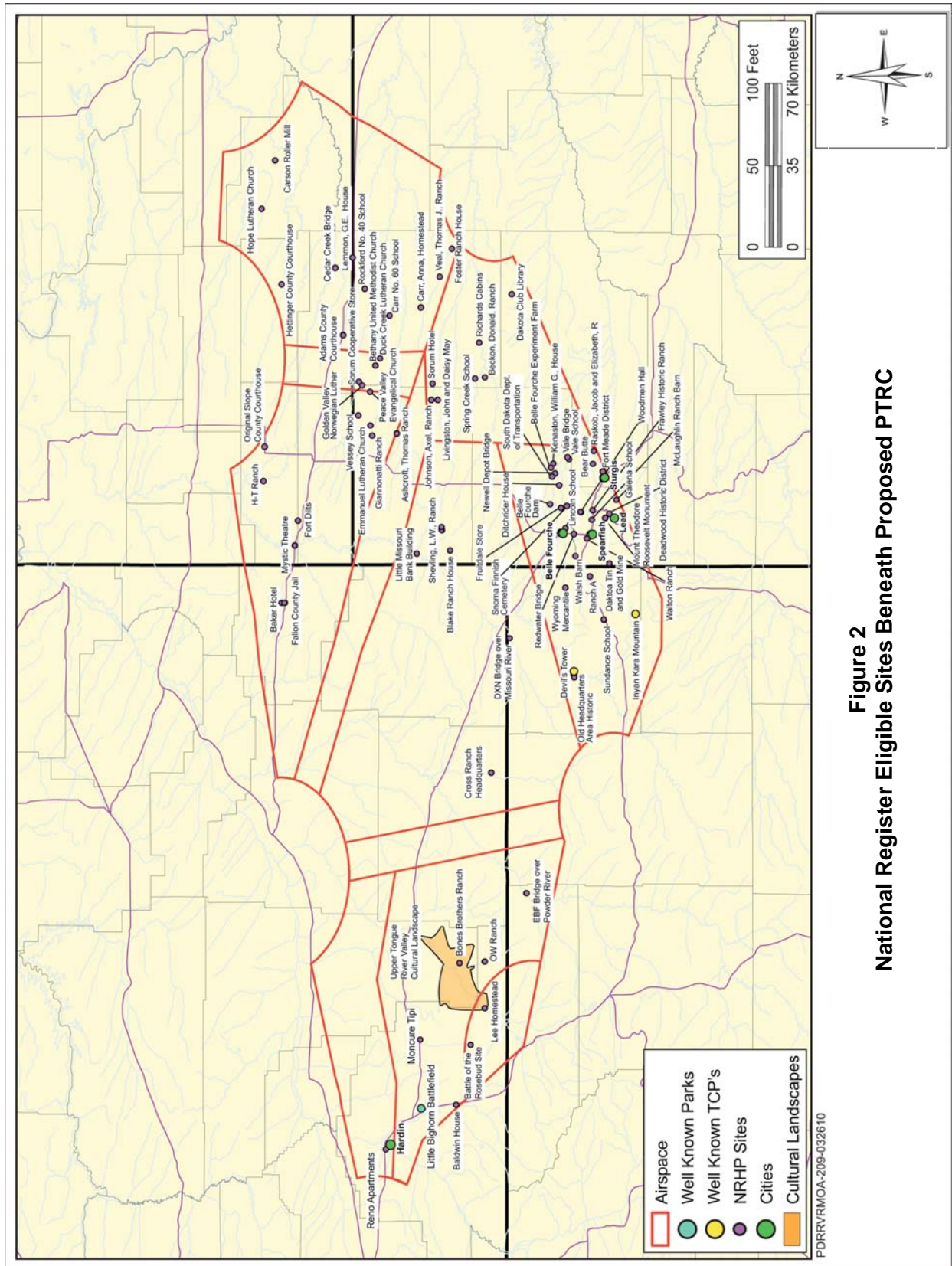


Figure 2
National Register Eligible Sites Beneath Proposed PRTC

PDRR/MOA-209-0326/10

of un-funded mandates upon Indian tribes. This executive order supersedes Executive Order 13084 signed May 14, 1998.

The Department of Defense (DoD) Instruction 4710.02 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 that require consultation with American Indians include the National Historic Preservation Act (NHPA) of 1966, American Indian Religious Freedom Act (AIRFA), and Executive Order 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. AIRFA sets the policy of the U.S. to “protect and preserve for Native Americans their inherit 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.” Executive Order 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.

Native American consultation for this undertaking is guided by *Consultation with Native American Tribes in the Section 106 Review Process: A Handbook* (Advisory Council on Historic Preservation [ACHP] 2008).

There are four American Indian Reservations partially or wholly located under the airspace – the Northern Cheyenne Indian Reservation, the Crow Indian Reservation, the Standing Rock Reservation, and the Cheyenne River Reservation. Ellsworth AFB initiated Government-to-Government consultation with each of these tribes in April and May, 2008. In addition, 11 reservations outside of the airspace in Montana, Wyoming, North Dakota, and South Dakota were sent letters requesting information on concerns and initiating Government-to-Government consultation in June, 2008 (Table 3-10).

Table 3-10. American Indian Groups Contacted

| | | |
|---|---|---|
| Cheyenne River Sioux Tribe* | Standing Rock Sioux Tribal Council* | Crow Tribal Council* |
| Northern Cheyenne Tribal Council* | Three Affiliated Tribes Business Council, Fort Berthold Reservation | Rosebud Sioux Tribe, Rosebud Reservation |
| Arapaho Business Council, Wind River Reservation | Turtle Mountain Tribal Council, Turtle Mountain Reservation | Eastern Shoshone Tribal Council, Wind River Reservation |
| Arapaho Business Council, Wind River Reservation | Chippewa-Cree Business Committee, Rocky Boy’s Reservation | Oglala Sioux Tribal Council, Pine Ridge Reservation |
| Spirit Lake Sioux Tribal Council, Spirit Lake Reservation | Fort Peck Tribal Executive Board, Fort Peck Indian Reservation | Confederated Salish and Kootenai Tribe, Flathead Indian Reservation |

*Below proposed PRTC Airspace

Meetings were held with each of the four tribes beneath the proposed PRTC airspace (Table 3-11). Information specific to each meeting is included in Appendix A.

| Table 3-11. Meetings Held with American Indian Groups to Date | | |
|--|---------------|---------------------------------------|
| <i>Tribe</i> | <i>Date</i> | <i>Purpose</i> |
| Northern Cheyenne | 9 May 2008 | Government-to-Government Consultation |
| Crow | 9 May 2008 | Government-to-Government Consultation |
| Standing Rock Sioux | 17 April 2008 | Public Relations Visit |
| Cheyenne River Sioux | 28 March 2008 | Public Relations Visit |
| Cheyenne River Sioux | 27 May 2008 | Government-to-Government Consultation |
| Northern Cheyenne | 9 August 2009 | Government-to-Government Consultation |

3.5 Public Involvement

The Air Force is using the procedures for public involvement under the NEPA to seek and consider the views of the public regarding the proposed PRTC. Public scoping meetings were held between June 16, 2008 and July 16, 2008. Three primary areas of concern related to cultural resources were expressed by the public during scoping meetings. These are the effects on American Indian sacred areas and ceremonies by overflights and noise (mentioned by both the general public and by members of each of the four reservations), visual effects to sites and sacred areas from overflights and chaff and flares, and effects on sacred areas and historic sites from subsonic and supersonic noise.

The Air Force proposes to integrate the public hearings and public meetings under NHPA for meetings to take place in Summer 2010. These meetings will be advertised as meeting requirements under NEPA and NHPA and comments from the meetings will be incorporated into the Section 106 consultation materials.

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4.0 PROJECT EFFECTS

Procedures for assessing adverse effects to cultural resources are discussed in the regulations for 36 Code of Federal Regulation (CFR) 800, NHPA, as amended. An undertaking results in an adverse effect to a cultural resource listed on or eligible for listing on the National Register when it alters the characteristics that qualify the resource for inclusion in the National Register (its integrity). Adverse effects are most often a result of physical destruction, damage, or alteration of a resource; alteration of the character of the surrounding environment that contributes to the resource's integrity; introduction of visual, audible, or atmospheric intrusions out of character with the resource or its setting; neglect of the resource resulting in its deterioration or destruction; or transfer, lease, or sale of the property out of Federal ownership (36 CFR 800.5(a)(2)).

4.1 Sources of Effects

In general, possible sources of adverse effects can include ground disturbance, vandalism, noise vibrations, visual intrusions, and change in land status that reduces legal protection of the resource. The proposed undertaking does include limited on-the-ground activities that can cause direct or indirect adverse effects to cultural resources eligible for listing on the National Register, but those areas have not yet been identified. Most direct effects would result from noise, sonic booms, or visual intrusions from the use of chaff and flare and/or sonic booms/overflights at 500 feet.

Effects due to visual intrusion may occur when the setting is altered, either through overflights or the release of self-protection chaff and flares in an area not primarily exposed to these elements to resources that are important for their setting or feeling. Such resources may include certain types of TCPs or historic battlefields. However, the effects potentially caused by visual intrusion can be difficult to evaluate. For potential visual intrusions, the assessment will use the frequency and visibility of overflights and documented information on chaff and flares to determine whether there would be an increase in visual intrusion from the undertaking sufficient to adversely affect cultural resources known to exist underneath the airspace. Noise effects to cultural resources beneath the affected airspace will be assessed by using noise analysis data (subsonic and supersonic noise), sortie-operations numbers, and altitude profiles of the aircraft.

More detail on project effects will be added after addition consultation with State Historic Preservation Offices, Tribal Historic Preservation Officers and other interested parties are conducted.

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5.0 REFERENCES

Advisory Council on Historic Preservation (ACHP). 2008. *Consultation with Native American Tribes in the Section 106 Review Process: A Handbook*. Washington, D.C.

Battis, J. C. 1983. The Effect of Low Flying Aircraft on Archaeological Sites, Kayenta, Arizona. Air Force Geotechnical Laboratory. Technical Memorandum No. 146.

Deaver and Tallbull. 2001. Bureau of Land Management.

Hampton, Kate. 2008. Montana Preservation Alliance. Personal Communication, July.

APPENDIX A
AMERICAN INDIAN GROUP MEETING INFORMATION

A meeting was held in the Tribal Council Chamber on the Northern Cheyenne Reservation on the morning of Tuesday, June 24, 2008. Seven people attended the meeting, including tribal representatives and members, and two representatives from the THPO. The Tribal Historic Preservation Officer, Conrad Fisher, suggested round-table meetings with the other affected tribes and requested additional meetings.

An additional meeting was held with the Northern Cheyenne Tribal Council on August 17, 2009. Tribal members expressed concern about the proposed airspace. Concern was expressed that Environmental Justice issues should be addressed in the Environmental Impact Statement.

Specific concerns associated with the proposed action included:

- The Northern Cheyenne have concerns about ceremonies and calving with aircraft activity in airspace over their reservation.