APPENDIX A

PUBLIC INVOLVEMENT

This page is intentionally blank.

TABLE OF CONTENTS

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

ARSD	Administrative Rules of South Dakota
EIS	Environmental Impact Statement
MOB 1	Main Operating Base 1
NEPA	National Environmental Policy Act
NHLs	National Historic Landmarks
NNLs	National Natural Landmarks
NOI	Notice of Intent
NPS	National Park Service
USAF	U.S. Air Force

A. PUBLIC INVOLVEMENT AND AGENCY OUTREACH

A.1 NOTICE OF INTENT

A.1.1 Original Notice of Intent (March 6, 2020)

Please submit your comments using only one of these methods. Submissions through the CFTC Comments Portal are encouraged. Any statements submitted in connection with the committee meeting will be made available to the public, including by publication on the CFTC website, *https://www.cftc.gov.*

FOR FURTHER INFORMATION CONTACT: Abigail S. Knauff, EEMAC Secretary, Commodity Futures Trading Commission, Three Lafayette Centre, 1155 21st Street NW, Washington, DC 20581; (202) 418–5123.

SUPPLEMENTARY INFORMATION: At this meeting, the EEMAC will hear remarks on the Commission's Position Limits for Derivatives proposed rule as approved on January 30, 2020. Specifically, the EEMAC will examine: (1) The proposed position limits for spot months, single month, and all-months-combined and (2) the proposed bona fide hedge exemptions from such position limits and related procedures. The EEMAC will also hear a presentation from the Market Intelligence Branch on recent developments within the energy derivatives marketplace.

The meeting will be open to the public with seating on a first-come, first-served basis. Members of the public may also listen to the meeting by telephone by calling a domestic toll-free telephone or international toll or toll-free number to connect to a live, listen-only audio feed. Call-in participants should be prepared to provide their first name, last name, and affiliation.

Domestic Toll Free: 1–888–947–9959.

International Toll and Toll Free: Will be posted on the CFTC's website, *https://www.cftc.gov,* on the page for the meeting, under Related Links.

Pass Code/Pin Code: 2927172.

The meeting agenda may change to accommodate other EEMAC priorities. For agenda updates, please visit the EEMAC committee website at: *https://www.cftc.gov/About/CFTCCommittees/EnergyEnvironmentalMarketsAdvisory/emac_meetings.html.*

After the meeting, a transcript of the meeting will be published through a link on the CFTC's website at: *https://www.cftc.gov.* All written submissions provided to the CFTC in any form will also be published on the CFTC's website. Persons requiring special accommodations to attend the meeting because of a disability should notify the contact person above.

(Authority: 7 U.S.C. 2(a)(15)(B)(i)).

Dated: March 3, 2020.

Robert Sidman,

Deputy Secretary of the Commission.

[FR Doc. 2020–04622 Filed 3–5–20; 8:45 am]

BILLING CODE 6351–01–P

CONSUMER PRODUCT SAFETY COMMISSION

Sunshine Act Meeting Notice

TIME AND DATE: Wednesday, March 11, 2020; 1:30 p.m.

PLACE: Hearing Room 420, Bethesda Towers, 4330 East West Highway, Bethesda, MD 20814.

STATUS: Commission Meeting—Closed to the Public.

MATTER TO BE CONSIDERED: Compliance Matter: Staff will brief the Commission on the status of a compliance matter.

CONTACT PERSON FOR MORE INFORMATION: Alberta E. Mills, Secretary, Division of the Secretariat, Office of the General Counsel, U.S. Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814, (301) 504–7479.

Dated: March 4, 2020.

Alberta E. Mills,

Secretary.

[FR Doc. 2020–04779 Filed 3–4–20; 4:15 pm]

BILLING CODE 6355–01–P

CONSUMER PRODUCT SAFETY COMMISSION

Sunshine Act Meeting Notice

TIME AND DATE: Wednesday, March 11, 2020; 10 a.m.

PLACE: Hearing Room 420, Bethesda Towers, 4330 East West Highway, Bethesda, MD 20814.

STATUS: Commission Meeting—Open to the Public.

MATTER TO BE CONSIDERED: Briefing Matter: FY2020 Midyear Review.

CONTACT PERSON FOR MORE INFORMATION: Alberta E. Mills, Secretary, Division of the Secretariat, Office of the General Counsel, U.S. Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814, (301) 504–7479.

Dated: March 4, 2020.

Alberta E. Mills,

Secretary.

[FR Doc. 2020–04764 Filed 3–4–20; 4:15 pm]

BILLING CODE 6355–01–P

CORPORATION FOR NATIONAL AND COMMUNITY SERVICE

Guidance Document Portal; Correction

AGENCY: Corporation for National and Community Service.

ACTION: Notice; correction.

SUMMARY: The Corporation for National and Community Service published a Notice in the **Federal Register** of March 2, 2020, concerning notification of a Guidance Portal on the agency's public website, pursuant to Executive Order 13891 and OMB Memorandum M–20–02. The document gave the incorrect URL for the Guidance Portal.

FOR FURTHER INFORMATION CONTACT: Amy Borgstrom, *aborgstrom@cns.gov* or 202–606–6930.

SUPPLEMENTARY INFORMATION:

Correction

In the **Federal Register** of March 2, 2020, in FR Doc. 2020–04226, in the third column at the bottom of page 12270, in the **ADDRESSES** line, correct the information to read:

ADDRESSES: *www.nationalservice.gov/guidance.*

Dated: March 2, 2020.

Amy Borgstrom,

Associate Director of Policy.

[FR Doc. 2020–04569 Filed 3–5–20; 8:45 am]

BILLING CODE 6050–$$–P

DEPARTMENT OF DEFENSE

Department of the Air Force

Notice of Intent To Prepare an Environmental Impact Statement for the B–21 Main Operating Base 1 (Mob 1) Beddown at Dyess Air Force Base, Texas or Ellsworth Air Force Base, South Dakota

AGENCY: Department of the Air Force, DoD.

ACTION: Notice of intent.

SUMMARY: The United States Air Force (Air Force) is issuing this notice to advise the public of its intent to prepare an Environmental Impact Statement (EIS) for the B–21 Main Operating Base 1 (MOB 1) Beddown at Dyess Air Force Base (AFB), Texas or Ellsworth AFB, South Dakota. The EIS will assess the potential environmental consequences of the proposal to beddown the Department of Defense's new bomber aircraft, the B–21 "Raider," which will eventually replace existing B–1 and B–2 bomber aircraft.

DATES: The Air Force plans to hold six public scoping meetings: Tuesday, March 31, 2020: Holiday Inn at Rushmore Plaza, 505 North 5th Street, Rapid City, SD 5770; Wednesday, April 1, 2020: Sturgis Community Center, 1401 Lazelle Street, Sturgis, SD 57785; Thursday, April 2, 2020: Douglas Middle School, 691 Tower Road, Box Elder, SD 57719; Tuesday, April 7, 2020: Abilene Convention Center, 1100 North 6th Street, Abilene, TX 79601; Wednesday, April 8, 2020: Wylie High

School Performing Arts Center, 4502 Antilley Road, Abilene, TX 79606; and Thursday, April 9, 2020: Tye Community Center, 103 Scott Street, Tye, TX 79563.

ADDRESSES: Additional information on the B–21 MOB 1 Beddown EIS environmental impact analysis process can be found on the project website at *www.B21EIS.com*. The project website can also be used to submit comments. Inquiries and comments-by-mail regarding the Air Force proposal should be directed to Dyess AFB Public Affairs, ATTN: B–21 EIS, 7 Lancer Loop, Suite 136, Dyess AFB, TX 79607; (325) 696–4820; *7bwpa@us.af.mil;* or Ellsworth AFB Public Affairs, ATTN: Steve Merrill, 28th Bomb Wing Public Affairs, 1958 Scott Dr., Suite 4, Ellsworth AFB, SD 57706; (605) 385–5056; *28bw.public.affairs@us.af.mil.* Comments will be accepted at any time during the environmental impact analysis process. However, to ensure the Air Force has sufficient time to consider public input in the preparation of the Draft EIS, scoping comments must be submitted to the website or mailed to one of the addresses listed above by April 24, 2020.

SUPPLEMENTARY INFORMATION: The beddown of the B–21 will take place through a series of three Main Operating Bases (MOB), referred to as MOB 1, MOB 2, and MOB 3. The Air Force proposes to beddown MOB 1, which includes two B–21 Operational Squadrons, a B–21 Formal Training Unit (FTU), and a Weapons Generation Facility (WGF) in this EIS. MOB 2 and MOB 3 beddown locations would be evaluated in future NEPA analyses, after the location for MOB 1 is chosen. The B–21 will operate under the direction of the Air Force Global Strike Command. The B–21 will have both conventional and nuclear roles and will be capable of penetrating and surviving in advanced air defense environments. It is projected to enter service in the 2020s, and the Air Force intends to have at least 100 B–21 aircraft built.

The purpose of the Proposed Action is to implement the goals of the National Defense Strategy by modernizing the U.S. bomber fleet capabilities. The B–21 Raider is being developed to carry conventional payloads and to support the nuclear triad by providing a visible and flexible nuclear deterrent capability that will assure allies and partners through the United States' commitment to international treaties. The B–21 will provide the only stealth bomber capability and capacity needed to deter, and if necessary, defeat our adversaries in an era of renewed great power competition. MOB 1 will support training of crewmembers and personnel in the operation and maintenance of the B–21 aircraft in an appropriate geographic location that can provide sufficient airfield, facilities, infrastructure, and airspace to support the B–21 training and operations.

The EIS will analyze Dyess AFB and Ellsworth AFB as basing alternatives for MOB 1 for the Proposed Action, as well as a No Action Alternative. The basing alternatives were developed to minimize mission impact, maximize facility reuse, minimize cost, and reduce overhead, as well as leverage the strengths of each base to optimize the B–21 beddown strategy. The potential impacts of the alternatives and the No Action Alternative that the EIS may examine include impacts to land use, airspace, safety, noise, hazardous materials and solid waste, physical resources (including earth and water resources), air quality, transportation, cultural resources, biological resources, socioeconomics, and environmental justice. The Air Force is preparing this EIS in accordance with the National Environmental Policy Act (NEPA) of 1969; 40 Code of Federal Regulations (CFR), parts 1500–1508, the Council on Environmental Quality (CEQ) regulations implementing NEPA; and the Air Force's Environmental Impact Analysis Process (EIAP) as codified in 32 CFR part 989.

Scoping and Agency Coordination: The scoping process will be used to involve the public early in the planning and development of the EIS, to help identify issues to be addressed in the environmental analysis. To effectively define the full range of issues and concerns to be evaluated in the EIS, the Air Force is soliciting scoping comments from interested local, state, and federal agencies and interested members of the public.

The Air Force will hold six scoping meetings to inform the public and solicit comments and concerns about the proposal. Scoping meetings will be held in local communities surrounding Dyess and Ellsworth AFBs. Scheduled dates, locations, and addresses for each meeting will be published in the Rapid City Journal and Black Hills Pioneer newspapers in South Dakota, the Abilene Reporter News and The Wylie News newspapers in Texas, as well as the Native Sun News, Indian Country Today and the Original Briefs tribal newspapers, a minimum of fifteen (15) days prior to each meeting.

Adriane Paris,
Acting Air Force Federal Register Liaison Officer.

[FR Doc. 2020–04593 Filed 3–5–20; 8:45 am]
BILLING CODE 5001–10–P

DEPARTMENT OF DEFENSE

Office of the Secretary

Department of Defense Military Family Readiness Council; Notice of Federal Advisory Committee Meeting

AGENCY: Under Secretary of Defense for Personnel and Readiness, Department of Defense (DoD).

ACTION: Notice of Federal Advisory Committee meeting.

SUMMARY: The DoD is publishing this notice to announce that the following Federal Advisory Committee meeting of the DoD Military Family Readiness Council will take place.

DATES: Open to the public Tuesday, March 24, 2020, from 10 a.m. to 12 p.m.

ADDRESSES: Pentagon, 1155 Defense Pentagon PLC2 Pentagon Library & Conference Center, Room B6, Washington, DC 20301.

FOR FURTHER INFORMATION CONTACT: William Story, (571) 372–5345 (Voice), (571) 372–0884 (Facsimile), OSD Pentagon OUSD P–R Mailbox Family Readiness Council, *osd.pentagon.ousd-p-r.mbx.family-readiness-council@mail.mil* (Email). Mailing address is: Office of the Deputy Assistant Secretary of Defense (Military Community & Family Policy), Office of Family Readiness Policy, 4800 Mark Center Drive, Alexandria, VA 22350–2300, Room 3G15. Website: *https://www.militaryonesource.mil/leaders-service-providers/military-family-readiness-council.* The most up-to-date changes to the meeting agenda can be found on the website.

SUPPLEMENTARY INFORMATION: This meeting is being held under the provisions of the Federal Advisory Committee Act (FACA) of 1972 (5 U.S.C., Appendix, as amended), the Government in the Sunshine Act of 1976 (5 U.S.C. 552b, as amended), and 41 CFR 102–3.140 and 102–3.150.

Purpose of the Meeting: This is the first meeting of the Council for Fiscal Year 2020 (FY2020). During this meeting the Director, Defense Health Agency, will present information to the Council, including changes in dependent health care systems and implications for military family

A.1.2 Amended Notice of Intent (March 24, 2020)

waterfront access for kayak launching. There will be no boundary change with the approval of the revised management plan. The revised management plan will serve as the guiding document for the 10,235-acre Great Bay National Estuarine Research Reserve for the next five years.

NOAA's Office for Coastal Management will conduct an environmental analysis in accordance with the National Environmental Policy Act on the proposed approval of the Great Bay National Estuarine Research Reserve's revised management plan. The public is invited to provide comment or information about any potential environmental impacts of the proposed action, and these comments will be used to inform NOAA's decision on whether to approve the revised management plan.

(Authority: 16 U.S.C. 1461 *et seq.*)

Dated: March 19, 2020.

Keelin S. Kuipers,

Deputy Director, Office for Coastal Management, National Ocean Service, National Oceanic and Atmospheric Administration.

[FR Doc. 2020–06163 Filed 3–23–20; 8:45 am]

BILLING CODE 3510–08–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XW008]

Endangered and Threatened Species; Extension of Public Comment Period

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; extension of public comment period.

SUMMARY: NMFS hereby extends the comment period on the notice of initiation of 5-year reviews of 28 species of Pacific salmon and steelhead (*Oncorhynchus spp.*) listed under the Endangered Species Act of 1973, as amended (ESA).

DATES: Comments and new relevant information related to these 5-year reviews must be received by midnight on May 26, 2020.

ADDRESSES: You may submit information on this document, identified by NOAA–NMFS–2019–0097, by any of the following methods:

- *Electronic Submissions:* Submit all electronic public comments via the Federal e-Rulemaking Portal *www.regulations.gov.* To submit comments via the e-Rulemaking Portal, first click the "submit a comment" icon, then enter NOAA–NMFS–2019–0097 in the keyword search. Locate the document you wish to comment on from the resulting list and click on the "Submit a Comment" icon to the right of that line.
- *Mail or Hand-Delivery:* Address comments to Robert Markle, NMFS, West Coast Region, 1201 NE Lloyd Blvd., Suite 1100, Portland, OR 97232.
- *Instructions:* Comments must be submitted by one of the above methods to ensure that we can receive, document, and consider them. Comments sent by any other method, sent to any other address or individual, or received after the end of the comment period may not be considered. All comments received are a part of the public record and will generally be posted for public viewing on *www.regulations.gov* without change. All personal identifying information (*e.g.*, name, address, etc.) submitted voluntarily by the sender will be publicly accessible. Do not submit confidential business information, or otherwise sensitive or protected information. We request that all information be accompanied by: (1) Supporting documentation such as maps, bibliographic references, or reprints of pertinent publications; and (2) the submitter's name, address, and any association, institution, or business that the person represents. NMFS will accept anonymous comments (enter "N/A" in the required fields if you wish to remain anonymous).

Please note that submissions without supporting information—those merely stating support for or opposition to the action under consideration—will be noted but not used in making any listing determinations, as such comments do not represent actual scientific or commercial data.

FOR FURTHER INFORMATION CONTACT: Robert Markle at the above address, by phone at (503) 230–5419, or by email at *robert.markle@noaa.gov.*

SUPPLEMENTARY INFORMATION: On October 4, 2019, we announced the initiation of 5-year reviews for 28 listed species of Pacific salmon and steelhead; see 84 FR 53117 for a complete list of the species under review as well as the relevant statutory provisions, policies and information under consideration. The original comment period was set to close on March 27, 2020.

However, we are now extending the comment period by 60 days to provide additional opportunity for public input.

Authority: 16 U.S.C. 1531 *et seq.*

Dated: March 19, 2020.

Angela Somma,

Chief, Endangered Species Conservation Division, National Marine Fisheries Service.

[FR Doc. 2020–06149 Filed 3–23–20; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF DEFENSE

Office of the Department of the Air Force

Notice of Intent To Prepare an Environmental Impact Statement for the B–21 Main Operating Base 1 (MOB 1) Beddown at Dyess Air Force Base, Texas or Ellsworth Air Force Base, South Dakota—Cancellation of Public Scoping Meetings

AGENCY: Department of the Air Force, DoD.

ACTION: Amended notice of intent.

SUMMARY: The United States Air Force (Air Force) is issuing this amended and updated notice from the original notice published on March 6, 2020 (**Federal Register**, Vol. 85, No. 45, 13148) to advise the public of its continuing intent to prepare an Environmental Impact Statement (EIS) for the B–21 Main Operating Base 1 (MOB 1) Beddown at Dyess Air Force Base (AFB), Texas or Ellsworth AFB, South Dakota. As a direct result of the National Emergency declared by the President on Friday, March 13, 2020, in response to the coronavirus (COVID–19) pandemic in the United States and the Center for Disease Control's recommendations for social distancing and avoiding large public gatherings, the Air Force is now canceling six public scoping meetings between March 31, 2020 and April 9. In lieu of the public scoping meetings, the Air Force will use the alternative means set forth below to inform the public and stakeholders and to obtain input for scoping the proposed action.

ADDRESSES: Additional scoping-related information on the B–21 MOB 1 Beddown EIS environmental impact analysis process can be found on the project website at *www.B21EIS.com.* The project website can also be used to submit comments. In the alternative, interested persons may submit written comments by mail or email. For those who do not have ready access to a computer or the internet, the scoping-related materials posted to the website will be made available upon request by mail or phone. Inquiries, requests for scoping-related materials, and comments by mail regarding the Air Force proposal should be directed to either the Dyess AFB Public Affairs,

ATTN: B–21 EIS, 7 Lancer Loop, Suite 136, Dyess AFB, TX 79607; (325) 696–4820; *7bwpa@us.af.mil;* or to Ellsworth AFB Public Affairs, ATTN: Steve Merrill, 28th Bomb Wing Public Affairs, 1958 Scott Dr., Suite 4, Ellsworth AFB, SD 57706; (605) 385–5056; *28bw.public.affairs@us.af.mil.*

Written scoping comments will be accepted at any time during the environmental impact analysis process up until the public release of the Draft EIS. However, to ensure the Air Force has sufficient time to consider public input in the preparation of the Draft EIS, scoping comments must be submitted to the website or postmarked to one of the addresses listed above by May 9, 2020.

SUPPLEMENTARY INFORMATION: The EIS will assess the potential environmental consequences of the proposal to beddown the Department of Defense's new bomber aircraft, the B–21 "Raider," which will eventually replace existing B–1 and B–2 bomber aircraft. The Air Force is preparing this EIS in accordance with the National Environmental Policy Act (NEPA) of 1969; 40 Code of Federal Regulations (CFR), Parts 1500–1508, the Council on Environmental Quality (CEQ) regulations implementing NEPA; and the Air Force's Environmental Impact Analysis Process (EIAP) as codified in 32 CFR part 989.

The beddown of the B–21 will take place through a series of three Main Operating Bases (MOB), referred to as MOB 1, MOB 2, and MOB 3. The Air Force proposes to beddown MOB 1, which includes two B–21 Operational Squadrons, a B–21 Formal Training Unit (FTU), and a Weapons Generation Facility (WGF) in this EIS. MOB 2 and MOB 3 beddown locations would be evaluated in future NEPA analyses, after the location for MOB 1 is chosen. The B–21 will operate under the direction of the Air Force Global Strike Command. The B–21 will have both conventional and nuclear roles and will be capable of penetrating and surviving in advanced air defense environments. It is projected to enter service in the 2020s, and the Air Force intends to have at least 100 B–21 aircraft built.

Purpose and Need for the Proposed Action: The purpose of the Proposed Action is to implement the goals of the National Defense Strategy by modernizing the U.S. bomber fleet capabilities. The B–21 Raider is being developed to carry conventional payloads and to support the nuclear triad by providing a visible and flexible nuclear deterrent capability that will assure allies and partners through the United States' commitment to international treaties. The B–21 will provide the only stealth bomber capability and capacity needed to deter, and if necessary, defeat our adversaries in an era of renewed great power competition.

Description of the Proposed Action and Alternatives: The Air Force proposes to beddown MOB 1, which includes two B–21 Operational Squadrons, a B–21 Formal Training Unit (FTU), and a Weapons Generation Facility (WGF) in this EIS. MOB 1 will support training of crewmembers and personnel in the operation and maintenance of the B–21 aircraft in an appropriate geographic location that can provide sufficient airfield, facilities, infrastructure, and airspace to support the B–21 training and operations. The EIS will analyze Dyess AFB and Ellsworth AFB as basing alternatives for MOB 1 for the Proposed Action, as well as a No Action Alternative. The basing alternatives were developed to minimize mission impact, maximize facility reuse, minimize cost, and reduce overhead, as well as leverage the strengths of each base to optimize the B–21 beddown strategy.

Brief Summary of Expected Impacts: The potential impacts of the alternatives and the No Action Alternative that the EIS may examine include impacts to land use, airspace, safety, noise, hazardous materials and solid waste, physical resources (including earth and water resources), air quality, transportation, cultural resources, biological resources, socioeconomics, and environmental justice.

Scoping and Agency Coordination: The scoping process will be used to involve the public early in the planning and development of the EIS, to help identify issues to be addressed in the environmental analysis. To effectively define the full range of issues and concerns to be evaluated in the EIS, the Air Force is soliciting scoping comments from interested local, state, and federal agencies and interested members of the public.

As a direct result of the National Emergency declared by the President on Friday, March 13, 2020, in response to the coronavirus (COVID–19) pandemic in the United States and the Center for Disease Control's recommendations for social distancing and avoiding large public gatherings, the Air Force has canceled six public scoping meetings between March 31, 2020 and April 9.

This amended notice of intent will be published in the Rapid City Journal and Black Hills Pioneer newspapers in South Dakota, the Abilene Reporter News and The Wylie News newspapers in Texas, as well as the Native Sun News, Indian Country Today and the Original Briefs tribal newspapers.

Request for Written Comments: The Air Force seeks written comments in the manner or methods listed in the **ADDRESSES** paragraph above on potential alternatives and impacts and identification of any relevant information, studies, or analyses of any kind concerning impacts affecting the quality of the human environment.

Adriane S. Paris,
Acting Air Force Federal Register Liaison Officer.

[FR Doc. 2020–06136 Filed 3–23–20; 8:45 am]
BILLING CODE 5001–10–P

DEPARTMENT OF DEFENSE

Office of the Secretary

[Docket ID DoD–2020–OS–0001]

Privacy Act of 1974; System of Records; Correction

AGENCY: Office of the Secretary, Department of Defense (DoD).

ACTION: Notice of a modified System of Records; correction.

SUMMARY: On Tuesday, January 14, 2020, the DoD published a notice titled "Privacy Act of 1974; System of Records" that modified a System of Records titled, "Forms and Account Management Service (FAMS), DCFO 01." Subsequent to the publication of the notice, DoD discovered that the SORN designator "DCFO 01" was not correct. This notice corrects the error.

DATES: This correction is effective on March 24, 2020.

FOR FURTHER INFORMATION CONTACT: Patricia L. Toppings, 571–372–0485.

SUPPLEMENTARY INFORMATION: On Tuesday, January 14, 2020 (85 FR 2112–2114), the DoD published a notice titled "Privacy Act of 1974; System of Records" that modified a System of Records titled, "Forms and Account Management Service (FAMS), DCFO 01." The error referenced in the **SUMMARY** section of this notice is corrected to read as follows:

1. On page 2112, in the third column, in the **SUMMARY** section "DCFO 01" is corrected to read "DUSDC 02."
2. On page 2113, in the second column, in the SYSTEM NAME AND NUMBER paragraph, "DCFO–01" is corrected to read "DUSDC 02."

Dated: March 19, 2020.

Aaron T. Siegel,
Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2020–06151 Filed 3–23–20; 8:45 am]
BILLING CODE 5001–06–P

A.2 AGENCIES AND INTERESTED PARTIES MAILING LIST

A.2.1 Dyess AFB Agency and Interested Parties Mailing List

Please note that blank cells in the following table indicate that the specific name of an office holder was not available, but notifications were instead addressed to the organization and office itself.

Dyess AFB Agency and Interested Parties Mailing List				
Organization	**Salutation***	**First Name***	**Last Name***	**Title/Office**
Department of Cultural Affairs	Dr.	Jeff	Pappas	SHPO
Office of the Regional Administrator	Mr.	Ken	McQueen	Regional Administrator
Texas Commission on Environmental Quality - Region 3	Ms.	Winona	Henry	Regional Director
Texas Commission on Environmental Quality - Region 3	Ms.	Winona	Henry	Regional Director
Texas Commission on Environmental Quality - Region 3	Mr.	Michael	Taylor	Air/Water/Waste Section Manager
Texas Historical Commission	Mr.	Mark	Wolfe	SHPO
Texas Parks and Wildlife	Mr.	Carter	Smith	Executive Director
USFWS Ecological Services Field Office	Mr.	Adam	Zerrenner	Field Supervisor
USFWS Ecological Services Field Office	Sir/ Madam			Field Supervisor
Abilene Chamber of Commerce	Sir/Madam			
Abilene Industrial Foundation	Sir/Madam			
Abilene Parks and Recreation	Mr.	Richard	Rodgers	Parks Division Manager
Big Country Regional Advisory Council	Mr.	Grant	Madden	RAC Chair
Buffalo Gap Chamber of Commerce	Sir/Madam			
Merkel Economic Development Corp.	Sir/Madam			
Taylor County	Mr.	Justin	Williams	Director, Environmental Department
Andrews County Commission				County Judge
Brewster County Commission				County Judge
Crane County Commission				County Judge
Culberson County Commission				County Judge
Ector County Commission				County Judge
Hudspeth County Commission				County Judge
Jeff Davis County Commission				County Judge
Loving County Commission				County Judge
Midland County Commission				County Judge
Pecos County Commission				County Judge
Presidio County Commission				County Judge
Reagan County Commission				County Judge
Reeves County Commission				County Judge

Dyess AFB Agency and Interested Parties Mailing List				
Organization	**Salutation***	**First Name***	**Last Name***	**Title/Office**
Sterling County Commission				County Judge
Taylor County Commission	Mr.	Randall D.	Williams	County Commissioner
Taylor County Commission	Mr.	Kyle	Kedrick	County Commissioner
Taylor County Commission	Mr.	Brad	Birchum	County Commissioner
Taylor County Commission	Mr.	Chuck	Statler	County Commissioner
Taylor County Commission	Mr.	Downing A.	Bolls, Jr.	County Judge
Tom Green County Commission				County Judge
Ward County Commission				County Manager
Winkler County Commission				Chairman
City of Abilene	Mayor	Anthony	Williams	Mayor
City of Abilene	Mr.	Shane	Price	City Councilman
City of Abilene	Mr.	Jack	Rentz	City Councilman
City of Abilene	Ms.	Donna	Albus	City Councilwoman
City of Abilene	Mr.	Weldon W.	Hurt	City Councilman
City of Abilene	Mr.	Travis	Craver	City Councilman
City of Alpine	Mayor	Andres "Andy"	Ramos	
City of Baird	Mayor	Donny	Smith	Mayor
City of Baird	Mr.	Jim	Dobbs	City Councilmember
City of Baird	Mr.	David	Parkhill	City Councilmember
City of Baird	Ms.	Laverne	Mason	City Councilmember
City of Baird	Ms.	Deborah	Moorehead	City Councilmember
City of Baird	Mr.	Hector	Aguirre	City Councilmember
City of Clyde	Mayor Pro-Tem	Stephen	Kniffen	Mayor Pro-Tem
City of Clyde	Mayor	Rodger	Brown	Mayor
City of Clyde	Ms.	Tammie	Coffman	Council Member
City of Clyde	Mr.	J.W.	Schlee	Council Member
City of Clyde	Mr.	Paul	McGuire	Council Member
City of Clyde	Mr.	Danny	White	Council Member
City of Fort Stockton	Mayor	Chris	Alexander	
City of Marfa	Mayor	Manny	Baeza	
City of Merkel	Mayor	Mary	Schrampfer	Mayor
City of Merkel	Mr.	Larry	Bland	City Councilmember
City of Merkel	Mr.	Jason	Beard	City Councilmember
City of Merkel	Mr.	Brady	Rutledge	City Councilmember
City of Merkel	Mr.	Joseph	Wilson	City Councilmember
City of Monahans	Mayor Pro-Tem	Jeppie	Wilson	
City of Odessa	Mayor	David	Turner	
City of Pecos	Mayor	David	Flores	
City of Tye	Mayor	Roy	Votaw	Mayor
City of Tye	Ms.	Vada	Childers	Tye City Council
City of Tye	Mr.	Kenny	Dry	Tye City Council
City of Tye	Mayor Pro-Tem	Nancy	Moore	Tye City Council
City of Tye	Mr.	Bill	Murphy	Tye City Council
City of Tye	Mr.	Chuck	Downs	Tye City Council

Dyess AFB Agency and Interested Parties Mailing List				
Organization	**Salutation***	**First Name***	**Last Name***	**Title/Office**
Town of Buffalo Gap	Mayor	David	Perry	Mayor
Town of Buffalo Gap	Mr.	James	Mabes	Alderman
Town of Buffalo Gap	Mr.	Mickey	Stewart	Alderman
Town of Buffalo Gap	Ms.	Doris	Dillard	Alderman
Town of Buffalo Gap	Ms.	Nancy	Henderson	Alderman
Town of Buffalo Gap	Mr.	Pete	Renick	Alderman
Abilene	Mr.	Stanley	Smith	City Attorney
Abilene District Office, District 24	Mr.	Ben	Bailey	District Representative
House District 24	The Honorable	Dawn	Buckingham	State Senator
House District 55	The Honorable	Cathrynn	Brown	State Representative
House District 61	The Honorable	David	Gallegos	State Representative
House District 71	The Honorable	Stan	Lambert	State Representative
House District 72	The Honorable	Drew	Darby	State Representative
House District 74	The Honorable	Alfonso "Poncho"	Nevárez	State Representative
House District 81	The Honorable	Brooks	Landgraf	State Representative
House District 82	The Honorable	Tom	Craddick	State Representative
Senate District 19	The Honorable	Pete	Flores	State Senator
Senate District 28	The Honorable	Charles	Perry	State Senator
Senate District 29	The Honorable	Jose'	Rodriguez	State Senator
Senate District 31	The Honorable	Kel	Seliger	State Senator
Senate District 31	The Honorable	Kel	Seliger	State Senator
Senate District 41	The Honorable	Gregory	Fulfer	State Senator
Bataan Memorial Building	Mr.	Ken	Hughes	Local Government Division
Governor's Office of Budget and Planning	Ms.	Denise S.	Francis	Director, State Grants Team
11th District	The Honorable	Mike	Conaway	US Congressman
11th District	The Honorable	Mike	Conaway	US Congressman
19th District	The Honorable	Jodey	Arrington	US Congressman
19th District	The Honorable	Jodey	Arrington	US Congressman
23rd District	The Honorable	Will	Hurd	US Congressman
23rd District	The Honorable	Will	Hurd	US Congressman
District 2	The Honorable	Xochitl	Torres Small	US Congressman
District 2	The Honorable	Steve	Pearce	US Congressman
New Mexico	The Honorable	Martin	Heinrich	US Senator
New Mexico	The Honorable	Martin	Heinrich	US Senator
New Mexico	The Honorable	Tom	Udall	US Senator
State of New Mexico	The Honorable	Michelle Lujan	Grisham	Governor
State of Texas	The Honorable	Greg	Abbott	Governor
Texas	The Honorable	Ted	Cruz	US Senator

Dyess AFB Agency and Interested Parties Mailing List				
Organization	**Salutation***	**First Name***	**Last Name***	**Title/Office**
Texas	The Honorable	Ted	Cruz	US Senator
Texas	The Honorable	John	Cornyn	US Senator
Texas	The Honorable	John	Cornyn	US Senator
Andarko Agency Bureau of Indian Affairs				
Jicarilla Agency Bureau of Indian Affairs	Ms.	Verinda	Reval	Superintendent
Mescalero Agency Bureau of Indian Affairs	Mr.	Charles	Riley	Superintendent
Pawnee Agency Bureau of Indian Affairs	Mr.	Jeremy	Lovekamp	Superintendent
Southern Plains Region Regional Office				Bureau of Indian Affairs
Southern Pueblos Agency Bureau of Indian Affairs	Mr.	John E.	Antonio, Sr.	Superintendent
Southwest Region Regional Office				Bureau of Indian Affairs
Mescalero Apache Tribe	Ms.	Holly	Houghten	THPO
Caddo Nation of Oklahoma	Mr.	Phil	Cross	THPO
Wichita and Affiliated Tribes	Mr.	Gary	McAdams	THPO
Comanche Nation	Ms.	Martina	Callahan	THPO
Jicarilla Apache Nation	Dr.	Jeffrey	Blythe	THPO
(not applicable)	Ms.	Sandra E.	Samuels	
(not applicable)	Mr.	Daniel	Graham	
(not applicable)	Ms.	Rosalyn W	Wilson	
FAA FCT/Midwest ATC Service				Air Traffic Manager
Eden Regenerative Community	Mr.	Daniel	McVey	

* Please note that blank cells in the table indicate that the specific name of an office holder was not available, but notifications were instead addressed to the organization and office itself.

A.2.2 Ellsworth AFB Agency and Interested Parties Mailing List

Please note that blank cells in the following table indicate that the specific name of an office holder was not available, but notifications were instead addressed to the organization and office itself.

Ellsworth AFB Agency and Interested Parties Mailing List				
Organization Name	**Salutation***	**First Name***	**Last Name***	**Title/Office**
Baker Chamber of Commerce	Mr.	Paul	Engel	President
Bowman Area Chamber of Commerce	Ms.	Emily	Bostyan	President
Bowman Area Chamber of Commerce	Ms.	Chrissy	Blankenbaker	Director
Bowman Area Chamber of Commerce	Ms.	Savanna	Stroh	Director
Bowman Township		Bruce	McLaughlin	Chairman
Buffalo Town Board	Mr.	Gary	Johnson	
Chamber of Commerce	Mr.	Mark	Rambow	Executive Director
City of Bridger				
City of Halliday				
City of Minot	Mayor	Shaun	Sipma	Mayor
City of Regent				
Dickinson Area Chamber of Commerce	Sir/Madam			
Flasher City Commission	President	Tamara	Bartz	President
Forsyth Area Chamber of Commerce and Agriculture	Sir/Madam			
Fromberg Town Hall				
Hereford Volunteer Fire Department				
Isabel City Hall				
Lavina Town Office				
McIntosh City Hall				
Miles City Airport Commission	Mr.	Lee	Richardson	Chairman
Miles City Area Chamber of Commerce	Ms.	Dannette	Cremer	President
Miles City Area Economic Development Council		Elizabeth	Patten	Executive Director
Minot Area Chamber of Commerce		Tiom	Rafferty	Chairman
Minot Area Development Corporation	Mr.	L. John	MacMartin	Interim President/CEO
Rapid City Chamber of Commerce				
Terry Town Hall				
Bowman City Commission		Lyn	James	President
Bowman City Commission		Vail	Mryon	City Commissioner
Box Elder City Hall	Mayor	Larry	Larson	Mayor
City of Baker	Mayor	JoDee	Pratt	Mayor
City of Beach	Mayor	Henry	Gerving	Mayor
City of Belfield	Mayor			Mayor

Ellsworth AFB Agency and Interested Parties Mailing List				
Organization Name	**Salutation***	**First Name***	**Last Name***	**Title/Office**
City of Belle Fourche	Mayor	Gloria	Landphere	Mayor
City of Beulah	Mayor	Travis	Frey	Mayor
City of Bismarck	Mayor	Steve	Bakken	Mayor
City of Braddock	Mayor	Del	Svalen	Mayor
City of Broadus	Mayor			City Hall Broadus
City of Buffalo	Mayor	Shane	Schrader	Mayor
City of Center	Mayor	Harold	Wilkens	Mayor
City of Colstrip		John	Williams	Mayor
City of Custer	Mayor	Corbin	Herman	
City of Deadwood	Mayor	David	Ruth Jr.	
City of Dunn Center	Mayor	Scott	Lynch	Mayor
City of Dupree	Mayor	Don	Howe	Mayor
City of Elgin	Mayor			Mayor
City of Faith	Mayor	Glen	Haines	Mayor
City of Forsyth	Mr./Ms. Mayor			Mayor
City of Gillette	Mayor	Louise	Carter-King	Mayor
City of Glendive	Mayor	Jerry	Jimison	Mayor
City of Golva	Mayor	Darin	Maus	Mayor
City of Hardin	Mayor	Joseph	Purcell	Mayor
City of Hazelton		Terry	Macdonald	Auditor
City of Hazen	Mr.	Jerry	Obenauer	Commission President
City of Hebron	Mayor	Grant	Walth	Mayor
City of Hill City	Mayor	Kathy	Skorzewski	Mayor
City of Killdeer	Mr.	Chuck	Muscha	Commission President
City of Laurel	Mayor	Thomas	Nelson	Mayor
City of Lead	Mayor	Ron	Everett	Mayor
City of Lemmon	Mayor	Neal	Pinnow	Mayor
City of Lemmon	Mayor	Neal	Pinnow	Mayor
City of Linton	Mayor	Dan	Imdieke	Mayor
City of Lovell	Mayor	Kevin	Jones	Mayor
City of Mandan	Mayor	Tim	Helbling	Mayor
City of Medora	Mayor	Todd	Corneil	Mayor
City of Miles City	Mayor	John	Hollowell	Mayor
City of New England	Mayor	Marty	Opdahl	Mayor
City of Rapid City	Mayor	Steve	Allender	Mayor
City of Roundup	Mayor	Sandra	Jones	Mayor
City of Sentinel Butte	Mayor	Rick	Olson	Mayor
City of Sheridan	Mayor	Roger	Miller	Mayor
City of Spearfish	Mayor	Dana	Boke	Mayor
City of Stanton	Mayor	Ron	Boyko	Mayor
City of Sturgis	Mayor	Mark	Carstensen	Mayor
City of Sundance	Mayor	Paul	Brooks	Mayor
City of Timber Lake	Mayor	Clyde	Pfeifle	Mayor
City of Washburn	Mayor			Mayor
City of Wibaux	Mayor			Mayor
City of Wilton		LeeAnn	Domonoske-Kellar	Mayor

Ellsworth AFB Agency and Interested Parties Mailing List				
Organization Name	**Salutation***	**First Name***	**Last Name***	**Title/Office**
City of Zap	Mayor	Norman	Fuchs	Mayor
Clearmont Town Hall		Greg	Rohrer	Mayor
Cowley Town Hall	Mayor	Joel	Peterson	Mayor
Dayton Town Hall	Mayor	Norm	Anderson	Mayor
Dickinson City Commission	Mr.	Scott	Decker	Mayor, Commission President
Eagle Butte City Clerk	Mayor	Larry	Keller	Mayor
Gillette City Council				
Hulett Town Government	Mayor	Ted	Parsons	Mayor
Joliet City Hall	Mayor	Harley	Sorrells	Mayor
Lodge Grass City Hall	Mayor	Henry	Speelman Sr.	Mayor
Melstone City Hall	Mayor	Tim	DeJaegher	Mayor
New Underwood Town Hall	Mayor	Jack	Trullinger	Mayor
Newcastle City Offices	Mayor	Deb	Piana	Mayor
Nisland City Hall	Mr./Ms. Mayor			Mayor
Pine Haven Town Hall	Mayor	Bill	Cunningham	Mayor
Sturgis City Council				
Town Hall	Mayor	Peter	Clark	Mayor
Town of Ekalaka	Mayor	Steven	Ford	Mayor
Town of Garryowen	Mayor	Chris	Kortlander	Mayor
Town of Moorcroft	Mayor	Dick	Claar	
Town of Plevna	Mayor	William	Benner	Mayor
Upton City Hall	Mayor	Travis	Beck	Mayor
Whitewood City Hall	Mayor	Mitch	Harmon	Mayor
Bowman County	Mr.	Rod	Diede	
Bowman County	Mr.	Dean	Pearson	Tax Director
Bowman County Development Corporation	Ms.	Teran	Doerr	Executive Director
Butte County Historical Society				
Butte County Veterans Service Office	Mr.	Bob	Wagner	Veterans Service Officer
Campbell County Economic Development Corporation	Ms.	Phil	Christopherson	CEO
Carter County Chamber of Commerce	Mr.	David	LeVeau	President
Custer County Fire		Bud	Peterson	County Fire Warden
Fallon County	Sir/Madam			
Fallon County DES/911	Mr.	Chuck	Lee	DES Director
Grant County Commission	Mr.	Alton	Zenker	Chairman
Grant County Job Development Authority	Ms.	Luann	Dart	Director
Harding County	Ms.	Kathy	Glines	County Auditor
Meade County Admin.		Jerry	Derr	Commission Assistant/ HR Director
Meade County Resource Advisory Committee				Secretary
Powder River Chamber of Commerce				

Ellsworth AFB Agency and Interested Parties Mailing List				
Organization Name	**Salutation***	**First Name***	**Last Name***	**Title/Office**
Adams County Commissioners		Dustin	Laufer	Chairman
Aurora County Commissioners				
Big Horn County Commissioners				
Big Horn County Commissioners				
Bowman County Commissioners	Mr.	Rick	Braaten	Commissioner
Bowman County Commissioners	Mr.	Pine	Abrahamson	Commissioner
Bowman County Commissioners	Mr.	Lynn	Brackel	Commissioner
Bowman County Commissioners	Mr.	Josh	Buckman	Commissioner
Bowman County Commissioners	Mr.	Jerry	Jeffers	Commissioner
Burleigh County Commissioners	Mr.	Brian	Bitner	Chairman
Butte County Commissioners				
Campbell County Commissioners				
Campbell County Commissioners Office				
Campbell County Sheriff's Office	Mr.	Scott	Matheny	Sheriff
Carbon County Commissioners				
Carter County Commissioners				
Carter County Commissioners	Mr.	Steve	Rosencranz	Commissioner
Corson County Commissioners				
Crook County Commissioners		Kelly	Dennis	Chairman
Crook County Land Use Planning & Zoning Commission	Mr.	Roger	Connett	Chairman
Custer County	Mr.	Jason	Strouf	Chairman
Custer County Commissioners				
Custer County Commissioners				
Dewey County Commissioners				
Dunn County				Commissioners
Emmons County				Commissioners
Fall River County Commissioners				
Fallon County Commissioners				
Fallon County Commissioners	Mr.	Steve	Baldwin	
Fallon County Commissioners	Ms.	Deb	Ranum	Chairperson
Fallon County Commissioners	Mr.	Roy	Rost	
Golden Valley County Commissioners				

Ellsworth AFB Agency and Interested Parties Mailing List				
Organization Name	**Salutation***	**First Name***	**Last Name***	**Title/Office**
Grant County Commissioners				
Haakon County Commissioners				
Harding County Commissioners				
Hettinger County Commissioners				
Johnson County Commissioners				
Lawrence County Commissioners				
Lawrence County Commissioners	Mr.	Randy	Deibert	Chair
McCone County Sheriff	Mr.	Dave	Harris	Sheriff
McKenzie County				Commissioners
Meade County Commissioner Dist 1	Mr.	Rod	Bradley	Vice Chairman
Meade County Commissioners				
Mercer County				Commissioners
Morton County				Commissioners
Musselshell County Commissioners				
Oliver County				Commissioners
Pennington County Commissioners				
Perkins County Commissioners				
Perkins County Sheriff		Kelly	Serr	Sheriff
Perkins County State's Attorney		Shane	Penfield	
Powder River County Commissioners		Lee	Randall	Chairman
Prairie County Commissioners				
Rosebud County Commissioners	Mr.	Robert	Lee	Presiding Officer
Sheridan County Commissioners	Mr.	Tom	Ringley	Chairman
Sioux County Commissioners				
Slope County Commissioners				
Stillwater County Commissioners				
Treasure County Commissioners				
Tripp County Commissioners				
Walworth County Commissioners				
Weston County Commissioners				
Yellowstone County Commissioners				

Ellsworth AFB Agency and Interested Parties Mailing List				
Organization Name	**Salutation***	**First Name***	**Last Name***	**Title/Office**
Ziebach County Commissioners				
Black Hills National Forest				District Ranger
Bureau of Land Management				
Bureau of Land Management				Field Manager
Bureau of Land Management				Field Manager
Bureau of Land Management				Field Manager
Bureau of Land Management	Mr.	Kevin	Christensen	District Manager
Bureau of Land Management				Field Manager
Bureau of Land Management				Field Manager
Bureau of Land Management	Mr.	Duane	Spencer	Acting State Director
Bureau of Land Management	Mr.	Ryan	Sundberg	
Bureau of Land Management				
Custer National Forest				Acting Forest Supervisor
Department of Interior		Robert	Stewart	
Department of Transportation Aeronautics Division	Mr.	Larry	Flynn	Administrator
Devils Tower National Monument				
Little Missouri National Grassland - McKenzie Ranger District				
Little Missouri National Grassland - Medora Ranger District				
MCC Economic Development	Sir/Madam			
National Business Aviation Association	Mr.	Ed	Bolen	President and CEO
National Park Service Midwest Regional Office	Sir/Madam			
National Park Service, Intermountain Region	Sir/Madam			Director
National Park Service, Midwest Regional Office	Mr.	Nick	Chevance	Regional Environmental Coordinator
National Parks Conservation Association, Northern Rockies Regional Office	Ms.	Betsy	Buffington	Regional Director
NPS Natural Sounds Program	Ms.	Vicki	McCusker	
Office of Environmental Policy and Compliance	Dr.	Michaela	Noble	Director
U.S. Environmental Protection Agency, Region 8 - Montana Office	Mr.	Stephen	Potts	
U.S. Fish and Wildlife Service	Mr.	Scott	Larson	Field Supervisor
U.S. Fish and Wildlife Service	Mr.	Tyler	Abbott	Field Supervisor
U.S. Fish and Wildlife Service	Mr.	Jeffrey	Towner	Field Supervisor
U.S. Fish and Wildlife Service	Ms.	Jodi	Bush	Field Supervisor
U.S. Fish and Wildlife Service	Ms.	Connie	Young-Dubovsky	Fisheries Information System and Outreach Coordinator

Ellsworth AFB Agency and Interested Parties Mailing List				
Organization Name	**Salutation***	**First Name***	**Last Name***	**Title/Office**
U.S. Forest Service				
U.S. Forest Service	Mr.	Jennifer	Eberlien	Regional Forester
U.S. Forest Service				Douglas Ranger District
U.S. Forest Service	Mr.	Shannon	Boehm	District Ranger
U.S. Forest Service	Mr.	Steve	Kozel	District Ranger
U.S. Forest Service	Ms.	Elizabeth	McFarland	
U.S. Forest Service	Mr.	Ken	Wabaunsee	
U.S. Forest Service Sioux Ranger District	Sir/Madam			
U.S. Forest Service, Douglas Ranger District	Sir/Madam			
US Environmental Protection Agency, Region 8	Ms.	Suzanne	Bohan	Director, Enforcement and Compliance Assurance Division
US Fish & Wildlife Department Service	Sir/Madam			
US Forest Service, Grand River Ranger District	Mr.	Paul	Drayton	
USDA APHIS/WS		Shane	Huseby	
USDA Forest Service				
USDA Forest Service				
USDA Forest Service		Mark	Slacks	
USDA Forest Service				
USDA Forest Service, Medicine Bow-Routt Natl Forests,Thunder Basin Natl Grassland				
USDA Wildlife Service		Cody	Krause	
USDA Wildlife Services		Alan	Brown	
USDA Wildlife Services	Mr.	John E.	Steuber	Montana Wildlife Services Director
USDA Wildlife Services	Mr.	John	Paulson	North/South Dakota Wildlife Services State Director
Wyoming Office of Homeland Security	Ms.	Lynn	Budd	Director
House of Representatives	Mr.	Dusty	Johnson	Representative- South Dakota
Montana State House District 39	Ms.	Geraldine	Custer	Representative
Montana State House District 40	Mr.	Barry	Usher	Representative
Montana State House District 41	Ms.	Rae	Peppers	Representative
Montana State House District 42	Ms.	Sharon	Stewart Peregoy	Representative
Montana State House District 43	Ms.	Peggy	Webb	Representative
Montana State House District 45	Mr.	Daniel	Zolnikov	Representative
Montana State Senate District 20	Mr.	Duane	Ankney	Senator

Ellsworth AFB Agency and Interested Parties Mailing List				
Organization Name	**Salutation***	**First Name***	**Last Name***	**Title/Office**
Montana State Senate District 21	Mr.	Jason	Small	Senator
Montana State Senate District 22	Mr.	Doug	Kary	Senator
North Dakota Legislative District 31	Ms.	Karen	Rohr	Representative
North Dakota Legislative District 31	Mr.	Donald	Schaible	Senator
North Dakota Legislative District 31	Mr.	Jim	Schmidt	Representative
North Dakota Legislative District 33	Mr.	Gary	Kreidt	Representative
North Dakota Legislative District 33	Mr.	Gary	Kreidt	Representative
North Dakota Legislative District 33	Mr.	Bill	Tveit	Representative
North Dakota Legislative District 33	Ms.	Jessica	Unruh	Senator
North Dakota Legislative District 36	Mr.	Jay	Elkin	Senator
North Dakota Legislative District 36	Mr.	Mike	Schatz	Representative
North Dakota Legislative District 36	Mr.	Luke	Simons	Representative
North Dakota Legislative District 39	Mr.	Bill	Bowman	Senator
North Dakota Legislative District 39	Mr.	Keith	Kempenich	Representative
North Dakota Legislative District 39	Mr.	Denton	Zubke	Representative
North Dakota State House Dist. 39	Mr.	David	Drovdal	State Representative
Nouth Dakota Legislative District At-Large	Mr.	Kelly	Armstrong	Representative
Representative Liz Cheney	Ms.	Amy	Edmonds	Communications Director
Representative Liz Cheney	Ms.	Jackie	King	Deputy District Director
Senator Jon Tester	Ms.	Penny	Zimmerman	Regional Field Director
Senator Mike Enzi		DeAnna	Kay	Field Representative
Senator Mike Enzi	Ms.	Karen	McCreery	State Director
South Dakota Legislative District 28	Mr.	Ryan	Maher	Senator
South Dakota Legislative District 28A	Mr.	Dean	Schrempp	Representative
South Dakota Legislative District 28B	Mr.	J. Sam	Marty	Representative
South Dakota Legislative District 29	Mr.	Kirk	Chaffee	Representative
South Dakota Legislative District 30	Ms.	Julie	Frye-Mueller	Representative

Ellsworth AFB Agency and Interested Parties Mailing List				
Organization Name	**Salutation***	**First Name***	**Last Name***	**Title/Office**
South Dakota Legislative District 30	Mr.	Tim	Goodwin	Representative
South Dakota Legislative District 31	Senator	Bob	Ewing	Senator
South Dakota Legislative District 31	Mr.	Dayle	Hammock	Representative
South Dakota Legislative District 31	Mr.	Timothy	Johns	Representative
South Dakota Legislative District 31	Mr.	Tom	Nelson	Senator
South Dakota Legislative District 31	Mr.	Fred	Romkema	Representative
South Dakota Legislative District 33	Ms.	Jacqueline	Sly	
South Dakota Legislative District At-Large	Mr.	Dusty	Johnson	Representative- South Dakota
South Dakota State House Dist. 29	Mr.	Thomas	Brunner	Representative
South Dakota State Senate Dist.29	Mr.	Gary	Cammack	Senator
State of Montana	Mr.	Roger	Webb	Senator
State of South Dakota	Mr.	Gary L.	Cammack	Senator
State of Wyoming	Mr.	Mark	Gordon	Governor
U.S. House Montana At-large District	Mr.	Greg	Gianforte	Representative
United States Senate	Senator	John	Barrasso	United States Senator-Wyoming
United States Senate	Senator	John	Barrasso	Senator- Wyoming
United States Senate	Senator	Kevin	Cramer	United States Senator - North Dakota
United States Senate	Mr.	Kevin	Cramer	Senator
United States Senate	Senator	Steve	Daines	United States Senator-Montana
United States Senate	Senator	Mike	Enzi	United States Senator-Wyoming
United States Senate	Senator	Mike	Enzi	United States Senator-Wyoming
United States Senate	Senator	John	Hoeven	United States Senator
United States Senate	Mr.	John	Hoeven	Senator
United States Senate	Senator	Mike	Rounds	Senator- South Dakota
United States Senate	Senator	Mike	Rounds	United States Senator- South Dakota
United States Senate	Mr.	Jon	Tester	Senator
United States Senator	Senator	Steve	Daines	United States Senator-Montana
United States Senator	Mr.	Jon	Tester	Senator
United States Senator	Mr.	John	Thune	Senator
United States Senator	Mr.	John	Thune	Senator
United States Senator	Mr.	John	Walsh	Senator

Ellsworth AFB Agency and Interested Parties Mailing List				
Organization Name	**Salutation***	**First Name***	**Last Name***	**Title/Office**
Wyoming State House At-Large District	Ms.	Liz	Cheney	Representative
Wyoming State House District 01	Mr.	Tyler	Lindholm	Representative
Wyoming State House District 02	Mr.	Hans	Hunt	Representative
Wyoming State House District 30	Mr.	Mark	Jennings	Representative
Wyoming State House District 30	Mr.	Mark	Jennings	Representative
Wyoming State House District 31	Mr.	Scott	Clem	Representative
Wyoming State House District 32	Mr.	Timothy	Hallinan	Representative
Wyoming State House District 40	Mr.	Richard	Tass	Representative
Wyoming State House District 51	Mr.	Cyrus	Western	Representative
Wyoming State House District 52	Mr.	Bill	Pownall	Representative
Wyoming State House District 53	Mr.	Roy	Edwards	Representative
Wyoming State Senate District 01	Senator	Ogden	Driskill	Senator
Wyoming State Senate District 21	Mr.	Bo	Biteman	Senator
Wyoming State Senate District 22	Mr.	Dave	Kinskey	Senator
Wyoming State Senate District 23	Mr.	John	Hines	State Senator
Regent City Hall	Mayor	Troy	Mosbrucker	Mayor
Bear Butte State Park	Sir/Madam			
Bowman-Slope Soil Conservation District	Ms.	Camie	Janikowski	Manager
Department of Environmental Quality	Mr.	Todd	Parfitt	Director
EAA/CAR	Mr.	Gary	Schroeder	
Experimental Aircraft Association (EAA)	Mr.	Randy	Hansen	Government Relations Director
Experimental Aircraft Association/North Dakota Aviation Council/North Dakota Pilot's Association		Todd	Schwarz	
Montana Department of Agriculture	Mr.	Ben	Thomas	Director
Montana Department of Natural Resources and Conservation	Mr.	John E.	Tubbs	Director

Ellsworth AFB Agency and Interested Parties Mailing List				
Organization Name	**Salutation***	**First Name***	**Last Name***	**Title/Office**
Montana Department of Transportation Aeronautics Division	Mr.	Tim	Conway	Administrator
Montana Department of Transportation Aeronautics Division	Mr.	Wade	Cebulski	Chief, Airport/Airways Bureau
Montana Essential Air Service Task Force	Mr.	John	Rabenberg	
Montana Fish, Wildlife, and Parks	Sir/Madam			Director
Montana Historical Society	Sir/Madam			State Historic Preservation Officer
Montana Historical Society	Mr.	Bruce	Whittenberg	Director
Montana Legislative Environmental Quality Council	Mr.	Jim	Keane	Chair
MT Bureau of Land Management	Mr.	John	Mehlhoff	State Director
MT DEQ	Mr.	Shaun	McGrath	Director
ND Division of Community Service	Mr.	James	Boyd	Manager, Governmental Services
ND Indian Affairs Commission	Mr.	Scott	Davis	Executive Director
ND Tax Commission	Mr.	Ryan	Rauschenberger	
North Dakota Aeronautics Commission (NDAC)		Gaye	Niemiller	Administrative Officer
North Dakota Aeronautics Commission (NDAC)	Ms.	Shelia	Doll	Licensing Specialist
North Dakota Aeronautics Commission (NDAC)	Mr.	Mike	McHugh	Aviation Education Coordinator
North Dakota Aeronautics Commission (NDAC)	Mr.	Kyle	Wanner	Director
North Dakota Aeronautics Commission (NDAC)		Nels	Lund	Airport Planner
North Dakota Aeronautics Commission (NDAC)	Mr.	Adam	Dillin	Airport Planner
North Dakota Atmospheric Research Board	Mr.	Tom	Tupa	Chairman
North Dakota Atmospheric Resource Board	Mr.	Darin	Langerud	Director
North Dakota Aviation Council	Mr.	Darren	Hall	Chairman
North Dakota Department of Agriculture	Mr.	Doug	Goehring	Commissioner
North Dakota Department of Commerce	Ms.	Michelle	Kommer	Commissioner
North Dakota Department of Trust Lands	Ms.	Jodi	Smith	Commissioner
North Dakota Farm Bureau				
North Dakota Forest Service	Mr.	Tom	Claeys	State Forester
North Dakota Game and Fish Department	Mr.	Terry	Steinwand	Director

Ellsworth AFB Agency and Interested Parties Mailing List				
Organization Name	**Salutation***	**First Name***	**Last Name***	**Title/Office**
North Dakota Game and Fish Department	Mr.	Greg	Link	Division Chief - Conservation/Communications
North Dakota Legislative District 36				State Capitol
North Dakota Parks and Recreation Department	Ms.	Melissa	Baker	Director
North Dakota State Historical Board	Mr.	Claudia	Berg	Director
North Dakota State Water Commission Atmospheric Research Board	Governor	Doug	Burgum	Chairman
North Dakota's Business Aviation Association	Mr.	Jonathan	Simmers	
North/ South Dakota Wildlife Services State Director	Mr.	John	Paulson	State Director
SD DENR PMB 2020	Mr.	Kelli	Buscher	Surface Water Quality Program
SD Dept. of Environmental and Natural Resources				Staff Attorney
South Dakota Cooperative Extension Service		Robert	Drown	
South Dakota Department of Agriculture	Ms.	Kim	Vanneman	Secretary
South Dakota Department of Game, Fish and Parks	Sir/Madam			
South Dakota Department of Game, Fish and Parks	Mr.	Stan	Michals	Energy and Minerals Coordinator
South Dakota Department of Military & Veterans Affairs	Mr.	Greg	Whitlock	Secretary
South Dakota Department of Public Safety	Mr.	Crain	Price	Secretary
South Dakota Department of Tourism and State Development				
South Dakota Department of Transportation	Mr.	Jon	Becker	Aeronautics Planning Engineer
South Dakota Department of Transportation				Director
South Dakota DOT		Andy	Vandel	Highway Safety Engineer
South Dakota Ellsworth Development Authority	Mr.	Scott	Landguth	Executive Director
South Dakota Game, Fish and Parks				Secretary
South Dakota Office of the State Historic Preservation Officer	Ms.	Paige	Olson	Review and Compliance Coordinator
South Dakota Office of Tribal Government Relations	Mr.	Dave	Flute	Secretary

Ellsworth AFB Agency and Interested Parties Mailing List				
Organization Name	**Salutation***	**First Name***	**Last Name***	**Title/Office**
State of Montana SHPO				State Historic Preservation Officer
State of South Dakota	Mr.	Jay	Vogt	State Historic Preservation Officer
State of Wyoming	Ms.	Mary	Hopkins	State Historic Preservation Officer
WYDOT - District 4	Mr.	Max	Morbeto	Area Maintenance Crew Supervisor
WYDOT Headquarters	Maj. Gen.	Luke	Reiner	Agency Director
Wyoming Department of Agriculture	Mr.	Doug	Miyamoto	Director
Wyoming Department of Environmental Quality, Sheridan Field Office				District Engineer
Wyoming Dept of Transportation, Aeronautics Division	Mr.	Greg	Hampshire	
Wyoming Game and Fish	Mr.	Brian	Nesvick	Director
Wyoming State Historic Preservation Office	Mr.	John	Laughlin	Archaeologist
Wyoming State Parks, Historic Sites & Trails Headquarters				Administrator
North Dakota Governor's Office	Governor	Doug	Burgum	Governor
Office of the Governor	Governor	Steve	Bullock	Governor of Montana
Senator Mike Enzi	Mr.	Enzi	Mike	Senator
State of Montana	Mr.	Steve	Bullock	Governor
State of North Dakota	Mr.	Doug	Burgum	Governor
State of South Dakota	Governor	Kristi	Noem	Governor
State of Wyoming	Governor	Mark	Gordon	Governor
Crow Agency Bureau of Indian Affairs				Superintendent
Fort Peck Agency Bureau of Indian Affairs				Superintendent
Great Plains Region Regional Office				Regional Director
Rocky Mountain Region Regional Office				Regional Director
Northwest Regional Office				Regional Director
Blackfeet Agency Bureau of Indian Affairs				Superintendent
Cheyenne River Agency Bureau of Indian Affairs	Ms.	Gina	Douville	Superintendent
Rocky Boy's Agency Bureau of Indian Affairs				Superintendent
Flathead Agency Bureau of Indian Affairs				Superintendent
Crow Creek Agency Bureau of Indian Affairs	Mr.	Patrick F.	Duffy	Superintendent
US-DOI-BIA Crow Agency	Mr.	Ty	Ten Bear	

Ellsworth AFB Agency and Interested Parties Mailing List				
Organization Name	**Salutation***	**First Name***	**Last Name***	**Title/Office**
Wind River Agency Bureau of Indian Affairs				Superintendent
Fort Belknap Agency Bureau of Indian Affairs				Superintendent
Lower Brule Agency Bureau of Indian Affairs	Mr.	James	Two Bulls	Superintendent
Northern Cheyenne Agency Bureau of Indian Affairs				Superintendent
Pine Ridge Agency Bureau of Indian Affairs	Mr.	John M.	Long	Superintendent
Rosebud Agency Bureau of Indian Affairs	Ms.	Lee Ann	Beardt	Superintendent
Sisseton Agency Bureau of Indian Affairs	Mr.	Russell	Hawkins	Superintendent
Fort Totten Agency Bureau of Indian Affairs	Ms.	Yvonne	LaRocque	Superintendent
Standing Rock Agency Bureau of Indian Affairs	Ms.	Shelia	White Mountain	Superintendent
Fort Berthold Agency Bureau of Indian Affairs	Ms.	Kayla	Danks	Superintendent
Turtle Mountain Agency Bureau of Indian Affairs	Mr.	Lyndon	Desjarlais	Superintendent
Yankton Agency Bureau of Indian Affairs	Ms.	Adelita	Guerue	Superintendent
Lower Brule Sioux Tribe	Ms.	Clair	Green	Cultural Resource Director
Blackfeet Nation	Mr.	John	Murray	THPO
Cheyenne River Sioux Tribe	Mr.	Steve	Vance	THPO
Chippewa Cree Tribe	Mr.	Jonathan	Windy Boy	THPO
Confederated Salish and Kootenai Tribe	Mr.	Kyle	Felsman	THPO
Crow Creek Sioux Tribe	Mr.	Merle	Marks	THPO
Crow Tribe of Indians	Mr.	William	Big Day	THPO
Eastern Shoshone Tribe	Mr.	Josh	Mann	THPO
Flandreau Santee Sioux Tribe	Mr.	Garrie	Kills A Hundred	THPO
Fort Belknap Indian Community	Mr.	Michael J.	Black Wolf	THPO
Fort Peck Assiniboine and Sioux Tribes	Ms.	Dyan	Youppe	THPO
Mandan, Hidatsa and Arikara Nation	Mr.	Elgin	Crows Breast	THPO
Northern Arapaho Tribe	Mr.	Devin	Oldman	THPO
Northern Cheyenne Tribe	Ms.	Teanna	Limpy	THPO
Oglala Sioux Tribe	Mr.	Thomas	Brings	THPO
Rosebud Sioux Tribe	Mr.	Ben	Rhodd	THPO
Sisseton-Wahpeton Oyate	Ms.	Dianne	Desrosiers	THPO
Spirit Lake Tribe	Dr.	Enrich	Longie	THPO
Standing Rock Sioux Tribe	Mr.	Jon	Eagle	THPO
Turtle Mountain Band of Chippewa Indians	Mr.	Jefferey	Desjarlais	THPO

Ellsworth AFB Agency and Interested Parties Mailing List				
Organization Name	**Salutation***	**First Name***	**Last Name***	**Title/Office**
Yankton Sioux Tribe	Mr.	Kip	Spotted Eagle	THPO
(not applicable)	Ms.	Lisa L.	Reeves	
(not applicable)	Mr.	Mark Wayne	Zerbe	
David Turch and Associates	Mr.	David N.M.	Turch	
Bighorn County Airport		Eol	Auker	
Baker Municipal Airport	Mr.	Roger D	Meggers	
(not applicable)	Mr.	Doug M.	Stewart	
Big Horn County Airport Board	Ms.	Linda	Greenwalt	
(not applicable)	Mr.	Chuck	Kreiner	
Carter Co. Mt. Rancher	Mr.	Del	Dinstel	
(not applicable)	Mr.	Monte D.	Reder	
Office of Senator John Thune	Mr.	Qusi	Al Haj	
Miles City Airport	Mr.	Lee J	Harbaugh	
Airport – MPA	Mr.	Patrick J	Lifto	
(not applicable)	Mr.	Ty	Warnberg	
(not applicable)	Mr.	Richard A	Benz	
Bowman County Emergency Management	Mr.	Dean A	Pearson	
Bowman Airport	Mr.	Rodney	Schaaf	
City of Box Elder	Mr.	Bob	Kaufman	
(not applicable)	Mr.	Craig	Steve	
Paradise Valley Airport (2SD0)	Ms.	Norma	Kraemer	
City of Box Elder		Blaise	Emerson	
Midwest ATC Service				Air Traffic Manager
Retired	Mr.	Eldon B	Curington	
Office of Senator John Thune	Mr.	Jon	Abdnor	
South Dakota Public Broadcasting	Mr.	Seth	Tupper	
NGC	Mr.	Andrew	Metrick	

* Please note that blank cells in the table indicate that the specific name of an office holder was not available, but notifications were instead addressed to the organization and office itself.

A.3 AGENCIES AND INTERESTED PARTIES NOI LETTER

A.3.1 Dyess AFB – General Agency Letter

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 7TH BOMB WING (AFGSC)
DYESS AIR FORCE BASE TEXAS

March 10, 2020

Colonel Jose E. Sumangil
Commander
7th Bomb Wing
7 Lancer Loop
Dyess AFB Texas 79607

Receiver Name
Title
Organization
Street Address
City ST 12345-6789

Dear Receiver Name

The United States Air Force (USAF) is issuing this notice to inform state and local agencies of its intent to prepare an Environmental Impact Statement (EIS) for the B-21 Main Operating Base 1 (MOB 1) Beddown at Dyess Air Force Base (AFB), Texas or Ellsworth AFB, South Dakota. The Air Force's notice of intent (NOI) to prepare an EIS and hold public scoping meetings was published in the Federal Register on March 6, 2020. The EIS will assess the potential environmental consequences of the proposal to beddown the Department of Defense's new bomber aircraft, the B-21 "Raider," which will eventually replace existing B-1 and B-2 bomber aircraft. The EIS is being prepared in accordance with National Environmental Policy Act (NEPA) of 1969; 40 Code of Federal Regulations (CFR), Parts 1500-1508, the Council on Environmental Quality (CEQ) regulations for implementing NEPA; and the Air Force Environmental Impact Analysis Process (EIAP) [32 CFR Part 989].

This notice also serves to invite early public and agency participation in determining the scope of environmental issues and alternatives to be analyzed in the EIS and to identify and eliminate from detailed study the issues which are not significant. To effectively define the full range of issues and concerns to be evaluated in the EIS, the Air Force is soliciting scoping comments from interested local, state and federal agencies, interested American Indian tribes, and interested members of the public.

The beddown of the B-21 will take place through a series of three Main Operating Bases (MOB), referred to as MOB 1, MOB 2, and MOB 3. The Air Force proposes to beddown

DEATH FROM ABOVE

MOB 1, which includes B-21 Operational Squadrons, a B-21 Formal Training Unit (FTU), and a Weapons Generation Facility (WGF) in this EIS. MOB 2 and MOB 3 beddown locations would be evaluated in future NEPA analyses, after the location for MOB 1 is chosen. The B-21 will operate under the direction of the Air Force Global Strike Command. The B-21 will have both conventional and nuclear roles and will be capable of penetrating and surviving in advanced air defense environments. It is projected to enter service in the 2020s, and the Air Force intends to have at least 100 B-21 aircraft built.

The purpose of the Proposed Action is to implement the goals of the National Defense Strategy by modernizing the U.S. bomber fleet capabilities. The B-21 Raider is being developed to carry conventional payloads and to support the nuclear triad by providing a visible and flexible nuclear deterrent capability that will assure allies and partners through the United States' commitment to international treaties. The B-21 will provide the only stealth bomber capability and capacity needed to deter, and if necessary, defeat our adversaries in an era of renewed great power competition. MOB 1 will support training of crewmembers and personnel in the operation and maintenance of the B-21 aircraft in an appropriate geographic location that can provide sufficient airfield, facilities, infrastructure, and airspace to support the B-21 training and operations.

The EIS will analyze Dyess AFB and Ellsworth AFB as basing alternatives for MOB 1 for the Proposed Action, as well as a No Action Alternative. The basing alternatives were developed to minimize mission impact, maximize facility reuse, minimize cost, and reduce overhead, as well as leverage the strengths of each base to optimize the B-21 beddown strategy. The potential impacts of the alternatives and the No Action Alternative that the EIS may examine include impacts to land use, airspace, safety, noise, hazardous materials and solid waste, physical resources (including earth and water resources), air quality, transportation, cultural resources, biological resources, socioeconomics, and environmental justice.

The Air Force will be holding public scoping meetings in areas potentially impacted by the proposal. During the public scoping meetings, the Air Force will provide additional information about the B-21 MOB 1 Beddown EIS. The purpose of the meetings and the scoping period is to further solicit input regarding the scope of issues to be addressed and identify environmental issues to be analyzed in depth. Written comments received by the Air Force during the public scoping period will be considered in the preparation of the Draft EIS. Scoping comments may be submitted to the Air Force at the planned public scoping meetings, via the public website (www.B21EIS.com), or mailed. Comments will be accepted at any time during the Environmental Impact Analysis Process (EIAP). However, to ensure the Air Force has sufficient time to consider public input in the preparation of the Draft EIS, scoping comments must be submitted no later than April 24, 2020.

1

DATES: The Air Force plans to hold six public scoping meetings from 6:00 p.m. to 8:00 p.m., on the dates and at the locations listed below. Local notices announcing scheduled dates, locations, and addresses for each public scoping meeting will also be published in the Rapid City Journal and Black Hills Pioneer newspapers in South Dakota, the Abilene Reporter News and The Wylie News newspapers in Texas, as well as the Native Sun News, Indian Country Today and the Original Briefs tribal newspapers, a minimum of fifteen (15) days prior to each meeting.

- Tuesday, March 31, 2020: Holiday Inn at Rushmore Plaza, 505 North 5th Street, Rapid City, SD 57701
- Wednesday, April 1, 2020: Sturgis Community Center, 1401 Lazelle Street, Sturgis, SD 57785
- Thursday, April 2, 2020: Douglas Middle School, 691 Tower Road, Box Elder, SD 57719
- Tuesday, April 7, 2020: Abilene Convention Center, 1100 North 6th Street, Abilene, Texas 79601
- Wednesday, April 8, 2020: Wylie High School Performing Arts Center, 4502 Antilley Road, Abilene, Texas 79606
- Thursday, April 9, 2020: Tye Community Center, 103 Scott Street, Tye, Texas 79563

The agenda for each scoping meeting is as follows:

- 6:00 p.m. to 6:30 p.m. – Open House and comment submission
- 6:30 p.m. to 7:00 p.m. – Air Force Presentation
- 7:00 p.m. to 8:00 p.m. – Open House and comment submission resumes

Additional information on the B-21 MOB 1 Beddown EIS environmental impact analysis process can be found on the project website at www.B21EIS.com. The project website can also be used to submit comments. Inquiries and comments-by-mail regarding the USAF proposal should be directed to Dyess AFB Public Affairs, 7 Lancer Loop, Suite 136, Dyess AFB Texas 79607; (325) 696-4820; or 7bwpa@us.af.mil.

Comments will be accepted at any time during the environmental impact analysis process. However, to ensure the Air Force has sufficient time to consider public input in the preparation of the Draft EIS, scoping comments must be submitted to the website or mailed to one of the addresses listed above by April 24, 2020.

Sincerely

JOSEPH SUMANGIL, Colonel, USAF
Commander

1
2

A.3.2 Ellsworth AFB – General Agency Letter

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 28TH BOMB WING (AFGSC)
ELLSWORTH AIR FORCE BASE SOUTH DAKOTA

Colonel David A. Doss
28th Bomb Wing
1958 Scott Drive, Suite 1
Ellsworth Air Force Base, SD 57706-4710

Receiver Name, Title
Organization
Street Address
City ST 12345-6789

Dear Receiver Name,

The United States Air Force (USAF) is issuing this notice to inform state and local agencies of its intent to prepare an Environmental Impact Statement (EIS) for the B-21 Main Operating Base 1 (MOB 1) Beddown at Dyess Air Force Base (AFB), Texas or Ellsworth AFB, South Dakota. The Air Force's notice of intent (NOI) to prepare an EIS and hold public scoping meetings was published in the Federal Register on March 6, 2020. The EIS will assess the potential environmental consequences of the proposal to beddown the Department of Defense's new bomber aircraft, the B-21 "Raider," which will eventually replace existing B-1 and B-2 bomber aircraft. The EIS is being prepared in accordance with National Environmental Policy Act (NEPA) of 1969; 40 Code of Federal Regulations (CFR), Parts 1500-1508, the Council on Environmental Quality (CEQ) regulations for implementing NEPA; and the Air Force Environmental Impact Analysis Process (EIAP) [32 CFR Part 989].

This notice also serves to invite early public and agency participation in determining the scope of environmental issues and alternatives to be analyzed in the EIS and to identify and eliminate from detailed study the issues which are not significant. To effectively define the full range of issues and concerns to be evaluated in the EIS, the Air Force is soliciting scoping comments from interested local, state and federal agencies, interested American Indian tribes, and interested members of the public.

The beddown of the B-21 will take place through a series of three Main Operating Bases (MOB), referred to as MOB 1, MOB 2, and MOB 3. The Air Force proposes to beddown MOB 1, which includes B-21 Operational Squadrons, a B-21 Formal Training Unit (FTU), and a Weapons Generation Facility (WGF) in this EIS. MOB 2 and MOB 3 beddown locations would be evaluated in future NEPA analyses, after the location for MOB 1 is chosen. The B-21 will operate under the direction of the Air Force Global Strike Command. The B-21 will have both conventional and nuclear roles and will be capable of penetrating and surviving in advanced air defense environments. It is projected to enter service in the 2020s, and the Air Force intends to have at least 100 B-21 aircraft built.

The purpose of the Proposed Action is to implement the goals of the National Defense Strategy by modernizing the U.S. bomber fleet capabilities. The B-21 Raider is being developed to carry conventional payloads and to support the nuclear triad by providing a visible and flexible nuclear deterrent capability that will assure allies and partners through the United States' commitment to international treaties. The B-21 will provide the only stealth bomber capability and capacity needed to deter, and if necessary, defeat our adversaries in an era of renewed great power competition. MOB 1

will support training of crewmembers and personnel in the operation and maintenance of the B-21 aircraft in an appropriate geographic location that can provide sufficient airfield, facilities, infrastructure, and airspace to support the B-21 training and operations.

The EIS will analyze Dyess AFB and Ellsworth AFB as basing alternatives for MOB 1 for the Proposed Action, as well as a No Action Alternative. The basing alternatives were developed to minimize mission impact, maximize facility reuse, minimize cost, and reduce overhead, as well as leverage the strengths of each base to optimize the B-21 beddown strategy. The potential impacts of the alternatives and the No Action Alternative that the EIS may examine include impacts to land use, airspace, safety, noise, hazardous materials and solid waste, physical resources (including earth and water resources), air quality, transportation, cultural resources, biological resources, socioeconomics, and environmental justice.

The Air Force will be holding public scoping meetings in areas potentially impacted by the proposal. During the public scoping meetings, the Air Force will provide additional information about the B-21 MOB 1 Beddown EIS. The purpose of the meetings and the scoping period is to further solicit input regarding the scope of issues to be addressed and identify environmental issues to be analyzed in depth. Written comments received by the Air Force during the public scoping period will be considered in the preparation of the Draft EIS. Scoping comments may be submitted to the Air Force at the planned public scoping meetings, via the public website (www.B21EIS.com), or mailed. Comments will be accepted at any time during the Environmental Impact Analysis Process (EIAP). However, to ensure the Air Force has sufficient time to consider public input in the preparation of the Draft EIS, scoping comments must be submitted no later than April 24, 2020.

DATES: The Air Force plans to hold six public scoping meetings from 6 p.m. to 8 p.m. on the dates and at the locations listed below. Local notices announcing scheduled dates, locations, and addresses for each public scoping meeting will also be published in the Rapid City Journal and Black Hills Pioneer newspapers in South Dakota, the Abilene Reporter News, and The Wylie News newspapers in Texas, as well as the Native Sun News, Indian Country Today, and the Original Briefs tribal newspapers, a minimum of fifteen (15) days prior to each meeting.

- Tuesday, March 31, 2020: Holiday Inn at Rushmore Plaza, 505 North 5th Street, Rapid City, SD 57701
- Wednesday, April 1, 2020: Sturgis Community Center, 1401 Lazelle Street, Sturgis, SD 57785
- Thursday, April 2, 2020: Douglas Middle School, 691 Tower Road, Box Elder, SD 57719
- Tuesday, April 7, 2020: Abilene Convention Center, 1100 North 6th Street, Abilene, TX 79601
- Wednesday, April 8, 2020: Wylie High School Performing Arts Center, 4502 Antilley Road, Abilene, TX 79606
- Thursday, April 9, 2020: Tye Community Center, 103 Scott Street, Tye, TX 79563

The agenda for each scoping meeting is as follows:

- 6:00 p.m. to 6:30 p.m. – Open House and comment submission
- 6:30 p.m. to 7:00 p.m. – Air Force Presentation
- 7:00 p.m. to 8:00 p.m. – Open House and comment submission resumes

2

1

Additional information on the B-21 MOB 1 Beddown EIS environmental impact analysis process can be found on the project website at www.B21EIS.com. The project website can also be used to submit comments. Inquiries and comments-by-mail regarding the Air Force proposal should be directed to Ellsworth AFB Public Affairs, ATTN: Steve Merrill, 28th Bomb Wing Public Affairs, 1958 Scott Dr., Suite 4, Ellsworth AFB, SD 57706; (605) 385-5056; 28bw.public.affairs@us.af.mil.

Comments will be accepted at any time during the environmental impact analysis process. However, to ensure the Air Force has sufficient time to consider public input in the preparation of the Draft EIS, scoping comments must be submitted to the website or mailed to one of the addresses listed above by April 24, 2020.

Sincerely,

DOSS.DAVID.A.1049946151 Digitally signed by DOSS.DAVID.A.1049946151 Date: 2020.03.06 11:40:55 -07'00'

DAVID A. DOSS, Colonel, USAF
Commander

3

1
2

A.4 PUBLIC SCOPING SUMMARY

The National Environmental Policy Act (NEPA) and the U.S. Air Force's (USAF's) implementing regulations require the lead agency (in this case, the USAF) to seek public participation throughout the environmental impact analysis process. "Scoping" identifies potential issues and alternatives early in the NEPA development process. The USAF filed a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) and host public scoping meetings. The NOI was published in the Federal Register on March 6, 2020. Additionally, the USAF notified in writing local, state, and federal agencies and tribes of the intent to prepare an EIS and host public scoping meetings. Section A.2 (Agencies and Interested Parties Mailing List) provides a list of these contacts.

As a direct result of the National Emergency declared by the President on Friday, March 13, 2020, in response to the coronavirus (COVID-19) pandemic in the United States and the Center for Disease Control's recommendations for social distancing and avoiding large public gatherings, the USAF canceled the six previously scheduled scoping meetings that were set to occur in South Dakota and Texas from March 31, 2020, to April 9, 2020, as listed in the original NOI that was published on March 6, 2020 (Federal Register, Vol. 85., No. 45, 13148). An amended NOI, announcing the cancellation of in-person scoping meetings due to COVID-19, was subsequently published in the Federal Register on March 24, 2020 (Federal Register, Vol. 85, No. 57, 16619). The USAF also sent written updates about the public meeting cancellation to previously notified local, state, and federal agencies and tribes. Public meeting cancellation notifications were also published in the *Rapid City Journal* on March 28, 2020, the *Native Sun Times* on April 1, 2020, the *Original Briefs* on March 27, 2020, the *Indian Country Today* on March 26, 2020, the *Black Hills Pioneer* on March 28, 2020, and the *Abilene Reporter News* on March 29, 2020.

In lieu of the in-person scoping meetings, the USAF published all public scoping meeting materials on the project website: www.B21EIS.com on March 27, 2020, and extended the public commenting deadline to May 9, 2020. For those without access to the website, a request for a mailed hardcopy package of scoping materials could be submitted to Ellsworth AFB and Dyess AFB Public Affairs offices, as provided in all public notices. Scoping materials included an eight-page brochure, 11 large informational displays, 4 small informational displays, the scoping presentation, and a mail-in comment form. Scoping comments could be submitted via the public website or by mail. In addition to providing information on how to provide scoping comments, the scoping materials also provided interested persons with an overview of the following:

- The NEPA/EIS process
- The anticipated EIS timeline and pertinent timeframes for public input
- The environmental resources being studied in the EIS
- The background of the project
- The elements of the B-21 Main Operating Base 1 (MOB 1) beddown
- The purpose of and need for the Proposed Action
- The criteria used to select Dyess AFB and Ellsworth AFB

- The commonalities between the proposed alternatives
- The elements/scope of the proposed alternatives
- The No Action Alternative

A total of 22 individuals, organizations, and agencies submitted comments during the scoping period. The comments were submitted via the project website, e-mail or standard mail. To capture the public concerns regarding the B-21 MOB 1 EIS, the USAF reviewed each comment letter for content. Key issues were identified, summarized, and categorized by topic (Table A-1). Table A-1 lists the number of substantive comments received per EIS resource topic and is followed by summaries of scoping comments by those resource topics. Please note that only substantive comments are included in the summary. Substantive comments are those comments that help shape the EIS alternatives and analyses. Non-substantive comments, which include comments "voting" for or against an alternative, are not considered substantive. Since some commenters did not provide substantive comments and other commenters may have addressed more than one issue, the number of comments does not necessarily equal the number of comment letters received. Additionally, some individual issues may be categorized under multiple topics to ensure that comments were considered for all relevant topic areas.

Table A-1. Scoping Comments by Topic Area

Environmental Impact Statement (EIS) Topic	Number of Substantive Comments Received
National Environmental Policy Act Process and EIS Development	0
Purpose and Need	0
Description of Proposed Action and Alternatives	0
Air Quality	0
Airspace	0
Biological Resources	**1**
Cultural Resources	**2**
Physical Resources (Soils, Water)	**2**
Hazardous Materials and Solid Wastes	0
Health and Safety	0
Land Use	**1**
Noise	0
Transportation, Infrastructure and Utilities	0
Socioeconomics	0
Environmental Justice	0
Cumulative Impacts	0

A.4.1 Biological Resources

The Texas Parks and Wildlife Department wanted to ensure that the recent changes to the State Threatened and Endangered Species lists, which went into effect on March 30, 2020, were reviewed for Taylor County, Texas, for rare, threatened, and endangered species that could be present in the project area, depending upon habitat availability.

A.4.2 Cultural Resources

The Montana State Historic Preservation Office requested review of any National Historic Preservation Act Section 106 compliance documentation for the project, particularly with regard to any potential ground-disturbing activities in Montana and possible changes to the Powder River Training Complex area.

The Northern Cheyenne Tribal Historic Preservation Office requested that "cultural resource pedestrian survey work include consulting tribes to ensure that any potential sites of religious and cultural significance to tribes be properly identified, assessed, and evaluated. Inclusion of potential traditional cultural properties protection measures in the EIS for mitigation, avoidance and/or protection measures is of the utmost importance to our nation."

A.4.3 Physical Resources

The South Dakota Department of Environment and Natural Resources made the following comments:

- At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site. Any construction activity that disturbs an area of 1 or more acres of land must have authorization under the General Permit for Storm Water Discharges Associated with Construction Activities.
- A Surface Water Discharge permit may be required if any construction dewatering should occur as a result of this project. Please contact [their] office for more information.
- Impacts to tributaries, creeks, wetlands, and lakes should be avoided by this project. These waterbodies are considered waters of the state and are protected under Administrative Rules of South Dakota (ARSD) Chapter 74:51. Special construction measures may have to be taken to ensure that water quality standards are not violated.

Bowman-Slope Soil Conservation District requested that the following key Policy Statements from the recently completed Natural Resources Policy Plan (available online at www.bowmanslopescd.com) be consistent in the findings of the EIS:

- Require the inclusion of quantitative data that meets credible data criteria, even if the data were not produced by a federal agency.
- Support the use of credible scientific data. Credible scientific data is defined as rigorously reviewed, scientifically valid chemical, physical and/or biological monitoring data, collected in a timely manner under an accepted sampling and analysis plan; including quality control and assurance procedures and available historical data.
- Support managing for multiple uses on public lands to maintain and enhance desired plant communities that benefit watersheds, water quality, recreations, and

sustainable livestock grazing that are critical to the economic health of Bowman and Slope Counties.

- Support consistent, appropriate reclamation of all surface resource disturbances as soon as feasible after impacts have been created. "As feasible" means restoring at the time and season that seed establishment methods are most likely to succeed and are appropriate for the site.

A.4.4 Land Use

The National Park Service (NPS) requested that the EIS evaluate potential soundscape, visual, and visitor experience impacts for nearby units that could be impacted by the MOB 1 decision, including:

- In the vicinity of Ellsworth AFB: Minuteman Missile National Historic Site, Badlands National Park, Wind Cave National Park, Jewel Cave National Monument, and Mount Rushmore National Memorial in South Dakota; Theodore Roosevelt National Park in North Dakota; Little Bighorn Battlefield National Monument in Montana; Devil's Tower National Monument in Wyoming; and Bighorn Canyon National Recreational Area in Montana and Wyoming.
- In the vicinity of Dyess AFB: Waco Mammoth National Monument and Guadalupe Mountains National Park in Texas; Carlsbad Cavern National Park and Salinas Pueblo Missions National Monument in New Mexico.
- There are also several National Natural Landmarks (NNLs) and National Historic Landmarks (NHLs) which could be impacted. These sites are not owned or managed by the NPS but have national significance for their natural and cultural resource values. Impacts to resources at these sites should also be considered:
- In Montana, Deer Medicine Rocks, Wolf Mountains Battlefield-Where Big Crow Walked Back and Forth, and Rosebud Battlefield-Where the Girl Saved Her Brother NHLs and Capitol Rock NNL.
- In New Mexico, Torgac Cave NNL.

This page is intentionally blank.

APPENDIX B

NOISE ANALYSIS SUPPORTING INFORMATION

This page is intentionally blank.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
ANSI	American National Standards Institute
ASA	Acoustical Society of America
CDNL or L_{Cdn}	C-weighted Day-Night Average Sound Level
CHABA	Committee on Hearing, Bioacoustics, and Biomechanics
CSEL	C-weighted Sound Exposure Level, as measured in decibels
dB	decibels
dBA or dB(A)	A-weighted decibels
dBC	C-weighted decibels
DLR	German Aerospace Center
DNL	Day-Night Average Sound Level
DoD	Department of Defense
EIS	Environmental Impact Statement
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FICAN	Federal Interagency Committee on Aviation Noise
FICON	Federal Interagency Committee on Noise
FICUN	Federal Interagency Committee on Urban Noise
Hz	hertz
INM	Integrated Noise Model
kHz	kilohertz
L_{Cdn}	C-weighted day-night average sound level, as measured in decibels
L_{dn}	day-night average sound level, as measured in decibels
L_{dnmr} or DNL_{mr}	onset-rate adjusted monthly day-night average sound level
L_{eq}	equivalent sound level
L_{max}	maximum sound level
L_{pk}	peak sound level
MOA	Military Operating Area
NIPTS	Noise-Induced Permanent Threshold Shift
NLR	Noise Level Reduction
OSHA	Occupational Safety and Health Administration
PHL	potential hearing loss
PK_{15}(met)	Peak Noise Exceeded by 15 Percent of Firing Events
Psf	pounds per square foot
SEL	Sound Exposure Level
USACHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
USAF	U.S. Air Force
USEPA	U.S. Environmental Protection Agency

This page is intentionally blank.

B. NOISE ANALYSIS SUPPORTING INFORMATION

B.1 NOISE IMPACT ASSESSMENT METHODS

Noise impacts can be quantified based on objective effects (such as hearing loss or damage to structures) or subjective judgments (such as community annoyance). Thus, assessment of impacts requires a combination of physical measurement of noise as well as assessment of psycho-acoustic and socio-acoustic effects. Noise is defined subjectively as being any unwanted sound. The following sections discuss how noise is described, the potential effects that noise may have on its receivers, and the methods by which noise levels are predicted.

B.2 CHARACTERISTICS OF SOUND

Sounds can be generally characterized based on three physical characteristics: amplitude, frequency, and duration. Amplitude is a measure of the strength of the sound and is directly measured in terms of the pressure of a sound wave. Frequency, which is perceived as "pitch," is the number of times per second that sound causes air molecules to vibrate. Duration is simply how long the sound lasts. All three characteristics are critical to determining impacts of a particular sound source and are discussed in more detail below.

Amplitude. The loudest sounds that can be comfortably heard by humans have acoustic energy 1 trillion times the acoustic energy of the quietest sounds that humans detect. Because of this vast range in magnitude, attempts to represent sound amplitude by direct expression of sound pressure are unwieldy. In addition, human hearing is proportional rather than absolute (i.e., detecting whether one sound is twice as big as another rather than detecting whether one sound is a given number of pressure units bigger than another). Sound is, therefore, usually represented on a logarithmic scale, reflecting the way in which it is perceived, using a unit called the decibel (dB).

The threshold (level at which an effect starts) of human hearing is approximately 0 dB, and the threshold of discomfort is approximately 120 dB. 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 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.

Figure B-1 is a chart of A-weighted sound levels from typical sounds. Some sounds (air conditioner, vacuum cleaner) are continuous, and their levels are constant for some time. Other sounds (automobile, heavy truck) are the maximum sound during a vehicle pass-by. Some sounds (urban daytime, urban nighttime) are averages over some extended period.

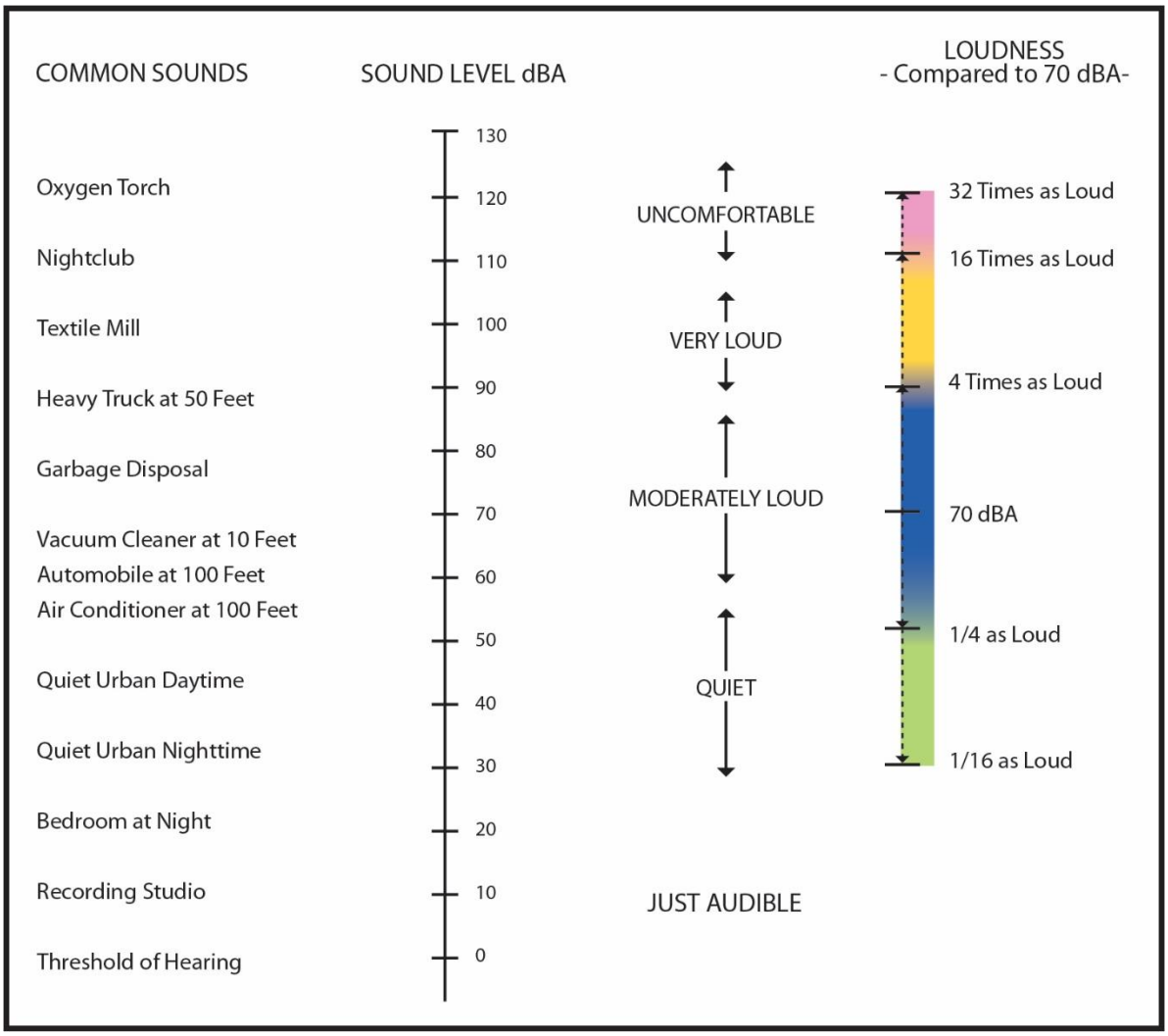


Figure B-1. Typical A-Weighted Sound Levels of Common Sounds

Because of the logarithmic nature of the decibel scale, sound 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 only increases by 3 dB, regardless of the initial sound level. 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.

Sound pressure of what is perceived as being continuous sound actually varies greatly over minute increments of 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 dial of a sound level meter) are based on averages of sound energy over either 1/8 second (fast) or 1 second (slow). This distinction becomes important when discussing sounds whose peak noise level lasts for only a short time, such as sonic booms.

***Frequency*.** The normal human ear can hear frequencies from about 20 hertz (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 (ANSI, 1988). Sound levels that have been so adjusted are referred to as A-weighted and may be denoted dBA or dB(A). However, because use of A-weighting to express sound level is so prevalent, it can normally be assumed that dB is equivalent to dBA or dB(A). In the Environmental Impact Statement (EIS), sound levels are reported in dB and are A-weighted unless otherwise specified.

A-weighting is appropriate for sounds that are perceived by the ear. Impulsive sounds, such as sonic booms, thunder, and other sudden "booming" sounds, are perceived by more than just the ear; listeners may *feel* this type of sound as well as hearing it. When experienced indoors, this type of sound may cause rattling of the structure and its contents. Because A-weighting would de-emphasize the intrusive low-frequency component of this type of sound, C-weighting (ANSI, 1988) is applied, which only de-emphasizes frequencies that are outside the range of human hearing (about 20 Hz to 20,000 Hz). In the EIS, and in accordance with standard methodologies, C-weighted sound levels are used for the assessment of sonic booms, blasts from high explosives, and other impulsive sounds. C-weighting is specifically denoted as dBC whenever it is used in the EIS.

Duration. Sound varies over time at almost all locations. Sound can be classified into four basic categories that define its basic time pattern:

- Ambient sound. Ambient sound is the ever-present collection of background sounds at any given place. Ambient sound can be strictly natural, such as frogs and cicadas in the deep woods; strictly mechanical, such as street noise in a busy city; or a combination of both, like sounds occurring in the suburbs. It is important to consider the existing ambient soundscape because what exists already has much to do with how annoying people will find a new sound. For example, the hum of a generator may be tolerated much better by those already living in an area with high mechanized ambient noise than those living in the far woods.
- Steady-state sound. Steady-state sound is of a consistent level and spectral content; examples are sounds originating from ventilation or mechanical systems that operate more or less continuously. From a military perspective, generators and aircraft run-up sounds are the most prominent steady-state sounds, and as a rule, the longer a steady-state sound persists, the more annoyed people will be.
- Transient sound. Transient sound has a clearly defined beginning and end, rising above the background and then fading back into it. Transient sounds are typically associated with "moving" sound sources such an aircraft overflight or a single vehicle driving by, and they usually last for only a few minutes at the most. The

annoyance caused by transient sounds is dependent upon both the maximum sound level and the duration.

B.3 NOISE METRICS

To communicate sound levels, the Department of Defense (DoD) uses three general types of noise-measuring descriptors, or metrics: (1) measuring the highest sound level occurring during a noise event, (2) combining the maximum level of that single event with its duration, and (3) describing the noise environment based on the total noise energy received over a specified length of time. The metrics used in the EIS are described below.

Maximum sound level. This metric, denoted as L_{max}, is the highest sound level measured (using time integration of either 1/8 second or 1 second) during a noise event. For a listener observing an aircraft overflight, the noise level starts at the ambient or background noise level, rises to the maximum level as the aircraft flies closest to the observer, and returns to the background level as the aircraft recedes into the distance. L_{max} decreases as altitude or distance from the observer increases and varies according to the type of aircraft, airspeed, and power setting.

Peak sound level. For impulsive sounds, the true instantaneous peak sound pressure level, which lasts for only a fraction of a second, is important in determining impacts. For sonic booms, this is the peak pressure of the shock wave. This pressure usually is presented in physical units of pounds per square foot (psf). Peak sound levels are not frequency weighted. Sometimes peak sound level is represented on the decibel scale, with the symbol L_{pk}. Because the amount of sound energy that reaches a receiver from a given noise event varies so much with specific atmospheric conditions, a special metric sometimes is used to account for this variability. The PK_{15}(met) metric represents the peak sound level that will not be exceeded 85 percent of the time with a given noise event. This metric is useful for expressing, in general terms, how loud an area will get while a particular weapon is firing.

Sound exposure level. The sound exposure level (SEL) metric is a single-number representation of a noise energy dose for an entire aircraft overflight. This measure takes into account the effect of both the duration and intensity of a noise event by summing the noise energy from each second in an event that typically lasts several seconds into a single second.

SEL is useful for comparing aircraft that move at different speeds. As an example, fighter aircraft tend to create a high L_{max}, but their noise level tends to drop off quickly as the plane moves away from the listener at high speed. On the other hand, cargo-type aircraft tend to be quieter but generally take more time to move past the listener and out of earshot. It is important to remember that SEL does not directly represent the sound level heard at any given time, but it provides a measure of the exposure of the entire acoustic event. SEL is useful for predicting several noise impacts, including sleep disturbance and animal escape response. SEL can be computed for C-weighted levels (appropriate for impulsive sounds) and the results denoted as CSEL. SEL for A-weighted sound is sometimes denoted as ASEL. In the EIS, SEL is used for A-weighted sounds and CSEL for C-weighted.

Onset-rate adjusted sound exposure level. When an aircraft is flying fast and low to the ground, listeners may experience a very quick rise in noise as it flies overhead. To account for the resulting "surprise effect," a penalty of up to 11 dB is applied to the SEL value for the overflight. SEL values with this "onset-rate adjustment" are denoted as SEL_r.

Equivalent sound level. To summarize noise levels over longer periods of time, total sound is represented by the equivalent sound 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, differing by (1) whether they are applied over a specific time period or over an event and (2) whether the duration of the event is included or divided out. 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. Cumulative noise metrics, such as L_{eq}, are useful because they represent a complicated set of noise events with a single number.

Day–night average sound level (DNL or L_{dn}). 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 10:00 PM and before 7:00 AM. DNL is similar to L_{eq} except DNL has a nighttime penalty added. DNL is the community noise metric recommended by the U.S. Environmental Protection Agency (USEPA) (USEPA, 1974) and has been adopted by most federal agencies (Federal Interagency Committee on Noise [FICON], 1992). It has been widely accepted that DNL correlates well with community response to noise (Schultz, 1978; Finegold et al., 1994). This correlation is presented in the section below (Noise Impacts on Humans). Furthermore, DNL has also been proven applicable to infrequent events (Fields and Powell, 1985) and to rural populations exposed to sporadic military aircraft noise (Stusnick et al., 1992, 1993).

It was noted earlier that, for impulsive sounds, C-weighting is more appropriate than A-weighting. The DNL can be computed for C-weighted noise and 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 [CHABA], 1981).

B.4 ANALYSIS METHODOLOGY

AFI 32-7070, *Air Force Noise Program*, provides the overall framework for computing noise levels associated with aircraft operations within Special Use Airspace and in the vicinity of military airfields (USAF, 2016a).

The primary effect of aircraft noise on exposed communities is one of annoyance, including activity interference, which includes speech interference and sleep disturbance. Noise annoyance is defined by the USEPA as any negative subjective reaction on the part of an individual or group (USEPA, 1974). The best available method for predicting community annoyance response to aircraft noise is the updated Schultz curve (sometimes called the "Air Force Curve") (Table B-1). The Schultz curve was validated by the Federal Interagency Committee on Noise (FICON) (1992) based on the additional data points collected by the U.S. Air Force (USAF), for use by federal agencies in aircraft

noise-related environmental impact analysis and by the American National Standards Institute (ANSI) as a standard regarding community responses to environmental noise (USAF, 2016a).

Table B-1. Relationship Between Annoyance and DNL

Noise Exposure (dB DNL)	Percent of Population Highly Annoyed
<65	<12.29
65–70	12.29–22.10
70–75	22.10–36.47
75–80	36.47–53.74

< = less than; dB = decibels; DNL = day-night average sound level

There are several commonly recognized average noise level thresholds that are based on expected community reaction.

B.4.1 Day-Night Average Sound Level (DNL)

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 unavoidably result in noise. Areas exposed to DNL above 65 dB generally are not considered suitable for residential use. The second is DNL of 55 dB, which was identified by the USEPA as a level "…requisite to protect public health and welfare with an adequate margin of safety," (USEPA, 1974). 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 that protects those most impacted by noise, and that often can be achieved on a practical basis (FICON, 1992). This corresponds to about 12 percent of the exposed population being highly annoyed. The third is DNL of 75 dB. This is the lowest level at which adverse health effects could be credible (USEPA, 1974).

All aircraft noise profiles associated with the Proposed Action are available in the NOISEFILE database and were used by NOISEMAP 7 to predict noise levels under the Proposed Action. Aircraft noise levels in the vicinity of runways were calculated and are presented using the DNL metric.

B.4.2 Potential Hearing Loss (PHL)

Noise impacts could include annoyance, activity interruption, hearing loss, and potentially nonauditory health effects. Potential hearing loss (PHL) as a noise impact is introduced in this EIS, and details describing PHL are included in this section.

There is very little potential for hearing loss at noise levels below 75 dB DNL (Committee on Hearing, Bioacoustics and Biomechanics [CHABA], 1977). However, there are situations where noise in and around airbases may exceed 75 dB DNL.

The first of these is a result of exposure to occupational noise by individuals working in known high noise exposure locations such as jet engine maintenance facilities or aircraft maintenance hangars. In this case, exposure of workers inside the base boundary area should be considered occupational, and is excluded from the DoD Noise Program by DoD

Instruction 4715.13. This noise exposure should be evaluated using the appropriate DoD component regulations for occupational noise exposure. The DoD, USAF, and the National Institute for Occupational Safety and Health all have established occupational noise exposure damage risk criteria (or "standard") for hearing loss so as to not exceed 85 dB as an 8-hour time weighted average, with a 3-dB exchange rate in a work environment. (The *exchange rate* is an increment of decibels that requires the halving of exposure time or a decrement of decibels that requires the doubling of exposure time. For example, a 3-dB exchange rate requires that noise exposure time be halved for each 3-dB increase in noise level. Therefore, an individual would achieve the limit for risk criteria at 88 dB for a period of four hours and at 91 dB for a period of two hours.) The standard assumes "quiet" (where an individual remains in an environment with noise levels less than 72 dB) for the balance of the 24-hour period. Also, USAF and Occupational Safety and Health Administration (OSHA) occupational standards prohibit any unprotected worker exposure to continuous (i.e., of a duration greater than one second) noise exceeding a 115-dB sound level. OSHA established this additional standard to reduce the risk of workers developing noise-induced hearing loss.

The second situation where individuals may be exposed to high noise levels is when noise contours resulting from flight operations in and around the installation reach or exceed 80 dB DNL both on- and off-base. To help determine the potential impacts of this situation, DoD published a policy for assessing hearing loss risk (DoD, 2009a). The policy defines the conditions under which assessments are required, references the methodology from a 1982 USEPA report and describes how the assessments are to be calculated; the policy states:

> Current and future high performance aircraft create a noise environment in which the current impact analysis based primarily on annoyance may be insufficient to capture the full range of impacts on humans. As part of the noise analysis in all future environmental impact statements, DoD components will use the 80 Day-Night A-Weighted (DNL) noise contour to identify populations at the most risk of potential hearing loss (PHL). DoD components will use as part of the analysis, as appropriate, a calculation of the PHL of the at risk population. The PHL (sometimes referred to as Population Hearing Loss) methodology is defined in [US]EPA Report No. 550/9-82-105, Guidelines for Noise Impact Analysis.

The USEPA *Guidelines for Noise Impact Analysis* (hereafter referred to as "USEPA Guidelines") specifically address the criteria and procedures for assessing noise-induced hearing loss in terms of the Noise-Induced Permanent Threshold Shift (NIPTS), a quantity that defines the permanent change in hearing level, or threshold, caused by exposure to noise (USEPA, 1982). Numerically, the NIPTS is the change in threshold averaged over the frequencies 0.5, 1, 2, and 4 kilohertz that can be expected from daily exposure to noise over a normal working lifetime of 40 years, with the exposure beginning at an age of 20 years. A grand average of the NIPTS over time (40 years) and hearing sensitivity (10 to 90 percentiles of the exposed population) is termed the *Average NIPTS*. The Average NIPTS attributable to noise exposure for ranges of noise levels in terms of DNL is given in Table B-2.

Table B-2. Average NIPTS and 10th Percentile NIPTS as a Function of DNL[1]

DNL (dB)	Average NIPTS (dB)[2]	10th Percentile NIPTS (dB)[2]
80–81	3.0	7.0
81–82	3.5	8.0
82–83	4.0	9.0
83–84	4.5	10.0
84–85	5.5	11.0
85–86	6.0	12.0
86–87	7.0	13.5
87–88	7.5	15.0
88–89	8.5	16.5
89–90	9.5	18.0

dB = decibels; DNL = day-night average sound level; NIPTS = Noise-Induced Permanent Threshold Shift

1. Relationships between DNL and NIPTS were derived from CHABA, 1977.
2. NIPTS values rounded to the nearest 0.5 dB.

For a noise exposure within the 80 to 81 dB DNL contour band, the expected lifetime average value of NIPTS (hearing loss) is 3.0 dB. The Average NIPTS is estimated as an average over all of the people included in the at-risk population. The actual value of NIPTS for any given person will depend on their physical sensitivity to noise; some will experience more loss of hearing than others. The USEPA Guidelines provide information on this variation in sensitivity in the form of the NIPTS exceeded by 10 percent of the population, which is included in Table B-2 in the "10th Percentile NIPTS" column. As in the example above, for individuals within the 80 to 81 dB DNL contour band, the most sensitive of the population would be expected to show no more degradation to their hearing than experiencing a 7.0 dB hearing loss. And while the DoD policy requires that hearing loss risk be estimated for the population exposed to 80 dB DNL or greater, this does not preclude populations outside the 80 dB DNL contour, i.e., at lower exposure levels, from being at some degree of risk of hearing loss.

The actual noise exposure for any person living in the at-risk area is determined by the time that person is outdoors and directly exposed to the noise. Many of the people living within the applicable DNL contour will not be present during the daytime hours; they may be at work, at school, or involved in other activities outside the at-risk area. Many will be inside their homes and thereby exposed to lower noise levels, benefiting from the noise attenuation provided by the house structure. The actual activity profile is usually impossible to generalize. For the purposes of this analysis, it was assumed that residents are fully exposed to the DNL level of noise appropriate for their residence location and the Average NIPTS taken from Table B-2.

The quantity to be reported is the number of people living within each 1-dB contour band between 80 to 90 dB DNL who are at risk for hearing loss given by the Average NIPTS for that band. The average nature of Average NIPTS means that it underestimates the magnitude of the PHL for the population most sensitive to noise. Therefore, the information to be reported includes both the Average NIPTS and the 10th percentile NIPTS (Table B-2) for each 1-dB contour band inside the 80 dB DNL contour.

According to the USEPA document titled Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety and Public Health and Welfare Criteria on Noise, changes in hearing level of less than 5 dB

are generally not considered noticeable or significant. There is no known evidence that a NIPTS of less than 5 dB is perceptible or has any practical significance for the individual. Furthermore, the variability in audiometric testing is generally assumed to be ±5 dB. The preponderance of available information on hearing loss risk is from the workplace with continuous exposure throughout the day for many years. Clearly, this data is applicable to the adult working population.

According to a report by Ludlow and Sixsmith, there were no significant differences in audiometric test results between military personnel, who as children, had lived in or near stations where jet operations were based, and a similar group who had no such exposure as children (Ludlow and Sixsmith, 1999). Hence, it is assumed that the limited data on hearing loss is applicable to the general population, including children, and provides a conservative estimate of hearing loss.

B.4.3 Structural Vibration Due to Noise

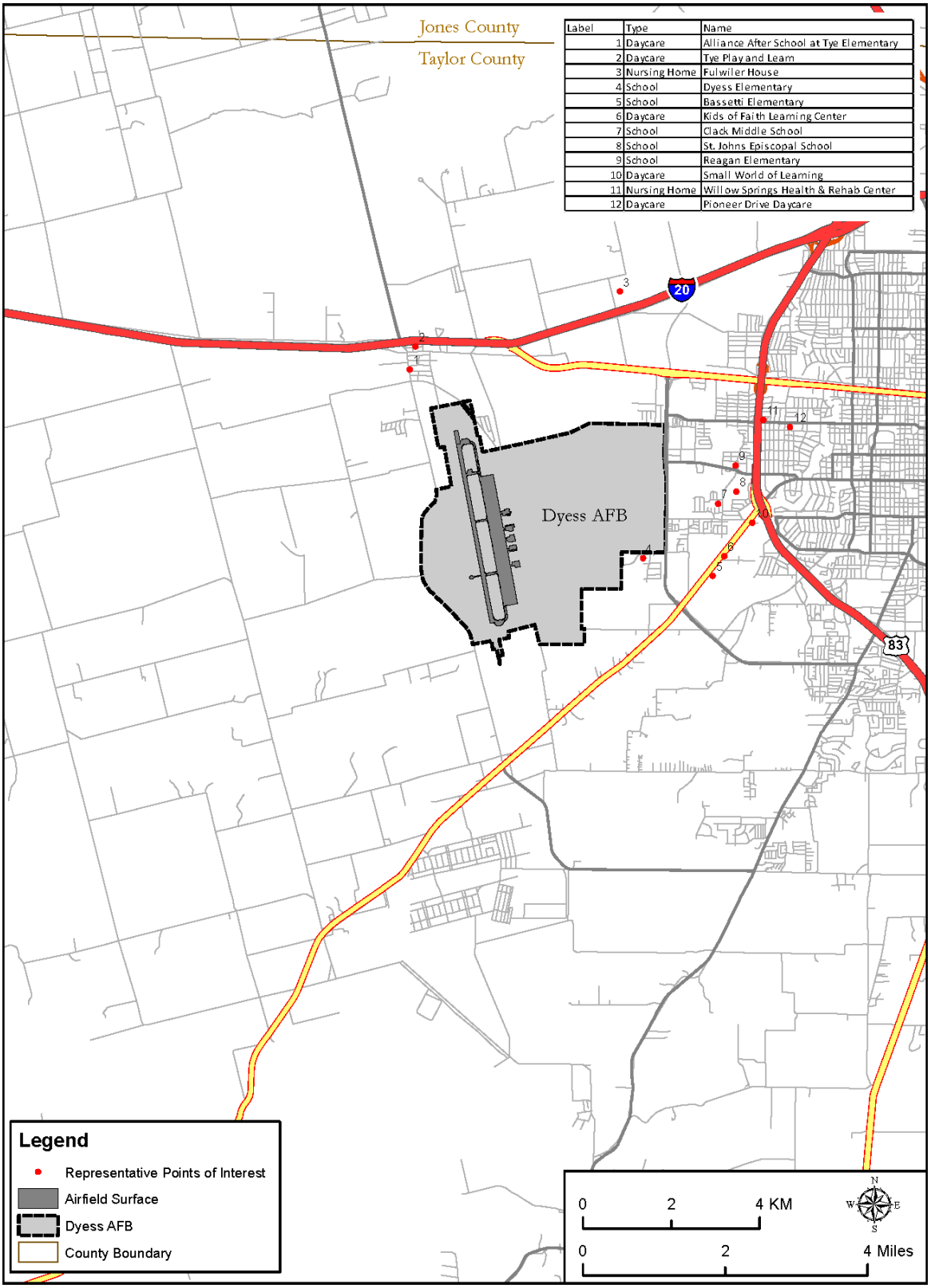
Aircraft overflights may have the potential to cause structural vibrations in homes and other facilities located near the Dyess AFB and Ellsworth AFB airfields. Noise-induced structural vibrations and secondary vibrations (i.e., rattling of objects within the structure) may occur at noise levels exceeding 110 dB. However, only sounds lasting more than one second above a sound level of 130 dB are potentially damaging to structural components (CHABA, 1977).

B.4.4 Sound Exposure Level (SEL) at Representative Noise-Sensitive Receptors

In order to give the public a better understanding of noise impacts in the community as a whole, representative points of interest, including schools, daycare, churches, and a prison were selected for special noise analysis. Figure B-2 and Figure B-3 show where each point is located for each respective base, and Table B-3 and Table B-4 provide the latitude and longitude for each location. At each noise-sensitive location, the NOISEMAP model was used to calculate the maximum SEL level, which is a single overflight metric, as well as the time averaged metric of DNL.

Table B-3. Locations of Representative Points of Interest Near Dyess AFB

Label	Type	Name	Latitude	Longitude
1	Daycare	Alliance After School at Tye Elementary	-99.87060	32.45404
2	Daycare	Tye Play and Learn	-99.86926	32.45875
3	Nursing Home	Fulwiler House	-99.82019	32.47029
4	School	Dyess Elementary	-99.81414	32.41594
5	School	Bassetti Elementary	-99.79734	32.41246
6	Daycare	Kids of Faith Learning Center	-99.79463	32.41650
7	School	Clack Middle School	-99.79615	32.42715
8	School	St. John's Episcopal School	-99.79184	32.42966
9	School	Reagan Elementary	-99.79206	32.43497
10	Daycare	Small World of Learning	-99.78794	32.42335
11	Nursing Home	Willow Springs Health & Rehab Center	-99.78544	32.44430
12	Daycare	Pioneer Drive Daycare	-99.77902	32.44292



Label	Type	Name
1	Daycare	Alliance After School at Tye Elementary
2	Daycare	Tye Play and Learn
3	Nursing Home	Fulwiler House
4	School	Dyess Elementary
5	School	Bassetti Elementary
6	Daycare	Kids of Faith Learning Center
7	School	Clack Middle School
8	School	St. Johns Episcopal School
9	School	Reagan Elementary
10	Daycare	Small World of Learning
11	Nursing Home	Willow Springs Health & Rehab Center
12	Daycare	Pioneer Drive Daycare

Figure B-2. Location of Representative Points of Interest Near Dyess AFB

Table B-4. Locations of Representative Points of Interest Near Ellsworth AFB

Label	Type	Name	Latitude	Longitude
1	Daycare	Ellsworth Schoolage Care Program	-103.07935	44.145968
2	Daycare	Child Development Services Program	-103.07548	44.143756
3	School	Douglas Middle School	-103.06211	44.13907
4	Daycare	Badger Clark Daycare	-103.06333	44.137542
5	School	Patriot Elementary	-103.06177	44.137486
6	Daycare	District Day Care	-103.06334	44.137164
7	Daycare	Francis Case Daycare	-103.06153	44.1372
8	School	Douglas High School	-103.0626	44.135497
9	Daycare	Vandenberg Daycare	-103.06557	44.134615
10	School	Vandenberg Elementary	-103.06688	44.135498
11	School	East Middle School	-103.13876	44.078331
12	Church	Emmanuel Baptist Church	-103.0696	44.12396
13	Resort	Watiki Indoor Waterpark Resort	-103.14865	44.09911

B.4.5 Equivalent Sound Level (L_{eq}) at Representative Local Schools

Good acoustical qualities are essential in classrooms in which speech communication is an important part of the learning process. Excessive background noise interferes with speech communication and thus presents an acoustical barrier to learning. The ANSI Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools provides “acoustical performance criteria, design requirements, and design guidelines for new school classrooms and other learning spaces” (ANSI, 2009). While this standard is not a requirement to be followed by school systems, it is applicable as a design guideline to new construction, as well as renovations of existing facilities, and is recommended to achieve a high degree of speech intelligibility in learning spaces. Because this ANSI standard was not finalized until 2009, it should not be expected that all schools constructed or renovated before that date would necessarily meet the recommended criteria.

The ANSI standard identifies an appropriate set of criteria for maximizing speech intelligibility in schools as an indoor equivalent sound level (L_{eq}) of 40 dBA (for intermittent noise from transportation sources such as aircraft operations). To compare the outdoor noise levels to indoor recommended values, outdoor noise levels are adjusted to account for the noise level reduction provided by the structure. 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. It is assumed that each of the schools within the ROI maintains a “windows closed” condition and provides approximately 25 dB of noise level reduction.

For those points that are schools, the minimum and maximum indoor 8-hour L_{eq} was calculated to represent the level of noise disturbance that could be experienced during a typical school day due to aircraft overflights.

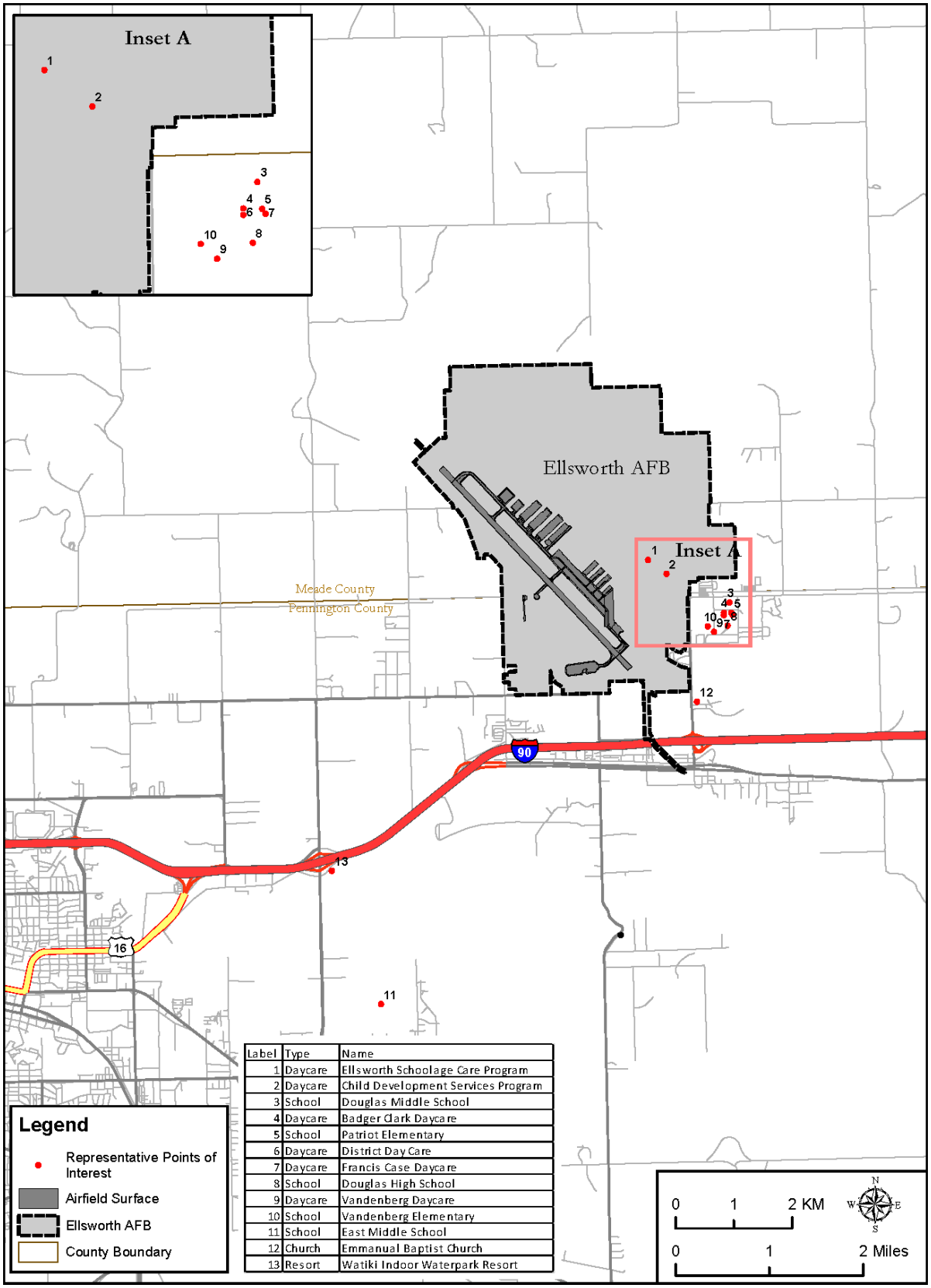


Figure B-3. Location of Representative Points of Interest Near Ellsworth AFB

B.4.6 Number of Noise Events Analysis

Speech interference associated with aircraft noise is a primary cause of annoyance for many communities. The disruption of routine indoor activities such as watching television or listening to the radio, using the telephone or conversing gives rise to frustration and irritation. Several research studies since 1984 have concluded that if an aircraft noise event's loudest noise level (i.e., its L_{max}) reached no higher than 50 dB, then 90 percent of speech typically would be understood. If the L_{max} exceeds 50 dB indoors, then activity/speech disruption could occur to some degree.

The analysis of the number of events above an indoor L_{max} of 50 dB assumed that the average home built to modern building codes, in a "windows-closed" environment, provides 25 dB of attenuation from outdoor noise sources (noise level reduction). The total number of aircraft noise events that exceed the threshold L_{max} level of 50 dB inside a structure was determined for an average operating day (24-hour period). In this way, the result answers the question of how many aircraft might fly over a given location that may potentially result in some level of interruption of activities such as conversing or listening to television.

B.5 NOISE IMPACTS ON HUMANS

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).

Studies of community annoyance resulting from numerous types of environmental noise show that DNL correlates well with impact. Schultz (1978) showed a consistent relationship between DNL and percentage of the impacted population that was "highly annoyed" (9 or 10 on a scale of 1 to 10, with 10 being the most annoyed). A more recent study reaffirmed and updated this relationship (Finegold et al., 1994) (Table B-5). 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, as a whole, communities' level of annoyance to aircraft noise is represented fairly reliably using DNL.

Table B-5. Relationship Between Annoyance and DNL

Noise Exposure (DNL)	Percent of Population Highly Annoyed
< 65	< 12
65–70	12–21
70–75	22–36
75–80	37–53
80–85	54–70
> 85	> 71

Source: Finegold et al., 1994

It is important to note that DNL does not represent the sound level heard at any particular time but a cumulative 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 and is recognized as the standard methodology by most federal agencies (ANSI, 1980, 1988; USEPA, 1974; Federal Interagency Committee on Urban Noise [FICUN], 1980; FICON, 1992).

There are several commonly recognized average noise level thresholds that are based on expected community reaction. The first is 65 dB DNL. 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 unavoidably result in noise. Areas exposed to noise levels above 65 dB DNL generally are not considered suitable for residential use. The second threshold is 55 dB DNL, which was identified by the USEPA as a level ". . . requisite to protect public health and welfare with an adequate margin of safety" (USEPA, 1974). 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 65 dB DNL as a criterion that protects those most impacted by noise and that often can be achieved on a practical basis (FICON, 1992). This corresponds to about 12 percent of the exposed population being highly annoyed. The third threshold is 75 dB DNL. This is the lowest level at which adverse health effects could be credible (USEPA, 1974).

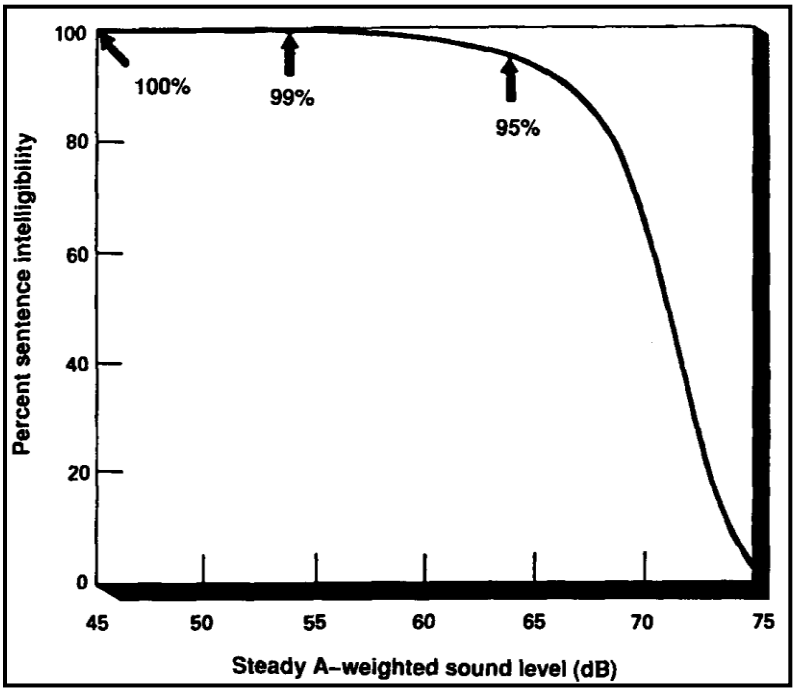
Speech interference. Speech interference associated with aircraft noise is a primary cause of annoyance for communities. The disruption of routine activities such as radio or television listening, telephone use, or family conversation gives rise to frustration and irritation. The quality of speech communication is particularly important in classrooms and offices. In industrial settings, it can cause fatigue and vocal strain in those who attempt to communicate over the noise.

The disruption of speech in the classroom is a primary concern, due to the potential for adverse effects on children's learning ability. There are two aspects to speech comprehension:

- *Word intelligibility* – the percentage of words transmitted and received. This might be important for students in the lower grades who are learning the English language, particularly students for whom English is a second language.
- S*entence intelligibility* – the percent of sentences transmitted and understood. This might be important for high school students and adults who are familiar with the language and do not necessarily have to understand each word in order to understand sentences.

Federal criteria for interior noise. In 1974, the USEPA identified a goal of an indoor 24-hour average sound level $L_{eq(24)}$ of 45 dB to minimize speech interference based on the intelligibility of sentences in the presence of a steady background noise (USEPA, 1974). Intelligibility pertains to the percentage of speech units correctly understood out of those transmitted, and specifies the type of speech material used, i.e. sentences or words. The curve displayed in Figure B-4 shows the effect of steady indoor background sound levels on sentence intelligibility. For an average adult with normal hearing and

fluency in the language, steady background sound levels indoors of less than 45 dB L_{eq} are expected to allow 100 percent intelligibility of sentences.



Source: USEPA, 1974

Figure B-4. Speech Intelligibility Curve

The curve shows 99 percent sentence intelligibility for background levels at a L_{eq} of 54 dB, and less than 10 percent intelligibility for background levels above a L_{eq} of 73 dB. Note that the curve is especially sensitive to changes in sound level between 65 dB and 75 dB—an increase of 1 dB in background sound level from 70 dB to 71 dB results in a 14 percent decrease in sentence intelligibility, whereas a 1-dB increase in background sound level from 60 dB to 61 dB results in less than 1 percent decrease in sentence intelligibility.

Sleep interference. The disturbance of sleep is a major concern for communities exposed to nighttime aircraft noise. There have been numerous research studies that have attempted to quantify the complex effects of noise on sleep. This section provides an overview of the major noise-induced sleep disturbance studies that have been conducted, with particular emphasis placed on those studies that have influenced U.S. federal noise policy. The studies have been separated into two groups:

- Initial studies performed in the 1960s and 1970s, where the research was focused on laboratory sleep observations.
- Later studies performed in the 1990s up to the present, where the research was focused on field observations, and correlations to laboratory research were sought.

Initial studies. The relationship between noise levels and sleep disturbance is complex and not fully understood. The disturbance depends not only on the depth of sleep but also on the previous exposure to aircraft noise, familiarity with the surroundings, the physiological and psychological condition of the recipient, and a host of other situational

factors. The most readily measurable effect of noise on sleep is the number of arousals or awakenings, and so the body of scientific literature has focused on predicting the percentage of the population that will be awakened at various noise levels. Fundamentally, regardless of the tools used to measure the degree of sleep disturbance (awakenings, arousals, etc.), these studies have grouped the data points into bins to predict the percentage of the population likely to be disturbed at various sound level thresholds.

FICON produced a guidance document that provided an overview of the most pertinent sleep disturbance research conducted throughout the 1970s (FICON, 1992). Literature reviews and meta-analysis conducted between 1978 and 1989 made use of the existing datasets that indicated the effects of nighttime noise on various sleep-state changes and awakenings (Lukas, 1978; Griefahn, 1978; Pearsons et al., 1989). FICON noted that various indoor A-weighted sound levels—ranging from 25 to 50 dB—were observed to be thresholds below which significant sleep effects were not expected. Due to the large variability in the data, FICON did not endorse the reliability of the results.

However, FICON did recommend the use of an interim dose-response curve—awaiting future research—that predicted the percent of the exposed population expected to be awakened as a function of the exposure to single event noise levels expressed in terms of SEL. This curve was based on the research conducted for the USAF (Finegold, 1994). The dataset included most of the research performed up to that point and predicted that 10 percent of the population would be awakened when exposed to an interior SEL of approximately 58 dB. The data utilized to derive this relationship were primarily the results of controlled laboratory studies.

Recent sleep disturbance research, field and laboratory studies. It was noted in the early sleep disturbance research that the controlled laboratory studies did not account for many factors that are important to sleep behavior, such as habituation to the environment and previous exposure to noise and awakenings from sources other than aircraft noise. In the early 1990s, field studies were conducted to validate the earlier laboratory work. The most significant finding from these studies was that an estimated 80 to 90 percent of sleep disturbances were not related to individual outdoor noise events but the result of indoor noise sources and other non–noise-related factors. The results showed that there was less of an effect of noise on sleep in real-life conditions than had been previously reported from laboratory studies.

Federal Interagency Committee on Aviation Noise (FICAN). The interim FICON dose-response curve that was recommended for use in 1992 was based on the most pertinent sleep disturbance research conducted through the 1970s, primarily in laboratory settings. After that time, considerable field research was conducted to evaluate the sleep effects in a normal home environment. Laboratory sleep studies tend to show higher values of sleep disturbance than field studies because people who sleep in their own homes are habituated to their environment and, therefore, do not wake up as easily (FICAN, 1997).

Based on the new information, FICAN updated its recommended dose-response curve in 1997, depicted as the lower curve in Figure B-5. This figure is based on the results of

three field studies (Ollerhead, 1992; Fidell et al., 1994; Fidell et al., 1995a; Fidell et al., 1995b), along with the datasets from six previous field studies.

The new relationship represents the higher end, or upper envelope, of the latest field data. It should be interpreted as predicting the "maximum percent of the exposed population expected to be behaviorally awakened" or the "maximum percent awakened" for a given residential population. According to this relationship, a maximum of 3 percent of people would be awakened at an indoor SEL of 58 dB, compared to 10 percent using the 1992 curve. An indoor SEL of 58 dB is equivalent to outdoor SELs of 73 and 83 dB, respectively, assuming 15 and 25 dB noise level reductions from outdoor to indoor with windows open and closed, respectively.

Note the relatively low percentage of awakenings to fairly high noise levels. People think they are awakened by a noise event, but usually the reason for awakening is otherwise. For example, the 1992 U.K. Civil Aviation Authority study found the average person was awakened about 18 times per night for reasons other than exposure to an aircraft noise—some of these awakenings are due to the biological rhythms of sleep and some to other reasons that were not correlated with specific aircraft events.

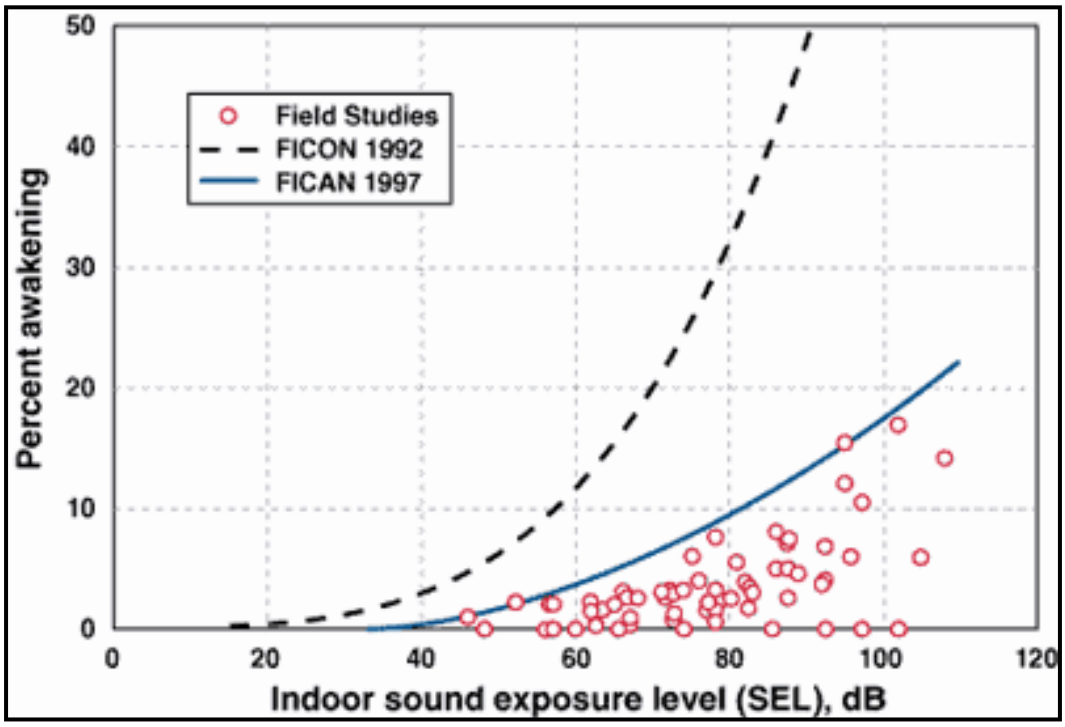


Figure B-5. FICAN's 1997 Recommended Sleep Disturbance Dose-Response Relationship

The FICAN 1997 curve is represented by the following equation:

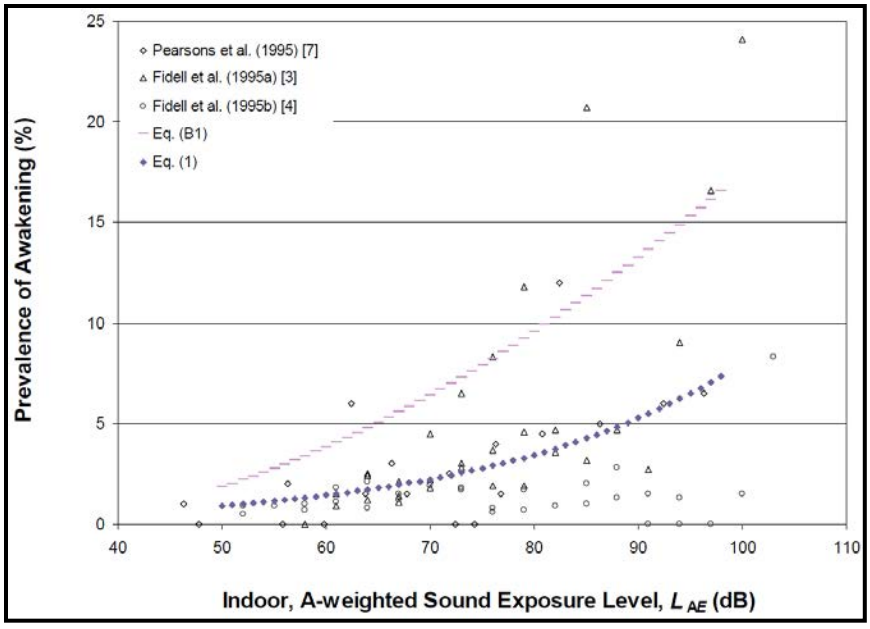
$$\text{Percent Awakenings} = 0.0087 \times [\text{SEL} - 30]^{1.79}$$

Number of events and awakenings. In recent years, there have been studies and one proposal that attempted to determine the effect of multiple aircraft events on the number of awakenings. The German Aerospace Center (DLR) conducted an extensive study

focused on the effects of nighttime aircraft noise on sleep and other related human performance factors (Basner, 2004). The DLR study was one of the largest studies to examine the link between aircraft noise and sleep disturbance and involved both laboratory and in-home field research phases. The DLR investigators developed a dose-effect curve that predicts the number of aircraft events at various values of L_{max} expected to produce one additional awakening over the course of a night. The dose-effect curve was based on the relationships found in the field studies.

In July 2008, ANSI and the Acoustical Society of America (ASA) published a method to estimate the percentage of the exposed population that might be awakened by multiple aircraft noise events based on statistical assumptions about the probability of awakening (or not awakening) (ANSI, 2008). This method relies on probability theory rather than direct field research/experimental data to account for multiple events.

Figure B-6 depicts the awakenings data that form the basis and equations of ANSI S12.9-2008. The curve labeled "Eq. (B1)" is the relationship between noise and awakening endorsed by FICAN in 1997. The ANSI recommended curve labeled "Eq. (1)" quantifies the probability of awakening for a population of sleepers exposed to an outdoor noise event as a function of the associated indoor SEL in the bedroom. This curve was derived from studies of behavioral awakenings associated with noise events in "steady-state" situations where the population has been exposed to the noise long enough to be habituated. The data points in Figure B-6 come from these studies. Unlike the FICAN curve, the ANSI 2008 curve represents the average of the field research data points.



Source: ANSI, 2008

Figure B-6. Plot of Sleep Awakening Data Versus Indoor SEL

In December 2008, FICAN recommended the use of this new estimation procedure for future analyses of behavioral awakenings from aircraft noise (Figure B-7 and Figure B-8). In that statement, FICAN also recognized that additional sleep disturbance research is underway by various research organizations, and results of that work may result in

additional changes to FICAN's position. Until that time, FICAN recommends the use of ANSI S12.9-2008.

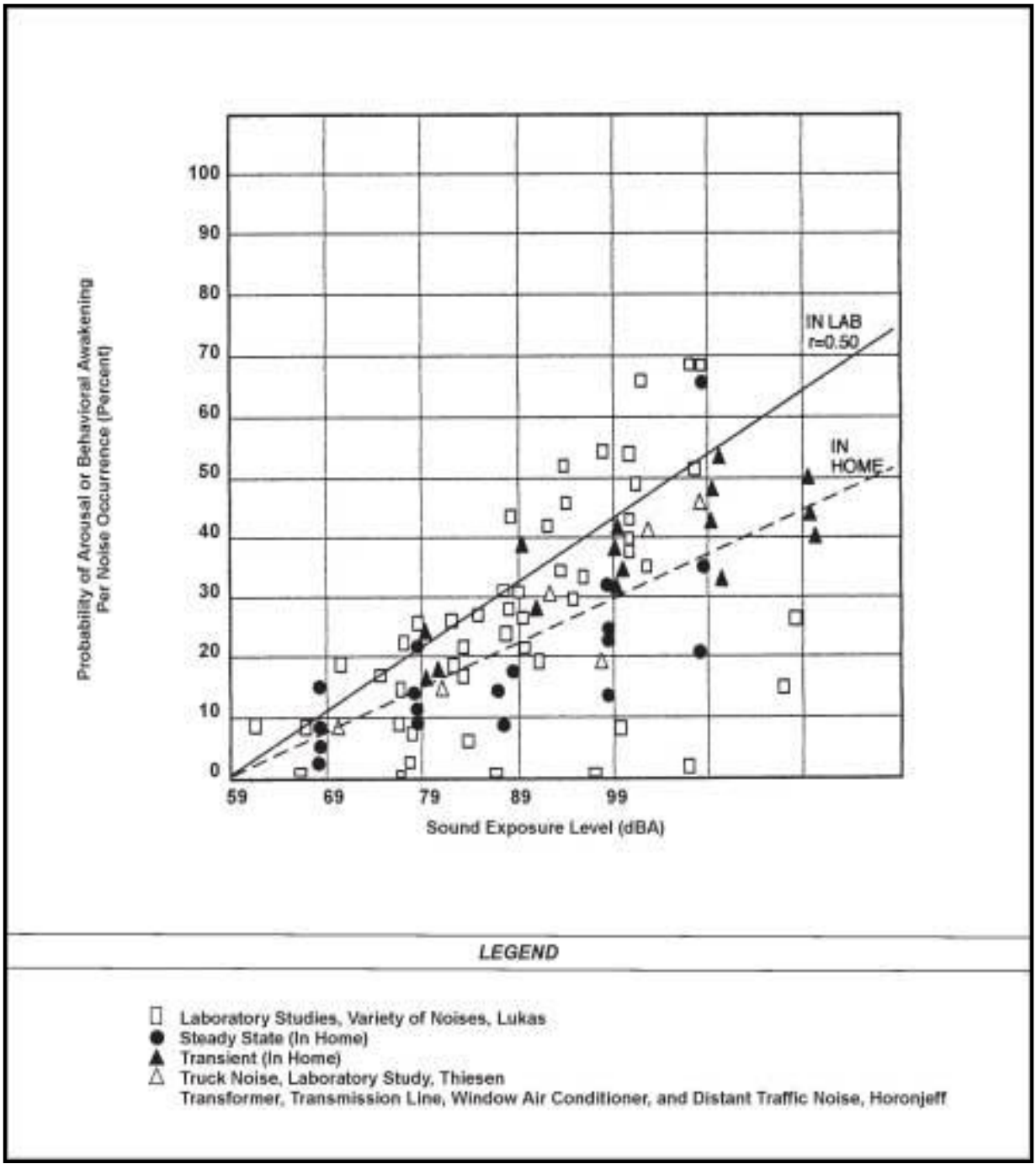


Figure B-7. Probability of Arousal or Behavioral Awakening in Terms of Sound Exposure Level

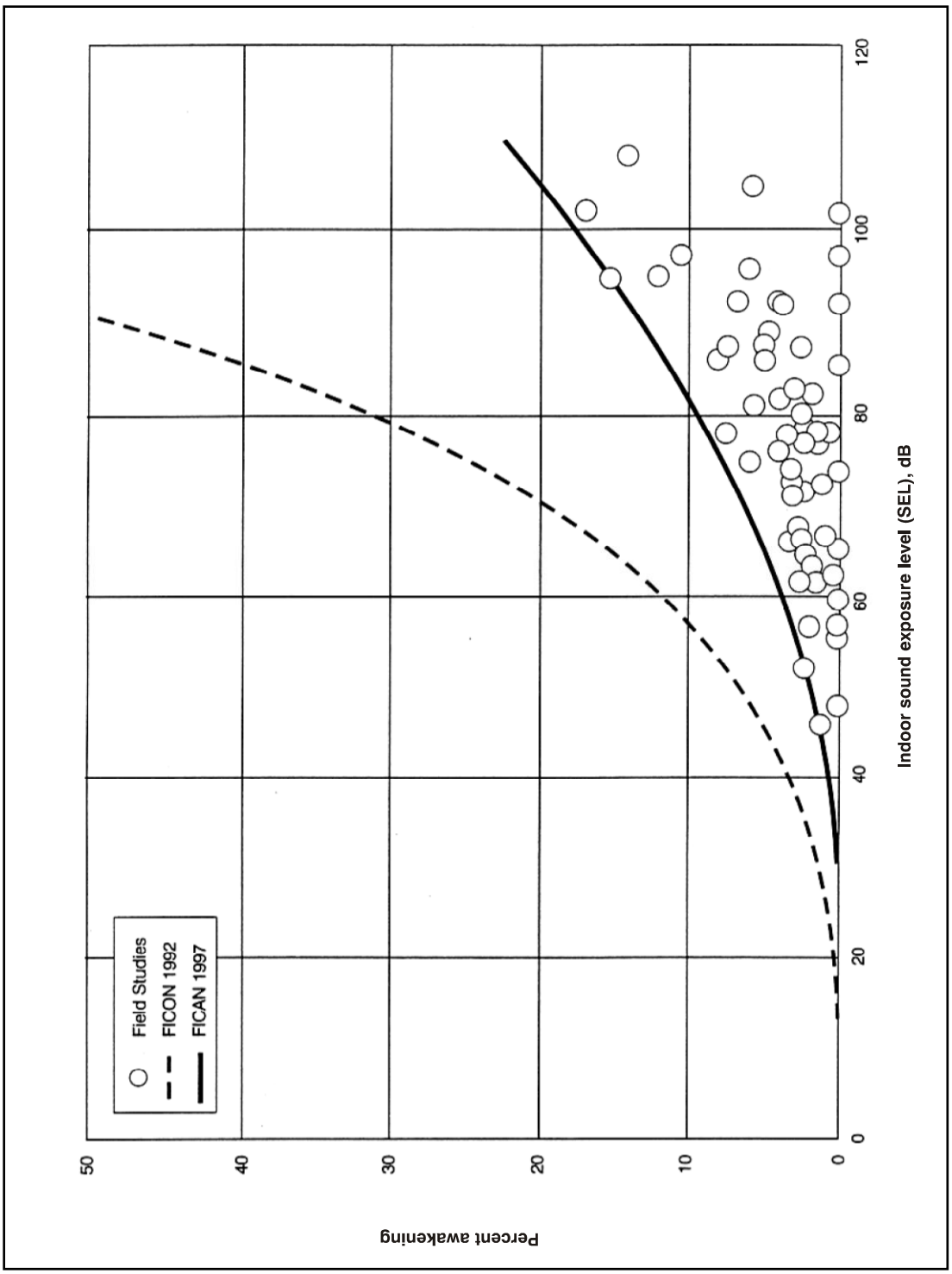


Figure B-8. Recommended Sleep Disturbance Dose-Response Relationship

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.

In June 1980, the ad hoc FICUN published guidelines (FICUN, 1980) relating DNL to compatible land uses. This committee was composed of representatives from the DoD, Department of Transportation, Department of Housing and Urban Development, USEPA, and the Veterans Administration. Since issuance of the FICUN guidelines, federal agencies have generally adopted the guidelines for their noise analyses. These guidelines are reprinted in Table B-6. The designations contained in the 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. The Federal Aviation Administration (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.

It is important to note that the guidelines presented in Table B-6 are recommendations, and compliance with them is not mandatory.

Table B-6. Land Use Compatibility with Yearly Day-Night Average Sound Levels

Land Use	Yearly Day-Night Average Sound Level in Decibels					
	Below 65	65–70	70–75	75–80	80–85	Over 85
Residential use						
Residential, other than mobile 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, auditoriums, and concert halls	Y	25	30	N	N	N
Government services	Y	Y	25	30	N	N
Transportation	Y	Y	Y[2]	N[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

Continued on the next page…

Table B-6. Land Use Compatibility with Yearly Day-Night Average Sound Levels

Land Use	Yearly Day-Night Average Sound Level in Decibels					
	Below 65	65–70	70–75	75–80	80–85	Over 85
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]	Y5[6]	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

Data for this table were taken from the Standard Land Use Coding Manual.
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 dB = 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.
(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.

Hearing loss. There is very little potential for hearing loss at noise levels below 75 dB DNL (CHABA, 1977). However, there are situations where noise in and around airbases may exceed 75 dB DNL.

The first of these is a result of exposure to occupational noise by individuals working in known high noise exposure locations such as jet engine maintenance facilities or aircraft maintenance hangers. In this case, exposure of workers inside the base boundary area should be considered occupational, which is excluded from the DoD Noise Program by DoD Instruction 4715.13, and should be evaluated using the appropriate DoD component regulations for occupational noise exposure. The DoD, USAF, and the National Institute of Occupational Safety and Health (NIOSH) have all established occupational noise exposure damage risk criteria (or "standard") for hearing loss so as to not exceed 85 dB as an 8-hour time weighted average, with a 3-dB exchange rate in a work environment. (The exchange rate is an increment of decibels that requires the halving of exposure time

or a decrement of decibels that requires the doubling of exposure time. For example, a 3-dB exchange rate requires that noise exposure time be halved for each 3-dB increase in noise level. Therefore, an individual would achieve the limit for risk criteria at 88 dB for a time period of four hours, and at 91 dB for a time period of two hours.) The standard assumes "quiet" (where an individual remains in an environment with noise levels less than 72 dB) for the balance of the 24-hour period. Also, USAF and OSHA occupational standards prohibit any unprotected worker exposure to continuous (i.e., of a duration greater than one second) noise exceeding a 115-dB sound level. OSHA established this additional standard to reduce the risk of workers developing noise-induced hearing loss.

The second situation where individuals may be exposed to high noise levels is when noise contours resulting from flight operations in and around the installation reach or exceed 80 dB DNL both on and off base. To assess the potential impacts of this situation, the DoD published a policy for assessing hearing loss risk (DoD, 2009). The policy defines the conditions under which assessments are required, references the methodology from a 1982 USEPA report, and describes how the assessments are to be calculated. The policy reads as follows:

Current and future high performance aircraft create a noise environment in which the current impact analysis based primarily on annoyance may be insufficient to capture the full range of impacts on humans. As part of the noise analysis in all future environmental impact statements, DoD components will use the 80 Day-Night A-Weighted (DNL) noise contour to identify populations at the most risk of potential hearing loss. DoD components will use as part of the analysis, as appropriate, a calculation of the PHL of the at risk population. The PHL (sometimes referred to as Population Hearing Loss) methodology is defined in USEPA Report No. 550/9-82-105, *Guidelines for Noise Impact Analysis*.

The USEPA *Guidelines for Noise Impact Analysis* (hereafter referred to as "USEPA Guidelines") specifically addresses the criteria and procedures for assessing the noise-induced hearing loss in terms of the noise-induced NIPTS, a quantity that defines the permanent change in hearing level, or threshold, caused by exposure to noise (USEPA, 1982). Numerically, the NIPTS is the change in threshold averaged over the frequencies 0.5, 1, 2, and 4 kilohertz (kHz) that can be expected from daily exposure to noise over a normal working lifetime of 40 years, with the exposure beginning at an age of 20 years. A grand average of the NIPTS over time (40 years) and hearing sensitivity (10 to 90 percentiles of the exposed population) is termed the average NIPTS. The average NIPTS attributable to noise exposure for ranges of noise level in terms of DNL is given in Table B-7.

Thus, for a noise exposure within the 80- to 81-dB DNL contour band, the expected lifetime average value of NIPTS (hearing loss) is 3.0 dB. The average NIPTS is estimated as an average over all people included in the at risk population. The actual value of NIPTS for any given person will depend on their physical sensitivity to noise—some will experience more loss of hearing than others. The USEPA Guidelines provide information on this variation in sensitivity in the form of the NIPTS exceeded by 10 percent of the population, which is included in Table B-7 in the "10th Percentile NIPTS" column. As in the example above, for individuals within the 80- to 81-dB DNL contour band, the most sensitive of the population, would be expected to show no more degradation to their

hearing than a 7.0-dB average NIPTS hearing loss. Furthermore, while the DoD policy requires that hearing loss risk be estimated for the population exposed to 80 dB DNL or greater, this does not preclude populations outside the 80-dB DNL contour, i.e., at lower exposure levels, from being at some degree of risk of hearing loss.

Table B-7. Average NIPTS and 10th Percentile NIPTS as a Function of DNL[1]

DNL	Average NIPTS (dB)[2]	10th Percentile NIPTS (dB)[2]
80–81	3.0	7.0
81–82	3.5	8.0
82–83	4.0	9.0
83–84	4.5	10.0
84–85	5.5	11.0
85–86	6.0	12.0
86–87	7.0	13.5
87–88	7.5	15.0
88–89	8.5	16.5
89–90	9.5	18.0

dB = decibels; DNL = Day–Night Average Sound Level; NIPTS = Noise-Induced Permanent Threshold Shift

1. Relationships between DNL and NIPTS were derived from CHABA, 1977.
2. NIPTS values rounded to the nearest 0.5 dB.

The actual noise exposure for any person living in the at-risk area is determined by the time that person is outdoors and directly exposed to the noise. Many of the people living within the applicable DNL contour will not be present during the daytime hours—they may be at work, at school, or involved in other activities outside the at-risk area. Many will be inside their homes and thereby exposed to lower noise levels, benefitting from the noise attenuation provided by the house structure. The actual activity profile is usually impossible to generalize. For the purposes of this analysis, it was assumed that residents are fully exposed to the DNL level of noise appropriate for their residence location and the average NIPTS taken from Table B-7.

The quantity to be reported is the number of people living within each 1-dB contour band inside the 80-dB DNL contour who are at risk for hearing loss given by the average NIPTS for that band. The average nature of average NIPTS means that it underestimates the magnitude of the PHL for the population most sensitive to noise. Therefore, in the interest of disclosure, the information to be reported includes both the average NIPTS and the 10th percentile NIPTS (Table B-7) for each 1-dB contour band inside the 80-dB DNL contour.

According to the USEPA documents titled Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, and Public Health and Welfare Criteria for Noise, changes in hearing levels of less than 5 dB are generally not considered noticeable or significant. There is no known evidence that an NIPTS of less than 5 dB is perceptible or has any practical significance for the individual. Furthermore, the variability in audiometric testing is generally assumed to be ±5 dB. The preponderance of available information on hearing loss risk is from the workplace with continuous exposure throughout the day for many years. Clearly, these data are applicable to the adult working population. According to a report by Ludlow and

Sixsmith, there were no significant differences in audiometric test results between military personnel who as children had lived in or near stations where jet operations were based and a similar group who had no such exposure as children (Ludlow and Sixsmith, 1999). Hence, for the purposes of PHL analysis, it can be assumed that the limited data on hearing loss are applicable to the general population, including children, and provide a conservative estimate of hearing loss.

Effects on children. The effect of aircraft noise on children is controversial. Certain studies indicate that, in certain situations, children are potentially more sensitive to noise compared to adults. For example, adults average roughly 10 percent better than young children on speech intelligibility tests in high-noise environments (ASA, 2000). Some studies indicate that noise negatively impacts classroom learning (Shield and Dockrell, 2008).

In response to noise-specific and other environmental studies, Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (1997), requires federal agencies to ensure that their policies, programs, and activities address environmental health and safety risks and identify any disproportionate risks to children. While the issue of noise impacts on children's learning is not fully settled, in June 2002, ANSI released a new classroom acoustics standard entitled "Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools" (ANSI S12.60-2002). At present, complying with the standard is voluntary in most locations. Essentially, the criteria state that when the noisiest hour is dominated by noise from such sources as aircraft, the limits for most classrooms are an hourly average A-weighted sound level of 40 dB, and the A-weighted sound level must not exceed 40 dB for more than 10 percent of the hour. For schools located near airfields, indoor noise levels would have to be lowered by 35 to 45 dBA relative to outdoor levels (ANSI, 2002).

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 (as 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 under workplace conditions. 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., stated the following: "The non-auditory 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)." At the 1988 International Congress 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 to protect 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 (von Gierke, 1990).

Although these findings were directed specifically at noise effects in the workplace, 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 that purport to find such health effects use time–average noise levels of 75 dB and higher for their research.

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 correlation to cardiovascular disease (Schwartze and Thompson, 1993). Since the F-35 would fly predominantly at high altitudes, even less concern exists for such health effects. Additional unsupported claims include flyover noise that produces increased mortality rates, adverse effects on the learning ability of middle- and low-aptitude students, aggravation of post-traumatic stress syndrome, increased stress, increase in admissions to mental hospitals, and adverse effects on pregnant women and the unborn fetus (Harris, 1997). Harris's comments are based on a report by The Health Council of The Netherlands (1996). That study discusses two epidemiological studies that looked at the hearing abilities of children whose mothers had been exposed to occupational noise during pregnancy. The results were conditionally qualified by the committee concluding "…that equivalent sounds levels of 85 dB(A) or higher during an 8-hour working day appear to be detrimental to the hearing of the unborn child," but then they also recommended that further research be undertaken to verify that conclusion.

In summary, there is no scientific basis for a claim that potential health effects exist for aircraft time–average sound levels below 75 dB.

Aircraft noise effects on structures. 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 (CHABA, 1977).

One study, directed specifically at low-altitude, high-speed aircraft, showed that there is little probability of structural damage from such operations (Sutherland, 1989). Sound levels at damaging frequencies (e.g., 30 Hz for window breakage or 15 to 25 Hz for whole-house response) produced by most military aircraft 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 (such as hanging pictures, dishes, plaques, and bric-a-brac) within the dwelling. Windowpanes 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 compatible with residential land use. Thus, assessments of noise

exposure levels for compatible land use should also be protective of noise-induced secondary vibrations.

B.6 NOISE IMPACTS MODELING

B.6.1 Aircraft Noise

Subsonic Aircraft Noise. An aircraft in subsonic flight emits noise from two sources: the engines and flow noise around the airframe. To estimate noise impacts on the ground, the DoD first measures noise from each aircraft in several flight configurations in straight and level flight at a reference altitude above an array of microphones. These measurements are stored in the NOISEFILE database. Next, this information on aircraft source noise is applied to a computer model to show how aircraft noise can be expected to propagate in real-world conditions. The algorithms at the core of these models account for spherical spreading, atmospheric absorption, and lateral attenuation. Spherical spreading is, in essence, the reduction in noise due to the spreading of sound energy away from its source. Sound energy decreases by approximately 6 dB every time the distance between the source and receiver is doubled. Daily and hourly variations in atmospheric conditions (such as humidity and clouds) can alter the amount of sound energy at a given location. The noise models use monthly average temperature and humidity conditions to derive acoustically average atmospheric absorption coefficients for each given location. Lateral attenuation, or the loss of sound energy due to reflection of sound by the ground, depends upon the altitude of the aircraft and the distance to the receiver.

The USAF has developed a series of computer models to handle modeling of aircraft noise in various situations. The USAF adopted the NOISEMAP computer program to describe noise impacts created by aircraft operations (U.S. Air Force Handbook 32-7084, 1999). NOISEMAP is one of two USEPA-approved programs; the other is the Integrated Noise Model (INM), which is used by the FAA for civilian airports. To describe airfield noise in the vicinity of an installation, the model NOISEMAP (Version 7.0) was used. NOISEMAP extracts data (speed and power setting of the aircraft) from the NOISEFILE database. The noise from each segment of each flight track from each aircraft then is summed to generate a map of average noise levels on the ground, which are typically expressed using the DNL metric. The model accounts for all operations, including both based and transient aircraft (Moulton, 1991).

B.6.1.1 Points of Interest Analysis

Potentially noise-sensitive locations (points of interest) were selected for detailed analysis. The locations are listed (in latitude/longitude format) in Table B-8 and Table B-9 for each respective base and shown graphically in Figure B-9 and Figure B-10. Noise analysis results for selected points of interest for each respective base are presented in Table B-10 through Table B-15.

Table B-8. Geographic Locations of Points of Interest Near Dyess AFB

Label	Type	Name	Latitude	Longitude
1	Daycare	Alliance After School at Tye Elementary	-99.87060	32.45404
2	Daycare	Tye Play and Learn	-99.86926	32.45875
3	Nursing Home	Fulwiler House	-99.82019	32.47029
4	School	Dyess Elementary	-99.81414	32.41594
5	School	Bassetti Elementary	-99.79734	32.41246
6	Daycare	Kids of Faith Learning Center	-99.79463	32.41650
7	School	Clack Middle School	-99.79615	32.42715
8	School	St. John's Episcopal School	-99.79184	32.42966
9	School	Reagan Elementary	-99.79206	32.43497
10	Daycare	Small World of Learning	-99.78794	32.42335
11	Nursing Home	Willow Springs Health & Rehab Center	-99.78544	32.44430
12	Daycare	Pioneer Drive Daycare	-99.77902	32.44292

Table B-9. Geographic Locations of Points of Interest Near Ellsworth AFB

Label	Type	Name	Latitude	Longitude
1	Daycare	Ellsworth Schoolage Care Program	-103.07935	44.145968
2	Daycare	Child Development Services Program	-103.07548	44.143756
3	School	Douglas Middle School	-103.06211	44.13907
4	Daycare	Badger Clark Daycare	-103.06333	44.137542
5	School	Patriot Elementary	-103.06177	44.137486
6	Daycare	District Day Care	-103.06334	44.137164
7	Daycare	Francis Case Daycare	-103.06153	44.1372
8	School	Douglas High School	-103.0626	44.135497
9	Daycare	Vandenberg Daycare	-103.06557	44.134615
10	School	Vandenberg Elementary	-103.06688	44.135498
11	School	East Middle School	-103.13876	44.078331
12	Church	Emmanuel Baptist Church	-103.0696	44.12396
13	Resort	Watiki Indoor Waterpark Resort	-103.14865	44.09911

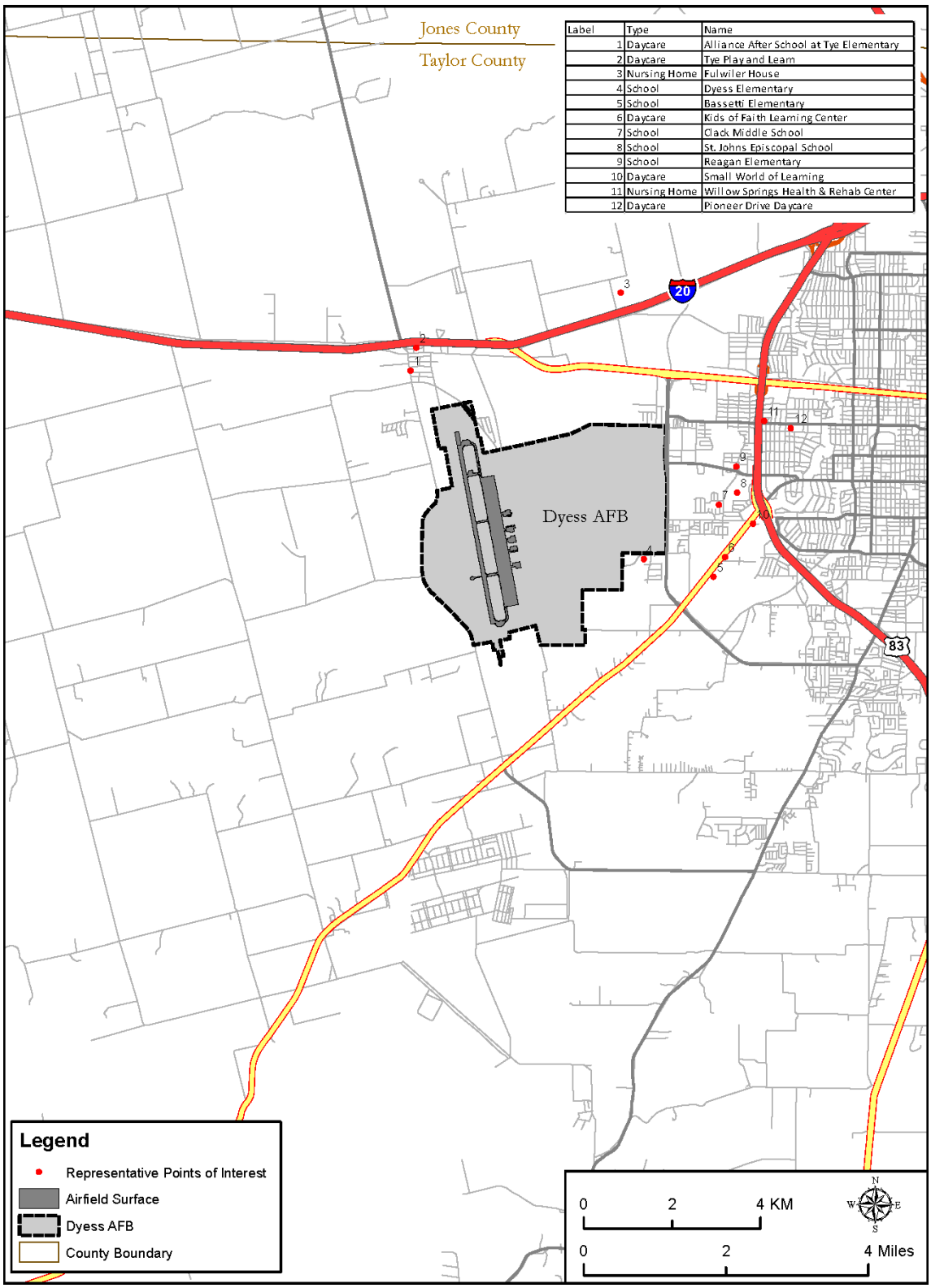
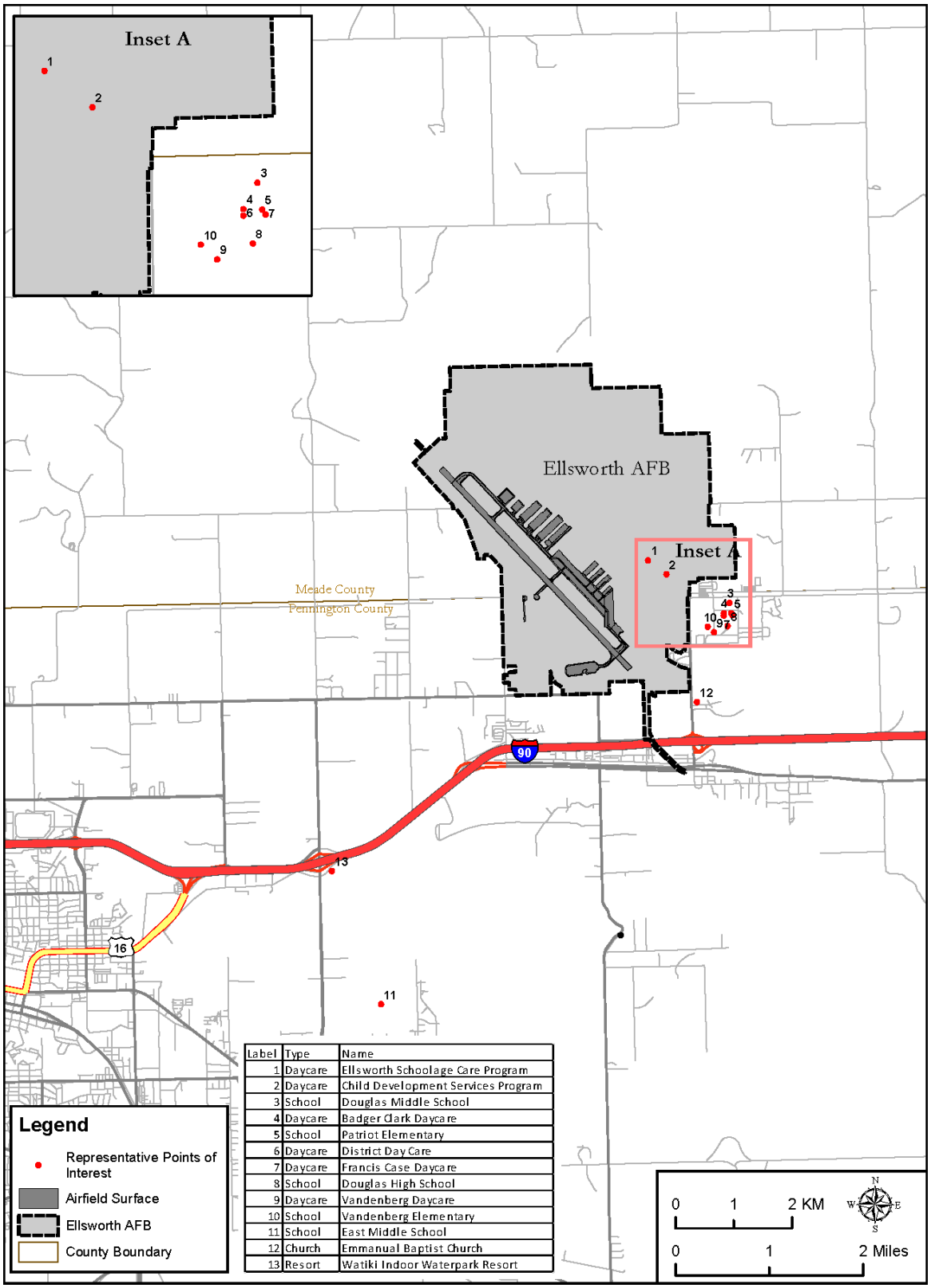


Figure B-9. Locations of Representative Points of Interest Near Dyess



Label	Type	Name
1	Daycare	Ellsworth Schoolage Care Program
2	Daycare	Child Development Services Program
3	School	Douglas Middle School
4	Daycare	Badger Clark Daycare
5	School	Patriot Elementary
6	Daycare	District Day Care
7	Daycare	Francis Case Daycare
8	School	Douglas High School
9	Daycare	Vandenberg Daycare
10	School	Vandenberg Elementary
11	School	East Middle School
12	Church	Emmanual Baptist Church
13	Resort	Watiki Indoor Waterpark Resort

Figure B-10. Locations of Representative Points of Interest Near Ellsworth AFB

Table B-10. Noise Levels at Selected Points of Interest Under the No Action Alternative At Dyess AFB

Point of Interest		DNL (dBA)	Max SEL (dBA)
ID	Description		
SP01	Alliance After School at Tye Elementary	68	114
SP02	Tye Play and Learn	72	117
SP03	Fulwiler House	49	93
SP04	Dyess Elementary	54	98
SP05	Bassetti Elementary	47	89
SP06	Kids of Faith Learning Center	45	88
SP07	Clack Middle School	44	87
SP08	St. John's Episcopal School	43	86
SP09	Reagan Elementary	42	86
SP10	Small World of Learning	43	88
SP11	Willow Springs Health & Rehab Center	47	95
SP12	Pioneer Drive Daycare	46	95

Table B-11. Noise Levels at Selected Points of Interest Under the No Action Alternative At Ellsworth AFB

Point of Interest		DNL (dBA)	Max SEL (dBA)
ID	Description		
SP01	Ellsworth Schoolage Care Program	63	107
SP02	Child Development Services Program	64	107
SP03	Douglas Middle School	67	111
SP04	Badger Clark Daycare	70	114
SP05	Patriot Elementary	70	115
SP06	District Day Care	71	116
SP07	Francis Case Daycare	71	115
SP08	Douglas High School	74	119
SP09	Vandenberg Daycare	77	123
SP10	Vandenberg Elementary	77	122
SP11	East Middle School	53	96
SP12	Emmanuel Baptist Church	67	115
SP13	Watiki Indoor Waterpark Resort	54	100

Table B-12. Noise Levels at Selected Points of Interest Under the Dyess Alternative

Point of Interest		DNL (dBA)			Max SEL (dBA)		
ID	Description	No Action	Dyess Alternative	Increase re No Action	No Action	Dyess Alternative	Increase re No Action
SP01	Alliance After School at Tye Elementary	68	62	-6	114	108	-6
SP02	Tye Play and Learn	72	64	-8	117	110	-7
SP03	Fulwiler House	49	40	-9	93	87	-6
SP04	Dyess Elementary	54	45	-9	98	87	-11
SP05	Bassetti Elementary	47	39	-8	89	82	-7
SP06	Kids of Faith Learning Center	45	37	-8	88	81	-7
SP07	Clack Middle School	44	37	-7	87	79	-8
SP08	St. John's Episcopal School	43	35	-8	86	82	-4
SP09	Reagan Elementary	42	35	-7	86	83	-3
SP10	Small World of Learning	43	35	-8	88	81	-7
SP11	Willow Springs Health & Rehab Center	47	34	-13	95	79	-16
SP12	Pioneer Drive Daycare	46	33	-13	95	80	-15

Table B-13. Noise Levels at Selected Points of Interest Under the Ellsworth Alternative

Point of Interest		DNL (dBA)			Max SEL (dBA)		
ID	Description	No Action	Ellsworth Alternative	Increase re No Action	No Action	Ellsworth Alternative	Increase re No Action
SP01	Ellsworth Schoolage Care Program	63	55	-8	107	104	-3
SP02	Child Development Services Program	64	54	-10	107	103	-4
SP03	Douglas Middle School	67	51	-16	111	101	-10
SP04	Badger Clark Daycare	70	53	-17	114	101	-13
SP05	Patriot Elementary	70	52	-18	115	101	-14
SP06	District Day Care	71	53	-18	116	101	-15
SP07	Francis Case Daycare	71	52	-19	115	101	-14
SP08	Douglas High School	74	55	-19	119	102	-17
SP09	Vandenberg Daycare	77	58	-19	123	105	-18
SP10	Vandenberg Elementary	77	57	-20	122	105	-17
SP11	East Middle School	53	48	-5	96	87	-9
SP12	Emmanuel Baptist Church	67	59	-8	115	111	-4
SP13	Watiki Indoor Waterpark Resort	54	44	-10	100	84	-16

Table B-14. Noise Levels at Selected Points of Interest Under the Dyess Snapshot Scenario

Point of Interest		DNL (dBA)			Max SEL (dBA)		
ID	Description	No Action	Snapshot Scenario	Increase re No Action	No Action	Snapshot Scenario	Increase re No Action
SP01	Alliance After School at Tye Elementary	68	64	-4	114	114	-
SP02	Tye Play and Learn	72	67	-5	117	117	-
SP03	Fulwiler House	49	44	-5	93	93	-
SP04	Dyess Elementary	54	49	-5	98	98	-
SP05	Bassetti Elementary	47	42	-5	89	89	-
SP06	Kids of Faith Learning Center	45	41	-4	88	88	-
SP07	Clack Middle School	44	40	-4	87	87	-
SP08	St. John's Episcopal School	43	38	-5	86	86	-
SP09	Reagan Elementary	42	38	-4	86	86	-
SP10	Small World of Learning	43	38	-5	88	88	-
SP11	Willow Springs Health & Rehab Center	47	40	-7	95	95	-
SP12	Pioneer Drive Daycare	46	40	-6	95	95	-

Table B-15. Noise Levels at Selected Points of Interest Under the Ellsworth Snapshot Scenario

Point of Interest		DNL (dBA)			Max SEL (dBA)		
ID	Description	No Action	Snapshot Scenario	Increase re No Action	No Action	Snapshot Scenario	Increase re No Action
SP01	Ellsworth Schoolage Care Program	63	59	-4	107	107	-
SP02	Child Development Services Program	64	59	-5	107	107	-
SP03	Douglas Middle School	67	60	-7	111	111	-
SP04	Badger Clark Daycare	70	63	-7	114	114	-
SP05	Patriot Elementary	70	63	-7	115	115	-
SP06	District Day Care	71	64	-7	116	116	-
SP07	Francis Case Daycare	71	64	-7	115	115	-
SP08	Douglas High School	74	67	-7	119	119	-
SP09	Vandenberg Daycare	77	71	-6	123	123	-
SP10	Vandenberg Elementary	77	70	-7	122	122	-
SP11	East Middle School	53	50	-3	96	96	-
SP12	Emmanuel Baptist Church	67	63	-4	115	115	-
SP13	Watiki Indoor Waterpark Resort	54	49	-5	100	100	-

B.6.1.2 Noise at Individual Schools

Eight-hour L_{eq} noise levels at representative schools near Dyess AFB and Ellsworth AFB are listed in Table B-16 through Table B-21 for each alternative scenario analyzed in this EIS. The schools presented were selected to help understand the noise environment and, as such, these tables may not include all schools that are affected by noise contours. Indoor L_{eq} was assumed to be 25 dB less than outdoor L_{eq} due to NLR provided by the school structure with windows closed. Actual outdoor-to-indoor NLR varies from school to school and between locations within individual schools.

Table B-16. Indoor Classroom Learning Disruption for the Applicable School Locations for the No Action Alternative at Dyess AFB

Point of Interest		Outdoor $L_{eq(8h)}$ (dB)	Indoor (1)			
			Windows Open		Windows Closed	
ID	Description		$L_{eq(8h)}$ (dB)	Events per Hour(2)	$L_{eq(8h)}$ (dB)	Events per Hour(2)
SP01	Alliance After School at Tye Elementary	66	51	3	41	1
SP02	Tye Play and Learn	70	55	3	45	2
SP03	Fulwiler House	47	<40	-	<40	-
SP04	Dyess Elementary	52	<40	1	<40	-
SP05	Bassetti Elementary	46	<40	-	<40	-
SP06	Kids of Faith Learning Center	44	<40	-	<40	-
SP07	Clack Middle School	42	<40	-	<40	-
SP08	St. John's Episcopal School	41	<40	-	<40	-
SP09	Reagan Elementary	41	<40	-	<40	-
SP10	Small World of Learning	42	<40	-	<40	-
SP11	Willow Springs Health & Rehab Center	45	<40	-	<40	-
SP12	Pioneer Drive Daycare	45	<40	-	<40	-
Number of Sites Exceeding 1 Intrusive Event per Hour				2		1
Minimum Number of Intrusive Events per Hour if Exceeding 1				3		2
Maximum Number of Intrusive Events per Hour if Exceeding 1				3		2

(1) assumes 15 dB and 25 dB of Noise Level Reductions for windows open and closed, respectively.
(2) Number of Average School-Day Events per hour during 8-hour school day (0800-1600) At or Above an Indoor Maximum (single-event) Sound Level (L_{max}) of 50 dB.

Table B-17. Indoor Classroom Learning Disruption for the Applicable School Locations for the No Action Alternative at Ellsworth AFB

Point of Interest		Outdoor $L_{eq(8h)}$ (dB)	Indoor (1)			
			Windows Open		Windows Closed	
ID	Description		$L_{eq(8h)}$ (dB)	Events per Hour(2)	$L_{eq(8h)}$ (dB)	Events per Hour(2)
SP01	Ellsworth Schoolage Care Program	64	49	1	<40	1
SP02	Child Development Services Program	65	50	1	<40	1
SP03	Douglas Middle School	68	53	1	43	1
SP04	Badger Clark Daycare	71	56	1	46	1
SP05	Patriot Elementary	71	56	1	46	1
SP06	District Day Care	72	57	1	47	1
SP07	Francis Case Daycare	72	57	1	47	1
SP08	Douglas High School	75	60	1	50	1
SP09	Vandenberg Daycare	79	64	1	54	1
SP10	Vandenberg Elementary	78	63	1	53	1
SP11	East Middle School	53	<40	1	<40	-
SP12	Emmanuel Baptist Church	68	53	1	43	1
SP13	Watiki Indoor Waterpark Resort	55	40	1	<40	-
Number of Sites Exceeding 1 Intrusive Event per Hour				-		-
Minimum Number of Intrusive Events per Hour if Exceeding 1				2		2
Maximum Number of Intrusive Events per Hour if Exceeding 1				-		-

(1) assumes 15 dB and 25 dB of Noise Level Reductions for windows open and closed, respectively.
(2) Number of Average School-Day Events per hour during 8-hour school day (0800-1600) At or Above an Indoor Maximum (single-event) Sound Level (L_{max}) of 50 dB.

Table B-18. Indoor Classroom Learning Disruption for the Applicable School Locations for the Dyess AFB Alternative

Point of Interest		Dyess Alternative					Increase re No Action				
		Outdoor $L_{eq(8h)}$ (dB)	Indoor [1]				Outdoor $L_{eq(8h)}$ (dB)	Indoor [1]			
			Windows Open		Windows Closed			Windows Open		Windows Closed	
ID	Description		$L_{eq(8h)}$ (dB)	Events per Hour[2]	$L_{eq(8h)}$ (dB)	Events per Hour[2]		$L_{eq(8h)}$ (dB)	Events per Hour[2]	$L_{eq(8h)}$ (dB)	Events per Hour[2]
SP01	Alliance After School at Tye Elementary	57	42	3	<40	-	-10	-10	-	-10	-1
SP02	Tye Play and Learn	58	43	3	<40	2	-12	-12	-	-12	-
SP03	Fulwiler House	<40	<40	-	<40	-	-11	-11	-	-11	-
SP04	Dyess Elementary	42	<40	-	<40	-	-11	-11	-1	-11	-
SP05	Bassetti Elementary	<40	<40	-	<40	-	-10	-10	-	-10	-
SP06	Kids of Faith Learning Center	<40	<40	-	<40	-	-10	-10	-	-10	-
SP07	Clack Middle School	<40	<40	-	<40	-	-9	-9	-	-9	-
SP08	St. John's Episcopal School	<40	<40	-	<40	-	-9	-9	-	-9	-
SP09	Reagan Elementary	<40	<40	-	<40	-	-9	-9	-	-9	-
SP10	Small World of Learning	<40	<40	-	<40	-	-10	-10	-	-10	-
SP11	Willow Springs Health & Rehab Center	<40	<40	-	<40	-	-16	-16	-	-16	-
SP12	Pioneer Drive Daycare	<40	<40	-	<40	-	-16	-16	-	-16	-
Number of Sites Exceeding 1 Intrusive Event per Hour				2		1			-		-
Minimum Number of Intrusive Events per Hour if Exceeding 1				3		2			0		0
Maximum Number of Intrusive Events per Hour if Exceeding 1				3		2			0		0

(1) assumes 15 dB and 25 dB of Noise Level Reductions for windows open and closed, respectively.
(2) Number of Average School-Day Events per hour during 8-hour school day (0800-1600) At or Above an Indoor Maximum (single-event) Sound Level (L_{max}) of 50 dB.

Table B-19. Indoor Classroom Learning Disruption for the Applicable School Locations for the Ellsworth AFB Alternative

Point of Interest		Ellsworth Alternative					Increase re No Action				
		Outdoor $L_{eq(8h)}$ (dB)	Indoor (1)				Outdoor $L_{eq(8h)}$ (dB)	Indoor (1)			
			Windows Open		Windows Closed			Windows Open		Windows Closed	
ID	Description		$L_{eq(8h)}$ (dB)	Events per Hour(2)	$L_{eq(8h)}$ (dB)	Events per Hour(2)		$L_{eq(8h)}$ (dB)	Events per Hour(2)	$L_{eq(8h)}$ (dB)	Events per Hour(2)
SP01	Ellsworth Schoolage Care Program	52	<40	1	<40	-	-12	-12	-	-12	-1
SP02	Child Development Services Program	52	<40	1	<40	-	-13	-13	-	-13	-1
SP03	Douglas Middle School	50	<40	1	<40	-	-18	-18	-	-18	-1
SP04	Badger Clark Daycare	52	<40	1	<40	-	-19	-19	-	-19	-1
SP05	Patriot Elementary	52	<40	1	<40	-	-19	-19	-	-19	-1
SP06	District Day Care	53	<40	1	<40	-	-19	-19	-	-19	-1
SP07	Francis Case Daycare	52	<40	1	<40	-	-20	-20	-	-20	-1
SP08	Douglas High School	55	40	1	<40	-	-20	-20	-	-20	-1
SP09	Vandenberg Daycare	58	43	1	<40	-	-21	-21	-	-21	-1
SP10	Vandenberg Elementary	58	43	1	<40	-	-20	-20	-	-20	-1
SP11	East Middle School	41	<40	-	<40	-	-12	-12	-1	-12	-
SP12	Emmanuel Baptist Church	58	43	1	<40	-	-11	-11	-	-11	-1
SP13	Watiki Indoor Waterpark Resort	<40	<40	-	<40	-	-17	-17	-1	-17	-
Number of Sites Exceeding 1 Intrusive Event per Hour				-		-			-		-
Minimum Number of Intrusive Events per Hour if Exceeding 1				2		2			0		0
Maximum Number of Intrusive Events per Hour if Exceeding 1				-		-			0		0

(1) assumes 15 dB and 25 dB of Noise Level Reductions for windows open and closed, respectively.
(2) Number of Average School-Day Events per hour during 8-hour school day (0800-1600) At or Above an Indoor Maximum (single-event) Sound Level (L_{max}) of 50 dB.

Table B-20. Indoor Classroom Learning Disruption for the Applicable School Locations for the Dyess AFB Snapshot Scenario

Point of Interest		Snapshot Scenario					Increase re No Action				
		Outdoor $L_{eq(8h)}$ (dB)	Indoor (1)				Outdoor $L_{eq(8h)}$ (dB)	Indoor (1)			
			Windows Open		Windows Closed			Windows Open		Windows Closed	
ID	Description		$L_{eq(8h)}$ (dB)	Events per Hour(2)	$L_{eq(8h)}$ (dB)	Events per Hour(2)		$L_{eq(8h)}$ (dB)	Events per Hour(2)	$L_{eq(8h)}$ (dB)	Events per Hour(2)
SP01	Alliance After School at Tye Elementary	61	46	3	<40	1	-5	-5	-	-5	-
SP02	Tye Play and Learn	64	49	3	<40	2	-6	-6	-	-6	-
SP03	Fulwiler House	41	<40	-	<40	-	-6	-6	-	-6	-
SP04	Dyess Elementary	47	<40	1	<40	-	-6	-6	-	-6	-
SP05	Bassetti Elementary	40	<40	-	<40	-	-6	-6	-	-6	-
SP06	Kids of Faith Learning Center	<40	<40	-	<40	-	-5	-5	-	-5	-
SP07	Clack Middle School	<40	<40	-	<40	-	-5	-5	-	-5	-
SP08	St. John's Episcopal School	<40	<40	-	<40	-	-5	-5	-	-5	-
SP09	Reagan Elementary	<40	<40	-	<40	-	-5	-5	-	-5	-
SP10	Small World of Learning	<40	<40	-	<40	-	-5	-5	-	-5	-
SP11	Willow Springs Health & Rehab Center	<40	<40	-	<40	-	-7	-7	-	-7	-
SP12	Pioneer Drive Daycare	<40	<40	-	<40	-	-7	-7	-	-7	-
Number of Sites Exceeding 1 Intrusive Event per Hour				2		1			-		-
Minimum Number of Intrusive Events per Hour if Exceeding 1				3		2			0		0
Maximum Number of Intrusive Events per Hour if Exceeding 1				3		2			0		0

(1) assumes 15 dB and 25 dB of Noise Level Reductions for windows open and closed, respectively.
(2) Number of Average School-Day Events per hour during 8-hour school day (0800-1600) At or Above an Indoor Maximum (single-event) Sound Level (L_{max}) of 50 dB.

Table B-21. Indoor Classroom Learning Disruption for the Applicable School Locations for the Ellsworth AFB Snapshot Scenario

Point of Interest		Snapshot Scenario					Increase re No Actionm				
		Outdoor $L_{eq(8h)}$ (dB)	Indoor [1]				Outdoor $L_{eq(8h)}$ (dB)	Indoor [1]			
			Windows Open		Windows Closed			Windows Open		Windows Closed	
ID	Description		$L_{eq(8h)}$ (dB)	Events per Hour[2]	$L_{eq(8h)}$ (dB)	Events per Hour[2]		$L_{eq(8h)}$ (dB)	Events per Hour[2]	$L_{eq(8h)}$ (dB)	Events per Hour[2]
SP01	Ellsworth Schoolage Care Program	58	43	1	<40	1	-6	-6	-	-6	-
SP02	Child Development Services Program	59	44	1	<40	1	-6	-6	-	-6	-
SP03	Douglas Middle School	61	46	1	<40	-	-7	-7	-	-7	-1
SP04	Badger Clark Daycare	64	49	1	<40	-	-7	-7	-	-7	-1
SP05	Patriot Elementary	64	49	1	<40	-	-7	-7	-	-7	-1
SP06	District Day Care	66	51	1	41	-	-7	-7	-	-7	-1
SP07	Francis Case Daycare	65	50	1	40	-	-7	-7	-	-7	-1
SP08	Douglas High School	69	54	1	44	-	-7	-7	-	-7	-1
SP09	Vandenberg Daycare	72	57	1	47	1	-7	-7	-	-7	-
SP10	Vandenberg Elementary	71	56	1	46	1	-7	-7	-	-7	-
SP11	East Middle School	47	<40	-	<40	-	-6	-6	-1	-6	-
SP12	Emmanuel Baptist Church	63	48	1	<40	-	-6	-6	-	-6	-1
SP13	Watiki Indoor Waterpark Resort	49	<40	-	<40	-	-7	-7	-1	-7	-
Number of Sites Exceeding 1 Intrusive Event per Hour				-		-			-		-
Minimum Number of Intrusive Events per Hour if Exceeding 1				2		2			0		0
Maximum Number of Intrusive Events per Hour if Exceeding 1				-		-			0		0

(1) assumes 15 dB and 25 dB of Noise Level Reductions for windows open and closed, respectively.
(2) Number of Average School-Day Events per hour during 8-hour school day (0800-1600) At or Above an Indoor Maximum (single-event) Sound Level (L_{max}) of 50 dB.

B.6.1.3 Number of Noise Events Analysis

Speech interference associated with aircraft noise is a primary cause of annoyance for many communities. The disruption of routine indoor activities such as watching television or listening to the radio, using the telephone, or conversing gives rise to frustration and irritation. Several research studies since 1984 have concluded that if an aircraft noise event's L_{max} reached no higher than 50 dB, 90 percent of the words in a sentence would typically be understood. However, should the noise get louder, the percentage of words understood is further reduced. Ultimately, the bottom line is that one's activity has been disrupted or their ability for their speech to be understood begins to be limited to some degree at an indoor L_{max} of 50 dB.

An analysis of the number of events above an indoor L_{max} of 50 dB was undertaken using an interior L_{max} of 50 dB as a threshold and assuming that the average home built to modern building codes, in a "windows-closed" environment, provides 25 dB of attenuation from outdoor noise sources (noise level reduction). L_{max} is a measure of the loudest noise level occurring during a noise event. The total number of aircraft noise events that exceed the threshold L_{max} level of 50 dB inside the structure was determined for an average operating day (24-hour period). In this way, the result answers the question of how many aircraft fly over a given location that may potentially result in some level of interruption of one's activities such as sentence intelligibility, TV watching, or telephonic communications.

The results are displayed in the tables in this section (Table B-22 through Table B-27), where the location of interest is provided in the leftmost column, and the conditions under which the analysis was performed are provided in subsequent columns. For example, an individual living near Alliance After School at Tye Elementary (SP01) would typically experience as many as 3 disruptive events a day under the No Action Alternative conditions with windows open. The second column represents the number of times daily under the No Action Alternative that a resident could experience disruptive events with windows closed. For example, under the No Action Alternative at the Alliance After School at Tye Elementary, an individual would be expected to experience only 3 disruptive events each day windows open and only 1 per day with windows closed.

Table B-22. Number of Noise Events Above 50 dB L_{max} at Points of Interest near Dyess AFB Under the No Action Alternative

Point of Interest		Annual Average Daily Indoor Daytime (0700-2200) Events per Hour (1)	
ID	Description	Windows Open	Windows Closed
SP01	Alliance After School at Tye Elementary	3	1
SP02	Tye Play and Learn	3	2
SP03	Fulwiler House	-	-
SP04	Dyess Elementary	1	-
SP05	Bassetti Elementary	-	-
SP06	Kids of Faith Learning Center	-	-
SP07	Clack Middle School	-	-
SP08	St. John's Episcopal School	-	-
SP09	Reagan Elementary	-	-
SP10	Small World of Learning	-	-
SP11	Willow Springs Health & Rehab Center	-	-
SP12	Pioneer Drive Daycare	-	-

(1) with an indoor Maximum Sound Level of at Least 50 dB; assumes 15 dB and 25 dB of Noise Level Reductions for windows open and closed, respectively.

Table B-23. Number of Noise Events Above 50 dB L_{max} at Points of Interest near Ellsworth AFB Under the No Action Alternative

Point of Interest		Annual Average Daily Indoor Daytime (0700-2200) Events per Hour (1)	
ID	Description	Windows Open	Windows Closed
SP01	Ellsworth Schoolage Care Program	1	1
SP02	Child Development Services Program	1	1
SP03	Douglas Middle School	1	1
SP04	Badger Clark Daycare	1	1
SP05	Patriot Elementary	1	1
SP06	District Day Care	1	1
SP07	Francis Case Daycare	1	1
SP08	Douglas High School	1	1
SP09	Vandenberg Daycare	1	1
SP10	Vandenberg Elementary	1	1
SP11	East Middle School	1	-
SP12	Emmanuel Baptist Church	1	1
SP13	Watiki Indoor Waterpark Resort	1	-

(1) with an indoor Maximum Sound Level of at Least 50 dB; assumes 15 dB and 25 dB of Noise Level Reductions for windows open and closed, respectively.

Table B-24. Number of Noise Events Above 50 dB L_{max} at Points of Interest near Dyess AFB Under the Dyess AFB Alternative

Point of Interest		Annual Average Daily Indoor Daytime (0700-2200) Events per Hour (1)			
		Dyess Alternative		Increase re No Action	
ID	Description	Windows Open	Windows Closed	Windows Open	Windows Closed
SP01	Alliance After School at Tye Elementary	3	0	-	-1
SP02	Tye Play and Learn	3	2	-	-
SP03	Fulwiler House	0	0	-	-
SP04	Dyess Elementary	0	0	-1	-
SP05	Bassetti Elementary	0	0	-	-
SP06	Kids of Faith Learning Center	0	0	-	-
SP07	Clack Middle School	0	0	-	-
SP08	St. John's Episcopal School	0	0	-	-
SP09	Reagan Elementary	0	0	-	-
SP10	Small World of Learning	0	0	-	-
SP11	Willow Springs Health & Rehab Center	0	0	-	-
SP12	Pioneer Drive Daycare	0	0	-	-

(1) with an indoor Maximum Sound Level of at Least 50 dB; assumes 15 dB and 25 dB of Noise Level Reductions for windows open and closed, respectively.

Table B-25. Number of Noise Events Above 50 dB L_{max} at Points of Interest near Ellsworth AFB Under the Ellsworth AFB Alternative

Point of Interest		Annual Average Daily Indoor Daytime (0700-2200) Events per Hour (1)			
		Ellsworth Alternative		Increase re No Action	
ID	Description	Windows Open	Windows Closed	Windows Open	Windows Closed
SP01	Ellsworth Schoolage Care Program	1	0	-	-1
SP02	Child Development Services Program	1	0	-	-1
SP03	Douglas Middle School	1	0	-	-1
SP04	Badger Clark Daycare	1	0	-	-1
SP05	Patriot Elementary	1	0	-	-1
SP06	District Day Care	1	0	-	-1
SP07	Francis Case Daycare	1	0	-	-1
SP08	Douglas High School	1	0	-	-1
SP09	Vandenberg Daycare	1	0	-	-1
SP10	Vandenberg Elementary	1	0	-	-1
SP11	East Middle School	0	0	-1	-
SP12	Emmanuel Baptist Church	1	0	-	-1
SP13	Watiki Indoor Waterpark Resort	0	0	-1	-

Table B-26. Number of Noise Events Above 50 dB L_{max} at Points of Interest near Dyess AFB Under the Dyess AFB Snapshot Scenario

Point of Interest		Annual Average Daily Indoor Daytime (0700-2200) Events per Hour (1)			
		Snapshot Scenario		Increase re No Action	
ID	Description	Windows Open	Windows Closed	Windows Open	Windows Closed
SP01	Alliance After School at Tye Elementary	3	1	-	-
SP02	Tye Play and Learn	3	2	-	-
SP03	Fulwiler House	0	0	-	-
SP04	Dyess Elementary	1	0	-	-
SP05	Bassetti Elementary	0	0	-	-
SP06	Kids of Faith Learning Center	0	0	-	-
SP07	Clack Middle School	0	0	-	-
SP08	St. John's Episcopal School	0	0	-	-
SP09	Reagan Elementary	0	0	-	-
SP10	Small World of Learning	0	0	-	-
SP11	Willow Springs Health & Rehab Center	0	0	-	-
SP12	Pioneer Drive Daycare	0	0	-	-

(1) with an indoor Maximum Sound Level of at Least 50 dB; assumes 15 dB and 25 dB of Noise Level Reductions for windows open and closed, respectively.

Table B-27. Number of Noise Events Above 50 dB L_{max} at Points of Interest near Ellsworth AFB Under the Ellsworth AFB Snapshot Scenario

Point of Interest		Annual Average Daily Indoor Daytime (0700-2200) Events per Hour (1)			
		Snapshot Scenario		Increase re No Action	
ID	Description	Windows Open	Windows Closed	Windows Open	Windows Closed
SP01	Ellsworth Schoolage Care Program	1	1	-	-
SP02	Child Development Services Program	1	1	-	-
SP03	Douglas Middle School	1	0	-	-1
SP04	Badger Clark Daycare	1	0	-	-1
SP05	Patriot Elementary	1	0	-	-1
SP06	District Day Care	1	0	-	-1
SP07	Francis Case Daycare	1	0	-	-1
SP08	Douglas High School	1	0	-	-1
SP09	Vandenberg Daycare	1	1	-	-
SP10	Vandenberg Elementary	1	1	-	-
SP11	East Middle School	0	0	-1	-
SP12	Emmanuel Baptist Church	1	0	-	-1
SP13	Watiki Indoor Waterpark Resort	0	0	-1	-

(1) with an indoor Maximum Sound Level of at Least 50 dB; assumes 15 dB and 25 dB of Noise Level Reductions for windows open and closed, respectively.

B.6.1.4 Special Use Airspace Analysis

Noise analysis was also conducted for the operations occurring in SUA. Table B-28 and Table B-29 provide noise levels (in L_{dnmr}) for the No Action Alternative, the respective Proposed Action alternatives, and the snapshot scenarios.

Table B-28. Dyess Alternative SUA Noise

Complex	SUA	NAA	Dyess Alternative	Dyess Snap Shot	Change From NAA
MOA	Lancer	43.4	<35	36.6	-6.8
	Pecos	55.9	36.9	49.2	-6.7
	Brownwood	<35	<35	<35	0
PRTC	GAP A	44.2	44.2	44.2	0
	GAP B	41.9	41.9	41.9	0
	GAP C	35.5	35.5	35.5	0
	GATEWAY EAST	<35	<35	<35	0
	GATEWAY WEST	36.4	36.4	36.4	0
	POWDER RIVER 1A	42.8	42.8	42.8	0
	POWDER RIVER 1B	42.8	42.8	42.8	0
	POWDER RIVER 1C	45.7	45.7	45.7	0
	POWDER RIVER 1D	39.1	39.1	39.1	0
	POWDER RIVER 2	46.1	46.1	46.1	0
	POWDER RIVER 3	37.1	37.1	37.1	0
	POWDER RIVER 4	<35	<35	<35	0

Table B-29. Ellsworth Alternative SUA Noise

Complex	SUA	NAA	Ellsworth Alternative	Ellsworth Snap Shot	Change From NAA
PRTC	GAP A	44.2	38.9	40.6	-3.6
	GAP B	41.9	36.5	38.2	-3.7
	GAP C	35.5	<35	35	-0.5
	GATEWAY EAST	<35	<35	<35	0
	GATEWAY WEST	36.4	<35	35	-1.4
	POWDER RIVER 1A	42.8	35.8	38.4	-4.4
	POWDER RIVER 1B	42.8	37.1	39.0	-3.8
	POWDER RIVER 1C	45.7	42.0	43.0	-2.7
	POWDER RIVER 1D	39.1	<35	35.5	-3.6
	POWDER RIVER 2	46.1	<35	39.8	-6.3
	POWDER RIVER 3	37.1	<35	35	-2.1
	POWDER RIVER 4	<35	<35	<35	0

B.7 REFERENCES

Acoustical Society of America (ASA) Technical Committee on Architectural Acoustics, 2000. *Classroom Acoustics*.

American National Standards Institute (ANSI), 1980. *Sound Level Descriptors for Determination of Compatible Land Use*. American National Standards Institute Standard ANSI S3.231980.

American National Standards Institute (ANSI), 1988. *Quantities and Procedures for Description and Measurement of Environmental Sound, Part 1*. American National Standards Institute Standard ANSI S12.9-1988.

Armstrong Laboratories, 1991. *Analysis of Measured Environmental Noise Levels: an Assessment of the Effects of Airbase Operational Model Variables on Predicted Noise Exposure Levels*, AL-TR-1991-0097, June.

Committee on Hearing, Bioacoustics, and Biomechanics (CHABA), 1977. *Guidelines for Preparing Environmental Impact Statements on Noise*. National Research Council, National Academy of Sciences. Washington, D.C.

Committee on Hearing, Bioacoustics and Biomechanics (CHABA), 1981. *Assessment of Community Noise Response to High-Energy Impulsive Sounds*. Report of Working Group 84, Committee on Hearing, Bioacoustics and Biomechanics, Assembly of Behavioral and Social Sciences. National Research Council, National Academy of Sciences. Washington, D.C.

Delaney, D. K., L. L. Pater, R. H. Melton, B. A. MacAllister, R. J. Dooling, B. Lohr, B. F. Brittan-Powell, L. L. Swindell, T. A. Beaty, L. D. Carlile, and E. W. Spadgenske, 2002. *Assessment of Training Noise Impacts on the Red-cockaded Woodpecker: Final Report*. February 2002.

Dooling, R. J., and M. L. Dent, 2001. New Studies on Hair Cell Regeneration in Birds, *Acoustical Science and Technology*, Vol 22, No 2, 2001. Department of Psychology, University of Maryland, College Park, Maryland.

Federal Highway Administration (FHWA), Office of Environmental Planning, 2006. *Roadway Construction Noise Model User's Guide*. FHWA-HEP-05-054. January 2006

Federal Interagency Committee on Aircraft Noise (FICAN), 2000. *FICAN Position on Research into Effects of Aircraft Noise on Classroom Learning*. September 2002.

Federal Interagency Committee on Aircraft Noise (FICAN), 2004. *FICAN Report on Relationship Between Aircraft Noise Reduction in Schools and Standardized Test Scores*. March 2004.

Federal Interagency Committee on Noise (FICON), 1992. *Federal Agency Review of Selected Airport Noise Analysis Issues*. August 1992.

Federal Interagency Committee on Urban Noise (FICUN), 1980. *Guidelines for Considering Noise in Land-Use Planning and Control*. Federal Interagency Committee on Urban Noise. June 1980.

Fields, J. M., and C. A. Powell, 1985. *A Community Survey of Helicopter Noise Annoyance Conducted Under Controlled Noise Exposure Conditions*. NASA TM-86400. March 1985.

Finegold, L. S., C. S. Harris, and H. E. von Gierke, 1994. Community Annoyance and Sleep Disturbance: Updated Criteria for Assessing the Impacts of General Transportation Noise on People. In *Noise Control Engineering Journal*, Vol 42, No 1, pp 25–30, January–February 1994.

Frampton, K., J. Lucas, and B. Cook, 1993. *Modeling the Sonic Boom Noise Environment in Military Operations Areas*. AIAA-1993-4432, October 25–27, 1993.

Haber, J., and D. Nakaki, 1989. *Sonic Boom Damage to Conventional Structures*. HSD-TR-89001. April 1989.

Harris, C. S., 1997. *The Effects of Noise on Health*. Wright-Patterson AFB, OH. AL/OETR-1997-0077.

Health Council of the Netherlands, 1996. Effects of Noise on Health, Chapter 3 of an edited report on Noise and Health prepared by a committee of The Health Council of The Netherlands. *Noise/News International*, September 1996.

Headquarters Department of the Army, 2007. Army Regulation 200-1, Environmental Protection and Enhancement, 13 December 2007.

Kryter, K. D., 1984. Physiological, Psychological, and Social Effects of Noise. NASA Reference Publication 1115, 446. July 1984.

Lucas, M., and P. Calamia, 1996. Military Operations Area and Range Noise Model MRNMAP User's Manual. Wyle Report WR 94-12, June 1996.

Lucas, M. J., and K. Plotkin, 1988. ROUTEMAP Model for Predicting Noise Exposure from Aircraft Operations on Military Training Routes. Final. Wright-Patterson AFB, OH. AAMRL. AAMRL-TR-88-060.

Ludlow and Sixsmith, 1999. Long Term Effects of Military Jet Aircraft Noise Exposure During Childhood on Hearing Threshold Levels. Noise and Health, Vol 5, pp 33–39.

Moulton, C. L., 1991. Air Force Procedure for Predicting Noise Around Airbases: Noise Exposure Model (NOISEMAP). Technical Report AL-TR-1992-59.

Ollerhead J. B., C. J. Jones, R. E. Cadoux, A. Woodley, B. J. Atkinson, J. A. Horne, F. Pankhurst, L. Reyner, K. I. Hume, F. Van, A. Watson, I. Diamond, P. Egger, D. Holmes, and J. McKean, 1992. Report of a Field Study of Aircraft Noise and Sleep Disturbance. Department of Transport, London, U.K.

Pearsons, K. S., D. S. Barber, and B. G. Tabachick, 1989. Analyses of the Predictability of Noise-Induced Sleep Disturbance. USAF Report HSD-TR-89-029. October 1989.

Pearsons, K. S., R. L. Bennett, and S. Fidell, 1977. “Speech levels in various noise environments,” U.S. Environmental Protection Agency Report EPA-600/1-77-025.

Plotkin, K. J., L. C. Sutherland, and J. A. Molino, 1987. Environmental Noise Assessment for Military Aircraft Training Routes, Volume II: Recommended Noise Metric. Wyle Research Report WR 86-21. January 1987.

Plotkin, K. J., V. R. Desai, C. L. Moulton, M. J. Lucas, and R. Brown, 1989. Measurements of Sonic Booms due to ACM Training at White Sands Missile Range. Wyle Research Report WR 89-18.

Schultz, T. J., 1978. Synthesis of Social Surveys on Noise Annoyance. Journal of the Acoustical Society of America, Vol 64, pp 377–405, August 1978.

Schwartze, S., and S. J. Thompson, 1993. Research on Non-Auditory Physiological Effects of Noise Since 1988: Review and Perspectives. Proceedings of the 6th International Congress on Noise as a Public Problem (I’NRETS), Nice, France, Vol 3.

Shield, B., and J. Dockrell, 2008. The Effects of Environmental and Classroom Noise on the Academic Attainments of Primary School Children. Journal of the Acoustical Society of America, Vol 123, No 1, pp 133–144, January 2008.

Stusnick, E., D. A. Bradley, J. A. Molino, and G. DeMiranda, 1992. The Effect of Onset Rate on Aircraft Noise Annoyance. Volume 2: Rented Own-Home Experiment. Wyle Laboratories Research Report WR 92-3. March 1992.

Stusnick, E., D. A. Bradley, M. A. Bossi, and D. G. Rickert, 1993. The Effect of Onset Rate on Aircraft Noise Annoyance. Volume 3: Hybrid Own-Home Experiment. Wyle Laboratories Research Report WR 93-22. December 1993.

Sutherland, L., 1989. Assessment of Potential Structural Damage from Low Altitude Subsonic Aircraft. Wyle Laboratories Research Report WR 89-16. El Segundo, CA.

U.S. Army Center for Health Promotion and Preventative Medicine (USACHPPM), 2005. Operational Noise Management. November 2005.

U.S. Environmental Protection Agency (USEPA), 1974. Information on Levels of Environmental Noise Requisite to Protect the Public Health and Welfare with an Adequate Margin of Safety. U.S. Environmental Protection Agency Report 550/9-74-004. March 1974.

U.S. Environmental Protection Agency (USEPA), 1982. Guidelines for Noise Impact Analysis. Report No. 550/9-82-105. April 1982.

von Gierke, H. R., 1990. The Noise-Induced Hearing Loss Problem. NIH Consensus Development Conference on Noise and Hearing Loss, Washington, D.C., 22–24 January 1990.

Wesler, J. E., 1977. Concorde Operations at Dulles International Airport. NOISEXPO '77, Chicago, IL, March 1977.

White, R., 1972. Effects of Repetitive Sonic Booms on Glass Breakage. FAA Report FAA-RD-72. April 1972.

APPENDIX C

AIR QUALITY CALCULATIONS

This page is intentionally blank.

TABLE OF CONTENTS

Page

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

ACAM	Air Conformity Applicability Model
AGL	above ground level
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gas
GOV	Government-Owned Vehicle
lb	pound
LTO	landing and takeoff
µg/m^3	micrograms per cubic meter
NAAQS	National Ambient Air Quality Standards
NEI	National Emissions Inventory
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
O_3	ozone
Pb	Lead
PM_{10}	particulate matter with a diameter less than or equal to 10 microns
$PM_{2.5}$	particulate matter with a diameter less than or equal to 2.5 microns
ppb	parts per billion
ppm	parts per million
PSD	Prevention of Significant Deterioration
ROI	region of influence
SIP	State Implementation Plan
SO_2	sulfur dioxide
TCEQ	Texas Commission on Environmental Quality
U.S.	United States
VOC	volatile organic compound
yr	year

C. AIR QUALITY CALCULATIONS

This appendix presents an overview of the Clean Air Act (CAA) requirements, as well as calculations, including the assumptions used for the air quality analyses presented in the Environmental Impact Statement (EIS).

C.1 AIR QUALITY PROGRAM OVERVIEW

In order to protect public health and welfare, the U.S. Environmental Protection Agency (EPA) has developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for six "criteria" pollutants (based on health-related criteria) under the provisions of the CAA Amendments of 1970. There are two kinds of NAAQS: primary and secondary standards. Primary standards prescribe the maximum permissible concentration in the ambient air to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards prescribe the maximum concentration or level of air quality required to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings (40 Code of Federal Regulations [CFR] 50).

The CAA gives states the authority to establish air quality rules and regulations. These rules and regulations must be equivalent to, or more stringent than, the federal program. The Texas Commission on Environmental Quality (TCEQ) is the state agency that regulates air quality emissions sources in Texas under the authority of the federal CAA and amendments, federal regulations, and state laws. In South Dakota, the South Dakota Department of Environment & Natural Resources has this authority.

Both Texas and South Dakota have adopted the federal NAAQS as shown in Table C-1. Based on measured ambient air pollutant concentrations, the EPA designates areas of the United States as having air quality better than the NAAQS (attainment), worse than the NAAQS (nonattainment), and unclassifiable. The areas that cannot be classified (on the basis of available information) as meeting or not meeting the NAAQS for a particular pollutant are "unclassifiable" and are treated as attainment areas until proven otherwise. Attainment areas can be further classified as "maintenance" areas, which are areas previously classified as nonattainment areas but where air pollutant concentrations have been successfully reduced to levels below the standard. Maintenance areas are subject to special maintenance plans and must operate under some of the nonattainment area plans to ensure compliance with the NAAQS. Both Taylor County, Texas, and Pennington and Meade Counties, South Dakota are currently in attainment for all criteria pollutants (EPA, 2020a).

A general conformity analysis is required to be conducted for areas designated as nonattainment or maintenance of the NAAQS if the action's direct and indirect emissions have a potential to emit one or more of the six criteria pollutants at or above concentrations standards listed in Table C-1 or the *de minimis* emission rate thresholds in Table C-2 or Table C-3.

1 **Table C-1. Summary of National Ambient Air Quality Standards**

Criteria Pollutant	Averaging Time	Federal Primary NAAQS	Federal Secondary NAAQS
Carbon monoxide (CO)	8-hour	9 ppm	No standard
	1-hour	35 ppm	No standard
Lead (Pb)	Rolling 3-month average	0.15 µg/m^3 [a]	0.15 µg/m^3
Nitrogen dioxide (NO_2)	Annual	53 ppb[b]	53 ppb
	1-hour	100 ppb	No standard [c]
Particulate matter ≤10 microns (PM_{10})	24-hour	150 µg/m^3	150 µg/m^3
Particulate matter ≤ 2.5 microns ($PM_{2.5}$)	Annual	12 µg/m^3	15 µg/m^3
	24-hour	35 µg/m^3	35 µg/m^3
Ozone (O_3)	8-hour	0.070 ppm [c]	0.070 ppm
Sulfur dioxide (SO_2)	Annual	No standard	No standard
	24-hour [a]	No standard	No standard
	3-hour	No standard	0.50 ppm [c]
	1-hour	75 ppb [d]	No standard

Source: (EPA, 2016)

≤ = less than or equl to; µg/m^3 = micrograms per cubic meter; NAAQS = National Ambient Air Quality Standards; ppb = parts per billion; ppm = parts per million.

a. In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m^3 as a calendar quarter average) also remain in effect.

b. The level of the annual NO_2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

c. Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O_3 standards additionally remain in effect in some areas. Revocation of the previous (2008) O_3 standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

d. The previous SO_2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards and (2)any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a State Implementation Plan (SIP) call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its SIP to demonstrate attainment of the required NAAQS.

Table C-2. Emission Rates for Criteria Pollutants in Nonattainment Areas[1]

Pollutant	Emission Rate (tons/year)
Ozone (VOCs or NO_x)	
Serious nonattainment areas	50
Severe nonattainment areas	25
Extreme nonattainment areas	10
Other ozone nonattainment areas outside an ozone transport region	100
Marginal and moderate nonattainment areas inside an ozone transport region	
VOCs	50
NO_x	100
CO: all nonattainment areas	100
SO_2 or NO_2: all nonattainment areas	100
PM_{10}	
Moderate nonattainment areas	100
Serious nonattainment areas	70

Table C-2. Emission Rates for Criteria Pollutants in Nonattainment Areas[1]

Pollutant	Emission Rate (tons/year)
$PM_{2.5}$	
Direct emissions	100
SO_2	100
NO_x (unless determined not to be a significant precursor)	100
VOCs or ammonia (if determined to be significant precursors)	100
Pb: all nonattainment areas	25

Source: (EPA, 2020b)
CO = carbon monoxide; NO_2 = nitrogen dioxide; NO_x = nitrogen oxides; VOC = volatile organic compound; Pb = lead; $PM_{2.5}$ = particulate matter with a diameter less than or equal to 2.5 microns; PM_{10} = particulate matter with a diameter less than or equal to 10 microns; SO_2 = sulfur dioxide
1. *De minimis* threshold levels for conformity applicability analysis.

Table C-3. Emission Rates for Criteria Pollutants in Attainment (Maintenance) Areas[1]

Pollutant	Emission Rate (tons/year)
Ozone (NO_x, SO_2, or NO_2): all maintenance areas	100
Ozone (VOCs)	
Maintenance areas inside an ozone transport region	50
Maintenance areas outside an ozone transport region	100
CO: all maintenance areas	100
PM_{10}: all maintenance areas	100
$PM_{2.5}$	
Direct emissions	100
SO_2	100
NO_x (unless determined not to be a significant precursor)	100
VOCs or ammonia (if determined to be significant precursors)	100
Pb: All maintenance areas	25

Source: (EPA, 2020b)
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compound; Pb = lead; $PM_{2.5}$ = particulate matter with a diameter less than or equal to 2.5 microns; PM_{10} = particulate matter with a diameter less than or equal to 10 microns; SO_2 = sulfur dioxide
1. *De minimis* threshold levels for conformity applicability analysis.

Each state is required to develop a State Implementation Plan (SIP) that sets forth how CAA provisions will be imposed within the state. The SIP is the primary means for the implementation, maintenance, and enforcement of the measures needed to attain and maintain the NAAQS within each state and includes control measures, emissions limitations, and other provisions required to attain and maintain the ambient air quality standards. The purpose of the SIP is twofold. First, it must provide a control strategy that will result in the attainment and maintenance of the NAAQS. Second, it must demonstrate that progress is being made in attaining the standards in each nonattainment area.

In attainment areas, major new or modified stationary sources of air emissions on and in the area are subject to Prevention of Significant Deterioration (PSD) review to ensure that these sources are constructed without causing significant adverse deterioration of the clean air in the area. A major new source is defined as one that has the potential to emit any pollutant regulated under the CAA in amounts equal to or exceeding specific major source thresholds, that is, 100 or 250 tons per year based on the source's industrial category. A major modification is a physical change or change in the method of operation

at an existing major source that causes a significant "net emissions increase" at that source of any regulated pollutant. Table C-4 lists the PSD significant emissions rate thresholds for selected criteria pollutants (EPA, 1990).

Table C-4. Criteria Pollutant Significant Emissions Rate Increases Under PSD Regulations

Pollutant	Significant Emissions Rate (tons/year)
PM_{10}	15
$PM_{2.5}$	10
Total suspended particulates	25
SO_2	40
NO_x	40
Ozone (VOCs)	40
CO	100

Source: Title 40 CFR Part 51
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compound; Pb = lead; $PM_{2.5}$ = particulate matter with a diameter less than or equal to 2.5 microns; PM_{10} = particulate matter with a diameter less than or equal to 10 microns; PSD = Prevention of Significant Deterioration; SO_2 = sulfur dioxide; VOC = volatile organic compound

The goals of the PSD program are to (1) ensure economic growth while preserving existing air quality; (2) protect public health and welfare from adverse effects that might occur even at pollutant levels better than the NAAQS; and (3) preserve, protect, and enhance the air quality in areas of special natural recreational, scenic, or historic value, such as national parks and wilderness areas. Sources subject to PSD review are required by the CAA to obtain a permit before commencing construction. The permit process requires an extensive review of all other major sources within a 50-mile radius and all Class I areas within a 62-mile radius of the facility. Emissions from any new or modified source must be controlled using best available control technology. The air quality, in combination with other PSD sources in the area, must not exceed the maximum allowable incremental increase identified in Table C-5. National parks and wilderness areas are designated as Class I areas, where any appreciable deterioration in air quality is considered significant. Class II areas are those where moderate, well-controlled industrial growth could be permitted. Class III areas allow for greater industrial development.

Table C-5. Federal Allowable Pollutant Concentration Increases Under PSD Regulations

Pollutant	Averaging Time	Maximum Allowable Concentration ($\mu g/m^3$)		
		Class I	Class II	Class III
PM_{10}	Annual	4	17	34
	24-hour	8	30	60
SO_2	Annual	2	20	40
	24-hour	5	91	182
	3-hour	25	512	700
NO_2	Annual	2.5	25	50

Source: Title 40 CFR Part 51
NO_2 = nitrogen dioxide; PM_{10} = particulate matter with a diameter less than or equal to 10 microns; PSD = Prevention of Significant Deterioration; SO_2 = sulfur dioxide; $\mu g/m^3$ = micrograms per cubic meter

The Ambient Monitoring Program measures levels of air pollutants throughout the state. The data are used to determine compliance with air standards established for five compounds and evaluate the need for special controls for various other pollutants.

The air quality monitoring network is used to identify areas where the ambient air quality standards are being violated, and plans are needed to reduce pollutant concentration levels to be in attainment with the standards. Also included are areas where the ambient standards are being met, but plans are necessary to ensure maintenance of acceptable levels of air quality in the face of anticipated population or industrial growth.

The result of this attainment/maintenance analysis is the development of local and statewide strategies for controlling emissions of criteria air pollutants from stationary and mobile sources. The first step in this process is the annual compilation of the ambient air monitoring results, and the second step is the analysis of the monitoring data for general air quality, exceedances of air quality standards, and pollutant trends.

C.2 REGULATORY COMPARISONS

In order to evaluate air emissions and their impact on the overall region of influence (ROI), the emissions associated with the Proposed Action activities were evaluated in accordance with the tiered approach outlined in the *Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide – Fundamentals, Volume I and Volume II – Advanced Assessments*. The first step was to conduct an assessment to determine if the action was exempt from air quality analysis. The Proposed Action was not subject to any categorical exclusions or General Conformity exemptions. Since the Proposed Action is not subject to any exemptions under Tier I, a quantitative assessment (Tier II) was completed. The Tier II assessment requires a formal evaluation of air impacts based on a quantitative net change emission inventory of the annual net total direct and indirect emissions of pollutants of concern.

Air quality impacts were evaluated quantitatively based on a two-pronged approach. Potential impacts to air quality were first identified as the total emissions of any primary pollutant that equals 250 tons per year for that pollutant based on the federal New Source Review/PSD major stationary source threshold. In addition to criteria pollutants, greenhouse gases (GHGs) were quantified for the Proposed Action and alternatives for purposes of disclosing the local net effects (increase or decrease) and for their potential usefulness in making a reasoned choice among alternatives.

However, since the majority of the emissions related to the Proposed Action and alternatives would result from activities associated with mobile sources, a second-level indicator was deemed appropriate. Consequently, each pollutant was also evaluated and compared with the total region of influence (ROI) emissions on a pollutant-by-pollutant basis against the ROI's 2017 National Emissions Inventory (NEI) data.

Potential impacts to air quality are evaluated with respect to the extent, context, and intensity of the impact in relation to relevant regulations, guidelines, and scientific documentation. The Council on Environmental Quality (CEQ) defines *significance* in terms of context and intensity in 40 CFR 1508.27. This requires that the significance of the action must be analyzed with respect to the setting of the Proposed Action and based

relative to the severity of the impact. The CEQ National Environmental Policy Act Regulations (40 CFR 1508.27(b)) provide 10 key factors to consider in determining an impact's intensity.

Intensity refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:

(1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect will be beneficial.

(2) The degree to which the proposed action affects public health or safety.

(3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

(4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.

(5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

(6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

(8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

(10) Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.

To provide a more conservative analysis, the affected counties where the respective airfields are located and those underlying the Special Use Airspace were selected as the ROIs instead of the EPA-designated Air Quality Control Regions, which are much larger

areas. Air quality impacts would be considered significant if the increases in annual emissions of a pollutant would be anticipated to: (1) cause or contribute to a violation of any national or state ambient air quality standard; (2) expose sensitive receptors to substantially increased pollutant concentrations; (3) exceed any evaluation criteria established by an SIP or permit limitations/requirements; or (4) be anticipated to cause an exceedance of the NAAQS or contribute to nonattainment.

The Air Conformity Applicability Model (ACAM) Version 5.0.16 was utilized to provide a level of consistency with respect to emissions factors and calculations. The ACAM provides estimated air emissions from proposed federal actions in areas designated as nonattainment and/or maintenance for each specific criteria and precursor pollutant as defined in the NAAQS. Emission factors for aircraft were obtained from ACAM. Equations and emission factors can be found in this appendix in Section C.4 (Project Calculations).

C.3 NATIONAL EMISSIONS INVENTORY

The NEI is operated under the EPA's Emission Factor and Inventory Group, which prepares the national database of air emissions information with input from numerous state and local air agencies, tribes, and industries. The database contains information on stationary and mobile sources that emit criteria air pollutants and hazardous air pollutants. The database includes estimates of annual emissions, by source, of air pollutants in each area of the country on a yearly basis. The NEI includes emission estimates for all 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands. Emission estimates for individual point or major sources (facilities), as well as county-level estimates for area, mobile, and other sources, are currently available for years 2011, 2014, and 2017 for criteria pollutants and hazardous air pollutants. The 2017 NEI data were finalized in April 2020 and last updated on July 7, 2020, so those data were used in all analyses.

Criteria air pollutants are those for which the EPA has set health-based standards. Four of the six criteria pollutants are included in the NEI database:

- Carbon monoxide
- Nitrogen oxides
- Sulfur dioxide
- Particulate matter (with a diameter less than or equal to 10 and 2.5 microns)

The NEI also includes emissions of volatile organic compounds (VOCs), which are ozone precursors, emitted from motor vehicle fuel distribution and chemical manufacturing, as well as other solvent uses. VOCs react with nitrogen oxides in the atmosphere to form ozone. The NEI database defines three classes of criteria air pollutant sources:

- Point sources. Stationary sources of emissions, such as an electric power plant, that can be identified by name and location. A "major" source emits a threshold amount (or more) of at least one criteria pollutant and must be inventoried and reported. Many states also inventory and report stationary sources that emit amounts below the thresholds for each pollutant.

- Area sources. Small point sources such as a home or office building or a diffuse stationary source such as wildfires or agricultural tilling. These sources do not individually produce sufficient emissions to qualify as point sources. Dry cleaners are one example; for instance, a single dry cleaner within an inventory area typically will not qualify as a point source, but collectively the emissions from all of the dry cleaning facilities in the inventory area may be significant and, therefore, must be included in the inventory.
- Mobile sources. Any kind of vehicle or equipment with a gasoline or diesel engine (such as an airplane or ship).

The following are the main sources of criteria pollutant emissions data for the NEI:

- For electric generating units: EPA's Emission Tracking System/Continuous Emissions Monitoring Data and Department of Energy fuel use data.
- For other large stationary sources: state data and older inventories where state data were not submitted.
- For on-road and nonroad mobile sources: the Federal Highway Administration's estimate of vehicle miles traveled and emission factors from EPA's MOVES 2014a Model.
- EPA's Clean Air Market program supplies emissions data for electric power plants.
- For stationary area sources: state data, EPA-developed estimates for some sources, and older inventories where state or EPA data were not submitted.
- State and local environmental agencies supply most of the point source data.

C.4 PROJECT CALCULATIONS

C.4.1 Aircraft Flight Operations

Aircraft operations of concern are those that occur from ground level up to 3,000 feet above ground level (AGL). Neither the Texas nor South Dakota SIP specifies a mixing height; therefore, the default 3,000-foot AGL ceiling was assumed as the atmospheric mixing height above which any pollutant generated would not contribute to increased pollutant concentrations at ground level. Aircraft operations of interest at Dyess and Ellsworth were departures and arrivals (the landing and takeoff [LTO] cycle) and closed pattern work near the airfield (visual flight rules and instrument flight rules routes) that occur below 3,000 feet. There were also low-level flight operations occurring in the Special Use Airspaces that were also calculated based on the time in mode below 3,000 feet.

For each mode of operation, an aircraft engine operates at a specified power setting and for a specific period (time in mode). The pollutant emission rate is a function of the engine's operating mode, the fuel flow rate, and the engine's overall efficiency. Emissions

for a particular aircraft are calculated by knowing the specific engine pollutant emissions factors for each mode of operation and the time of operation in that mode.

The U.S. Air Force has developed emissions factors for aircraft engines, and Table C-6 presents an example of the emissions factors and aircraft engine performance data for aircraft type used in this analysis. The table lists the various engine modes, fuel flow, and corresponding pollutant emissions factors. Using these data, as well as information on activity levels (i.e., time in mode annually for all aircraft ground operations [e.g., trim tests], sorties, and LTO operations), pollutant emissions for each aircraft were calculated based on the following formula:

$$AEM_{POL} = (TAH/60) * (FC / 1000) * EF * NE/ 2000$$

AEM_{POL}: aircraft emissions per pollutant (tons)
TAH: total hours annually (min)
60: conversion factor minutes to hours
FC: fuel flow rate (pounds [lb]/hour)
1000: conversion factor, pounds to 1,000 pounds
EF: emission factor (lb/1,000 lb fuel)
NE: number of engines
2000: conversion factor, pounds to tons

Aircraft flying operations were calculated using ACAM emission factors and applying them to the operational parameters utilized in the noise analysis in order to calculate the emissions based on time in mode below 3,000 feet AGL for each aircraft. Only those portions of the flying operation that take place below the atmospheric mixing height are considered (these are the only emissions presumed to affect ground-level concentrations). Air emissions were estimated for each criteria pollutant based on fuel flow rates for each engine mode (e.g., idle, taxi, intermediate, military, and afterburner) per the flight profiles, ground operations data, and operational time in mode as provided by each installation. It should be noted that B-2A emission factors were used as a surrogate for the B-21 as those aircraft-specific emission factors are not yet available.

Table C-6. Aircraft Performance Data and Emissions Factors

Aircraft Type	Power Setting	Fuel Flow Rate (lb/hr)	Emissions Factors (lb pollutant/1,000 lb fuel)						
			VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
B-1B	Idle	1,117	0.16	1.07	4.1	24.46	2.18	0.96	3,234
	Approach	4,533	0.02	1.07	9.16	1.03	4.21	3.74	3,234
	Intermediate	6,557	0.04	1.07	13.15	0.85	1.35	0.72	3,234
	Military	7,828	0.12	1.07	12.83	0.83	1.68	1.2	3,234
	After Burn	15,314	1.46	1.07	16.92	43.49	2.87	2.4	3,234
B-21 (B-2A)[1]	Idle	1,097	0.29	1.07	4.3	20.98	1.25	1.03	3,234
	Approach	3,773	0.05	1.07	11.09	2.02	4.7	2.32	3,234
	Intermediate	6,350	0.03	1.07	18.01	0.85	3.05	2.72	3,234
	Military	10,887	0.03	1.07	33.12	0.65	1.64	1.48	3,234

Table C-6. Aircraft Performance Data and Emissions Factors

Aircraft Type	Power Setting	Fuel Flow Rate (lb/hr)	Emissions Factors (lb pollutant/1,000 lb fuel)						
			VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
	After Burn	0	0	0	0	0	0	0	3,234
C-130J	Idle	794	24.15	1.07	3.9	32	0.83	0.75	3,234
	Approach	1,185	14.26	1.07	4.4	22.2	0.97	0.87	3,234
	Intermediate	1,825	0.58	1.07	9.2	2.4	0.51	0.46	3,234
	Military	2,302	0.46	1.07	9.3	2.1	0.5	0.45	3,234
	After Burn	0	0	0	0	0	0	0	3,234
T-38	Idle	524	34.46	1.07	1.34	178.05	4.7	4.02	3,234
	Approach	798	2.59	1.07	2.13	78.2	3.01	1.84	3,234
	Intermediate	1,098	1.36	1.07	2.73	58.01	2.15	1.2	3,234
	Military	1,297	3.99	1.07	2.31	43.02	1.79	0.69	3,234
	After Burn	8,470	0.92	1.07	2.6	29	0.25	0.09	3,234
F/A-18E/F	Idle	685	3.39	1.07	1.7	110.18	4.47	3.1	3,234
	Approach	3,111	0.04	1.07	7.86	2.02	1.46	0.87	3,234
	Intermediate	6,464	0.07	1.07	17.03	1.54	1.57	0.9	3,234
	Military	7,739	0.02	1.07	25.83	1.48	1.61	0.89	3,234
	After Burn	15,851	1.85	1.07	5.43	50.31	3.57	3.21	3,234
C-12	Idle	115	57.7	1.07	2.43	64	0.5	0.45	3,234
	Approach	215	2.51	1.07	8.37	23.26	0.1	0.09	3,234
	Intermediate	400	0	1.07	7	1.2	0.25	0.23	3,234
	Military	425	0	1.07	7.81	1.01	0.24	0.22	3,234
	After Burn	0	0	0	0	0	0	0	3,234
KC-135	Idle	952	88.55	1.07	2.2	79	0.16	0.14	3,234
	Approach	3,333	1.61	1.07	5.8	7.9	0.93	0.84	3,234
	Intermediate	6,508	0.23	1.07	9.5	2.4	1.92	1.73	3,234
	Military	7,460	0.12	1.07	11	1.9	1.72	1.55	3,234
	After Burn	0	0	0	0	0	0	0	3,234
P-8A	Idle	817	2.65	1.07	4.09	34.71	0.07	0.06	3,234
	Approach	2,444	0.07	1.07	8.6	3.68	0.05	0.05	3,234
	Intermediate	7,103	0.04	1.07	15.6	0.15	0.08	0.07	3,234
	Military	8,619	0.02	1.07	18.93	0.18	0.09	0.09	3,234
	After Burn	0	0	0	0	0	0	0	3,234
B-52	Idle	1,093	5.32	1.07	0.78	134.96	6.13	3.8	3,234

Table C-6. Aircraft Performance Data and Emissions Factors

Aircraft Type	Power Setting	Fuel Flow Rate (lb/hr)	Emissions Factors (lb pollutant/1,000 lb fuel)						
			VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
	Approach	4,884	0.24	1.07	7.12	9.67	3.68	1.46	3,234
	Intermediate	6,356	0.06	1.07	8.1	4.16	5.28	1.72	3,234
	Military	8,264	0.02	1.07	10.29	1.49	3.58	1.23	3,234
	After Burn	0	0	0	0	0	0	0	3,234
C-17	Idle	978	0.37	1.07	3.76	22.7	10.67	8.75	3,234
	Approach	4,645	0.05	1.07	15.49	0.51	5.53	5.1	3,234
	Intermediate	10,408	0.04	1.07	32.72	0.32	2.31	1.42	3,234
	Military	13,905	0.01	1.07	35.04	0.32	0.06	0.05	3,234
	After Burn	0	0	0	0	0	0	0	3,234
C-16	Idle	1,111	0.22	1.07	3.77	24.11	2.6	1.12	3,234
	Approach	5,080	0.03	1.07	9.78	5.77	1.37	0.91	3,234
	Intermediate	7,332	0.05	1.07	16.92	3.47	0.58	0.41	3,234
	Military	11,358	0.04	1.07	29	3.38	0.14	0	3,234
	After Burn	18,088	1.21	1.07	14.26	67.41	3.35	2.98	3,234

CO = carbon monoxide; hr = hour; lb = pounds; NO_x = nitrous oxides; PM_{10} = particulate matter with a diameter of 10 microns or less; VOC = volatile organic compound

1. B-2A emission factors were used as a surrogate for the B-21 as those aircraft-specific emission factors are not yet available.

C.4.2 Personnel and Construction Emissions

Emissions associated with personnel increases, such as vehicular emissions increases due to worker commutes, were calculated using ACAM 5.0.16 using the default values for each respective installation. Likewise, construction emissions resulting from the various facility construction, demolition, and renovation projects associated with the Proposed Action were also calculated using the default values in ACAM 5.0.16.

Calculations for construction emissions were completed using the methodologies described in the U.S. Air Force *Air Quality Environmental Impact Analysis Process (EIAP) Guide – Volumes I and II* (U.S. Air Force, 2017a; U.S. Air Force, 2018).

The ACAM was used to provide a level of consistency with respect to emissions factors and calculations. The ACAM evaluates the individual emissions from different sources associated with the construction phases. Phase I is the site preparation phase, and Phase II is the actual construction phase. For facilities and infrastructure construction, demolition, and renovation, these sources include grading activities, paving, construction worker trips, stationary equipment (such as saws and generators), and mobile equipment emissions (U.S. Air Force, 2017b). Formulas and assumptions included in the ACAM program calculations are provided below in Sections C.4.2.1 through C.4.2.5.

The total square footage of each construction footprint was entered into the ACAM. Based on these assumptions, the construction emissions were calculated using the methodology described below.

C.4.2.1 Grading Activities

Grading activities are divided into grading equipment emissions and grading operations emissions.

Grading equipment emissions are combustive emissions from equipment engines and are calculated in the following manner:

$$VOC = 0.22 \text{ (pounds [lb]/acre/day)} * acres * DPY_1/2{,}000$$

$$\text{Nitrogen oxide } (NO_x) = 2.07 \text{ (lb/acre/day)} * acres * DPY_1/2{,}000$$

$$\text{Particulate matter with a diameter less than or equal to 10 microns } (PM_{10}) = 0.17 \text{ (lb/acre/day)} * acres * DPY_1/2{,}000$$

$$\text{Carbon monoxide } (CO) = 0.55 \text{ (lb/acre/day)} * acres * DPY_1/2{,}000$$

$$\text{Sulfur dioxide } (SO_2) = 0.21 \text{ (lb/acre/day)} * acres * DPY_1/2{,}000$$

Where

acres = number of gross acres to be graded during Phase I construction

DPY_1 = number of days per year used for grading during Phase I construction

2,000 = conversion factor from pounds to tons

All emissions are represented as tons per year.

Grading operations emissions are fugitive dust and tiny soil particles distributed into the air through ground disturbance and are calculated using a similar equation.

Emissions calculation:

$$PM_{10} \text{ (tons/year [yr])} = 60.7 \text{ (lb/acre/day)} * acres * DPY_1/2{,}000$$

Where

acres = number of gross acres to be graded during Phase I construction

DPY_1 = number of days per year used for grading during Phase I construction

2,000 = conversion factor from pounds to tons

The calculations assumed there were no controls used to reduce fugitive emissions. Also, it was assumed construction activities would occur within a single calendar year to provide a conservative estimate.

C.4.2.2 Construction Worker Trips

Construction worker trips during the construction phases of the project are calculated and represented as a function of the number of facilities constructed and/or square feet of commercial construction.

Calculation:

*Trips (trips/day) = 0.42 (trip/facility/day) * Area of training facilities*

Where:

Areas of training facilities = total square footage of construction projects to be constructed in the given year of construction

Total daily trips are applied to the following factors depending on the corresponding years.

Year 2009:

- VOC_E = 0.016 * trips
- NOx_E = 0.015 * trips
- PM_{10E} = 0.0022 * trips
- CO_E = 0.262 * trips

Year 2010 and beyond:

- VOC_E = 0.012 * trips
- NOx_E = 0.013 * trips
- PM_{10E} = 0.0022 * trips
- CO_E = 0.262 * trips

To convert from pounds per day to tons per year:

$$VOC\ (tons/yr) = VOC_E * DPY_{II}/2{,}000$$

$$NOx\ (tons/yr) = NOx_E * DPY_{II}/2{,}000$$

$$PM_{10}\ (tons/yr) = PM10_E * DPY_{II}/2{,}000$$

$$CO\ (tons/yr) = CO_E * DPY_{II}/2{,}000$$

Where

2,000 = conversion factor from pounds to tons

DPY_{II} = number of days per year during Phase II construction activities

C.4.2.3 Stationary Equipment

Emissions from stationary equipment occur when gasoline-powered equipment (e.g., saws, generators) are used at the construction site.

Emissions calculations:

$$VOC = 0.198 \text{ pounds (lb)/day} * (GRSQFT) * DPY_{II}/2{,}000$$

$$NO_x = 0.137 \text{ lb/day} * (GRSQFT) * DPY_{II}/2{,}000$$

$$PM_{10} = 0.004 \text{ lb/day} * (GRSQFT) * DPY_{II}/2{,}000$$

$$CO = 5.29 \text{ lb/day} * (GRSQFT) * DPY_{II}/2{,}000$$

$$SO_2 = 0.007 \text{ lb/day} * (GRSQFT) * DPY_{II}/2{,}000$$

Where

GRSQF = gross square feet of commercial buildings to be constructed during Phase II

DPY_{II} = number of days per year during Phase II construction

2,000 = conversion factor from pounds to tons

C.4.2.4 Mobile Equipment

Mobile equipment (such as forklifts and dump trucks) emissions include pollutant releases generated by the equipment during Phase II construction.

Emissions calculations:

$$VOC = 0.17 \text{ lb/day} * (GRSQFT) * DPY_{II}/2{,}000$$

$$NO_x = 1.86 \text{ lb/day} * (GRSQFT) * DPY_{II}/2{,}000$$

$$PM_{10} = 0.15 \text{ lb/day} * (GRSQFT) * DPY_{II}/2{,}000$$

$$CO = 0.78 \text{ lb/day} * (GRSQFT) * DPY_{II}/2{,}000$$

$$SO_2 = 0.23 \text{ lb/day} * (GRSQFT) * DPY_{II}/2{,}000$$

Where

GRSQF = gross square feet of training area to be constructed during Phase II

DPY_{II} = number of days per year during Phase II construction

2,000 = conversion factor from pounds to tons

C.4.2.5 Vehicle Emissions

Grading vehicle emissions are generated from on-road government use, off-road base-support vehicles, and maintenance construction vehicles. Since specific numbers and types of vehicles for each base are difficult to obtain, emissions from this category were based on historical installation fuel consumption data.

C.4.2.5.1 On-Road Government-Owned Vehicle (GOV)

Emissions calculation:

$$E_p = N \times F \times GOVVMT \times \frac{EF_p}{454 \times 2000}$$

Where

N = number of personnel realigned

F = fraction of the year the personnel operate

GOVVMT = per-employee volume of miles traveled (VMT), miles/employee

EF_p = emissions factor for pollutant, *p*, grams/mile. These factors were determined from MOVES 2014a for total hydrocarbons (VOCs), CO, and NO_x for the chosen fleet mix.

454 = conversion factor from grams to pounds

2,000 = conversion factor from pounds to tons

C.4.2.5.2 Off-Road Base-Support Vehicles

A variety of off-road base-support vehicles are used at typical Air Force installations. There are many types of these vehicles, both gasoline and diesel fueled. Since specific numbers and types of vehicles for each base are difficult to obtain, emissions from this category were based on historical data on installation fuel consumption.

Emissions calculation:

$$E_p = N \times F \times \frac{EF_p}{2000}$$

Where

N = number of personnel realigned

F = fraction of the year the personnel operate

EF_p = per employee emissions factor, pounds.

Emissions factors are as follows: SO_2 = 0.24, PM_{10} = 0.34, CO = 7.91, VOC = 0.74

2,000 = conversion factor from pounds to tons

C.5 REFERENCES

EPA. (2016). *NAAQS Table*. Retrieved from United States Environmental Protection Agency: https://www.epa.gov/criteria-air-pollutants/naaqs-table. December 20.

EPA. (2020a). *Texas Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants*. Retrieved from United States Environmental Protection Agency: https://www3.epa.gov/airquality/greenbook/anayo_tx.html. June 30

EPA. (2020b). *De Minimis Tables*. Retrieved from United States Environmental Protection Agency: https://www.epa.gov/general-conformity/de-minimis-tables. May 27.

U.S. Air Force. (2017a). *Air Force Air Quality Environmental Impact Process (EIAP) Guide - Fundamentals, Volume 1 of 2.* Lackland Air Force Base, Texas: Air Force Civil Engineering Center.

U.S. Air Force. (2017b). *U.S. Air Force Air Conformity Applicability Model Quick Start Guide Version 5.0.* San Antonio, TX: Air Force Civil Engineer Center.

U.S. Air Force. (2018). *Air Quality Environmental Impact Analysis Process (EIAP) Guide Volume II - Advanced Assessments.* Lackland Air Force Base, Texas: Air Force Civil Engineer Center.

APPENDIX D

LAND USE

This page is intentionally blank.

TABLE OF CONTENTS

Page

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AICUZ	Air Installation Compatible Use Zone
APZs	Accident Potential Zones
CZs	Clear Zones
dB	decibels
dBA	A-weighted decibels
DNL	day-night average sound level
ICEMAP	Installation Complex Encroachment Management Action Plan

D. LAND USE

D.1 OFF-BASE LAND USE AND ASSOCIATED NOISE ZONES AND ACCIDENT POTENTIAL ZONES

D.1.1 Dyess Air Force Base

The following is a summary of information contained in the 2015 Dyess Air Force Base (AFB) Air Installation Compatible Use Zone (AICUZ) study (Dyess AFB, 2015). Off-base land use categories are discussed in the context of definitions provided in that study. Note that land use categories have since been updated, and the revised definitions are used for descriptions and analyses associated with the No Action Alternative and Proposed Action.

Land use in most areas adjacent to Dyess AFB consists primarily of open space/low density, with a small amount of residential, commercial, and industrial. A mix of residential, commercial, industrial, and other uses occur in developed portions of Abilene. Abilene's land use policies, which guide development, are discussed in the city's Comprehensive Plan (City of Abilene, 2004). The city recognizes Dyess AFB as a significant asset to the local economy and is committed to promoting policies that will enable the base to meet current and future mission requirements. The city's land use and development strategies include controlling incompatible encroachment around the base. Abilene airport zoning regulations mitigate effects to the public from airfield operations at Dyess AFB.

Approximately 77 percent of land within the Tye city limit consists of open space/low-density use (Dyess AFB, 2015). The city center has an interspersed land use pattern of residential, recreational, and public/quasi-public. Commercial and industrial land use occurs adjacent to I-20. A mixture of mostly residential and industrial land uses occur along other primary roads. The city of Tye recognizes the noise zones and Accident Potential Zones (APZs) of Dyess AFB as a growth development restraint. In the community of Caps, industrial land use occurs along Highway 277. Land use in the remainder of the community consists primarily of open space/low-density, along with small amounts of residential. Taylor County does not have land use regulations. Outside of Abilene, Tye, and Caps, the great majority of county land use in the vicinity of Dyess AFB is open space/low density, along with a small number of residential parcels.

Land use adjacent to Dyess AFB may potentially be affected by noise and safety issues associated with aircraft operations. Noise contours, Clear Zones (CZs), and APZs extend in an approximately north-south axis along the primary runway centerline. The off-base area exposed to various noise levels (outside of CZs and APZs) and accident zones under existing conditions for each land use type, as defined in the 2015 AICUZ study, is shown in Table D-1 and Table D-2. Noise zone contours and accident zones are presented on figures in the AICUZ study.

Table D-1. Off-Base Land Use Area Noise Exposure from the 2015 Dyess AFB AICUZ Study

Land Use Category	Acres within Noise Zones[1] (dB DNL)				
	65-69	70-74	75-79	80+	Total
Residential	78	34	0	0	**112**
Commercial	26	24	0	0	**50**
Industrial	83	55	16	0	**154**
Public/Quasi-Public	2	13	8	0	**23**
Open Space/Low-Density	5,405	2,484	750	31	**8,670**
Recreational	0	0	0	0	**0**
Total	**5,595**	**2,610**	**774**	**31**	**9,009**

Source: (Dyess AFB, 2015)
dB = decibel; DNL = day-night average sound level
Notes: [1]Clear Zone and Accident Potential Zone areas are not included

Table D-2. Off-Base Land Use Area within Clear Zones and Accident Potential Zones Identified in the 2015 Dyess AFB AICUZ Study

Land Use Category	Acres within Clear Zones and Accident Potential Zones			
	Clear Zone	APZ I	APZ II	Total
Residential	0	24	29	**53**
Commercial	0	7	7	**14**
Industrial	0	68	73	**141**
Public/Quasi-Public	5	3	3	**11**
Open Space/Low-Density	107	553	809	**1,469**
Recreational	0	0	0	**0**
Total	**112**	**655**	**921**	**1,688**

Source: (Dyess AFB, 2015)
APZ = accident potential zone

Overall, about 96 percent of off-base land use within noise zones of 65 dB DNL or greater consists of open space/low density, which is compatible with all noise levels. Open space/low density accounts for about 87 percent of land use within the combined CZs/APZs. The base's AICUZ and Installation Complex Encroachment Management Action Plan (ICEMAP) studies provide additional information on specific areas within noise zones and APZs under existing conditions. Land use in noise zones within the Abilene city limit occurs north of the installation and consists of open space/low-density use only. However, there are existing incompatible/not recommended land uses within Abilene's extraterritorial jurisdiction (regulated areas outside the city limits) (Dyess AFB, 2018b). Five residential areas in the city of Tye occur within noise zones greater than 65 dB DNL. Two of these areas, along with the Tye RV Park, are considered incompatible. Public/quasi-public land use areas occur in the center of Tye within noise zones of 75+ dB DNL, which is also considered incompatible. Overall, most land within the 75+ dB DNL noise zones are open space/low density, commercial, and agricultural use. In the community of Caps, conditionally compatible land in the 80+ dB DNL noise zone consists of industrial use. Incompatible use consists of residential parcels in the 75–79 dB DNL noise zone. Several residential areas in south Caps in the 65–74 dB DNL noise zone are conditionally compatible.

With regard to accident zones, the northern CZ is entirely within the installation boundary, with the exception of Air Base Road, which traverses the northeastern corner of the CZ. Land in the northern APZ I consists primarily of open space/low-density use but also contains residential, commercial, and public/quasi-public use. Residential land use is considered incompatible, while commercial and public/quasi-public uses are considered conditionally compatible. Land in the northern APZ II also consists primarily of open space/ low-density use but includes large commercial and industrial parcels, which are considered conditionally compatible. The City of Tye General Plan Report proposes to convert several existing large industrial and commercial parcels, along with some small residential lots, to vacant/agricultural use. This would alleviate some of the compatibility issues associated with the APZs. Approximately half of the land in the southern CZ is within the installation boundaries; the remaining land consists of open space/low density, including some agricultural use. There is an industrial use in southern APZ I. Dyess AFB owns restrictive easements to prevent development within this area, and because of these easements, it is considered a compatible use. Without the easements, this area would be conditionally compatible. All land in the southern APZ I and the majority of land in APZ II consists of open space/low density, which is considered compatible. Residential and industrial land in APZ II, which occurs in the community of Caps, are considered conditionally compatible uses. The majority if land in the Landing Zone APZs is within the installation boundary. A small portion of land for the Runway 163/343 Landing Zone extends outside the installation; land use in this area is open space/low density, which is compatible. Dyess AFB has proposed the designation of a Safety Influence Area within the CZs and APZs, which would prevent further development of incompatible and not-recommended land uses in these areas (Dyess AFB, 2018b).

D.1.2 Ellsworth Air Force Base

The following is a summary of information contained in the 2008 Ellsworth AFB AICUZ study (Ellsworth AFB, 2008). Off-base land use categories are discussed in the context of definitions provided in that study. Note that land use categories have since been updated, and the revised definitions are used for descriptions and analyses associated with the No Action Alternative and Proposed Action.

Land use surrounding Ellsworth AFB is mixed, with the majority of the development southwest of the installation in Rapid City (Ellsworth AFB, 2008). Generally, most adjacent development has been in Pennington County south of the installation. The Box Elder Planning and Zoning Commission, the Pennington County Board of County Commissioners, and the Rapid City Planning Commission have enacted zoning ordinances that regulate land use adjacent to Ellsworth AFB.

The city of Box Elder has five land use designations, consisting of residential, commercial, agriculture, mobile home park, and industrial (City of Box Elder, 2014). Of these, agriculture and residential are the largest use categories, representing 61 percent and 27 percent of the total city area, respectively. Residential and commercial areas occur along Highway 1416. Commercial development has occurred near the Liberty Boulevard/I-90 intersection. The South Dakota Ellsworth Development Authority is pursuing a plan to purchase land in this area to prevent future incompatibility (Ellsworth

AFB, 2016). Box Elder's Comprehensive Plan provides suggestions for land use and zoning that would reduce or eliminate conflicts with noise zones and APZs at Ellsworth AFB. The city plans to annex areas to the north, incorporating existing residential areas east of the base, along with vacant land, for future residential development.

Rapid City has numerous designated land use categories, but the primary uses are residential, commercial, and industrial. With the exception of Ashland Heights, land between Ellsworth AFB and Rapid City is mostly undeveloped. However, there is potential for Rapid City to annex and develop areas along Elk Vale Road toward the base. The Rapid City Comprehensive Plan recognizes Ellsworth AFB as one of the primary employers in the region and includes support of the base as one of the city's stated goals (Rapid CIty, 2014). The plan discourages development that could conflict with aircraft operations at the base.

Land use categories in Meade County are agricultural, residential, commercial/industrial, public/quasi-public, conservation/recreation, and aggregate mining (Meade County, 2009). Most of Meade County is undeveloped, with the majority of land use consisting of ranching and agriculture. Most residential, commercial, and industrial growth has been concentrated along I-90, northwest of Ellsworth AFB (e.g., Sturgis, Summerset). However, there has been some development further east, including some low density residential development directly north of the base. The South Dakota Ellsworth Development Authority is working with ranchers to purchase development rights to prevent more development adjacent to the base (Ellsworth AFB, 2016). A large ridge along the north boundary of Ellsworth AFB lowers development potential immediately next to the base fenceline. The county's land use plan includes adopting noise attenuation guidelines for construction of habitable dwellings and buildings in elevated noise areas, and encouraging state and federal agencies to purchase development rights around Ellsworth AFB to limit development in areas with noise levels above 70 dBA.

Land use categories in Pennington County consist of agriculture, residential, commercial, industrial, open space, and Native American lands, along with several subcategories. Land in Pennington County, outside the cities of Box Elder and Rapid City, is mostly rural with some low density residential development (Ellsworth AFB, 2016). The Pennington County Comprehensive Plan (currently being updated) states that it is important to ensure that land uses surrounding Ellsworth AFB are compatible with the military mission and operations (Pennington County, 2020). Stated goals in the plan include developing a Military Influence Area, which would be defined based on noise and safety guidance in Ellsworth AFB's AICUZ study and Joint Land Use Study.

Land use adjacent to Ellsworth AFB may potentially be affected by noise and safety issues associated with aircraft operations. Noise contours, CZs, and APZs extend northwest and southeast along the runway centerline. All of the noise zones encompass land in the city of Box Elder and in Pennington and Meade counties. The noise zones do not extend into Rapid City. The 65 to 74 dB DNL noise zones arc to the north/northeast because most flight tracks turn northeast to avoid Rapid City Regional Airport airspace and to minimize noise exposure in populated areas to the greatest extent possible.

The off-base area exposed to various noise levels and accident zones under existing conditions for each land use type, as defined in the 2008 AICUZ study, is shown in Table D-3 and Table D-4. Specific land use categories were not provided for the accident zone areas. Noise zone contours and accident zones are presented on figures in the AICUZ study.

Table D-3. Off-Base Land Use Area Noise Exposure from the 2008 Ellsworth AFB AICUZ Study

Land Use Category	Acres within Noise Zones (dBA)				
	65-69	70-74	75-79	80+	Total
Residential	768	430	135	1	**1,334**
Commercial	226	44	34	13	**317**
Industrial	7	0	0	0	**7**
Public/Semi-Public	28	40	22	3	**93**
Open Space/Low-Density	8,451	3,880	1,545	689	**14,565**
Recreational	0	13	0	0	**13**
Transportation	235	199	134	24	**592**
Total	**9,715**	**4,606**	**1,870**	**730**	**16,921**

Table D-4. Off-Base Land Use Area within Clear Zones and Accident Potential Zones Identified in the 2008 Ellsworth AFB AICUZ Study

Accident Potential Category	Acres within Clear Zones and Accident Potential Zones
Clear Zone	132
Accident Potential Zone I	663
Accident Potential Zone II	964
Total	**1,759**

Source: (Ellsworth AFB, 2008)

Overall, about 86 percent of off-base land use within noise zones of 65 A-weighted decibels (dBA) or greater consists of open space/low density. This use category is compatible with all noise levels evaluated, from 65 dBA to over 80 dBA. Residential and public/semi-public land uses are present in every noise zone, although the area in the 80+ dBA noise zone is extremely small. The base's AICUZ study provides additional information on specific areas within noise zones and APZs. All of the noise zones encompass land within Box Elder. Land use in the 80+ dBA noise zone consists of residential, open space/low density, transportation, and commercial. Land use within the southern APZs includes residential, open space/low density, public/semi-public, and commercial. Noise zones do not encompass land within Rapid City. The northeastern boundary of the city is approximately two miles southwest of the 65-69 dBA noise zone. Rapid Valley, which is a census-designated unincorporated suburb of Rapid City, is about 0.5 mile from this zone. Land outside of Box Elder and Rapid City within Pennington County consists of large tracts of open space/low-density use with smaller areas of residential parcels closer to the urban areas. Meade County consists almost entirely of open space/low-density land use, with small pockets of residential use surrounding the installation. Land use within the noise zones and APZs in Meade County consists primarily of open space/low-density, with small areas of residential use in the 65-74 dBA

noise zones. A small parcel of residential land is within the 80+ dBA noise, directly south of the northern CZ.

Land in the Ellsworth AFB CZs occurs either within the installation boundary or has been acquired by the base via easements (Ellsworth AFB, 2008). All land within the northern and southern CZs is considered compatible. Ellsworth AFB has property easements in the majority of the land in the northern APZ I but does not have easements in the northern APZ II or either of the southern APZs. All land in the northern APZs is compatible. As of the time the 2008 AICUZ report was prepared, approximately 22 percent (223 acres) of the land in the southern APZs was considered conditionally compatible and approximately 4 percent (39 acres) was incompatible. Conditionally compatible land consisted of commercial use in APZ I and residential use in APZ II. Conditionally compatible residential land consisted of mobile homes and single family homes south of Old Highway 1416. Incompatible land consisted of residential and public/semi-public land in APZ I. The incompatible residential land consisted of mobile homes south of I-90 and north of Old U.S. Highway 1416. The incompatible public/semi-public land contained the Emmanuel Baptist Church and Harvest Time Free Will Baptist Church.

D.2 LAND USE CATEGORY DEFINITIONS

Table D-5. Land Use Definitions from Dyess AFB and Ellsworth AFB AICUZ Studies

Land Use Category	Definition
Residential	All types of residential activity, such as single- and multi-family residences and mobile homes, at a density greater than one dwelling unit per acre.
Commercial	Offices, retail, restaurants, businesses, and other types of commercial activity.
Industrial	Areas and the facilities they contain that are owned or used for manufacturing, warehousing, and other similar uses.
Public/Quasi-Public	Publicly owned lands or lands to which the public has access, such as public buildings or institutional facilities.
Recreational	Land areas designated for recreational activity, including local parks; wilderness areas and reservations; conservation areas; and areas designated for trails, hikes, camping, and other similar uses.
Open Space/Low Density	Undeveloped land areas, forested land, agricultural land, grazing areas, water or wetland areas, and areas with residential activity at densities less than or equal to one dwelling per acre.
Transportation	Major transportation features including roads, freeways, interstates, and railroads.

AFB = Air Force Base; AICUZ = air installation compatible use zone

Table D-6. Land Use Definitions Associated with the 2016 USDA Land Use Dataset

Land Use Category	Definition
Water	
Open Water	Areas of open water, generally with less than 25% cover of vegetation or soil.
Perennial Ice/Snow	Areas characterized by a perennial cover of ice and/or snow, generally greater than 25% of total cover.
Developed	
Developed, Open Space	Areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20% of total cover. These areas most commonly include large-lot single-family

Table D-6. Land Use Definitions Associated with the 2016 USDA Land Use Dataset

Land Use Category	Definition
	housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.
Developed, Low Intensity	Areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20% to 49% percent of total cover. These areas most commonly include single-family housing units.
Developed, Medium Intensity	Areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50% to 79% of the total cover. These areas most commonly include single-family housing units.
Developed, High Intensity	Highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80% to 100% of the total cover.
Barren	
Barren Land (Rock/Sand/Clay)	Areas of bedrock, desert pavement, scarps, talus, slides, volcanic material, glacial debris, sand dunes, strip mines, gravel pits and other accumulations of earthen material. Generally, vegetation accounts for less than 15% of total cover.
Forest	
Deciduous Forest	Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species shed foliage simultaneously in response to seasonal change.
Evergreen Forest	Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species maintain their leaves all year. Canopy is never without green foliage.
Mixed Forest	Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. Neither deciduous nor evergreen species are greater than 75% of total tree cover.
Shrubland	
Dwarf Scrub	Alaska only areas dominated by shrubs less than 20 centimeters tall with shrub canopy typically greater than 20% of total vegetation. This type is often co-associated with grasses, sedges, herbs, and non-vascular vegetation.
Shrub/Scrub	Areas dominated by shrubs; less than 5 meters tall with shrub canopy typically greater than 20% of total vegetation. This class includes true shrubs, young trees in an early successional stage or trees stunted from environmental conditions.
Herbaceous	
Grassland/Herbaceous	Areas dominated by gramanoid or herbaceous vegetation, generally greater than 80% of total vegetation. These areas are not subject to intensive management such as tilling, but can be utilized for grazing.
Sedge/Herbaceous	Alaska only areas dominated by sedges and forbs, generally greater than 80% of total vegetation. This type can occur with significant other grasses or other grass like plants, and includes sedge tundra, and sedge tussock tundra.
Lichens	Alaska only areas dominated by fruticose or foliose lichens generally greater than 80% of total vegetation.
Moss	Alaska only areas dominated by mosses, generally greater than 80% of total vegetation.
Planted/Cultivated	
Pasture/Hay	Areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay vegetation accounts for greater than 20% of total vegetation.

Table D-6. Land Use Definitions Associated with the 2016 USDA Land Use Dataset

Land Use Category	Definition
Cultivated Crops	Areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops such as orchards and vineyards. Crop vegetation accounts for greater than 20% of total vegetation. This class also includes all land being actively tilled.
Wetlands	
Woody Wetlands	Areas where forest or shrubland vegetation accounts for greater than 20% of vegetative cover and the soil or substrate is periodically saturated with or covered with water.
Emergent Herbaceous Wetlands	Areas where perennial herbaceous vegetation accounts for greater than 80% of vegetative cover and the soil or substrate is periodically saturated with or covered with water.

Source: (MRLC, 2016)

D.3 INFORMATION USED FOR LAND USE COMPATIBILITY DETERMINATION

Table D-7. Corresponding Land Use Categories

Current (2016) Land Use Category	Most Closely Corresponding Land Use Category or Categories, AICUZ Studies
Open Water	Open Space/Low Density
Perennial Ice/Snow	Open Space/Low Density
Developed, Open Space	Open Space/Low Density
Developed, Low Intensity	Residential
Developed, Medium Intensity	Residential
Developed, High Intensity	Commercial; Industrial
Barren Land	Open Space/Low Density; Recreational
Deciduous Forest	Open Space/Low Density; Recreational
Evergreen Forest	Open Space/Low Density; Recreational
Mixed Forest	Open Space/Low Density; Recreational
Dwarf Scrub	Open Space/Low Density; Recreational
Shrub/Scrub	Open Space/Low Density; Recreational
Grassland/Herbaceous	Open Space/Low Density; Recreational
Sedge/Herbaceous	Open Space/Low Density
Lichens	Open Space/Low Density
Moss	Open Space/Low Density
Pasture/Hay	Open Space/Low Density
Cultivated Crops	Open Space/Low Density
Woody Wetlands	Open Space/Low Density; Recreational
Emergent Herbaceous Wetlands	Open Space/Low Density; Recreational

AICUZ = air installation compatible use zone

Table D-8. Generalized Land Use Compatibility

Land Use Category	Clear/Accident Potential Zones			Noise Zones (dB DNL)			
	CZ	APZ I	APZ II	65-69	70-74	75-79	80+
Open Water	Y	Y	Y	Y	Y	Y	Y
Perennial Ice/Snow	Y	Y	Y	Y	Y	Y	Y
Developed, Open Space	C	Y	Y	Y	C	C	N
Developed, Low Intensity	N	N	C	C	C	N	N
Developed, Medium Intensity	N	N	C	C	C	N	N
Developed, High Intensity	N	C	C	Y	C	C	N
Barren Land	Y	Y	Y	Y	Y	Y	Y
Deciduous Forest	C	C	Y	Y	C	C	C
Evergreen Forest	C	C	Y	Y	C	C	C
Mixed Forest	C	C	Y	Y	C	C	C
Dwarf Scrub	C	Y	Y	Y	Y	Y	Y
Shrub/Scrub	C	Y	Y	Y	C	C	C
Grassland/Herbaceous	C	Y	Y	Y	C	C	C
Sedge/Herbaceous	C	Y	Y	Y	Y	Y	Y
Lichens	C	Y	Y	Y	Y	Y	Y
Moss	C	Y	Y	Y	Y	Y	Y
Pasture/Hay	C	Y	Y	Y	Y	Y	Y
Cultivated Crops	C	Y	Y	Y	Y	Y	Y
Woody Wetlands	C	Y	Y	Y	Y	Y	Y
Emergent Herbaceous Wetlands	C	Y	Y	Y	Y	Y	Y

APZ = accident potential zone; CZ = clear zone; dB = decibel; DNL = day-night noise level average
Y = compatible use; C = conditionally compatible use; N = non-compatible use

This page is intentionally blank.

APPENDIX E

BIOLOGICAL RESOURCES

This page is intentionally blank.

TABLE OF CONTENTS

This page is intentionally blank.

E. BIOLOGICAL RESOURCES SUPPORTING INFORMATION

E.1 USFWS CONSULTATION – ELLSWORTH AFB

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Dakota Ecological Services
420 South Garfield Avenue, Suite 400
Pierre, South Dakota 57501-5408

IN REPLY REFER TO:
Informal consultation for
B-21 Environmental Impact
Statement

May 20, 2020

Dr. Gary Brundige
Natural/Cultural/EIAP Program Manager
28 CES/CEIEC
2125 Scott Drive
Ellsworth Air Force Base, South Dakota, 57706

Dear Dr. Gary Brundige:

This letter is in response to your request received April 23, 2020 for environmental comments regarding the B-21 Environmental Impact Statement on Ellsworth Air Force Base, SD

In accordance with section 7(c) of the Endangered Species Act, as amended, 16 USC 1531 et seq., we have determined that the project, as currently planned, does not involve any federally listed threatened or endangered species or their habitats. If changes are made in the project plans or operating criteria, or if additional information becomes available, the Service must 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 Dylan Turner of this office at (605) 224-8693, Extension 233.

Sincerely,

SCOTT LARSON Digitally signed by SCOTT LARSON Date: 2020.05.20 10:33:51 -05'00'

Scott Larson
Field Supervisor
North and South Dakota Field Office

E.2 LIST OF THREATENED AND ENDANGERED SPECIES THAT MAY OCCUR IN PROPOSED PROJECT LOCATION AND/OR MAY BE AFFECTED

E.2.1 Dyess Air Force Base

E.2.1.1 U.S. Fish and Wildlife List of Threatened and Endangered Species

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Austin Ecological Services Field Office
10711 Burnet Road, Suite 200
Austin, TX 78758-4460
Phone: (512) 490-0057 Fax: (512) 490-0974
http://www.fws.gov/southwest/es/AustinTexas/
http://www.fws.gov/southwest/es/EndangeredSpecies/lists/

In Reply Refer To:
Consultation Code: 02ETAU00-2020-SLI-0810
Event Code: 02ETAU00-2020-E-01712
Project Name: B-21 EIS

February 19, 2020

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that *may* occur within the county of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

Please note that new information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Also note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of federally listed as threatened

or endangered species and to determine whether projects may affect these species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

While a Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment, the Federal Agency must notify the Service in writing of any such designation. The Federal agency shall also independently review and evaluate the scope and content of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by a federally funded, permitted or authorized activity, the agency is required to consult with the Service pursuant to 50 CFR 402. The following definitions are provided to assist you in reaching a determination:

- *No effect* - the proposed action will not affect federally listed species or critical habitat. A "no effect" determination does not require section 7 consultation and no coordination or contact with the Service is necessary. However, if the project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.
- *May affect, but is not likely to adversely affect* - the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effect. The Federal agency or the designated non-Federal representative should consult with the Service to seek written concurrence that adverse effects are not likely. Be sure to include all of the information and documentation used to reach your decision with your request for concurrence. The Service must have this documentation before issuing a concurrence.
- *Is likely to adversely affect* - adverse effects to listed species may occur as a direct or indirect result of the proposed action. For this determination, the effect of the action is neither discountable nor insignificant. If the overall effect of the proposed action is beneficial to the listed species but the action is also likely to cause some adverse effects to individuals of that species, then the proposed action "is likely to adversely affect" the listed species. The analysis should consider all interrelated and interdependent actions. An "is likely to adversely affect" determination requires the Federal action agency to initiate formal section 7 consultation with our office.

1

Regardless of the determination, the Service recommends that the Federal agency maintain a complete record of the evaluation, including steps leading to the determination of effect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related information. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF.

Migratory Birds

For projects that may affect migratory birds, the Migratory Bird Treaty Act (MBTA) implements various treaties and conventions for the protection of these species. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. Migratory birds may nest in trees, brushy areas, or other areas of suitable habitat. The Service recommends activities requiring vegetation removal or disturbance avoid the peak nesting period of March through August to avoid destruction of individuals, nests, or eggs. If project activities must be conducted during this time, we recommend surveying for nests prior to conducting work. If a nest is found, and if possible, the Service recommends a buffer of vegetation remain around the nest until the young have fledged or the nest is abandoned.

For additional information concerning the MBTA and recommendations to reduce impacts to migratory birds please contact the U.S. Fish and Wildlife Service Migratory Birds Office, 500 Gold Ave. SW, Albuquerque, NM 87102. A list of migratory birds may be viewed at https://www.fws.gov/birds/management/managed-species/migratory-bird-treaty-act-protected-species.php. Guidance for minimizing impacts to migratory birds for projects including communications towers can be found at: https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/communication-towers.php. Additionally, wind energy projects should follow the wind energy guidelines

https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/wind-energy.php) for minimizing impacts to migratory birds and bats.

Finally, please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/eagles.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

1

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Austin Ecological Services Field Office
10711 Burnet Road, Suite 200
Austin, TX 78758-4460
(512) 490-0057

1

Project Summary

Consultation Code: 02ETAU00-2020-SLI-0810

Event Code: 02ETAU00-2020-E-01712

Project Name: B-21 EIS

Project Type: DEVELOPMENT

Project Description: Main Operating Base 1 Beddown Environmental Impact Statement

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/32.420786663883945N99.83813278088942W

Counties: Taylor, TX

1

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 5 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Least Tern *Sterna antillarum* Population: interior pop. No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/8505	Endangered
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location is outside the critical habitat. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

1

Fishes

NAME	STATUS
Sharpnose Shiner *Notropis oxyrhynchus*	Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
This species only needs to be considered under the following conditions:

- All reservoir projects; in-channel projects such as interbasin transfers, water diversions, small impoundments, etc. that may reduce flows of major tributaries eventually flowing into occupied habtiat; commercial/industrial well field projects.

Species profile: https://ecos.fws.gov/ecp/species/6492

Smalleye Shiner *Notropis buccula*	Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
This species only needs to be considered under the following conditions:

- All reservoir projects; in-channel projects such as interbasin transfers, water diversions, small impoundments, etc. that may reduce flows of major tributaries eventually flowing into occupied habtiat; commercial/industrial well field projects.

Species profile: https://ecos.fws.gov/ecp/species/1774

Clams

NAME	STATUS
Texas Fawnsfoot *Truncilla macrodon*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/8965

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

1

E.2.1.2 Texas County List of Species

Texas County List of Rare Species

Taxon	Species Name	Common Name	ESA	SPROT	Endemic	Global Rank	State Rank	SGCN	Description	Number of Counties
Amphibians	*Anaxyrus woodhousii*	Woodhouse's toad			N	G5	SU	Y	Extremely catholic up to 5000 feet, does very well (except for traffic) in association with man.	231
Birds	*Plegadis chihi*	white-faced ibis		T	N	G5	S4B	Y	Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.	254
Birds	*Haliaeetus leucocephalus*	bald eagle		T	N	G5	S3B,S3N	Y	Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds	238
Birds	*Laterallus jamaicensis*	black rail	PT		N	G3G4	S2	Y	Salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps; nests in or along edge of marsh, sometimes on damp ground, but usually on mat of previous years dead grasses; nest usually hidden in marsh grass or at base of Salicornia	135
Birds	*Charadrius montanus*	mountain plover			N	G3	S2	Y	Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous	183
Birds	*Leucophaeus pipixcan*	Franklin's gull			N	G4G5	S2N	Y	Habitat description is not available at this time.	254
Birds	*Athene cunicularia hypugaea*	western burrowing owl			N	G4T4	S2	Y	Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows	221

Texas County List of Rare Species

Taxon	Species Name	Common Name	ESA	SPROT	Endemic	Global Rank	State Rank	SGCN	Description	Number of Counties
Birds	*Vireo atricapilla*	black-capped vireo		E	N	G3	S2B	Y	Oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer	63
Mammals	*Myotis velifer*	cave myotis bat			N	G4G5	S4	Y	Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (Hirundo pyrrhonota) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore.	155
Mammals	*Perimyotis subflavus*	tricolored bat			N	G2G3	S3S4	Y	Forest, woodland and riparian areas are important. Caves are very important to this species.	230
Mammals	*Lasiurus borealis*	eastern red bat			N	G3G4	S4	Y	Found in a variety of habitats in Texas. Usually associated with wooded areas. Found in towns especially during migration.	254
Mammals	*Lasiurus cinereus*	hoary bat			N	G3G4	S4	Y	Known from montane and riparian woodland in Trans-Pecos, forests and woods in east and central Texas.	254
Mammals	*Tadarida brasiliensis*	Mexican free-tailed bat			N	G5	S5	Y	Roosts in buildings in east Texas. Largest maternity roosts are in limestone caves on the Edwards Plateau. Found in all habitats, forest to desert.	254

Texas County List of Rare Species

Taxon	Species Name	Common Name	ESA	SPROT	Endemic	Global Rank	State Rank	SGCN	Description	Number of Counties
Mammals	*Cynomys ludovicianus*	black-tailed prairie dog			N	G4	S3	Y	Dry, flat, short grasslands with low, relatively sparse vegetation, including areas overgrazed by cattle; live in large family groups	133
Mammals	*Mustela frenata*	long-tailed weasel			N	G5	S5	Y	Includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges & rocky desert scrub. Usually live close to water.	234
Mammals	*Neovison vison*	mink			N	G5	S4	Y	Intimately associated with water; coastal swamps & marshes, wooded riparian zones, edges of lakes. Prefer floodplains.	155
Mammals	*Taxidea taxus*	American badger			N	G5	S5	Y	Habitat description is not available at this time.	225
Mammals	*Spilogale putorius*	eastern spotted skunk			N	G4	S1S3	Y	Catholic; open fields prairies, croplands, fence rows, farmyards, forest edges & woodlands. Prefer wooded, brushy areas & tallgrass prairies. S.p. ssp. interrupta found in wooded areas and tallgrass prairies, preferring rocky canyons and outcrops when such sites are available.	218
Mammals	*Spilogale putorius interrupta*	plains spotted skunk			N	G4T4	S1S3	N	Catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie	217
Mammals	*Spilogale gracilis*	western spotted skunk			N	G5	S5	Y	Habitat description is not available at this time.	80
Mammals	*Conepatus leuconotus*	western hog-nosed skunk			N	G4	S4	Y	Habitats include woodlands, grasslands & deserts, to 7200 feet, most common in rugged, rocky canyon country; little is known about the habitat of the ssp. telmalestes	148

Texas County List of Rare Species

Taxon	Species Name	Common Name	ESA	SPROT	Endemic	Global Rank	State Rank	SGCN	Description	Number of Counties
Mammals	*Puma concolor*	mountain lion			N	G5	S2S3	Y	Rugged mountains & riparian zones.	253
Mammals	*Antilocapra americana*	pronghorn			N	G5	S5	Y	Prefers hilly & plateau areas of open grassland, desert-grassland, & desert-scrub, where it frequents south-facing slopes & other sheltered areas.	71
Reptiles	*Terrapene ornata*	western box turtle			N	G5	S3	Y	Ornate or western box trutles inhabit prairie grassland, pasture, fields, sandhills, and open woodland. They are essentially terrestrial but sometimes enter slow, shallow streams and creek pools. For shelter, they burrow into soil (e.g., under plants such as yucca) (Converse et al. 2002) or enter burrows made by other species; winter burrow depth was 0.5-1.8 meters in Wisconsin (Doroff and Keith 1990), 7-120 cm (average depth 54 cm) in Nebraska (Converse et al. 2002). Eggs are laid in nests dug in soft well-drained soil in open area (Legler 1960, Converse et al. 2002). Very partial to sandy soil.	249
Reptiles	*Phrynosoma cornutum*	Texas horned lizard		T	N	G4G5	S3	Y	Occurs to 6000 feet, but largely limited below the pinyon-juniper zone on mountains in the Big Bend area. Open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September.	246
Reptiles	*Heterodon nasicus*	western hognose snake			N	G5	S4	Y	Habitat consists of areas with sandy or gravelly soils, including prairies, sandhills, wide valleys, river floodplains, bajadas, semiagricultural areas (but not intensively cultivated land), and margins of irrigation	142

Texas County List of Rare Species

Taxon	Species Name	Common Name	ESA	SPROT	Endemic	Global Rank	State Rank	SGCN	Description	Number of Counties
									ditches (Degenhardt et al. 1996, Hammerson 1999, Werler and Dixon 2000, Stebbins 2003). Also thornscrub woodlands and chaparral thickets. Seems to prefer sandy and loamy soils, not necessarily flat. Periods of inactivity are spent burrowed in the soil or in existing burrows. Eggs are laid in nests a few inches below the ground surface (Platt 1969).	
Reptiles	*Thamnophis sirtalis*	common garter snake				G5	S2	N	Irrigation canals and riparian-corridor farmlands in west; marshy, flooded pastureland, grassy or brushy borders of permanent bodies of water; coastal salt marshes.	76
Reptiles	*Thamnophis sirtalis annectens*	Texas garter snake			Y	G5T4	S1	Y	Irrigation canals and riparian-corridor farmlands in west; marshy, flooded pastureland, grassy or brushy borders of permanent bodies of water; coastal salt marshes. Wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August.	48
Reptiles	*Crotalus horridus*	timber (canebrake) rattlesnake		T	N	G4	S4	Y	Swamps, floodplains, upland pine and deciduous woodland, riparian zones, abandoned farmland. Limestone bluffs, sandy soil or black clay. Prefers dense ground cover, i.e. grapevines, palmetto.	77
Reptiles	*Crotalus viridis*	western rattlesnake			N	G5	S5	Y	Grassland, both desert and prairie; shrub desert rocky hillsides; edges of arid and semi-arid river breaks.	94

Texas County List of Rare Species

Taxon	Species Name	Common Name	ESA	SPROT	Endemic	Global Rank	State Rank	SGCN	Description	Number of Counties
Insects	*Bombus pensylvanicus*	American bumblebee				G3G4	SNR	Y	Habitat description is not available at this time.	161
Mollusks	*Lampsilis bracteata*	Texas fatmucket	C	T	Y	G1	S1	Y	Streams and rivers on sand, mud, and gravel substrates; intolerant of impoundment; broken bedrock and course gravel or sand in moderately flowing water; Colorado and Guadalupe River basins	26
Plants	*Gaura triangulata*	prairie butterfly-weed			N	G3G4	S3	Y	Open sandy areas; Annual; Flowering March-June	16
Plants	*Oenothera coryi*	Cory's evening-primrose			Y	G3	S3	Y	Calcareous prairies in the Plains Country of north Texas and in the Panhandle; Perennial; Flowering April-May	9
Plants	*Vitis rupestris*	rock grape			N	G3	S1	Y	Occurs on rocky limestone slopes and in streambeds; Perennial; Flowering March-May; Fruiting May-July	7
Plants	*Hexalectris nitida*	Glass Mountains coral-root			N	G3	S3	Y	Apparently rare in mixed woodlands in canyons in the mountains of the Brewster County, but encountered with regularity, albeit in small numbers, under Juniperus ashei in woodlands over limestone on the Edwards Plateau, Callahan Divide and Lampasas Cutplain; Perennial; Flowering June-Sept; Fruiting July-Sept	19
Plants	*Hexalectris warnockii*	Warnock's coral-root			N	G2G3	S2	Y	In leaf litter and humus in oak-juniper woodlands on shaded slopes and intermittent, rocky creekbeds in canyons; in the Trans Pecos in oak-pinyon-juniper woodlands in higher mesic canyons (to 2000 m [6550 ft]), primarily on igneous substrates; in Terrell County under Quercus fusiformis mottes on terrraces of spring-fed perennial streams, draining an otherwise rather xeric limestone landscape; on the Callahan Divide (Taylor	12

Texas County List of Rare Species

Taxon	Species Name	Common Name	ESA	SPROT	Endemic	Global Rank	State Rank	SGCN	Description	Number of Counties
									County), the White Rock Escarpment (Dallas County), and the Edwards Plateau in oak-juniper woodlands on limestone slopes; in Gillespie County on igneous substrates of the Llano Uplift; flowering June-September; individual plants do not usually bloom in successive years	

ESA = Species listed by the U.S. Fish and Wildlife Service under the *Endangered Species Act*; SPROT = State Protected, Rare, or Threatened Species (species listed by the State of Texas); SCGN = Species of Greatest Conservation Need
Y = yes; N = No
P = Potentially Threatened
T = Threatened
G = Global rank indicator, based on worldwide distribution at the species level[1]
S = State rank indicator, based on distribution within Texas at the lowest taxonomic level
G1-Critically Imperiled — At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
G2-Imperiled — At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
G3-Vulnerable — At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
G4-Apparently Secure — Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5-Secure — Common; widespread and abundant.
(State Rank)B-Breeding—Conservation status refers to the breeding population of the species in the nation or state/province.
(StateRank)N-Nonbreeding—Conservation status refers to the non-breeding population of the species in the nation or state/province.
S1-Critically Imperiled — Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.
S2-Imperiled — Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
S3-Vulnerable — Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4-Apparently Secure — Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5-Secure — Common, widespread, and abundant in the nation or state/province.
SNR-Unranked — Nation or state/province conservation status not yet assessed.
SU-Unrankable — Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.

[1] Global and State ranking definitions as provided in the *Texas Conservation Action Plan 2011*: Status and Rank Key for use with SGCN and Rare Communities List

E.2.2 Ellsworth Air Force Base

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Dakota Ecological Services Field Office
420 South Garfield Avenue, Suite 400
Pierre, SD 57501-5408
Phone: (605) 224-8693 Fax: (605) 224-9974
http://www.fws.gov/southdakotafieldoffice/

In Reply Refer To:
Consultation Code: 06E14000-2020-SLI-0406
Event Code: 06E14000-2020-E-00974
Project Name: B-21 EIS

February 19, 2020

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Migratory Bird Treaty Act (16 U.S.C. 703-712, as amended), as well as the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may benefit from the development of an Eagle Conservation Plan (ECP), see guidance at this website (http://www.fws.gov/windenergy/eagle_guidance.html). An ECP can assist developers in achieving compliance with regulatory requirements, help avoid “take” of eagles at project sites, and provide biological support for eagle permit applications. Additionally, we recommend wind energy developments adhere to our Land-based Wind Energy Guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

We have recently updated our guidelines for minimizing impacts to migratory birds at projects that have communication towers (including meteorological, cellular, digital television, radio, and emergency broadcast towers). These guidelines can be found at:

http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm
http://www.towerkill.com

According to National Wetlands Inventory maps, (available online at http://wetlands.fws.gov/) wetlands exist adjacent to the proposed construction corridor. 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. If this is not possible, attempts should be made to minimize adverse impacts. Finally if adverse impacts are unavoidable, measures should be undertaken to replace the impacted areas. 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.

1

Please check with your local wetland management district to determine whether Service interest lands exist at the proposed project site, the exact locations of these properties, and any additional restrictions that may apply regarding these sites. The Offices are listed below. If you are not sure which office to contact, we can help you make that decision.

U.S. Fish and Wildlife Service, Huron Wetland Management District, Federal Building, Room 309, 200 4th Street SW, Huron, SD 57350; telephone (605) 352-5894. Counties in the Huron WMD: Beadle, Buffalo, Hand, Hughes, Hyde, Jerauld, Sanborn, Sully.

U.S. Fish and Wildlife Service, Lake Andes Wetland Management District, 38672 291st Street, Lake Andes, South Dakota; telephone (605) 487-7603. Counties in the Lake Andes WMD: Aurora, Bon Homme, Brule, Charles Mix, Clay, Davison, Douglas, Hanson, Hutchinson, Lincoln, Turner, Union, Yankton.

U.S. Fish and Wildlife Service, Madison Wetland Management District, P.O. Box 48, Madison, South Dakota, 57042, telephone (605) 256-2974. Counties in the Madison WMD: Brookings, Deuel, Hamlin, Kingsury, Lake, McCook, Miner, Minnehaha, Moody.

U.S. Fish and Wildlife Service, Sand Lake Wetland Management District, 39650 Sand Lake Drive, Columbia, South Dakota, 57433; telephone (605) 885-6320. Counties in the Sand Lake WMD: Brown, Campbell, Edmunds, Faulk, McPherson, Potter, Spink, Walworth.

U.S. Fish and Wildlife Service, Waubay Wetland Management District, 44401 134A Street, Waubay, South Dakota, 57273; telephone (605) 947-4521. Counties in the Waubay WMD: Clark, Codington, Day, Grant, Marshall, Roberts.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

You are welcome to contact our office at the address or phone number above for more information.

Thank you.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

1

02/19/2020 Event Code: 06E14000-2020-E-00974 1

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

South Dakota Ecological Services Field Office
420 South Garfield Avenue, Suite 400
Pierre, SD 57501-5408
(605) 224-8693

1

Project Summary

Consultation Code: 06E14000-2020-SLI-0406

Event Code: 06E14000-2020-E-00974

Project Name: B-21 EIS

Project Type: DEVELOPMENT

Project Description: Main Operating Base 1 Beddown Environmental Impact Statement

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/44.14439018984346N103.08686187051376W

Counties: Meade, SD | Pennington, SD

1

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Least Tern *Sterna antillarum* Population: interior pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8505	Endangered
Red Knot *Calidris canutus rufa* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane *Grus americana* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered

1

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

1

02/19/2020 Event Code: 06E14000-2020-E-00974 1

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

1

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Burrowing Owl *Athene cunicularia* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31

1

NAME	BREEDING SEASON
Ferruginous Hawk *Buteo regalis* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6038	Breeds Mar 15 to Aug 15
Lark Bunting *Calamospiza melanocorys* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 10 to Aug 15
Marbled Godwit *Limosa fedoa* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds May 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12

1

(0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

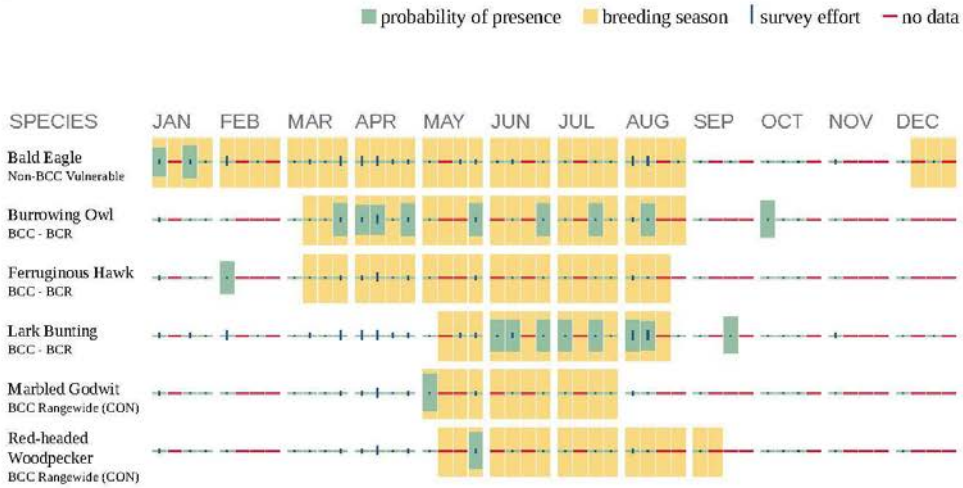
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



1

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

1

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical

1

Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

1

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER EMERGENT WETLAND

- PEM1A
- PEM1C
- PEM1Ch
- PEM1Cx
- PEM1Fx

FRESHWATER FORESTED/SHRUB WETLAND

- PFOA
- PFOAh
- PSSCx

FRESHWATER POND

- PABFh
- PUBFx

RIVERINE

- R4SBC
- R5UBH

1
2

E.2.2.1 South Dakota County List of Species

State and Federally Listed Threatened, Endangered and Candidate Species Documented in South Dakota by County. Updated on 07/19/2016

The following list contains documented occurrences of both state and federally listed species by county in South Dakota. Records were compiled from the South Dakota Natural Heritage Database and expert knowledge of species occurrences. Please note that the absence of a species from a county list does not preclude its presence and that a listing of a historical record does not necessarily mean the species still occurs in that county.

Documentations of bird species consist of known breeding records with the exception of the whooping crane (*Grus americana*) for which all observations are included. However, please note that while the year-round distribution of the American dipper (*Cinclus mexicanus*) does not change, all other listed bird species may be found throughout the state during migration.

If more specific information is needed for a particular project site, please visit the following website to request a search of the Natural Heritage Database: http://gfp.sd.gov/wildlife/threatened-endangered/default.aspx

Species statuses include: FE = Federally Endangered, FT = Federally Threatened, PE = Proposed Endangered (Federal), PT = Proposed Threatened (Federal) C = Federal Candidate, SE = State Endangered, ST = State Threatened.

County	Common Name	Scientific Name	Status
Aurora	Topeka Shiner	*Notropis topeka*	FE
	Whooping Crane	*Grus americana*	FE, SE
Beadle	Topeka Shiner	*Notropis topeka*	FE
	Whooping Crane	*Grus americana*	FE, SE
	Northern River Otter	*Lontra canadensis*	ST
Bennett	Northern Pearl Dace	*Margariscus nachtriebi*	ST
	American Burying Beetle	*Nicrophorus americanus*	FE
	Northern Redbelly Dace	*Chrosomus eos*	ST
	Whooping Crane	*Grus americana*	FE, SE
	Swift Fox	*Vulpes velox*	ST
Bon Homme	Blacknose Shiner	*Notropis heterolepis*	SE
	Northern Redbelly Dace	*Chrosomus eos*	ST
	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	Sturgeon Chub	*Macrhybopsis gelida*	ST
	Sicklefin Chub	*Macrhybopsis meeki*	ST
	Topeka Shiner	*Notropis topeka*	FE
	False Map Turtle	*Graptemys pseudogeographica*	ST
	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE
	Piping Plover	*Charadrius melodus*	FT, ST
	Whooping Crane	*Grus americana*	FE, SE

	Northern Long-eared Bat	*Myotis septentrionalis*	FT
	Northern River Otter	*Lontra canadensis*	ST
Brookings	American Burying Beetle	*Nicrophorus americanus*	FE
	Poweshiek Skipperling	*Oarisma poweshiek*	FE
	Dakota Skipper	*Hesperia dacotae*	FT
	Northern Redbelly Dace	*Chrosomus eos*	ST
	Topeka Shiner	*Notropis topeka*	FE
	Whooping Crane	*Grus americana*	FE, SE
	Northern River Otter	*Lontra canadensis*	ST
	Western Prairie Fringed Orchid	*Platanthera praeclara*	FT
Brown	Dakota Skipper	*Hesperia dacotae*	FT
	Topeka Shiner	*Notropis topeka*	FE
	Whooping Crane	*Grus americana*	FE, SE
	Northern River Otter	*Lontra canadensis*	ST
Brule	Northern Redbelly Dace	*Chrosomus eos*	ST
	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	Sturgeon Chub	*Macrhybopsis gelida*	ST
	Whooping Crane	*Grus americana*	FE, SE
	Northern Long-eared Bat	*Myotis septentrionalis*	FT
	Northern River Otter	*Lontra canadensis*	ST
Buffalo	Northern Redbelly Dace	*Chrosomus eos*	ST
	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	False Map Turtle	*Graptemys pseudogeographica*	ST
	Whooping Crane	*Grus americana*	FE, SE
	Northern River Otter	*Lontra canadensis*	ST
Butte	Finescale Dace	*Chrosomus neogaeus*	SE
	Longnose Sucker	*Catostomus catostomus*	ST
	Whooping Crane	*Grus americana*	FE, SE
	Northern River Otter	*Lontra canadensis*	ST
	Swift Fox	*Vulpes velox*	ST
Campbell	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	False Map Turtle	*Graptemys pseudogeographica*	ST
	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE
	Piping Plover	*Charadrius melodus*	FT, ST
	Whooping Crane	*Grus americana*	FE, SE
Charles Mix	Banded Killifish	*Fundulus diaphanus*	SE
	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	Sicklefin Chub	*Macrhybopsis meeki*	ST

1

	Sturgeon Chub	*Macrhybopsis gelida*	ST
	False Map Turtle	*Graptemys pseudogeographica*	ST
	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE
	Piping Plover	*Charadrius melodus*	FT, ST
	Whooping Crane	*Grus americana*	FE, SE
	Northern Long-eared Bat	*Myotis septentrionalis*	FT
Clark	Northern River Otter	*Lontra canadensis*	ST
Clay	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	Sicklefin Chub	*Macrhybopsis meeki*	ST
	Sturgeon Chub	*Macrhybopsis gelida*	ST
	Topeka Shiner	*Notropis topeka*	FE
	Eastern Hognose Snake	*Heterodon platirhinos*	ST
	False Map Turtle	*Graptemys pseudogeographica*	ST
	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE
	Piping Plover	*Charadrius melodus*	FT, ST
	Northern Long-eared Bat	*Myotis septentrionalis*	FT
	Northern River Otter	*Lontra canadensis*	ST
Codington	Dakota Skipper	*Hesperia dacotae*	FT
	Poweshiek Skipperling	*Oarisma poweshiek*	FE
	Topeka Shiner	*Notropis topeka*	FE
	Piping Plover	*Charadrius melodus*	FT, ST
	Whooping Crane	*Grus americana*	FE, SE
	Northern River Otter	*Lontra canadensis*	ST
Corson	Northern Redbelly Dace	*Chrosomus eos*	ST
	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	Sicklefin Chub	*Macrhybopsis meeki*	ST
	Sturgeon Chub	*Macrhybopsis gelida*	ST
	False Map Turtle	*Graptemys pseudogeographica*	ST
	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE
	Piping Plover	*Charadrius melodus*	FT, ST
	Whooping Crane	*Grus americana*	FE, SE
	Black-footed Ferret	*Mustela nigripes*	FE, SE
Custer	Blacknose Shiner	*Notropis heterolepis*	SE
	Longnose Sucker	*Catostomus catostomus*	ST
	Sturgeon Chub	*Macrhybopsis gelida*	ST
	American Dipper	*Cinclus mexicanus*	ST
	Osprey	*Pandion haliaetus*	ST
	Whooping Crane	*Grus americana*	FE, SE
	Black-footed Ferret	*Mustela nigripes*	FE, SE
	Northern Long-eared Bat	*Myotis septentrionalis*	FT
	Northern River Otter	*Lontra canadensis*	ST

1

	Swift Fox	*Vulpes velox*	ST
Davison	Topeka Shiner	*Notropis topeka*	FE
Day	Blacknose Shiner	*Notropis heterolepis*	SE
	Dakota Skipper	*Hesperia dacotae*	FT
	Poweshiek Skipperling	*Oarisma poweshiek*	FE
	Banded Killifish	*Fundulus diaphanus*	SE
	Piping Plover	*Charadrius melodus*	FT, ST
	Whooping Crane	*Grus americana*	FE, SE
	Northern River Otter	*Lontra canadensis*	ST
Deuel	Dakota Skipper	*Hesperia dacotae*	FT
	Poweshiek Skipperling	*Oarisma poweshiek*	FE
	Banded Killifish	*Fundulus diaphanus*	SE
	Northern Redbelly Dace	*Chrosomus eos*	ST
	Topeka Shiner	*Notropis topeka*	FE
	Northern River Otter	*Lontra canadensis*	ST
Dewey	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE
	Piping Plover	*Charadrius melodus*	FT, ST
	Whooping Crane	*Grus americana*	FE, SE
	Black-footed Ferret	*Mustela nigripes*	FE, SE
Douglas	Whooping Crane	*Grus americana*	FE, SE
Edmunds	Whooping Crane	*Grus americana*	FE, SE
Fall River	Finescale Dace	*Chrosomus neogaeus*	SE
	Osprey	*Pandion haliaetus*	ST
	Swift Fox	*Vulpes velox*	ST
Faulk	Whooping Crane	*Grus americana*	FE, SE
Grant	Dakota Skipper	*Hesperia dacotae*	FT
	Poweshiek Skipperling	*Oarisma poweshiek*	FE
	Blacknose Shiner	*Notropis heterolepis*	SE
	Northern Redbelly Dace	*Chrosomus eos*	ST
	Osprey	*Pandion haliaetus*	ST
	Northern River Otter	*Lontra canadensis*	ST
Gregory	American Burying Beetle	*Nicrophorus americanus*	FE
	Northern Pearl Dace	*Margariscus nachtriebi*	ST
	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	Sicklefin Chub	*Macrhybopsis meeki*	ST
	Sturgeon Chub	*Macrhybopsis gelida*	ST
	False Map Turtle	*Graptemys pseudogeographica*	ST
	Piping Plover	*Charadrius melodus*	FT, ST
	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE

1

	Whooping Crane	*Grus americana*	FE, SE
	Northern Long-eared Bat	*Myotis septentrionalis*	FT
Haakon	Sturgeon Chub	*Macrhybopsis gelida*	ST
	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE
	Whooping Crane	*Grus americana*	FE, SE
	Northern River Otter	*Lontra canadensis*	ST
	Swift Fox	*Vulpes velox*	ST
Hamlin	Dakota Skipper	*Hesperia dacotae*	FT
	Poweshiek Skipperling	*Oarisma poweshiek*	FE
	Topeka Shiner	*Notropis topeka*	FE
	Northern River Otter	*Lontra canadensis*	ST
Hand	Whooping Crane	*Grus americana*	FE, SE
Hanson	Topeka Shiner	*Notropis topeka*	FE
	Northern River Otter	*Lontra canadensis*	ST
Harding	Sturgeon Chub	*Macrhybopsis gelida*	ST
	Peregrine Falcon	*Falco peregrinus*	SE
	Swift Fox	*Vulpes velox*	ST
Hughes	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	Sicklefin Chub	*Macrhybopsis meeki*	ST
	False Map Turtle	*Graptemys pseudogeographica*	ST
	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE
	Piping Plover	*Charadrius melodus*	FT, ST
	Whooping Crane	*Grus americana*	FE, SE
	Northern Long-eared Bat	*Myotis septentrionalis*	FT
	Northern River Otter	*Lontra canadensis*	ST
	Swift Fox	*Vulpes velox*	ST
Hutchinson	Topeka Shiner	*Notropis topeka*	FE
	Whooping Crane	*Grus americana*	FE, SE
Hyde	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	Whooping Crane	*Grus americana*	FE, SE
	Swift Fox	*Vulpes velox*	ST
Jackson	Northern Redbelly Dace	*Chrosomus eos*	ST
	Sturgeon Chub	*Macrhybopsis gelida*	ST
	Whooping Crane	*Grus americana*	FE, SE
	Northern Long-eared Bat	*Myotis septentrionalis*	FT
	Swift Fox	*Vulpes velox*	ST
Jerauld	Whooping Crane	*Grus americana*	FE, SE
	Northern River Otter	*Lontra canadensis*	ST
Jones	Sturgeon Chub	*Macrhybopsis gelida*	ST
	Whooping Crane	*Grus americana*	FE, SE

1

Kingsbury	Piping Plover	*Charadrius melodus*	FT, ST
	Whooping Crane	*Grus americana*	FE, SE
Lake	Northern River Otter	*Lontra canadensis*	ST
Lawrence	Finescale Dace	*Chrosomus neogaeus*	SE
	Longnose Sucker	*Catostomus catostomus*	ST
	American Dipper	*Cinclus mexicanus*	ST
	Osprey	*Pandion haliaetus*	ST
	Northern Long-eared Bat	*Myotis septentrionalis*	LT
Lincoln	Northern Redbelly Dace	*Chrosomus eos*	ST
	Topeka Shiner	*Notropis topeka*	FE
	Lined Snake	*Tropidoclonion lineatum*	SE
	Northern River Otter	*Lontra canadensis*	ST
Lyman	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	Sturgeon Chub	*Macrhybopsis gelida*	ST
	False Map Turtle	*Graptemys pseudogeographica*	ST
	Whooping Crane	*Grus americana*	FE, SE
	Black-footed Ferret	*Mustela nigripes*	FE, SE
	Northern Long-eared Bat	*Myotis septentrionalis*	LT
	Northern River Otter	*Lontra canadensis*	ST
	Swift Fox	*Vulpes velox*	ST
Marshall	Dakota Skipper	*Hesperia dacotae*	FT
	Poweshiek Skipperling	*Oarisma poweshiek*	FE
	Whooping Crane	*Gus americana*	FE, SE
	Northern River Otter	*Lontra canadensis*	ST
McCook	Topeka Shiner	*Notropis topeka*	FE
	Northern River Otter	*Lontra canadensis*	ST
McPherson	Dakota Skipper	*Hesperia dacotae*	FT
	Banded Killifish	*Fundulus diaphanus*	SE
	Whooping Crane	*Grus americana*	FE, SE
Meade	Banded Killifish	*Fundulus diaphanus*	SE
	Longnose Sucker	*Catostomus catostomus*	ST
	Sturgeon Chub	*Macrhybopsis gelida*	ST
	American Dipper	*Cinclus mexicanus*	ST
	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE
	Whooping Crane	*Grus americana*	FE, SE
	Northern Long-eared Bat	*Myotis septentrionalis*	LT
	Northern River Otter	*Lontra canadensis*	ST
	Swift Fox	*Vulpes velox*	ST
Mellette	Sturgeon Chub	*Macrhybopsis gelida*	ST
	Whooping Crane	*Grus americana*	FE, SE
Miner	Topeka Shiner	*Notropis topeka*	FE

1

	Whooping Crane	*Grus americana*	FE, SE
Minnehaha	Topeka Shiner	*Notropis topeka*	FE
	Lined Snake	*Tropidoclonion lineatum*	SE
	Northern River Otter	*Lontra canadensis*	ST
	Western Prairie Fringed Orchid	*Platanthera praeclara*	FT
Moody	Dakota Skipper	*Hesperia dacotae*	FT
	Poweshiek Skipperling	*Oarisma poweshiek*	FE
	Blacknose Shiner	*Notropis heterolepis*	SE
	Topeka Shiner	*Notropis topeka*	FE
	Northern River Otter	*Lontra canadensis*	ST
Oglala Lakota	Sturgeon Chub	*Macrhybopsis gelida*	ST
	Swift Fox	*Vulpes velox*	ST
Pennington	Longnose Sucker	*Catostomus catostomus*	ST
	Sturgeon Chub	*Macrhybopsis gelida*	ST
	American Dipper	*Cinclus mexicanus*	ST
	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE
	Osprey	*Pandion haliaetus*	ST
	Peregrine Falcon	*Falco peregrinus*	SE
	Whooping Crane	*Grus americana*	FE, SE
	Black-footed Ferret	*Mustela nigripes*	FE, SE
	Northern Long-eared Bat	*Myotis septentrionalis*	LT
	Northern River Otter	*Lontra canadensis*	ST
	Swift Fox	*Vulpes velox*	ST
Perkins	Whooping Crane	*Grus americana*	FE, SE
	Northern Long-eared Bat	*Myotis septentrionalis*	LT
	Swift Fox	*Vulpes velox*	ST
Potter	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE
	Piping Plover	*Charadrius melodus*	FT, ST
	Whooping Crane	*Grus americana*	FE, SE
Roberts	Dakota Skipper	*Hesperia dacotae*	FT
	Poweshiek Skipperling	*Oarisma poweshiek*	FE
	Blacknose Shiner	*Notropis heterolepis*	SE
	Osprey	*Pandion haliaetus*	ST
	Whooping Crane	*Grus americana*	FE, SE
	Northern River Otter	*Lontra canadensis*	ST
Sandborn	Topeka Shiner	*Notropis topeka*	FE
	Whooping Crane	*Grus americana*	FE, SE
	Northern River Otter	*Lontra canadensis*	ST
Spink	Whooping Crane	*Grus americana*	FE, SE
	Northern River Otter	*Lontra canadensis*	ST

1

	Swift Fox	*Vulpes velox*	ST
Stanley	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	Sicklefin Chub	*Macrhybopsis meeki*	ST
	False Map Turtle	*Graptemys pseudogeographica*	ST
	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE
	Piping Plover	*Charadrius melodus*	FT, ST
	Whooping Crane	*Grus americana*	FE, SE
	Black-footed Ferret	*Mustela nigripes*	FE, SE
	Northern Long-eared Bat	*Myotis septentrionalis*	LT
	Northern River Otter	*Lontra canadensis*	ST
	Swift Fox	*Vulpes velox*	ST
Sully	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE
	Piping Plover	*Charadrius melodus*	FT, ST
	Whooping Crane	*Grus americana*	FE, SE
	Northern River Otter	*Lontra canadensis*	ST
	Swift Fox	*Vulpes velox*	ST
Todd	American Burying Beetle	*Nicrophorus americanus*	FE
	Blacknose Shiner	*Notropis heterolepis*	SE
	Finescale Dace	*Chrosomus neogaeus*	SE
	Northern Pearl Dace	*Margariscus nachtriebi*	ST
	Northern Redbelly Dace	*Chrosomus eos*	ST
	Black-footed Ferret	*Mustela nigripes*	FE, SE
Tripp	American Burying Beetle	*Nicrophorus americanus*	FE
	Blacknose Shiner	*Notropis heterolepis*	SE
	Northern Pearl Dace	*Margariscus nachtriebi*	ST
	Northern Redbelly Dace	*Chrosomus eos*	ST
	Sturgeon Chub	*Macrhybopsis gelida*	ST
	Whooping Crane	*Grus americana*	FE, SE
	Northern River Otter	*Lontra canadensis*	ST
Turner	Northern Redbelly Dace	*Chrosomus eos*	ST
	Topeka Shiner	*Notropis topeka*	FE
Union	American Burying Beetle	*Nicrophorus americanus*	FE
	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	Finescale Dace	*Chrosomus neogaeus*	SE
	Sturgeon Chub	*Macrhybopsis gelida*	ST
	Sicklefin Chub	*Macrhybopsis meeki*	ST
	Eastern Hognose Snake	*Heterodon platirhinos*	ST
	False Map Turtle	*Graptemys pseudogeographica*	ST
	Lined Snake	*Tropidoclonion lineatum*	SE

1

	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE
	Piping Plover	*Charadrius melodus*	FT, ST
	Northern Long-eared Bat	*Myotis septentrionalis*	LT
	Northern River Otter	*Lontra canadensis*	ST
Walworth	Northern Redbelly Dace	*Chrosomus eos*	ST
	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	Sturgeon Chub	*Macrhybopsis gelida*	ST
	Sicklefin Chub	*Macrhybopsis meeki*	ST
	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE
	Piping Plover	*Charadrius melodus*	FT, ST
	Whooping Crane	*Grus americana*	FE, SE
	Northern Long-eared Bat	*Myotis septentrionalis*	LT
Yankton	Higgins Eye	*Lampsilis higginsii*	FE
	Scaleshell	*Leptodea leptodon*	FE
	Pallid Sturgeon	*Scaphirhynchus albus*	FE, SE
	Shovelnose Sturgeon	*Scaphirhynchus platorynchus*	FT
	Sicklefin Chub	*Macrhybopsis meeki*	ST
	Sturgeon Chub	*Macrhybopsis gelida*	ST
	Eastern Hognose Snake	*Heterodon platirhinos*	ST
	False Map Turtle	*Graptemys pseudogeographica*	ST
	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE
	Piping Plover	*Charadrius melodus*	FT, ST
	Northern Long-eared Bat	*Myotis septentrionalis*	LT
	Northern River Otter	*Lontra canadensis*	ST
Ziebach	Sturgeon Chub	*Macrhybopsis gelida*	ST
	Interior Least Tern	*Sternula antillarum athalassos*	FE, SE
	Black-footed Ferret	*Mustela nigripes*	FE, SE
	Swift Fox	*Vulpes velox*	ST
	Whooping Crane	*Grus americana*	FE, SE

1

E.3 BIRD CONSERVATION REGIONS

Table 14 BCR 16 (Southern Rockies/Colorado Plateau) *BCC 2008* list.[16]

Gunnison Sage Grouse
American Bittern
Bald Eagle (b)
Ferruginous Hawk
Golden Eagle
Peregrine Falcon (b)
Prairie Falcon
Snowy Plover (c)
Mountain Plover
Long-billed Curlew
Yellow-billed Cuckoo (w. U.S. DPS) (a)
Flammulated Owl
Burrowing Owl
Lewis's Woodpecker
Willow Flycatcher (c)
Gray Vireo
Pinyon Jay
Juniper Titmouse
Veery
Bendire's Thrasher
Grace's Warbler
Brewer's Sparrow
Grasshopper Sparrow
Chestnut-collared Longspur (nb)
Black Rosy-Finch
Brown-capped Rosy-Finch
Cassin's Finch

16 (a) ESA candidate, (b) ESA delisted, (c) non-listed subspecies or population of Threatened or Endangered species, (d) MBTA protection uncertain or lacking, (nb) non-breeding in this BCR

U.S. Fish and Wildlife Service 32

Table 15 BCR 17 (Badlands and Prairies) *BCC 2008* list.[17]

Horned Grebe
American Bittern
Bald Eagle (b)
Ferruginous Hawk
Golden Eagle
Peregrine Falcon (b)
Prairie Falcon
Yellow Rail
Mountain Plover
Upland Sandpiper
Long-billed Curlew
Marbled Godwit
Black-billed Cuckoo
Burrowing Owl
Short-eared Owl
Lewis's Woodpecker
Red-headed Woodpecker
Loggerhead Shrike
Pinyon Jay
Sage Thrasher
Sprague's Pipit
Brewer's Sparrow
Sage Sparrow
Grasshopper Sparrow
Baird's Sparrow
McCown's Longspur
Chestnut-collared Longspur
Dickcissel

17 (a) ESA candidate, (b) ESA delisted, (c) non-listed subspecies or population of Threatened or Endangered species, (d) MBTA protection uncertain or lacking, (nb) non-breeding in this BCR

1

Table 16 BCR 18 (Shortgrass Prairie) *BCC 2008* list.[18]

Lesser Prairie-Chicken (a)
Bald Eagle (b)
Golden Eagle
Prairie Falcon
Snowy Plover (c)
Mountain Plover
Upland Sandpiper
Long-billed Curlew
Burrowing Owl
Lewis's Woodpecker
Willow Flycatcher (c)
Bell's Vireo (c)
Sprague's Pipit (nb)
Lark Bunting
McCown's Longspur
Chestnut-collared Longspur

18 (a) ESA candidate, (b) ESA delisted, (c) non-listed subspecies or population of Threatened or Endangered species, (d) MBTA protection uncertain or lacking, (nb) non-breeding in this BCR

U.S. Fish and Wildlife Service 34

1

Table 19 BCR 21 (Oaks and Prairies) *BCC 2008* list.[21]

Little Blue Heron
Swallow-tailed Kite
Bald Eagle (b)
Peregrine Falcon (b)
Black Rail (nb)
Upland Sandpiper
Long-billed Curlew (nb)
Hudsonian Godwit (nb)
Buff-breasted Sandpiper (nb)
Red-headed Woodpecker
Scissor-tailed Flycatcher
Loggerhead Shrike
Bell's Vireo (c)
Sprague's Pipit (nb)
Swainson's Warbler
Henslow's Sparrow (nb)
Harris's Sparrow (nb)
Smith's Longspur (nb)
Orchard Oriole

21 (a) ESA candidate, (b) ESA delisted, (c) non-listed subspecies or population of Threatened or Endangered species, (d) MBTA protection uncertain or lacking, (nb) non-breeding in this BCR

1

Table 33 BCR 35 (Chihuahuan Desert U.S. portion only) *BCC 2008* lists.[35]

Bald Eagle (b)
Common Black-Hawk
Ferruginous Hawk (nb)
Golden Eagle
Peregrine Falcon (b)
Snowy Plover (c)
Mountain Plover
Long-billed Curlew (nb)
Yellow-billed Cuckoo (w. US DPS) (a)
Flammulated Owl
Elf Owl
Burrowing Owl
Lucifer Hummingbird
Loggerhead Shrike
Bell's Vireo (c)
Gray Vireo
Bendire's Thrasher
Sprague's Pipit (nb)
Virginia's Warbler
Colima Warbler
Yellow Warbler (*sonorana* ssp.)
Grace's Warbler
Red-faced Warbler
Cassin's Sparrow
Black-chinned Sparrow
Lark Bunting (nb)
Baird's Sparrow (nb)
McCown's Longspur (nb)
Chestnut-collared Longspur (nb)
Varied Bunting
Painted Bunting

35 (a) ESA candidate, (b) ESA delisted, (c) non-listed subspecies or population of Threatened or Endangered species, (d) MBTA protection uncertain or lacking, (nb) non-breeding in this BCR

U.S. Fish and Wildlife Service 51

1

Table 17 BCR 19 (Central Mixed-Grass Prairie) *BCC 2008* list.[19]

Lesser Prairie-Chicken (a)
Little Blue Heron
Mississippi Kite
Bald Eagle (b)
Swainson's Hawk
Black Rail
Snowy Plover (c)
Mountain Plover (nb)
Solitary Sandpiper (nb)
Upland Sandpiper
Long-billed Curlew
Hudsonian Godwit (nb)
Marbled Godwit (nb)
Buff-breasted Sandpiper (nb)
Short-billed Dowitcher (nb)
Red-headed Woodpecker
Scissor-tailed Flycatcher
Loggerhead Shrike
Bell's Vireo (c)
Sprague's Pipit (nb)
Cassin's Sparrow
Lark Bunting
Henslow's Sparrow
Harris's Sparrow (nb)
McCown's Longspur (nb)
Smith's Longspur (nb)
Chestnut-collared Longspur (nb)

19 (a) ESA candidate, (b) ESA delisted, (c) non-listed subspecies or population of Threatened or Endangered species, (d) MBTA protection uncertain or lacking, (nb) non-breeding in this BCR

U.S. Fish and Wildlife Service 35

1

This page is intentionally blank.

APPENDIX F

CULTURAL RESOURCES

This page is intentionally blank.

TABLE OF CONTENTS

This page is intentionally blank.

F. CULTURAL RESOURCES SUPPORTING INFORMATION

F.1 NATIVE AMERICAN CONSULTATION AND COMMUNICATION

F.1.1 Dyess AFB

F.1.1.1 Dyess AFB – Tribal Mailing List

Dyess AFB Tribal Government Mailing List				
Organization	**Salutation**	**First Name**	**Last Name**	**Title**
Kickapoo Traditional Tribe of Texas	Mr.	Garza	Juan	Chairman
Apache Tribe of Oklahoma	Mr.	Komardly	Bobby	Chairman
Comanche Nation	Mr.	Nelson Sr.	William	Chairman
Fort Sill Apache Tribe of Oklahoma	Mr.	Haozous	Jeff	Chairman
Jicarilla Apache Nation	Mr.	Garcia	Donnie	Chairman
Kiowa Tribe of Oklahoma	Mr.	Komalty	Matthew	Chairman
Caddo Nation of Oklahoma	Ms.	Francis-Fourkiller	Tammy	Chairman
Ysleta Del Sur Pueblo	Mr.	Silvas	E. Michael	Governor
Wichita and Affiliated Tribes	Ms.	Parton	Terri	President
Mescalero Apache Tribe	Mr.	Aguilar	Gabe	President
Tonkawa Tribe of Indians of Oklahoma	Mr.	Martin	Russell	President

F.1.1.2 Dyess AFB – Tribal Letter Example

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 7TH BOMB WING (AFGSC)
DYESS AIR FORCE BASE TEXAS

March 10, 2020

Colonel Jose E. Sumangil
Commander
7th Bomb Wing
7 Lancer Loop
Dyess AFB Texas 79607

Mr. Juan Garza
Chairman
Kickapoo Traditional Tribe of Texas
HC 1, Box 9700
2212 Rosita Valley Road
Eagle Pass, TX 78852

Dear Chairman Garza

The Department of Defense (DoD) is developing a new bomber aircraft, the B-21 "Raider," which will eventually replace existing B-1 and B-2 bomber aircraft. The beddown of the B-21 will take place through a series of three Main Operating Bases (MOBs), referred to as MOB 1, MOB 2, and MOB 3. The United States Air Force (USAF) is preparing an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA) to evaluate potential environmental impacts associated with the B-21 MOB 1 Beddown at Dyess AFB Texas or Ellsworth AFB South Dakota. MOB 2 and MOB 3 basing actions will be evaluated in future NEPA and NHPA analyses. Per Section 306108 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR Part 800, the USAF is accounting for various environmental concerns and engaging early with tribal governments as it formulates the undertaking.

As part of this proposed undertaking, the USAF would beddown the B-21 MOB 1 at one of the candidate bases. The EIS will consider two alternatives, or locations, for MOB 1: Dyess AFB Texas or Ellsworth AFB South Dakota. This letter addresses Dyess AFB (Attachment 1). Implementation of the Proposed Action includes establishment of B-21 Operational Squadrons and a B-21 Formal Training Unit (FTU), as well as construction of various facilities and infrastructure projects, including a Weapons Generation Facility (WGF). The proposed undertaking also considers the additional personnel needed to support the MOB 1 mission at the selected base and B-21 aircraft operations within designated airspace.

The USAF has proposed numerous facilities and infrastructure projects required to establish the B-21 MOB 1 at Dyess AFB. Due to operational security concerns, the exact locations cannot be illustrated. However, Attachment 2 shows where USAF planners evaluated land use limitations and identified a general planned area of construction, or construction footprint on Dyess AFB. The WGF is a separate facility that is unique to the B-21 mission and would be constructed at Dyess AFB under the proposed undertaking. The WGF will provide a safer and more secure location for the storage of USAF nuclear munitions. The WGF will require a construction footprint of approximately 35 acres, with an approximate 52,000-square-foot building. The USAF will implement construction and operations in a manner consistent with AFI 20-110, *Nuclear Weapons-Related Materiel Management*. Due to national

DEATH FROM ABOVE

security implications, the details regarding the infrastructure associated with the WGF is not releasable. It should be noted that the Munitions Storage Area at Dyess AFB has adequate capacity for conventional USAF assets. The USAF identified one preferred location for the WGF at Dyess AFB (Attachment 3).

The B-21 mission personnel duties would include initial training, transition/conversion training, refresher/requalification training, and instructor training. Students entering the B-21 program would be graduates of undergraduate aviator and maintainer training programs. Pilots and maintainers entering the program from another aircraft platform would go through a transitional training program, which would provide the requisite skills to meet the mission-qualified pilot or mission-qualified maintainer graduation criteria. The B-21 mission would also require some civilian and contractor personnel for various support functions. Due to operational security concerns, the total number and breakout of B-21 mission personnel required for MOB 1 cannot be released. The EIS will provide a range of personnel numbers and associated dependents anticipated to meet the B-21 MOB 1 mission. The EIS will also analyze the potential impacts from changes in end-state populations at Dyess AFB. This analysis will consider both the incoming B-21 mission and personnel as well as the retiring B-1 mission and associated outgoing personnel.

The EIS will also address the B-21 training mission. The primary training area for B-21 aircraft operations based at either location would be the Powder River Training Complex airspace. However, aircraft based at Dyess AFB would also utilize additional airspace within the Brownwood Military Operating Area (MOA), Lancer MOA, and the Pecos MOA, which includes the associated Air Traffic Control Assigned Airspaces (ATCAAs) (Attachment 4). B-21 aircraft operations would adhere to the limitations established in the USAF's Powder River Training Complex EIS (USAF, 2014) and Record of Decision (ROD) (signed on January 16, 2015) (USAF, 2015) and the Federal Aviation Administration (FAA) ROD (signed on March 24, 2015) (FAA, 2015). Additionally, the Nevada Test and Training Range (NTTR) and the Utah Test and Training Range (UTTR) would also support minimal B-21 operations in a manner consistent with the current B-1 and B-2 missions, as incorporated in the NTTR Land Withdrawal Legislative EIS (USAF, 2018) and the F-35A Operational Basing EIS (USAF, 2013a) and ROD (signed December 2, 2013) (USAF, 2013b). In general, end-state B-21 operations and ordnance use in NTTR and UTTR are anticipated to be the same as existing B-1 and B-2 operations, which will be phased out of operation and into retirement. While many components of the B-21 aircraft are classified and cannot be released, in general, B-21 engine noise is anticipated to be quieter than the B-1 and would be the same as or quieter than the B-2. Additionally, the B-21 is not anticipated to use low altitude training routes during operations.

The USAF plans to hold six public scoping meetings to provide information on the description of the proposed action and alternatives and will solicit public comments. The meetings will occur from 6:00 p.m. to 8:00 p.m., on the dates and at the locations listed below:

- Tuesday, March 31, 2020: Holiday Inn at Rushmore Plaza, 505 North 5th Street, Rapid City SD 57701
- Wednesday, April 1, 2020: Sturgis Community Center, 1401 Lazelle Street, Sturgis SD 57785
- Thursday, April 2, 2020: Douglas Middle School, 691 Tower Road, Box Elder SD 57719
- Tuesday, April 7, 2020: Abilene Convention Center, 1100 North 6th Street, Abilene Texas 79601
- Wednesday, April 8, 2020: Wylie High School Performing Arts Center, 4502 Antilley Road, Abilene Texas 79606
- Thursday, April 9, 2020: Tye Community Center, 103 Scott Street, Tye Texas 79563

1

The agenda for each scoping meeting is as follows:

- 6:00 p.m. to 6:30 p.m. – Open House and comment submission
- 6:30 p.m. to 7:00 p.m. – Air Force Presentation
- 7:00 p.m. to 8:00 p.m. – Open House and comment submission resumes

Additional information on the B-21 MOB 1 Beddown EIS environmental impact analysis process can be found on the project website at https://www.B21EIS.com. Inquiries and comments-by-mail regarding the USAF proposal should be directed to Dyess AFB Public Affairs, 7 Lancer Loop, Suite 136, Dyess AFB Texas 79607; (325) 696-4820; or 7bwpa@us.af.mil.

The project website (https://www.B21EIS.com) can also be used to submit comments. Comments will be accepted at any time during the environmental impact analysis process. However, to ensure the USAF has sufficient time to consider public input in the preparation of the Draft EIS, scoping comments should be submitted to the website or the address listed above by April 24, 2020.

In accordance with the NHPA, the USAF would like to request your level of interest in participating in government-to-government consultation on the B-21 MOB 1 Beddown at Dyess AFB Texas or Ellsworth AFB South Dakota EIS regarding traditional cultural properties. Please let us know if you believe this undertaking might adversely affect any historic properties of religious and cultural significance to the Kickapoo Traditional Tribe of Texas. In addition to government-to-government consultation on properties of religious and cultural significance, the USAF also requests your input in identifying any issues or areas of concern you feel should be addressed in the environmental analysis. If you would like to participate in government-to-government consultation or if you have any questions, please contact Mr. Tommy Downing, (AFGSC 7 CES/CENPP) Dyess AFB POC at (325) 696-2050 or by e-mail at Tommy.Downing@us.af.mil. Thank you in advance for your assistance in this effort.

Sincerely

JOSE E. SUMANGIL, Colonel, USAF
Commander

4 Attachments:
Attachment 1: Dyess AFB Location
Attachment 2: Facilities and Infrastructure Planned Areas of Construction on Dyess AFB
Attachment 3: Weapons Generation Facility (WGF) Planned Areas of Construction on Dyess AFB
Attachment 4: Range and Airspace Boundaries

1

REFERENCES

FAA. (2015). *Adoption of Environmental Impact Statement and FAA Record of Decision for Establishment of the Powder River Training Complex Located in Montana, North Dakota, South Dakota, and Wyoming.* Federal Aviation Administration, March 24.

USAF. (2013a). *F-35A Operational Basing Environmental Impact Statement.* U.S. Air Force, September.

USAF. (2013b). *Record of Decision for the First Active Duty F-35A Operational Base.* U.S. Air Force, December 2.

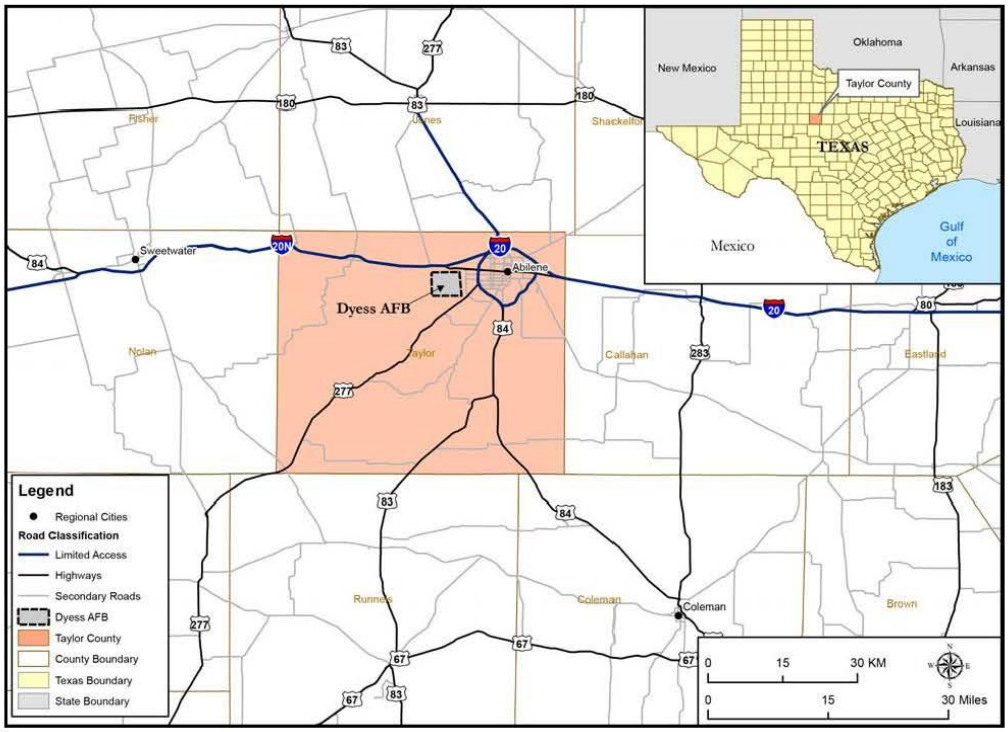
USAF. (2014). *Powder River Training Complex Ellsworth Air Force Base, South Dakota Environmental Impact Statement.* U.S. Air Force, November.

USAF. (2015). *Record of Decision for the Powder River Training Complex, Ellsworth Air Force Base, South Dakota, Environmental Impact Statement.* U.S. Air Force. January 16.

USAF. (2018). *Nevada Test and Training Range Land Withdrawal Legislative Environmental Impact Statement.* U.S. Air Force, October.

1

5

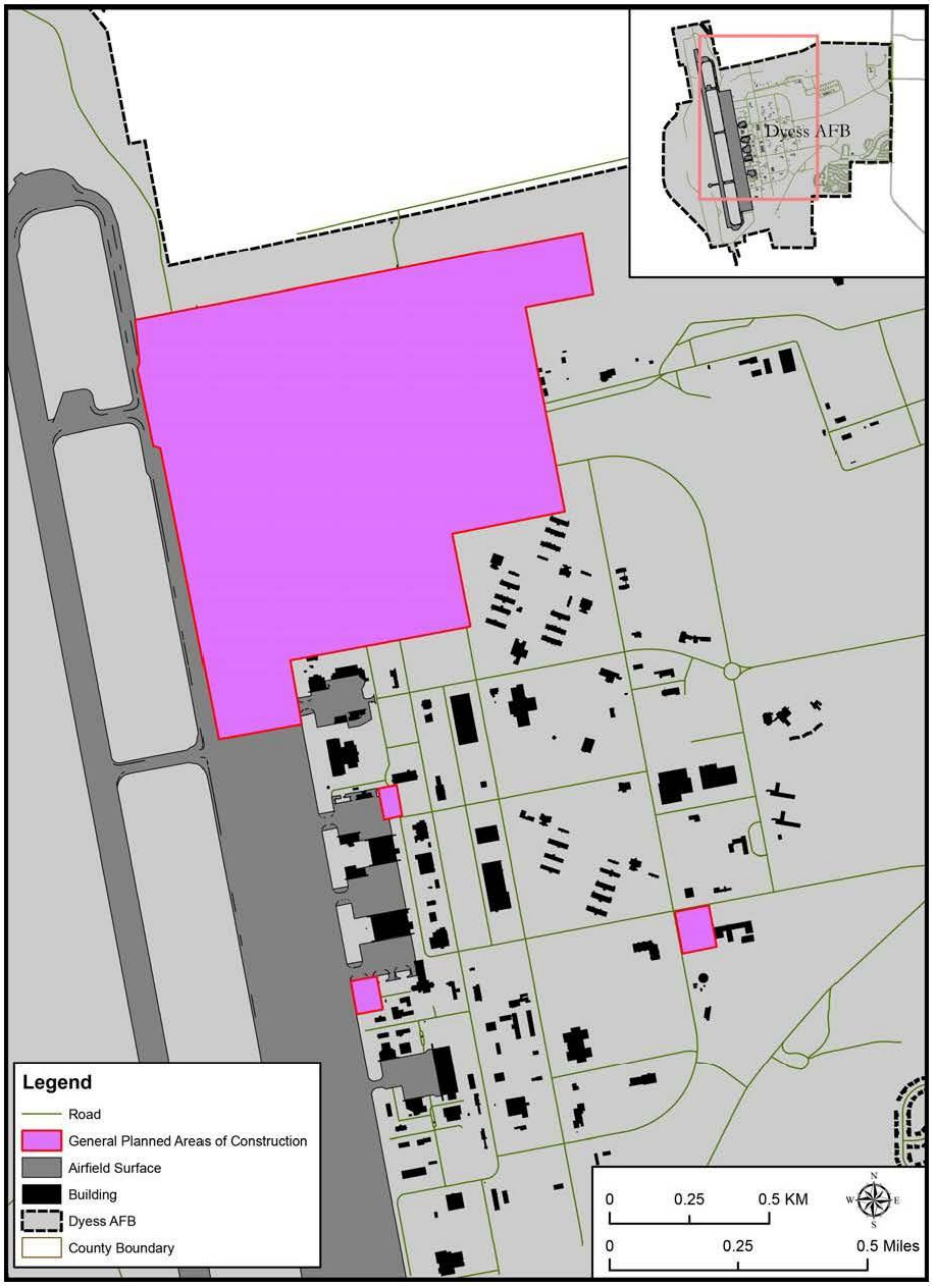


Dyess AFB Location

Attachment 1

1

6

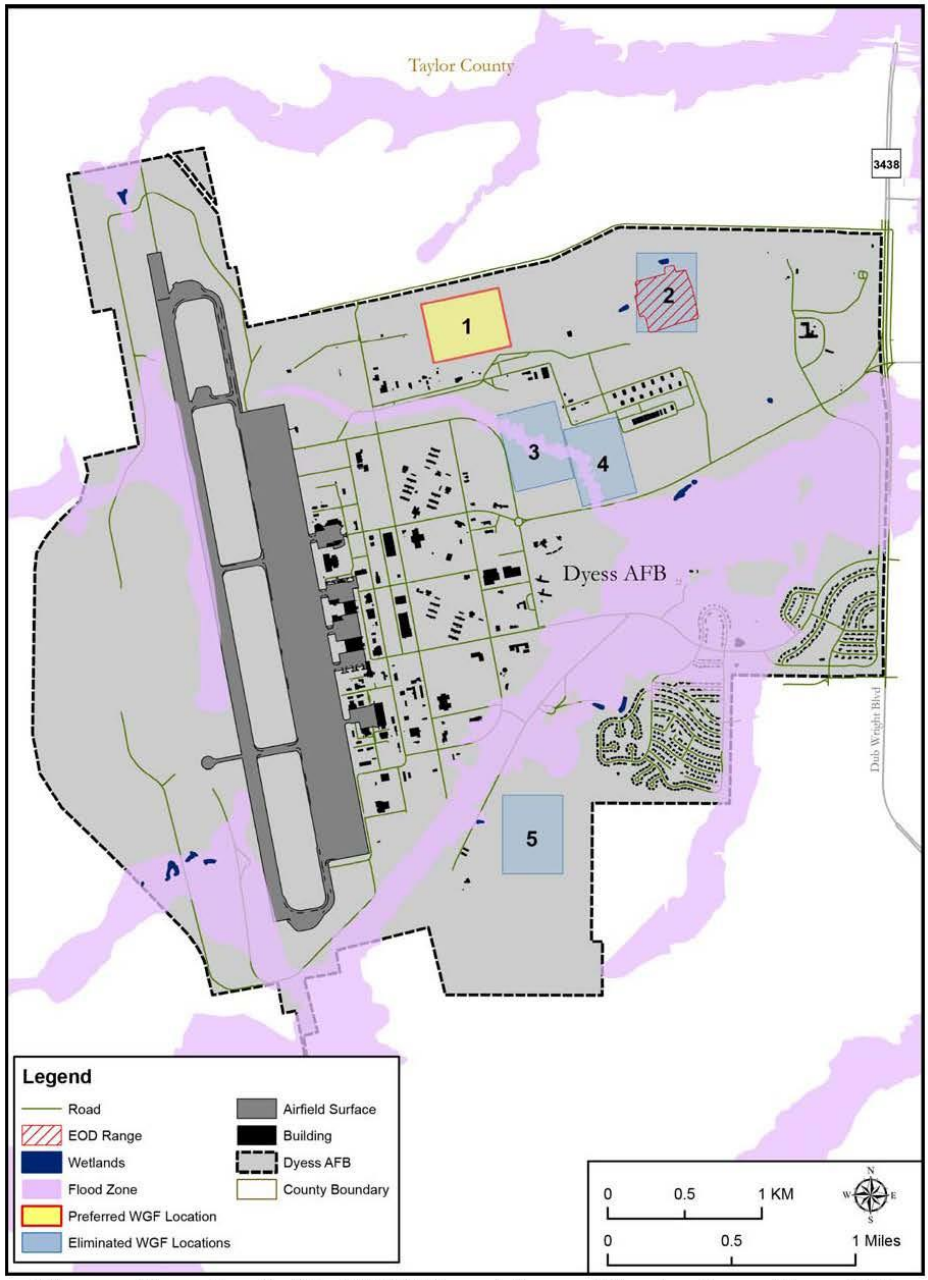


Facilities and Infrastructure Planned Areas of Construction on Dyess AFB

Attachment 2

1

7

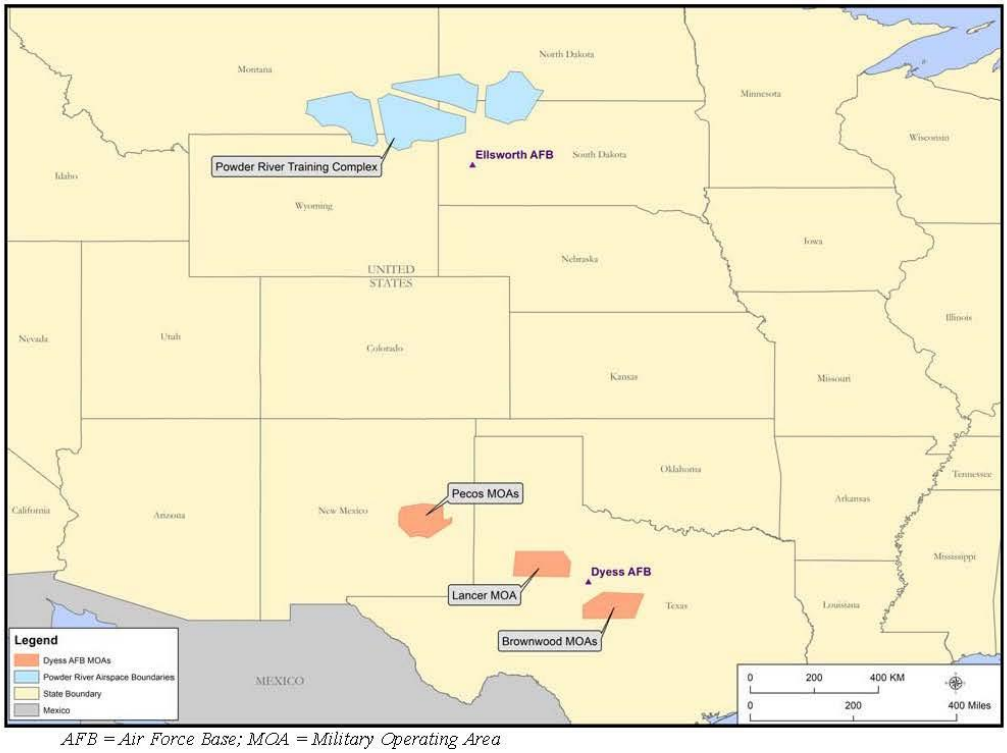


Weapons Generation Facility (WGF) Planned Areas of Construction on Dyess AFB

Attachment 3

1

8



AFB = Air Force Base; MOA = Military Operating Area

Range and Airspace Boundaries

Attachment 4

1
2

F.1.1.3 Dyess AFB – Tribal Responses

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 7TH BOMB WING (AFGSC)
DYESS AIR FORCE BASE TEXAS

RECEIVED
MAR 17 2020
BY: Fred J. Loop

March 10, 2020

Colonel Jose E. Sumangil
Commander
7th Bomb Wing
7 Lancer Loop
Dyess AFB Texas 79607

Mr. E. Michael Silvas
Governor
Ysleta Del Sur Pueblo
P.O. Box 17579
El Paso, TX 79907

MAR 20 2020
7BW/CC-office
Mailed to
CE

Dear Governor Silvas

The Department of Defense (DoD) is developing a new bomber aircraft, the B-21 "Raider," which will eventually replace existing B-1 and B-2 bomber aircraft. The beddown of the B-21 will take place through a series of three Main Operating Bases (MOBs), referred to as MOB 1, MOB 2, and MOB 3. The United States Air Force (USAF) is preparing an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA) to evaluate potential environmental impacts associated with the B-21 MOB 1 Beddown at Dyess AFB Texas or Ellsworth AFB South Dakota. MOB 2 and MOB 3 basing actions will be evaluated in future NEPA and NHPA analyses. Per Section 306108 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR Part 800, the USAF is accounting for various environmental concerns and engaging early with tribal governments as it formulates the undertaking.

As part of this proposed undertaking, the USAF would beddown the B-21 MOB 1 at one of the candidate bases. The EIS will consider two alternatives, or locations, for MOB 1: Dyess AFB Texas or Ellsworth AFB South Dakota. This letter addresses Dyess AFB (Attachment 1). Implementation of the Proposed Action includes establishment of B-21 Operational Squadrons and a B-21 Formal Training Unit (FTU), as well as construction of various facilities and infrastructure projects, including a Weapons Generation Facility (WGF). The proposed undertaking also considers the additional personnel needed to support the MOB 1 mission at the selected base and B-21 aircraft operations within designated airspace.

The USAF has proposed numerous facilities and infrastructure projects required to establish the B-21 MOB 1 at Dyess AFB. Due to operational security concerns, the exact locations cannot be illustrated. However, Attachment 2 shows where USAF planners evaluated land use limitations and identified a general planned area of construction, or construction footprint on Dyess AFB. The WGF is a separate facility that is unique to the B-21 mission and would be constructed at Dyess AFB under the proposed undertaking. The WGF will provide a safer and more secure location for the storage of USAF nuclear munitions. The WGF will require a construction footprint of approximately 35 acres, with an approximate 52,000-square-foot building. The USAF will implement construction and operations in a manner consistent with AFI 20-110, *Nuclear Weapons-Related Materiel Management*. Due to national

DEATH FROM ABOVE

Ysleta del Sur Pueblo
Tribal Council

119 South Old Pueblo Road * P.O. Box 17579 * El Paso, Texas 79917 * (915) 859-8053 * Fax: (915) 859-4252

March 18, 2020

Colonel Jose E. Sumangil
Commander
7th Bomb Wing
7 Lancer Loop
Dyess AFB Texas 79607

Dear Colonel Jose E. Sumangil,

This letter is in response to the correspondence received in our office in which you provide Ysleta del Sur Pueblo the opportunity to comment on the B-21 MOB 1 Beddown at Dyess AFB Texas or Ellsworth AFB South Dakota EIS regarding traditional culture properties.

The Ysleta Del Sur Pueblo does not have any comments nor does it request consultation on this project due to its location being outside of our Pueblo's NAGPRA area of interest and/or relevance.

Thank you for allowing us the opportunity to comment on the proposed project.

Sincerely,

Omar Villanueva
Tribal Council Assistant
Ysleta del Sur Pueblo
119 S. Old Pueblo Rd.
(915) 342-2557

ovillanueva@ydsp-nsn.gov

1

F.1.2 Ellsworth AFB

F.1.2.1 Ellsworth AFB – Tribal Mailing List

Ellsworth AFB Tribal Mailing List				
Organization Name	**Salutation**	**First Name**	**Last Name**	**Title**
Blackfeet Nation	Chairman	Timothy	Davis	Chairman
Cheyenne River Sioux Tribe	Chairman	Harold	Frazier	Chairman
Chippewa Cree Tribe	Chairman	Harlan Gopher	Baker	Chairman
Confederated Salish and Kootenai Tribe	Chairwoman	Shelly	Fyant	Chairwoman
Crow Creek Sioux Tribe	Chairman	Lester	Thompson Jr.	Chairman
Crow Tribe of Indians	Chairman	Alvin	Not Afraid Jr.	Chairman
Eastern Shoshone Tribe	Chairman	Vernon	Hill	Chairman
Flandreau Santee Sioux Tribe	President	Anthony	Reider	President
Fort Belknap Indian Community	President	Andrew "Andy"	Werk Jr.	President
Fort Peck Assiniboine and Sioux Tribes	Chairman	Floyd	Azure	Chairman
Lower Brule Sioux Tribe	Chairman	Boyd I.	Gourneau	Chairman
Mandan, Hidatsa and Arikara Nation	Chairman	Mark N.	Fox	Chairman
Northern Arapaho Tribe	Chairman	Lee	Spoonhunter	Chairman
Northern Cheyenne Tribe	President	Rynalea	Whiteman Pena	President
Oglala Sioux Tribe	President	Julian	Bear Runner	President
Rosebud Sioux Tribe	President	Rodney	Bordeaux	President
Sisseton-Wahpeton Oyate	Chairman	Donovan	White	Chairman
Spirit Lake Tribe	Chairperson	Peggy	Cavanaugh	Chairperson
Standing Rock Sioux Tribe	Chairman	Mike	Faith	Chairman
Turtle Mountain Band of Chippewa Indians	Chairman	Jamie	Azure	Chairman
Yankton Sioux Tribe	Chairman	Robert	Flying Hawk	Chairman
Blackfeet Nation	Chairman	Timothy	Davis	Chairman
Cheyenne River Sioux Tribe	Chairman	Harold	Frazier	Chairman
Chippewa Cree Tribe	Chairman	Harlan Gopher	Baker	Chairman
Confederated Salish and Kootenai Tribe	Chairwoman	Shelly	Fyant	Chairwoman
Crow Creek Sioux Tribe	Chairman	Lester	Thompson Jr.	Chairman
Crow Tribe of Indians	Chairman	Alvin	Not Afraid Jr.	Chairman

F.1.2.2 Ellsworth AFB – Tribal Letter Example

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 28TH BOMB WING (AFGSC)
ELLSWORTH AIR FORCE BASE SOUTH DAKOTA

Colonel David A, Doss
28th Bomb Wing
1958 Scott Drive, Suite 1
Ellsworth Air Force Base SD 57706-4710

Timothy Davis
Chairman
Blackfeet Nation
PO Box 850
Browning, MT 59417

Dear Chairman Davis

The Department of Defense (DoD) is developing a new bomber aircraft, the B-21 "Raider," which will eventually replace existing B-1 and B-2 bomber aircraft. The beddown of the B-21 will take place through a series of three Main Operating Bases (MOBs), referred to as MOB 1, MOB 2, and MOB 3. The United States Air Force (USAF) is preparing an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA) to evaluate potential environmental impacts associated with the B-21 MOB 1 Beddown at Dyess AFB, Texas or Ellsworth AFB, South Dakota. MOB 2 and MOB 3 basing actions will be evaluated in future NEPA and NHPA analyses. Per Section 306108 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR Part 800, the USAF is accounting for various environmental concerns and engaging early with tribal governments as it formulates the undertaking.

As part of this proposed undertaking, the USAF would beddown the B-21 MOB 1 at one of the candidate bases. The EIS will consider two alternatives, or locations, for MOB 1: Dyess AFB, Texas, or Ellsworth AFB, South Dakota. This letter addresses Ellsworth AFB (Attachment 1). Implementation of the Proposed Action includes establishment of B-21 Operational Squadrons and a B-21 Formal Training Unit (FTU), as well as construction of various facilities and infrastructure projects, including a Weapons Generation Facility (WGF). The proposed undertaking also considers the additional personnel needed to support the MOB 1 mission at the selected base and B-21 aircraft operations within designated airspace.

The USAF has proposed numerous facilities and infrastructure projects required to establish the B-21 MOB 1 at Ellsworth AFB. Due to operational security concerns, the exact locations cannot be illustrated. However, Attachment 2 shows where USAF planners evaluated land use limitations and identified a general planned area of construction, or construction footprint on Ellsworth AFB. The WGF is a separate facility that is unique to the B-21 mission and would be constructed at Ellsworth AFB under the proposed undertaking. The WGF will provide a safer and more secure location for the storage of USAF nuclear munitions. The WGF will require a construction footprint of approximately 35 acres, with an approximate 52,000-square-foot building. The USAF will implement construction and operations in a manner consistent with AFI 20-110, *Nuclear Weapons-Related Materiel Management*. Due to national security implications, the details regarding the infrastructure associated with the WGF is not releasable. It should be noted that the Munitions Storage Area at Ellsworth AFB has adequate capacity for conventional USAF assets. The USAF identified two preferred locations for the WGF at

-1-

Ellsworth AFB. These will be presented as subalternatives in the EIS under the Ellsworth AFB Alternative: the North WGF Site (Location 1 on Attachment 3) and the South WGF Site (Location 5 on Attachment 3).

The B-21 mission personnel duties would include initial training, transition/conversion training, refresher/requalification training, and instructor training. Students entering the B-21 program would be graduates of undergraduate aviator and maintainer training programs. Pilots and maintainers entering the program from another aircraft platform would go through a transitional training program, which would provide the requisite skills to meet the mission-qualified pilot or mission-qualified maintainer graduation criteria. The B-21 mission would also require some civilian and contractor personnel for various support functions. Due to operational security concerns, the total number and breakout of B-21 mission personnel required for MOB 1 cannot be released. The EIS will provide a range of personnel numbers and associated dependents anticipated to meet the B-21 MOB 1 mission. The EIS will also analyze the potential impacts from changes in end-state populations at Ellsworth AFB. This analysis will consider both the incoming B-21 mission and personnel as well as the retiring B-1 mission and associated outgoing personnel.

The EIS will also address the B-21 training mission. The primary training area for B-21 aircraft operations based at either location would be the Powder River Training Complex airspace. However, aircraft based at Dyess AFB would also utilize additional airspace within the Brownwood Military Operating Area (MOA), Lancer MOA, and the Pecos MOA, which includes the associated Air Traffic Control Assigned Airspaces (ATCAAs) (Attachment 4). B-21 aircraft operations would adhere to the limitations established in the USAF's Powder River Training Complex EIS (USAF, 2014) and Record of Decision (ROD) (signed on January 16, 2015) (USAF, 2015) and the Federal Aviation Administration (FAA) ROD (signed on March 24, 2015) (FAA, 2015). Additionally, the Nevada Test and Training Range (NTTR) and the Utah Test and Training Range (UTTR) would also support minimal B-21 operations in a manner consistent with the current B-1 and B-2 missions, as incorporated in the NTTR Land Withdrawal Legislative EIS (USAF, 2018) and the F-35A Operational Basing EIS (USAF, 2013a) and ROD (signed December 2, 2013) (USAF, 2013b). In general, end-state B-21 operations and ordnance use in NTTR and UTTR are anticipated to be the same as existing B-1 and B-2 operations, which will be phased out of operation and into retirement. While many components of the B-21 aircraft are classified and cannot be released, in general, B-21 engine noise is anticipated to be quieter than the B-1 and would be the same or quieter than the B-2. Additionally, the B-21 is not anticipated to use low altitude training routes during operations.

The USAF plans to hold six public scoping meetings to provide information on the description of the the proposed action and alternatives and will solicit public comments. The meetings will occur from 6 p.m. to 8 p.m. on the dates and at the locations listed below:

- Tuesday, March 31, 2020: Holiday Inn at Rushmore Plaza, 505 North 5th Street, Rapid City, SD 57701
- Wednesday, April 1, 2020: Sturgis Community Center, 1401 Lazelle Street, Sturgis, SD 57785
- Thursday, April 2, 2020: Douglas Middle School, 691 Tower Road, Box Elder, SD 57719
- Tuesday, April 7, 2020: Abilene Convention Center, 1100 North 6th Street, Abilene, TX 79601
- Wednesday, April 8, 2020: Wylie High School Performing Arts Center, 4502 Antilley Road, Abilene, TX 79606
- Thursday, April 9, 2020: Tye Community Center, 103 Scott Street, Tye, TX 79563

1

The agenda for each scoping meeting is as follows:

- 6:00 p.m. to 6:30 p.m. – Open House and comment submission
- 6:30 p.m. to 7:00 p.m. – Air Force Presentation
- 7:00 p.m. to 8:00 p.m. – Open House and comment submission resumes

Additional information on the B-21 MOB 1 Beddown EIS environmental impact analysis process can be found on the project website at https://www.B21EIS.com. Inquiries and comments-by-mail regarding the USAF proposal should be directed to Ellsworth AFB Public Affairs, ATTN: Steve Merrill, 28th Bomb Wing Public Affairs, 1958 Scott Drive, Suite 4, Ellsworth AFB, SD 57706; (605)358-5056; 28bw.public.affairs@us.af.mil.

The project website (https://www.B21EIS.com) can also be used to submit comments. Comments will be accepted at any time during the environmental impact analysis process. However, to ensure the USAF has sufficient time to consider public input in the preparation of the Draft EIS, scoping comments should be submitted to the website or the address listed above by April 24, 2020.

In accordance with the NHPA, the USAF would like to request your level of interest in participating in government-to-government consultation on the B-21 MOB 1 Beddown at Dyess AFB, Texas or Ellsworth AFB, South Dakota EIS regarding traditional cultural properties. Please let us know if you believe this undertaking might adversely affect any historic properties of religious and cultural significance to the Blackfeet Nation. In addition to government-to-government consultation on properties of religious and cultural significance, the USAF also requests your input in identifying any issues or areas of concern you feel should be addressed in the environmental analysis. If you would like to participate in government-to-government consultation or if you have any questions, please contact Mr. Gary Brundige (AFGSC 28 CES/CEIEC) Ellsworth AFB POC at (605) 385-2690 or by e-mail at Gary.Brundige@us.af.mil. Thank you in advance for your assistance in this effort.

Sincerely,

DOSS.DAVID.A.1049946151 Digitally signed by DOSS.DAVID.A.1049946151 Date: 2020.03.06 11:38:42 -07'00'

DAVID A. DOSS, Colonel, USAF
Commander

4 ATTACHMENTS:
1. Attachment - Ellsworth AFB Location
2. Attachment - Facilities and Infrastructure Planned Areas of Construction on Ellsworth AFB
3. Attachment - Weapons Generation Facility (WGF) Planned Areas of Construction on Ellsworth AFB
4. Attachment - Range and Airspace Boundaries

-3-

1

REFERENCES

FAA. (2015). *Adoption of Environmental Impact Statement and FAA Record of Decision for Establishment of the Powder River Training Complex Located in Montana, North Dakota, South Dakota, and Wyoming.* Federal Aviation Administration, March 24.

USAF. (2013a). *F-35A Operational Basing Environmental Impact Statement.* U.S. Air Force, September.

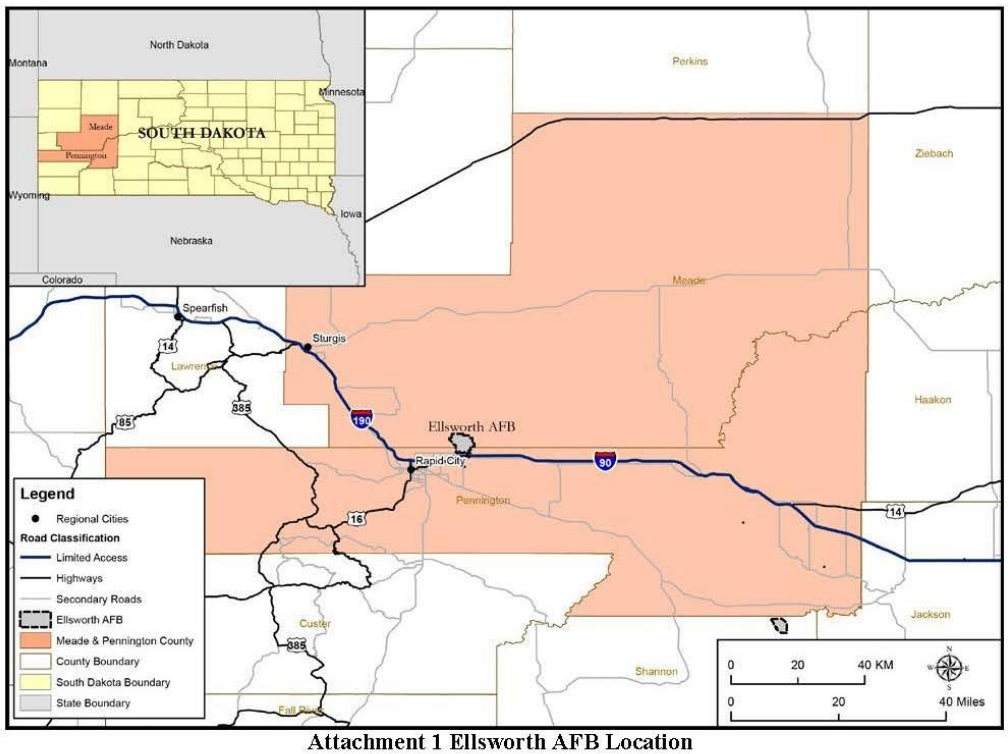
USAF. (2013b). *Record of Decision for the First Active Duty F-35A Operational Base.* U.S. Air Force, December 2.

USAF. (2014). *Powder River Training Complex Ellsworth Air Force Base, South Dakota Environmental Impact Statement.* U.S. Air Force, November.

USAF. (2015). *Record of Decision for the Powder River Training Complex, Ellsworth Air Force Base, South Dakota, Environmental Impact Statement.* U.S. Air Force. January 16.

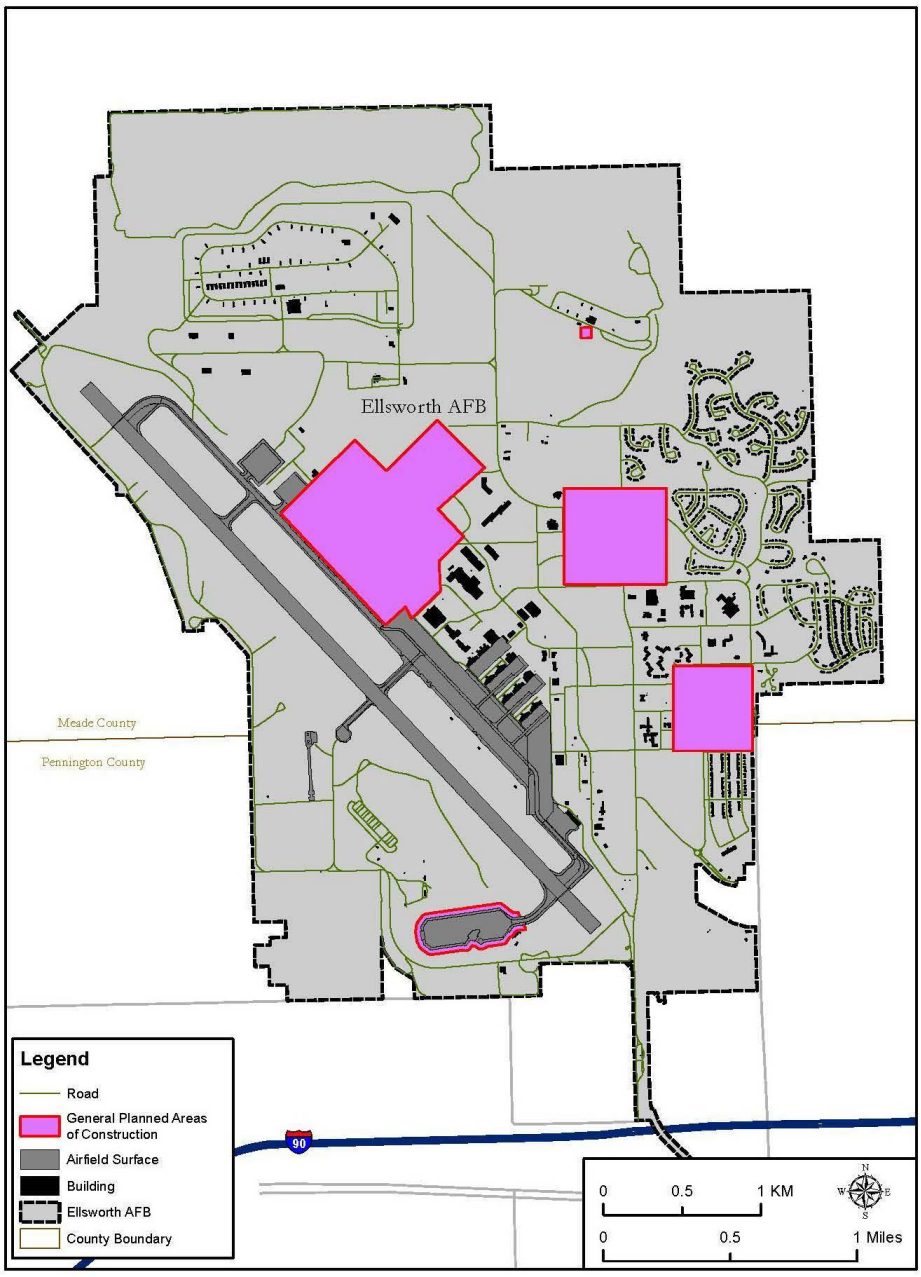
USAF. (2018). *Nevada Test and Training Range Land Withdrawal Legislative Environmental Impact Statement.* U.S. Air Force, October.

1



Attachment 1 Ellsworth AFB Location

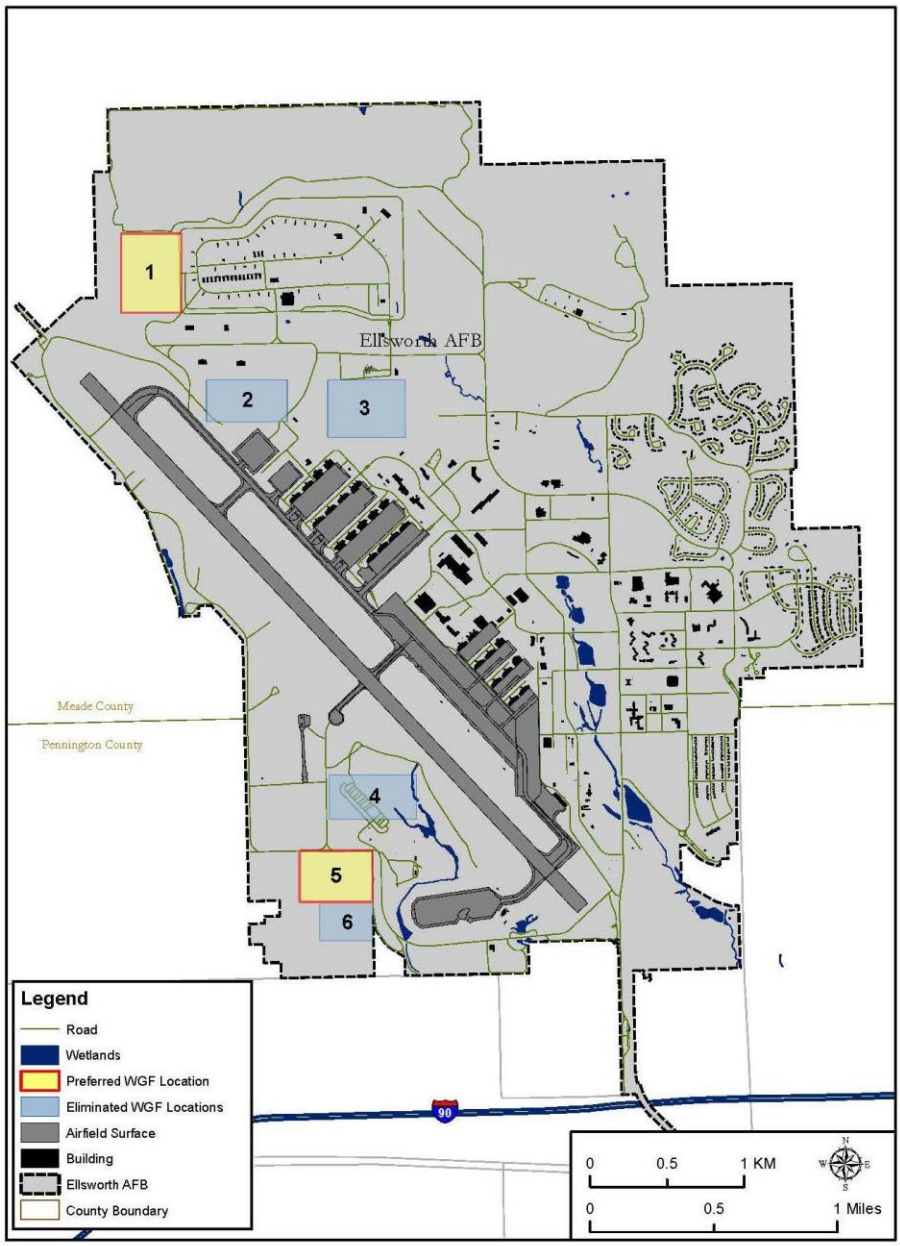
1



Attachment 2 Facilities and Infrastructure Planned Areas of Construction on Ellsworth AFB

-6-

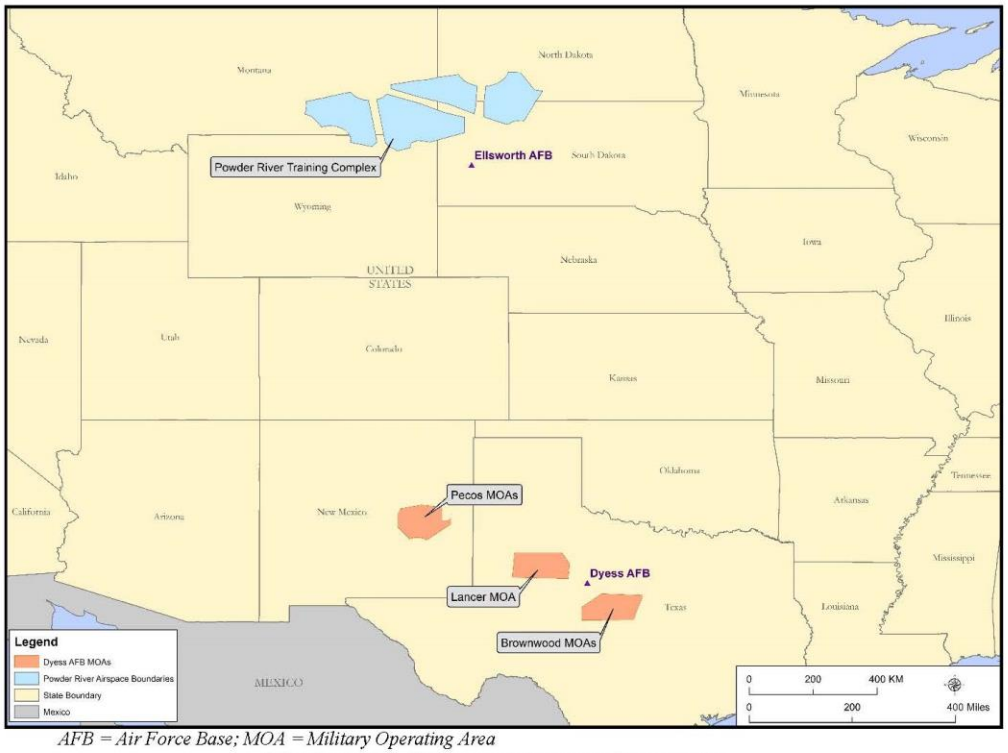
1



Attachment 3 Weapons Generation Facility (WGF) Planned Areas of Construction on Ellsworth AFB

-7-

1



AFB = Air Force Base; MOA = Military Operating Area

Attachment 4. Range and Airspace Boundaries

-8-

1

F.1.2.3 Ellsworth AFB – Tribal Responses

No responses have been received.

F.2 SOUTH DAKOTA STATE HISTORIC PRESERVATION OFFICER (SHPO) CONSULTATION

F.2.1 PRIDE Hangar SHPO Correspondence

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 28TH MISSION SUPPORT GROUP (ACC)
ELLSWORTH AIR FORCE BASE, SOUTH DAKOTA

21 Jan 2020

Gary Brundige
Cultural Resources Manager
28CES/CEIEC
2125 Scott Drive
Ellsworth AFB, SD 57706

Ms. Kate Nelson
Restoration Specialist
Cultural Heritage Center
900 Governors Drive
Pierre, SD 57501

Dear Ms. Nelson,

We recently discussed plans to rehabilitate building 7504, PRIDE Hangar, a historic eligible property on Ellsworth AFB. The project is to return an aircraft maintenance function to the building to accommodate the beddown of a new mission, basing the new B-21 bomber on Ellsworth AFB.

The rehabilitation will accommodate placing the Aerospace Grounds Equipment (AGE) shop within the open space of the former B-36 hangar bay. The details of the rehabilitation are incomplete as planning and alternative development are ongoing. However, the running track, exercise equipment and playing fields will be removed, and the exterior modifications are limited to the installation of overhead doors.

Other modifications under discussion include updating and modifying the lower office spaces against the northwest and southeast walls. These offices are not part of the original structure (see as-built plans attached), but were constructed shortly after. The original transformer room, bathrooms, and LP-2 walls remain between the arch supports within the office spaces on the southeast wall, however, these rooms have been stripped or repurposed. Similar original walls within the office spaces are missing or have been modified on the northwest wall. Current plans are to remove these walls to improve functionality of the space and accommodate new use. Access to upper office spaces and handrails will be brought up to code if necessary to provide additional storage space. Additionally, the exterior windows on the SE façade will be updated/replaced to improve thermal efficiency.

To accommodate the movement of equipment in and out of the hangar, the existing overhead door in the SW door set will be heightened to 18 ft (currently 16 ft). Three additional 16'W x 18'H overhead doors will be placed in the non-functional sliding hangar bay leaves

Global Power For America

where personnel doors and vestibules currently exist, resulting in two doors in the NE hangar door set and two in the SW hangar door set. A full length sunshade will be installed over the SW hangar door windows.

A wash bay will be constructed in the southeast corner of the building. If exterior space allows for an approach, 2 overhead doors will be installed in the SE facing façade, one between the 1st and 2nd arch supports and a second between the 3rd and 4th arch supports from the SE building corner. These doors will be 12 x 12. The existing overhead door between the 5th and 6th supports will be filled.

The original 2 center door leaves were replaced with an insert circa 1966 when the 44th Missile Wing Headquarters were housed in the Pride hangar. These door leaves are currently located in and adjacent to the door pocket on the SE corner of the building . These 2 door leaves will be scrapped and materials salvaged (windows and insulated panels) to repair the existing leaves.

We are in the conceptual planning stage, but the B-21 EIS is being fast tracked and we expect to finalize detail into this project in the near term. As indicated on the enclosed project review form, I have determined that this project as outlined will result in "no adverse effect".

I request the SD SHPO review the enclosed Section 106 Project Review Form and make a determination as to the proposed project's effect on historic properties.

If you have questions or concerns, please feel free to contact me at 605-385-2690 or by email at gary.brundige@us.af.mil. Thank you for your continued support of our Cultural Resources Program.

Sincerely

Gary Brundige

Enclosures:
Section 106 Project Review Form

1

SOUTH DAKOTA STATE HISTORICAL SOCIETY
STATE HISTORIC PRESERVATION OFFICE (SHPO)
SECTION 106 PROJECT REVIEW FORM

Submission of a completed Section 106 Project Review Form with adequate information and attachments constitutes a request for review pursuant to Section 106 of the National Historic Preservation Act of 1966 (as amended). Section 106 requires the South Dakota State Historic Preservation Office to review all projects that are federally funded, licensed, or assisted. We reserve the right to request more information if needed. Typed forms are preferred. **SUBMITTAL OF THIS FORM WITHOUT ALL REQUESTED INFORMATION WILL CAUSE REVIEW DELAYS.**

Section 106 regulations provide for a 30-day response time by the South Dakota State Historic Preservation Office from the date of receipt of complete information.

For projects requiring a license from the Federal Communications Commission, please use FCC Forms 620 or 621. **DO NOT USE THIS FORM.**

I. PROJECT INFORMATION

☒ THIS IS A NEW SUBMITTAL
☐ THIS IS MORE INFORMATION RELATING TO SHPO PROJECT# _____

1. PROJECT NAME: **BLDG 7504, Pride Hangar – Aerospace Ground Equipment Maintenance**

2. FEDERAL AGENCY FUNDING, LICENSING, OR ASSISTING THE PROJECT
A. AGENCY NAME: **Ellsworth AFB**
B. AGENCY CONTACT PERSON: **Gary Brundige**

DETERMINATION OF EFFECT
See page 5, #12 for descriptions and space for explanations.

☐ **No Historic Properties Affected** ☐ **Adverse Effect** ☒ **No Adverse Effect**

The responsible federal agency official must sign this form here prior to submitting it to the SHPO. Projects received without an appropriate signature will cause review delays. **This must be an original signature and not electronic**.

SIGNATURE _____ **DATE** 21 Jan 2020

Please type/ the following:
NAME Gary Brundige
TITLE Cultural Resources Manager
AGENCY Ellsworth Air Force Base

FOR SHPO USE ONLY. DO NOT WRITE OR INSERT ANYTHING HERE.

Updated May 2013 1

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

2. FEDERAL AGENCY FUNDING, LICENSING, OR ASSISTING THE PROJECT

A. AGENCY NAME: Ellsworth AFB
B. AGENCY CONTACT PERSON: Gary Brundige
C. MAILING ADDRESS: 2125 Scott Dr, Ellsworth AFB, SD 57706
D. EMAIL ADDRESS: gary.brundige@us.af.mil
E. TELEPHONE NUMBER: 605-385-2690

3. STATE AGENCY FUNDING, LICENSING, OR ASSISTING THE PROJECT, IF APPLICABLE

A. AGENCY NAME:
B. AGENCY CONTACT PERSON:
C. MAILING ADDRESS:
D. EMAIL ADDRESS:
E. TELEPHONE NUMBER:
F. IF THIS IS A GRANT PROGRAM, PLEASE INCLUDE THE NAME OF THE PROGRAM (FOR EXAMPLE, CDBG OR SRF):

4. CONSULTANT CONTACT PERSON, IF APPLICABLE

A. COMPANY NAME:
B. CONTACT PERSON:
C. MAILING ADDRESS:
D. EMAIL ADDRESS:
E. TELEPHONE NUMBER:

5. PROJECT LOCATION

A. ADDRESS: 1750 LeMay Blvd
B. CITY: Ellsworth AFB
C. COUNTY: Meade

D. TOWNSHIP: T2N E. RANGE R8E F. SECTION 12

G. Provide a USGS 7.5 minute quadrangle map of the project area. If the project is in an urban area, show the location(s) on a city map. Photocopies are acceptable, but poor quality maps or insufficient information will cause review delays. Do not enlarge or reduce the map.

Is a map showing the exact location of the project attached to this form? YES ☒ or NO ☐

Updated May 2017

2

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

6. PROJECT DESCRIPTION

Describe all anticipated work associated with the project. Be specific. The description should include all ancillary facilities such as access roads, placement of utilities, additional outbuildings, fences, material borrow areas, staging areas, etc. Use as much space and as many pages as needed to clearly describe the project.

Modification of interior spaces and entry/exit pathways in the Pride Hangar in preparation for the new bomber mission. The function of the Hangar will change from a recreational/fitness center to the Aerospace Ground Equipment (AGE) maintenance facility. The project will include removal of all interior playing fields, fitness equipment, and ceremonial props. The interior block wall offices and mezzanines (NW and SE walls constructed 1 – 2 years after the hangar came online) will be remodeled to accommodate offices, facilities, and storage (see Attachment 1). The as-build transformer and bathroom walls contained in the office space have been modified and will be removed. The original sliding leaf doors (replaced by an insert with 44th Missile Wing activation, ca 1966, Photo 1) *Continued pg 8*

7. PROJECT PLANS

Plans, drawings, engineering specifications etc. should be included to help explain the project, but these cannot replace the above verbal description. If new construction is involved, elevation drawings and plans should be included.

Are plans, drawings, engineering specifications, or similar documents attached to this form?

YES ☒ or NO ☐

8. PHOTOGRAPHS

Provide several clear, original photographs of the project location. Also, include photographs of every affected buildings/structures, including an overall front view of each structure and other views necessary to describe fully the structures and the project. Streetscape photographs of surrounding buildings and structures should also be included. Photographs should be color and can be either printed or digital images submitted on a CD. Printed digital photographs should have a high dpi and clear resolution. Photographs should also either be labeled or include a key.

NOTE: Projects submitted with insufficient photographs will cause review delays.

Are photographs that clearly show the project location attached to this form? YES ☒ or NO ☐

9. PROJECT AREA OF POTENTIAL EFFECT (APE)

The APE consists of the geographic area or areas within which a project may directly or indirectly, cause changes in the character or use of historic properties. In most instances, the APE is not simply the project's physical boundaries or right-of-way. The APE also includes all ancillary facilities such as access roads, placement of utilities, additional outbuildings, fences, material borrow areas, staging areas, etc. The APE may include visual and audible effects.
Highlight the APE on a localized map.

A. Is a map highlighting the APE attached to this form? YES ☒ or NO ☐

B. Provide a written description of the APE. Describe the steps taken to identify the APE, and justify why the APE boundaries were chosen. If the APE has been previously disturbed, include an explanation of the previous ground disturbance.

The proposed project is located primarily in the interior of building 7504, Additional work will occur on the hangar doors, installing 3 additional overhead doors. Two additional overhead doors will be installed in the SE corner to accommodate the wash rack. Building 7504, the Pride Hangar, is an HRHP eligible building. The area of potential effects is building 7504. There are no other eligible properties in the vicinity of this building.

Updated May 2017

3

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

II. IDENTIFY HISTORIC PROPERTIES

10. IDENTIFICATION EFFORTS (See 36 CFR 800.4)
Identification of historic properties may include, but is not limited, any of the following identification methods. Check which steps were taken to identify historic properties in the APE. Check all that apply and describe the results.

A. ☐ RECORD SEARCH
Conducted a record search through the Archaeological Research Center in Rapid City. Record searches are available for a fee by calling 605.394.1936. This will include a search of all previously-surveyed archaeological sites and structures within the APE and within one mile of the APE.

If a record search was conducted, is a copy of the results attached to this form? YES ☐ or NO ☐

B. ☐ ON-THE-GROUND SURVEY
Survey by an archaeologist and/or an architectural historian of project area not previously surveyed. Survey type will depend on the scope of the project. A list of professionals is available at http://history.sd.gov/Preservation/TechAssist/ConsultantsContractors.aspx. Guidelines for surveys and reports are available at: http://history.sd.gov/Preservation/PresLaws/r&c_guidelines.pdf and http://history.sd.gov/Preservation/OtherServices/HSArchitecturalSurveyManual2006.pdf.

If a survey was conducted, is a copy of the survey report and/or survey forms attached to this form?
YES ☐ or NO ☐

C. ☐ SEARCHED THE NATIONAL REGISTER OF HISTORIC PLACES DATABASE
This database is available online at: http://nrhp.focus.nps.gov/. NOTE: This database only includes properties *listed* on the National Register of Historic Places. Properties that are *eligible* for the National Register must also be taken into consideration.

If the National Register database was searched, is a printout of any results attached to this form?
YES ☐ or NO ☐

D. ☐ BACKGROUND RESEARCH
Please describe sources reviewed and findings of research. This could include such things as reviewing county or city history books or conducting research at a local historical society, research facility, or county courthouse.

E. ☐ ORAL HISTORY INTERVIEWS
Please list who was interviewed and describe what was learned through the interviews.

Updated May 2017

4

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

F. ☐ CONSULTATION

Please describe who was consulted and the results of the consultation. Examples include tribes, historic preservation commissions, the public, and local historical societies.

G. ☒ OTHER

Describe any other efforts undertaken to identify historic properties and the results of those efforts.

Historic properties on Ellsworth AFB have been identified through surveys and consultation with SD SHPO.
No other historic properties are in the vicinity of Building 7504.

11. HISTORIC PROPERTIES FINDING

Based on the efforts described above to identify historic properties, please choose one finding for the project. There are (mark one):

☒ Historic Properties Present in the APE

☐ No Historic Properties Present in the APE

III. ASSESS EFFECTS

12. DETERMINATION OF EFFECT

The federal agency must submit a determination of effect for the SHPO to review this project. Based on the information provided above, the responsible agency official should make a determination of effect on historic properties for this project. Please select and mark one of the following determinations, then explain the basis for your decision.

☐ **No Historic Properties Affected** [36 CFR 800.4(d)(1)] – For a determination of no historic properties affected, the agency official finds no historic properties present or that the undertaking will have no effect upon historic properties as defined in Sec. 800.16(i). Please explain.

☐ **Adverse Effect** [36 CFR Part 800.5(a)(1)] – For a determination of adverse effect, the undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects that may occur later in time, be farther removed in distance, or be cumulative. Please explain.

☒ **No Adverse Effect** [36 CRF Part 800.5(b)] – For a determination of no adverse effect, the undertaking is modified or conditions are imposed to avoid adverse effects to a historic property. Please explain.

Updated May 2017

5

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

The work will remove additions to the building interior not present as built. The hangar doors will have additional overhead doors inserted over existing personnel doors. These will match the configuration of the existing overhead door on the SW door set. Equipment will be installed in the open hangar bay.

Please print and mail completed form to:

Review and Compliance Coordinator
South Dakota State Historical Society
900 Governors Drive
Pierre, SD 57501

Questions about Section 106 can be directed to:

Paige Olson
Review and Compliance Coordinator
Paige.Olson@state.sd.us
605.773.6004

OR

Jenna Carlson Dietmeier
Review and Compliance Archaeologist
Jenna.CarlsonDietmeier@state.sd.us
605.773.8370

Questions about Section 106 projects on existing buildings or structures can be directed to:

Kate Nelson
Restoration Specialist
Kate.Nelson@state.sd.us
605.773.6005

Project information submitted cannot be returned. This documentation is kept on file at the South Dakota State Historical Society. We review faxed and electronic submissions in the same manner as any other submission and with the same considerations for clarity and completeness. However, original documents with original signature must follow all faxed and electronic submissions. The submission of incomplete, unclear, or confusing information may result in unnecessary delays in the review process until adequate information is obtained.

Updated May 2017

6

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

Additional Resources

1. South Dakota State Historic Preservation Office http://history.sd.gov/Preservation/
   a. Link to National and State Register Listed Properties: http://history.sd.gov/Preservation/NatReg/NatReg.aspx
   b. Historic Contexts: history.sd.gov/Preservation/OtherServices/SHPODocs.aspx
   c. *Guidelines for Cultural Resource Surveys and Survey Reports 2005*: http://history.sd.gov/Preservation/PresLaws/r&c_guidelines.pdf

2. Advisory Council on Historic Preservation: www.achp.gov
   a. Link to National Historic Preservation Act of 1966 as amended
   b. 36 CFR Part 800 – Protection of Historic Properties

3. National Park Service: www.nps.gov/
   a. National Register of Historic Places: www.nps.gov/nr/
   b. Publications (National Register Bulletins, Preservation Briefs, etc.): www.nps.gov/history/publications.htm

4. Archaeological Research Center: history.sd.gov/Archaeology/ or 605.394.1936
   a. Record Search Information

5. State Archives: history.sd.gov/Archives/ or 605.773.3804
   a. Historic photographs
   b. Research material

Updated May 2017

7

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

CONTINUATION SHEET

#6 Continued:

will be removed and salvaged for repair of installed leaves. The 2 center leaf doors are currently on their tracks adjacent to the southeast hangar door pocket (see Photo 2). The entire hangar concrete floor will be repaired/resurfaced. Various equipment to include hoists, a jack tester, a run room, and wash rack will be added to the interior. A full length sunshade will be added to the SW hangar door façade to aid in regulating temperature. The SE side office windows will be updated with thermally efficient windows matching the original look. The interior overhead span will remain open.

An existing overhead door on the southwest façade (in the runway side hangar doors - See Photo 3) will be heightened to 18 ft (currently 16 ft) to accommodate AGE equipment movement. One additional 16' W x 18' H overhead door will be placed in the 3rd leaf from the NW corner on the same (SW) façade (symmetric with the existing overhead door) and 2 additional 16' W x 18' W overhead doors will be placed in the NE facing hangar doors. These doors will be inserted over existing personnel doors. This will provide 2 entry/exit vehicle doors in the NE and SW door sets plus the 2 existing 15 x 18 doors in the inset (Photos 4 and 5).

A wash bay will be constructed in the southeast corner of the building. If exterior space allows for an approach, 2 overhead doors will be installed in the SE facing façade at the loading dock area, one between the 1st and 2nd arch supports and a second between the 3rd and 4th arch supports from the SE building corner. These doors will be 12 x 12. The existing overhead door between the 5th and 6th supports will be filled (see Photo 6 & 7 for interior and exterior views). No other changes will occur to the exterior of the building.

Updated May 2017

7

1

SOUTH DAKOTA STATE HISTORICAL SOCIETY
DEPARTMENT OF TOURISM

SOUTH DAKOTA STATE HISTORICAL SOCIETY
STATE HISTORIC PRESERVATION OFFICE (SHPO)
SECTION 106 PROJECT REVIEW FORM

JAN 24 2020
South Dakota SHPO

Submission of a completed Section 106 Project Review Form with adequate information and attachments constitutes a request for review pursuant to Section 106 of the National Historic Preservation Act of 1966 (as amended). Section 106 requires the South Dakota State Historic Preservation Office to review all projects that are federally funded, licensed, or assisted. We reserve the right to request more information if needed. Typed forms are preferred. **SUBMITTAL OF THIS FORM WITHOUT ALL REQUESTED INFORMATION WILL CAUSE REVIEW DELAYS.**

Section 106 regulations provide for a 30-day response time by the South Dakota State Historic Preservation Office from the date of receipt of complete information.

For projects requiring a license from the Federal Communications Commission, please use FCC Forms 620 or 621. **DO NOT USE THIS FORM.**

I. PROJECT INFORMATION

☒ THIS IS A NEW SUBMITTAL
☐ THIS IS MORE INFORMATION RELATING TO SHPO PROJECT# _____

1. PROJECT NAME: **BLDG 7504, Pride Hangar – Aerospace Ground Equipment Maintenance**

2. FEDERAL AGENCY FUNDING, LICENSING, OR ASSISTING THE PROJECT
A. AGENCY NAME: **Ellsworth AFB**
B. AGENCY CONTACT PERSON: **Gary Brundige**

DETERMINATION OF EFFECT
See page 5, #12 for descriptions and space for explanations.

☐ **No Historic Properties Affected** ☐ **Adverse Effect** ☒ **No Adverse Effect**

The responsible federal agency official must sign this form here prior to submitting it to the SHPO. Projects received without an appropriate signature will cause review delays. **This must be an original signature and not electronic.**

SIGNATURE Gary C Brundige **DATE** 21 Jan 2020

Please type/ the following:
NAME Gary Brundige
TITLE Cultural Resources Manager
AGENCY Ellsworth Air Force Base

FOR SHPO USE ONLY. DO NOT WRITE OR INSERT ANYTHING HERE.

Pursuant to 36 CFR part 800.13, if historic properties are discovered or unanticipated effects on historic properties found after the agency official has completed the Section 106 process, the agency official shall avoid, minimize or mitigate the adverse effects to such properties and notify the SHPO/THPO, and Indian tribes that might attach religious and cultural significance to the affected property within 48 hours of the discovery.

SECTION 106 DETERMINATION
Based upon the information provided to the South Dakota State Historic Preservation Office on 01-24-2020, we concur with your agency's determination of "No Adverse Effect" for this undertaking.
Gary D. Vogt
State Historic Preservation Officer (SHPO)
By: Kate Nelson
02-07-2020 20012400 7F
Date SHPO Project #

SECTION 106 CONSULTATION
Concurrence of the State Historical Preservation Office does not relieve the federal agency official from consulting with other appropriate parties, as described in 36 CFR Part 800.2(c).

Updated May 2013

1

1
2

F.2.2 Building Demolition SHPO Correspondence

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 28TH MISSION SUPPORT GROUP (AFGSC)
ELLSWORTH AIR FORCE BASE SOUTH DAKOTA

27 Jan 2020

Gary Brundige
Cultural Resources Manager
28CES/CEIEC
2125 Scott Drive
Ellsworth AFB, SD 57706

Ms. Kate Nelson
Restoration Specialist
Cultural Heritage Center
900 Governors Drive
Pierre, SD 57501

Dear Ms. Nelson,

The 60 row docks (hangars) are four of 15 identical docks built on Ellsworth AFB in the early-middle 1950's. These buildings were designated as multi-purpose wing hangars and were designed to house the new B-52 bombers.

Ellsworth AFB is planning base improvements to accommodate the new B-21 bomber on EAFB. This new mission will require new facilities on the north ramp to support this new weapon system. The 60 row docks will be demolished to provide space for these new facilities. The proposed demolitions include docks 60, 61, 62, and 63 (buildings 7262, 7260, 7258, and 7256).

Building 7256 is not considered eligible and its demolition will not have an adverse effect on historic properties. However, demolition of buildings 7262, 7260, and 7258 *will have an Adverse Effect* on these historic buildings. We believe mitigation in the form of historic documentation of these facilities should be accomplished prior to demolition activities.

I request the SD SHPO review the enclosed Section 106 Project Review Form and make a determination per Section 106 of the Historic Preservation Act and recommend mitigation procedures regarding the proposed demolition of these historic buildings.

If you have questions or concerns, please feel free to contact me at 605-385-2690 or by email at gary.brundige@us.af.mil. Thank you for your continued support of our Cultural Resources Program.

Sincerely

Gary Brundige

Enclosures:
Section 106 Project Review Form

Global Power For America

SOUTH DAKOTA STATE HISTORICAL SOCIETY
STATE HISTORIC PRESERVATION OFFICE (SHPO)
SECTION 106 PROJECT REVIEW FORM

Submission of a completed Section 106 Project Review Form with adequate information and attachments constitutes a request for review pursuant to Section 106 of the National Historic Preservation Act of 1966 (as amended). Section 106 requires the South Dakota State Historic Preservation Office to review all projects that are federally funded, licensed, or assisted. We reserve the right to request more information if needed. Typed forms are preferred. **SUBMITTAL OF THIS FORM WITHOUT ALL REQUESTED INFORMATION WILL CAUSE REVIEW DELAYS.**

Section 106 regulations provide for a 30-day response time by the South Dakota State Historic Preservation Office from the date of receipt of complete information.

For projects requiring a license from the Federal Communications Commission, please use FCC Forms 620 or 621. **DO NOT USE THIS FORM.**

I. PROJECT INFORMATION

☒ THIS IS A NEW SUBMITTAL
☐ THIS IS MORE INFORMATION RELATING TO SHPO PROJECT# _____

1. PROJECT NAME: **BLDGS 7258, 7260, 7262 - 60 Row Hangars – B-21 Beddown**

2. FEDERAL AGENCY FUNDING, LICENSING, OR ASSISTING THE PROJECT
A. AGENCY NAME: **Ellsworth AFB**
B. AGENCY CONTACT PERSON: **Gary Brundige**

DETERMINATION OF EFFECT
See page 5, #12 for descriptions and space for explanations.

☐ **No Historic Properties Affected** ☒ **Adverse Effect** ☐ **No Adverse Effect**

The responsible federal agency official must sign this form here prior to submitting it to the SHPO. Projects received without an appropriate signature will cause review delays. **This must be an original signature and not electronic**.

SIGNATURE _____ **DATE** 27 Jan 2020

Please type/ the following:
NAME Gary Brundige
TITLE Cultural Resources Manager
AGENCY Ellsworth Air Force Base

FOR SHPO USE ONLY. DO NOT WRITE OR INSERT ANYTHING HERE.

Updated May 2013 1

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

2. FEDERAL AGENCY FUNDING, LICENSING, OR ASSISTING THE PROJECT

A. AGENCY NAME: Ellsworth AFB
B. AGENCY CONTACT PERSON: Gary Brundige
C. MAILING ADDRESS: 2125 Scott Dr, Ellsworth AFB, SD 57706
D. EMAIL ADDRESS: gary.brundige@us.af.mil
E. TELEPHONE NUMBER: 605-385-2690

3. STATE AGENCY FUNDING, LICENSING, OR ASSISTING THE PROJECT, IF APPLICABLE

A. AGENCY NAME:
B. AGENCY CONTACT PERSON:
C. MAILING ADDRESS:
D. EMAIL ADDRESS:
E. TELEPHONE NUMBER:
F. IF THIS IS A GRANT PROGRAM, PLEASE INCLUDE THE NAME OF THE PROGRAM (FOR EXAMPLE, CDBG OR SRF):

4. CONSULTANT CONTACT PERSON, IF APPLICABLE

A. COMPANY NAME:
B. CONTACT PERSON:
C. MAILING ADDRESS:
D. EMAIL ADDRESS:
E. TELEPHONE NUMBER:

5. PROJECT LOCATION

A. ADDRESS: 1529, 1579, 1613 Hamilton Street
B. CITY: Ellsworth AFB
C. COUNTY: Meade

D. TOWNSHIP: T2N E. RANGE R8E F. SECTION 12

G. Provide a USGS 7.5 minute quadrangle map of the project area. If the project is in an urban area, show the location(s) on a city map. Photocopies are acceptable, but poor quality maps or insufficient information will cause review delays. Do not enlarge or reduce the map.

Is a map showing the exact location of the project attached to this form? YES ☒ or NO ☐

Updated May 2017

2

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

6. PROJECT DESCRIPTION

Describe all anticipated work associated with the project. Be specific. The description should include all ancillary facilities such as access roads, placement of utilities, additional outbuildings, fences, material borrow areas, staging areas, etc. Use as much space and as many pages as needed to clearly describe the project.

Demolition of Hangars 60-63 to provide space for specialized maintenance facilities for the new B-21 bomber.

7. PROJECT PLANS

Plans, drawings, engineering specifications etc. should be included to help explain the project, but these cannot replace the above verbal description. If new construction is involved, elevation drawings and plans should be included.

Are plans, drawings, engineering specifications, or similar documents attached to this form?

YES ☐ or NO ☒

8. PHOTOGRAPHS

Provide several clear, original photographs of the project location. Also, include photographs of every affected buildings/structures, including an overall front view of each structure and other views necessary to describe fully the structures and the project. Streetscape photographs of surrounding buildings and structures should also be included. Photographs should be color and can be either printed or digital images submitted on a CD. Printed digital photographs should have a high dpi and clear resolution. Photographs should also either be labeled or include a key.

NOTE: Projects submitted with insufficient photographs will cause review delays.

Are photographs that clearly show the project location attached to this form? YES ☒ or NO ☐

9. PROJECT AREA OF POTENTIAL EFFECT (APE)

The APE consists of the geographic area or areas within which a project may directly or indirectly, cause changes in the character or use of historic properties. In most instances, the APE is not simply the project's physical boundaries or right-of-way. The APE also includes all ancillary facilities such as access roads, placement of utilities, additional outbuildings, fences, material borrow areas, staging areas, etc. The APE may include visual and audible effects.
Highlight the APE on a localized map.

A. Is a map highlighting the APE attached to this form? YES ☒ or NO ☐

B. Provide a written description of the APE. Describe the steps taken to identify the APE, and justify why the APE boundaries were chosen. If the APE has been previously disturbed, include an explanation of the previous ground disturbance.

The proposed project is located on the north ramp adjacent to the flightline and taxiway. The three eligible hangars are proximate to the flight line. The last hangar (dock 63) is also one of 15 identical hangars added in the 1950's. However, this buildings integrity is not intact due to modifications in the 1980's. There are no other eligible properties in the vicinity of these buildings.

Updated May 2017

3

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

II. IDENTIFY HISTORIC PROPERTIES

10. IDENTIFICATION EFFORTS (See 36 CFR 800.4)
Identification of historic properties may include, but is not limited, any of the following identification methods. Check which steps were taken to identify historic properties in the APE. Check all that apply and describe the results.

A. ☐ RECORD SEARCH
Conducted a record search through the Archaeological Research Center in Rapid City. Record searches are available for a fee by calling 605.394.1936. This will include a search of all previously-surveyed archaeological sites and structures within the APE and within one mile of the APE.

If a record search was conducted, is a copy of the results attached to this form? YES ☐ or NO ☐

B. ☐ ON-THE-GROUND SURVEY
Survey by an archaeologist and/or an architectural historian of project area not previously surveyed. Survey type will depend on the scope of the project. A list of professionals is available at http://history.sd.gov/Preservation/TechAssist/ConsultantsContractors.aspx. Guidelines for surveys and reports are available at: http://history.sd.gov/Preservation/PresLaws/r&c_guidelines.pdf and http://history.sd.gov/Preservation/OtherServices/HSArchitecturalSurveyManual2006.pdf.

If a survey was conducted, is a copy of the survey report and/or survey forms attached to this form?
YES ☐ or NO ☐

C. ☐ SEARCHED THE NATIONAL REGISTER OF HISTORIC PLACES DATABASE
This database is available online at: http://nrhp.focus.nps.gov/. NOTE: This database only includes properties *listed* on the National Register of Historic Places. Properties that are *eligible* for the National Register must also be taken into consideration.

If the National Register database was searched, is a printout of any results attached to this form?
YES ☐ or NO ☐

D. ☐ BACKGROUND RESEARCH
Please describe sources reviewed and findings of research. This could include such things as reviewing county or city history books or conducting research at a local historical society, research facility, or county courthouse.

E. ☐ ORAL HISTORY INTERVIEWS
Please list who was interviewed and describe what was learned through the interviews.

Updated May 2017

4

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

F. ☐ CONSULTATION

Please describe who was consulted and the results of the consultation. Examples include tribes, historic preservation commissions, the public, and local historical societies.

G. ☒ OTHER

Describe any other efforts undertaken to identify historic properties and the results of those efforts.

Historic properties on Ellsworth AFB have been identified through surveys and consultation with SD SHPO.
No other historic properties are in the vicinity of Building 7504.

11. HISTORIC PROPERTIES FINDING

Based on the efforts described above to identify historic properties, please choose one finding for the project. There are (mark one):

☒ Historic Properties Present in the APE

☐ No Historic Properties Present in the APE

III. ASSESS EFFECTS

12. DETERMINATION OF EFFECT

The federal agency must submit a determination of effect for the SHPO to review this project. Based on the information provided above, the responsible agency official should make a determination of effect on historic properties for this project. Please select and mark one of the following determinations, then explain the basis for your decision.

☐ **No Historic Properties Affected** [36 CFR 800.4(d)(1)] – For a determination of no historic properties affected, the agency official finds no historic properties present or that the undertaking will have no effect upon historic properties as defined in Sec. 800.16(i). Please explain.

☒ **Adverse Effect** [36 CFR Part 800.5(a)(1)] – For a determination of adverse effect, the undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects that may occur later in time, be farther removed in distance, or be cumulative. Please explain.

The demolition of these 4 buildings will have an adverse effect.

☐ **No Adverse Effect** [36 CRF Part 800.5(b)] – For a determination of no adverse effect, the undertaking is modified or conditions are imposed to avoid adverse effects to a historic property. Please explain.

Updated May 2017

5

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

Please print and mail completed form to:

Review and Compliance Coordinator
South Dakota State Historical Society
900 Governors Drive
Pierre, SD 57501

Questions about Section 106 can be directed to:

Paige Olson	OR	Jenna Carlson Dietmeier
Review and Compliance Coordinator		Review and Compliance Archaeologist
Paige.Olson@state.sd.us		Jenna.CarlsonDietmeier@state.sd.us
605.773.6004		605.773.8370

Questions about Section 106 projects on existing buildings or structures can be directed to:

Kate Nelson
Restoration Specialist
Kate.Nelson@state.sd.us
605.773.6005

Project information submitted cannot be returned. This documentation is kept on file at the South Dakota State Historical Society. We review faxed and electronic submissions in the same manner as any other submission and with the same considerations for clarity and completeness. However, original documents with original signature must follow all faxed and electronic submissions. The submission of incomplete, unclear, or confusing information may result in unnecessary delays in the review process until adequate information is obtained.

Updated May 2017

6

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

Additional Resources

1. South Dakota State Historic Preservation Office http://history.sd.gov/Preservation/
   a. Link to National and State Register Listed Properties: http://history.sd.gov/Preservation/NatReg/NatReg.aspx
   b. Historic Contexts: history.sd.gov/Preservation/OtherServices/SHPODocs.aspx
   c. *Guidelines for Cultural Resource Surveys and Survey Reports 2005*: http://history.sd.gov/Preservation/PresLaws/r&c_guidelines.pdf

2. Advisory Council on Historic Preservation: www.achp.gov
   a. Link to National Historic Preservation Act of 1966 as amended
   b. 36 CFR Part 800 – Protection of Historic Properties

3. National Park Service: www.nps.gov/
   a. National Register of Historic Places: www.nps.gov/nr/
   b. Publications (National Register Bulletins, Preservation Briefs, etc.): www.nps.gov/history/publications.htm

4. Archaeological Research Center: history.sd.gov/Archaeology/ or 605.394.1936
   a. Record Search Information

5. State Archives: history.sd.gov/Archives/ or 605.773.3804
   a. Historic photographs
   b. Research material

Updated May 2017

7

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

CONTINUATION SHEET

Updated May
2017

7

1

If you need any more information or have questions or concerns, please feel free to contact me at 605-385-2690 or by email at gary.brundige@us.af.mil. Thank you for your continued support of our Cultural Resources Program.

Sincerely

Gary Brundige

Enclosures:
Section 106 Project Review Form
Map of the APE
Table of Facilities and Infrastructure
Photos

1

SOUTH DAKOTA STATE HISTORICAL SOCIETY
STATE HISTORIC PRESERVATION OFFICE (SHPO)
SECTION 106 PROJECT REVIEW FORM

Submission of a completed Section 106 Project Review Form with adequate information and attachments constitutes a request for review pursuant to Section 106 of the National Historic Preservation Act of 1966 (as amended). Section 106 requires the South Dakota State Historic Preservation Office to review all projects that are federally funded, licensed, or assisted. We reserve the right to request more information if needed. Typed forms are preferred. **SUBMITTAL OF THIS FORM WITHOUT ALL REQUESTED INFORMATION WILL CAUSE REVIEW DELAYS.**

Section 106 regulations provide for a 30-day response time by the South Dakota State Historic Preservation Office from the date of receipt of complete information.

For projects requiring a license from the Federal Communications Commission, please use FCC Forms 620 or 621. **DO NOT USE THIS FORM.**

I. PROJECT INFORMATION

☒ THIS IS A NEW SUBMITTAL
☐ THIS IS MORE INFORMATION RELATING TO SHPO PROJECT# _____

1. PROJECT NAME: **B-21 Beddown**

2. FEDERAL AGENCY FUNDING, LICENSING, OR ASSISTING THE PROJECT
A. AGENCY NAME: **Ellsworth AFB**
B. AGENCY CONTACT PERSON: **Gary Brundige**

DETERMINATION OF EFFECT
See page 5, #12 for descriptions and space for explanations.

☐ **No Historic Properties Affected** ☒ **Adverse Effect** ☐ **No Adverse Effect**

The responsible federal agency official must sign this form here prior to submitting it to the SHPO. Projects received without an appropriate signature will cause review delays. **This must be an original signature and not electronic**.

SIGNATURE _____ **DATE** 18 June 2020

Please type/ the following:
NAME Gary Brundige
TITLE Cultural Resources Manager
AGENCY Ellsworth Air Force Base

FOR SHPO USE ONLY. DO NOT WRITE OR INSERT ANYTHING HERE.

Updated May 2013 1

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

2. FEDERAL AGENCY FUNDING, LICENSING, OR ASSISTING THE PROJECT

A. AGENCY NAME: Department of the Air Force, Ellsworth AFB
B. AGENCY CONTACT PERSON: Gary Brundige
C. MAILING ADDRESS: 2125 Scott Dr, Ellsworth AFB, SD 57706
D. EMAIL ADDRESS: gary.brundige@us.af.mil
E. TELEPHONE NUMBER: 605-385-2690

3. STATE AGENCY FUNDING, LICENSING, OR ASSISTING THE PROJECT, IF APPLICABLE

A. AGENCY NAME:
B. AGENCY CONTACT PERSON:
C. MAILING ADDRESS:
D. EMAIL ADDRESS:
E. TELEPHONE NUMBER:
F. IF THIS IS A GRANT PROGRAM, PLEASE INCLUDE THE NAME OF THE PROGRAM (FOR EXAMPLE, CDBG OR SRF):

4. CONSULTANT CONTACT PERSON, IF APPLICABLE

A. COMPANY NAME:
B. CONTACT PERSON:
C. MAILING ADDRESS:
D. EMAIL ADDRESS:
E. TELEPHONE NUMBER:

5. PROJECT LOCATION

A. ADDRESS: Various sites including 1529, 1579, 1613 Hamilton Street (Addresses of Docks 60-62)
B. CITY: Ellsworth AFB
C. COUNTY: Pennington, Meade

D. TOWNSHIP:	E. RANGE	F. SECTION
T2N	R8E	1, 2, 12, 13
T2N	R9E	6, 7

G. Provide a USGS 7.5 minute quadrangle map of the project area. If the project is in an urban area, show the location(s) on a city map. Photocopies are acceptable, but poor quality maps or insufficient information will cause review delays. Do not enlarge or reduce the map.

Is a map showing the exact location of the project attached to this form? YES ☒ or NO ☐

Updated May 2017

2

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

6. PROJECT DESCRIPTION

Describe all anticipated work associated with the project. Be specific. The description should include all ancillary facilities such as access roads, placement of utilities, additional outbuildings, fences, material borrow areas, staging areas, etc. Use as much space and as many pages as needed to clearly describe the project.

The beddown of the new bomber, the B-21 Raider, and the phasing out of the existing B-1 fleet at Ellsworth AFB will involve a number of actions to facilities, primarily around the flight line to accommodate the new mission.

Continued on Page 8

7. PROJECT PLANS

Plans, drawings, engineering specifications etc. should be included to help explain the project, but these cannot replace the above verbal description. If new construction is involved, elevation drawings and plans should be included.

Are plans, drawings, engineering specifications, or similar documents attached to this form?

YES ☐ or NO ☒

8. PHOTOGRAPHS

Provide several clear, original photographs of the project location. Also, include photographs of every affected buildings/structures, including an overall front view of each structure and other views necessary to describe fully the structures and the project. Streetscape photographs of surrounding buildings and structures should also be included. Photographs should be color and can be either printed or digital images submitted on a CD. Printed digital photographs should have a high dpi and clear resolution. Photographs should also either be labeled or include a key.

NOTE: Projects submitted with insufficient photographs will cause review delays.

Are photographs that clearly show the project location attached to this form? YES ☒ or NO ☐

9. PROJECT AREA OF POTENTIAL EFFECT (APE)

The APE consists of the geographic area or areas within which a project may directly or indirectly, cause changes in the character or use of historic properties. In most instances, the APE is not simply the project's physical boundaries or right-of-way. The APE also includes all ancillary facilities such as access roads, placement of utilities, additional outbuildings, fences, material borrow areas, staging areas, etc. The APE may include visual and audible effects.
Highlight the APE on a localized map.

A. Is a map highlighting the APE attached to this form? YES ☒ or NO ☐

B. Provide a written description of the APE. Describe the steps taken to identify the APE, and justify why the APE boundaries were chosen. If the APE has been previously disturbed, include an explanation of the previous ground disturbance.

The APE is defined as the disturbance limits of the action to beddown the new B-21 aircraft as defined in the Environmental Impact Statement under development.

Continued on Page 8

Updated May 2017

3

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

II. IDENTIFY HISTORIC PROPERTIES

10. IDENTIFICATION EFFORTS (See 36 CFR 800.4)
Identification of historic properties may include, but is not limited, any of the following identification methods. Check which steps were taken to identify historic properties in the APE. Check all that apply and describe the results.

A. ☐ RECORD SEARCH
Conducted a record search through the Archaeological Research Center in Rapid City. Record searches are available for a fee by calling 605.394.1936. This will include a search of all previously-surveyed archaeological sites and structures within the APE and within one mile of the APE.

If a record search was conducted, is a copy of the results attached to this form? YES ☐ or NO ☐

B. ☐ ON-THE-GROUND SURVEY
Survey by an archaeologist and/or an architectural historian of project area not previously surveyed. Survey type will depend on the scope of the project. A list of professionals is available at http://history.sd.gov/Preservation/TechAssist/ConsultantsContractors.aspx. Guidelines for surveys and reports are available at: http://history.sd.gov/Preservation/PresLaws/r&c_guidelines.pdf and http://history.sd.gov/Preservation/OtherServices/HSArchitecturalSurveyManual2006.pdf.

If a survey was conducted, is a copy of the survey report and/or survey forms attached to this form?
YES ☐ or NO ☐

C. ☐ SEARCHED THE NATIONAL REGISTER OF HISTORIC PLACES DATABASE
This database is available online at: http://nrhp.focus.nps.gov/. NOTE: This database only includes properties *listed* on the National Register of Historic Places. Properties that are *eligible* for the National Register must also be taken into consideration.

If the National Register database was searched, is a printout of any results attached to this form?
YES ☐ or NO ☐

D. ☐ BACKGROUND RESEARCH
Please describe sources reviewed and findings of research. This could include such things as reviewing county or city history books or conducting research at a local historical society, research facility, or county courthouse.

E. ☐ ORAL HISTORY INTERVIEWS
Please list who was interviewed and describe what was learned through the interviews.

Updated May 2017

4

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

F. ☐ CONSULTATION
Please describe who was consulted and the results of the consultation. Examples include tribes, historic preservation commissions, the public, and local historical societies.

G. ☒ OTHER
Describe any other efforts undertaken to identify historic properties and the results of those efforts.
Historic properties on Ellsworth AFB have been identified through a number of surveys and consultation with SD SHPO. Twenty-one properties on EAFB have been identified as eligible for inclusion on the NRHP. Three of these properties are scheduled for demolition under this action.

11. HISTORIC PROPERTIES FINDING
Based on the efforts described above to identify historic properties, please choose one finding for the project. There are (mark one):

☒ Historic Properties Present in the APE

☐ No Historic Properties Present in the APE

III. ASSESS EFFECTS

12. DETERMINATION OF EFFECT
The federal agency must submit a determination of effect for the SHPO to review this project. Based on the information provided above, the responsible agency official should make a determination of effect on historic properties for this project. Please select and mark one of the following determinations, then explain the basis for your decision.

☐ **No Historic Properties Affected** [36 CFR 800.4(d)(1)] – For a determination of no historic properties affected, the agency official finds no historic properties present or that the undertaking will have no effect upon historic properties as defined in Sec. 800.16(i). Please explain.

☒ **Adverse Effect** [36 CFR Part 800.5(a)(1)] – For a determination of adverse effect, the undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects that may occur later in time, be farther removed in distance, or be cumulative. Please explain.
Three of the four hangars scheduled for demolition are considered eligible for the NRHP.
Continued on Page 8

☐ **No Adverse Effect** [36 CRF Part 800.5(b)] – For a determination of no adverse effect, the undertaking is modified or conditions are imposed to avoid adverse effects to a historic property. Please explain.

Updated May 2017

5

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

Please print and mail completed form to:

Review and Compliance Coordinator
South Dakota State Historical Society
900 Governors Drive
Pierre, SD 57501

Questions about Section 106 can be directed to:

Paige Olson	OR	Jenna Carlson Dietmeier
Review and Compliance Coordinator		Review and Compliance Archaeologist
Paige.Olson@state.sd.us		Jenna.CarlsonDietmeier@state.sd.us
605.773.6004		605.773.8370

Questions about Section 106 projects on existing buildings or structures can be directed to:

Kate Nelson
Restoration Specialist
Kate.Nelson@state.sd.us
605.773.6005

Project information submitted cannot be returned. This documentation is kept on file at the South Dakota State Historical Society. We review faxed and electronic submissions in the same manner as any other submission and with the same considerations for clarity and completeness. However, original documents with original signature must follow all faxed and electronic submissions. The submission of incomplete, unclear, or confusing information may result in unnecessary delays in the review process until adequate information is obtained.

Updated May 2017

6

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

Additional Resources

1. South Dakota State Historic Preservation Office http://history.sd.gov/Preservation/
   a. Link to National and State Register Listed Properties: http://history.sd.gov/Preservation/NatReg/NatReg.aspx
   b. Historic Contexts: history.sd.gov/Preservation/OtherServices/SHPODocs.aspx
   c. *Guidelines for Cultural Resource Surveys and Survey Reports 2005*: http://history.sd.gov/Preservation/PresLaws/r&c_guidelines.pdf

2. Advisory Council on Historic Preservation: www.achp.gov
   a. Link to National Historic Preservation Act of 1966 as amended
   b. 36 CFR Part 800 – Protection of Historic Properties

3. National Park Service: www.nps.gov/
   a. National Register of Historic Places: www.nps.gov/nr/
   b. Publications (National Register Bulletins, Preservation Briefs, etc.): www.nps.gov/history/publications.htm

4. Archaeological Research Center: history.sd.gov/Archaeology/ or 605.394.1936
   a. Record Search Information

5. State Archives: history.sd.gov/Archives/ or 605.773.3804
   a. Historic photographs
   b. Research material

Updated May 2017

7

1

SD SHPO SECTION 106 PROJECT REVIEW FORM

CONTINUATION SHEET

6. PROJECT DESCRIPTION - Continued
Various facility projects to include construction, demolition, modernization, and expansion of facilities to accommodate a new mission at Ellsworth AFB. See attached Table (Facilities and Infrastructure for the Ellsworth AFB Alternative) for facility projects associated with this Project. Due to security constraints, locations of individual facility footprints is not available; however, construction limits that define the Area of Potential Effects (APE) are shown on the attached map (Ellsworth Alternative APE). Areas outlined in red will encompass all facilities projects itemized in the Table, with the exception of the Weapons Generation Facility (WGF). The WGF will be constructed in one of the two alternatives designated on the map in blue and labeled as North and South WGF Sites (determination to be made in the Final EIS). Map and Table are included in the Draft EIS. Four hangars, Docks 60-63 will be demolished ('Demolition associated with 60 row' in the Table) to provide space for specialized maintenance facilities for the new B-21 bomber. Three of the four Hangars on the 60 row (Docks 60-62) are eligible for listing on the NRHP. Other historic eligible buildings in the APE include the PRIDE hangar. A separate 106 consultation for actions involving the PRIDE hangar included in the Table has already been completed (see attached 'B7504 AGE SHPO Concur').

9. PROJECT AREA OF POTENTIAL EFFECT (APE) - Continued
The APE as defined in the Environmental Impact Statement under development includes 9 distinct locations that will encompass all construction, demolition, and staging areas with the exception of the Weapons Generation Facility (WGF). The attached map (Ellsworth Alternative APE) shows footprint for Table 2-3 projects in red. Other associated construction will include the WGF. The WGF will be sited in either the north location or the south location (delineated in blue on the map) dependent on completed environmental analysis in the Final EIS. Areas were selected based on USAF mission requirements and Course of Action alternative development and are being analyzed in the B-21 Main Operating Base 1 (MOB 1) Beddown EIS (www.b21eis.com). The 3 hangars on the 60 row (Dock 60 – B7262, Dock 61 – B7260, Dock 62 – B7258) and the PRIDE Hangar (B7504) are the only eligible Cultural Resources in the APE.

12. DETERMINATION OF EFFECT – Continued
The proposed demolition project is located in the north ramp construction area adjacent to the flightline and taxiway. The three eligible hangars (Docks 60, 61, and 62) are proximate to the flight line. These 3 hangars are part of a group of 15 identical hangars added in the 1950's to support the incoming B-52 bombers. The fourth hangar to the east (Dock 63 – B7256) is also one of 15 identical hangars added in the 1950's. However, Dock 63's historical integrity is not intact due to modifications in the 1980's. None of the other 11 contemporary hangars in the vicinity of these buildings are considered eligible properties. The demolition of these hangars will have an adverse effect on Docks 60, 61, and 62.

Updated May 2017

7

1

south dakota
STATE HISTORICAL SOCIETY
DEPARTMENT OF EDUCATION

June 23, 2020

Mr. Gary Brundige
Cultural Resources Manager
28CES/CEIEC
2125 Scott Drive
Ellsworth AFB, SD 57706

SECTION 106 PROJECT CONSULTATION
Project: 200127017F – Ellsworth AFB – Buildings 7258, 7260, 7262 – 60 Row Hangars – B-21 Beddown Demolition
Location: Meade County
(COE)

Dear Mr. Brundige:

Thank you for the opportunity to comment on the above referenced projects pursuant to Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended). The South Dakota Office of the State Historic Preservation Officer (SHPO) concurs with your determination regarding the effect of the proposed undertaking on the non-renewable cultural resources of South Dakota.

On January 27, 2020, we received your correspondence regarding the proposed base improvements to accommodate the new B-21 bomber on Ellsworth Air Force Base. Additional information was received on June 22, 2020. Based on the information provided, buildings 7262 (Dock 60), 7260 (Dock 61), and 7258 (Dock 62) are eligible for listing in the National Register of Historic Places. Pursuant to 36 CFR § 800.5 (Assessment of Adverse Effects), removal and replacement of these structures is an adverse effect. Therefore, we concur with your agency's determination of Adverse Effect for the undertaking.

Pursuant to 36 C.F.R. § 800.6, we look forward to continuing consultation with your agency. Please be sure to notify the Advisory Council on Historic Preservation of the Adverse Effect.

Should you require any additional information, please contact Heather Mulliner at (605) 773-6005 or Heather.Mulliner@state.sd.us.

Sincerely,

Jay D. Vogt
State Historic Preservation Officer

Heather Mulliner
Historic Preservation Specialist

900 GOVERNORS DR • PIERRE • SD 57501 • P{605•773•3458} F{605•773•6041} • HISTORY.SD.GOV
DEPARTMENT OF EDUCATION {DOE.SD.GOV}

1
2

F.2.3 Building Demolition ACHP Correspondence

August 4, 2020

Mr. Gary C. Brundige
Ellwsworth Air Force Base
Department of the Air Force

Ref: *Proposed Main Operating Base #1 for the B-21 at Ellsworth Air Force Base*
Pennington and Meade Counties, South Dakota

Dear Mr. Brundige:

The Advisory Council on Historic Preservation (ACHP) has received your notification and supporting documentation regarding the adverse effects of the referenced undertaking on a property or properties listed or eligible for listing in the National Register of Historic Places. Based upon the information provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800), does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, if we receive a request for participation from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Additionally, should circumstances change, and it is determined that our participation is needed to conclude the consultation process, please notify us.

Pursuant to 36 CFR §800.6(b)(1)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the South Dakota State Historic Preservation Office (SHPO), and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the MOA, and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with the notification of adverse effect. If you have any questions or require further assistance, please contact Ms. Katharine Kerr at 202-517-0216 or via e-mail at kkerr@achp.gov.

Sincerely,

Artisha Thompson
Historic Preservation Technician
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION
401 F Street NW, Suite 308 • Washington, DC 20001-2637
Phone: 202-517-0200 • Fax: 202-517-6381 • achp@achp.gov • www.achp.gov

F.3 PROGRAMMATIC AGREEMENT

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.

1

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.

1

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.

5/30•

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:

PA Regarding Development, Implementation, and Operation of the Powder River Training Complex: 07 July 2014 Version

1

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.

1

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.

1

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 or federally recognized tribes 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 or federally recognized tribe to this PA. 28 BW shall ensure that each consulting party is provided with an updated copy of the PA.

C. If the Cheyenne River Sioux Tribe, the Crow Tribe, the Northern Cheyenne Tribe, or the Standing Rock Sioux Tribe chooses 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

PA Regarding Development, Implementation, and Operation of the Powder River Training Complex: 07 July 2014 Version

1

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

PA Regarding Development, Implementation, and Operation of the Powder River Training Complex: 07 July 2014 Version

1

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 Baumler Date: 7/25/14
MARK BAUMLER
State Historic Preservation Officer

1

12/30

**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

NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICE

By: _____ Date: 8-4-14
MERLIN E. PAAVERUD, Jr.
State Historic Preservation Officer

13/30

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

SOUTH DAKOTA STATE HISTORIC PRESERVATION OFFICE

By: Jay D. Vogt Date: 07-11-2014
JAY D. VOGT
State Historic Preservation Officer

PA Regarding Development, Implementation, and Operation of the Powder River Training Complex: 07 July 2014 Version

1

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: /s/ Steve Carlson #11847 Date: 8-19-14

1

15/30

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

INVITED SIGNATORY

FEDERAL AVIATION ADMINISTRATION

By: _____ Date: 7-22-2014

KENT M. WHEELER
Manager
Operations Support Group
ATO Central Service Center, AJV-C2

PA Regarding Development, Implementation, and Operation of the Powder River Training Complex: 07 July 2014 Version

1

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

1

17/30

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

INVITED SIGNATORY

CHEYENNE RIVER SIOUX TRIBE

By: _____ Date: _____
Name
Title

PA Regarding Development, Implementation, and Operation of the Powder River Training Complex: 07 July 2014 Version

1

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

1

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

1

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

1

LIST OF ATTACHMENTS

1. Map of the proposed Powder River Training Complex (PRTC) and selected historic sites

2. Proposed PRTC MOA/ATCAA Complexes

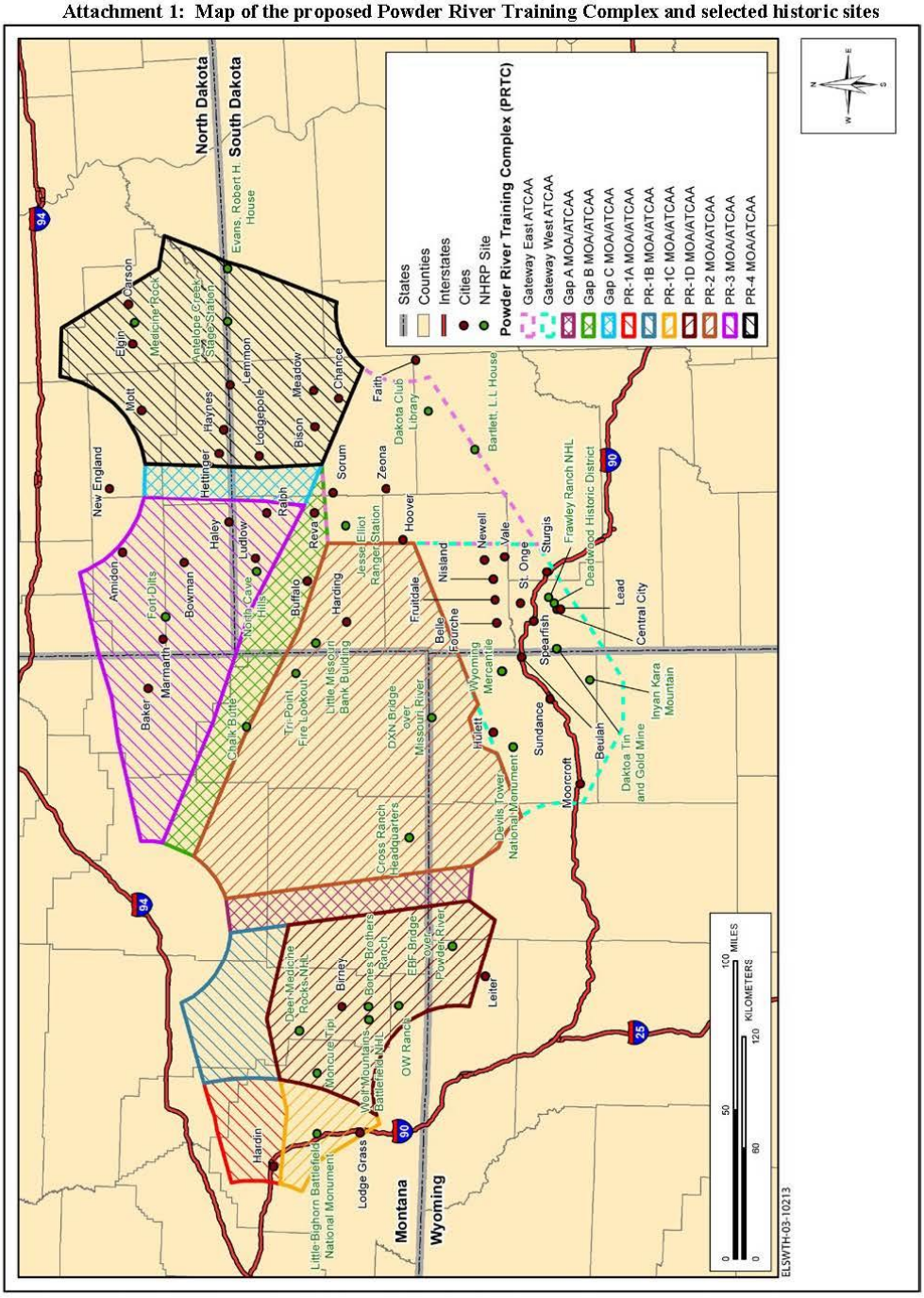
3. Table describing National Register of Historic Places listed properties beneath the PRTC airspace (in multiple sub-tables)

4. Map of the Little Bighorn National Battlefield Monument Area per Stipulation I.A.1.

1

22/30

Attachment 1: Map of the proposed Powder River Training Complex and selected historic sites



PA Regarding Development, Implementation, and Operation of the Powder River Training Complex: 07 July 2014 Version

1

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

1

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

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

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
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

1

27/30

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

PA Regarding Development, Implementation, and Operation of the Powder River Training Complex: 07 July 2014 Version

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**
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

1

29/30

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

PA Regarding Development, Implementation, and Operation of the Powder River Training Complex: 07 July 2014 Version

1

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.