



# **B-21 Main Operating Base 1 (MOB 1) Beddown at Dyess AFB, Texas or Ellsworth AFB, South Dakota**

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## **EXECUTIVE SUMMARY**

**Draft**

**Environmental Impact Statement**

**August 2020**



This Executive Summary of the *Draft Environmental Impact Statement for B-21 Main Operating Base 1 (MOB 1) Beddown at Dyess AFB, Texas or Ellsworth AFB, South Dakota* (the "Draft EIS") provides an overview of the in-depth analysis of the Proposed Actions that is presented in the full Draft EIS.

A CD containing the Draft EIS as well as this Executive Summary is provided inside the back cover of this Executive Summary. The Draft EIS is available at each of the public libraries listed below. In addition, an electronic copy of the Draft EIS is available online at [www.B21EIS.com](http://www.B21EIS.com).

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## ACRONYMS AND ABBREVIATIONS

13	<b>AFB</b>	Air Force Base
14	<b>AGE</b>	Aerospace Ground Equipment
15	<b>AMU</b>	Aircraft Maintenance Unit
16	<b>ATC</b>	Air Traffic Control
17	<b>ATCAA</b>	Air Traffic Control Assigned Airspace
18	<b>BMP</b>	best management practice
19	<b>BOS</b>	Base Operating Support
20	<b>C&amp;D</b>	construction and demolition
21	<b>CEQ</b>	Council on Environmental Quality
22	<b>CFR</b>	Code of Federal Regulations
23	<b>CO</b>	carbon monoxide
24	<b>dB</b>	decibels
25	<b>DNL</b>	day-night average sound level
26	<b>DoD</b>	Department of Defense
27	<b>EIAP</b>	Environmental Impact Analysis Process
28	<b>EIS</b>	Environmental Impact Statement
29	<b>EPA</b>	U.S. Environmental Protection Agency
30	<b>ERP</b>	Environmental Restoration Program
31	<b>ESP</b>	Explosive Site Plan
32	<b>FAA</b>	Federal Aviation Administration
33	<b>FTU</b>	Formal Training Unit
34	<b>HAZMART</b>	Hazardous Materials Pharmacy
35	<b>INRMP</b>	Integrated Natural Resources Management Plan
36	<b>L<sub>dnmr</sub></b>	onset-rate adjusted monthly day-night average sound level
37	<b>LOS</b>	level of service
38	<b>MOA</b>	Military Operating Area
39	<b>MOB</b>	Main Operating Base
40	<b>MSA</b>	Metropolitan Statistical Area
41	<b>MSW</b>	municipal solid waste
42	<b>NA</b>	not available
43	<b>NEPA</b>	National Environmental Policy Act
44	<b>Ops</b>	Operations

1	<b>PFAS</b>	per- and polyfluoroalkyl substances
2	<b>POL</b>	petroleum, oil, and lubricant
3	<b>POV</b>	Privately Owned Vehicle
4	<b>PRIDE Hangar</b>	Professional Results in Daily Efforts Hangar
5	<b>PRTC</b>	Powder River Training Complex
6	<b>QD</b>	quantity-distance
7	<b>ROD</b>	Record of Decision
8	<b>ROI</b>	region of influence
9	<b>SHPO</b>	State Historic Preservation Officer
10	<b>SPCC</b>	Spill Prevention, Control, and Countermeasures
11	<b>SUA</b>	Special Use Airspace
12	<b>SWPPP</b>	Storm Water Pollution Prevention Plan
13	<b>USAF</b>	U.S. Air Force
14	<b>USFWS</b>	U.S. Fish and Wildlife Service
15	<b>WGF</b>	Weapons Generation Facility



## EXECUTIVE SUMMARY

### ES.1. INTRODUCTION

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. In this Environmental Impact Statement (EIS), the United States (U.S.) Air Force (USAF) is evaluating the proposed MOB 1 beddown of the B-21, which includes B-21 Operational Squadrons, a B-21 Formal Training Unit (FTU), and a Weapons Generation Facility (WGF). Decision-making associated with MOBs 2 and 3 will occur after a decision is made regarding MOB 1, and will be the subject of separate analysis in accordance with the National Environmental Policy Act (NEPA).

Through the USAF’s Strategic Basing Process (Air Force Instruction 10-503, *Strategic Basing*), the USAF determined the three MOB locations would be Dyess Air Force Base (AFB) in Texas, Ellsworth AFB in South Dakota, and Whiteman AFB in Missouri. Subsequently, the Secretary of the Air Force announced that the preferred strategic basing alternative for MOB 1 would be Ellsworth AFB. In accordance with the NEPA, the USAF also identified Dyess AFB as a reasonable alternative for the MOB 1 beddown analyzed in this Draft EIS. Refer to Section 2.2.1 (Screening Criteria Process for MOB 1) in the Draft EIS for details on how the USAF chose Dyess AFB and Ellsworth AFB to be the alternative locations for MOB 1.

### ES.2. PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to implement the goals of the 2018 National Defense Strategy (DoD, 2018a) 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 need for the Proposed Action is to support deterrence capabilities by basing the B-21 at an installation that can support USAF Global Strike Command’s MOB 1 mission. 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. The installation 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.

### ES.3. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

The Proposed Action is for the USAF to implement the beddown of the B-21 MOB 1. This beddown would include establishing B-21 Operations Squadrons and a B-21 FTU, constructing a WGF, developing new infrastructure, and increasing numbers of personnel to support and conduct B-21 aircraft operations.

The Draft EIS considers two alternative locations for the MOB 1 beddown of the B-21 and evaluates impacts where training and operational activities would occur. Additionally the No Action Alternative is evaluated.

#### ES.3.1 Commonalities

The Proposed Action includes common elements that the B-21 would bring to, or require at, both candidate bases that would make them operationally ready. These commonalities are associated with personnel, airfield operations, airspace and range utilization, and the WGF.

##### ES.3.1.1 Personnel

The full B-21 mission personnel complement required to execute the proposed B-21 mission would include pilot instructors, maintenance instructors, and contractor support personnel. Table ES-1 presents the estimated maximum number of personnel associated with establishing the B-21 mission at the MOB 1 installation, which would be 7,700 total individuals, including 3,500 military personnel and 4,200 dependents. Since the B-21 MOB 1 proposal would eventually displace the personnel and aircraft associated with the B-1 mission, 3,747 personnel at Dyess AFB and 4,553 personnel at Ellsworth AFB would no longer be at each base. Therefore, the analysis of potential impacts from changes in end-state populations at each MOB 1 location considers both the incoming B-21 mission and personnel as well as the retiring B-1 mission and associated personnel. See Section ES.4 (Affected Environment and Environmental Consequences) for a more detailed breakout of personnel changes in Table ES-8 and Table ES-9.

**Table ES-1. Personnel Associated With the Incoming B-21 Mission and End-State Personnel**

Personnel	Number of Individuals for B-21 Mission under the Proposed Action	End-State Personnel at Dyess AFB	End-State Personnel at Ellsworth AFB
Military	3,500	6,014	4,860
Civilian	NA	665	930
Contractor	NA	NA	139
Spouses <sup>1</sup>	1,925	3,674	3,261
Children <sup>2</sup>	2,275	3,745	4,553
<b>Total</b>	<b>7,700</b>	<b>14,098</b>	<b>13,743</b>

AFB = Air Force Base; NA = not available; USAF = U.S. Air Force

Notes:

1. Based on statistics in the 2018 Demographics Profile of the Military Community (DoD, 2018b), 55 percent of the USAF is married.
2. The number of children was estimated by assuming there are 1.2 dependents for each military family. The number of married USAF personnel was multiplied by 1.2 to get the total number of dependents (4,200). The number of spouses was subtracted from the total dependents to obtain the estimated number of children.

### 1 **ES.3.1.2 Airfield Operations**

2 The annual estimated number of total aircraft operations is approximately 9,120 per year  
3 for all the squadrons (Operations and FTU), based on 94.5 sorties per month. Twenty  
4 percent of all sorties would be conducted between 10:00 p.m. and 7:00 a.m.

5 On average, approximately 3.15 sorties would be conducted per day, of which  
6 approximately 50 percent would be flown by students within the FTU and the other  
7 50 percent by the Operations Squadrons.

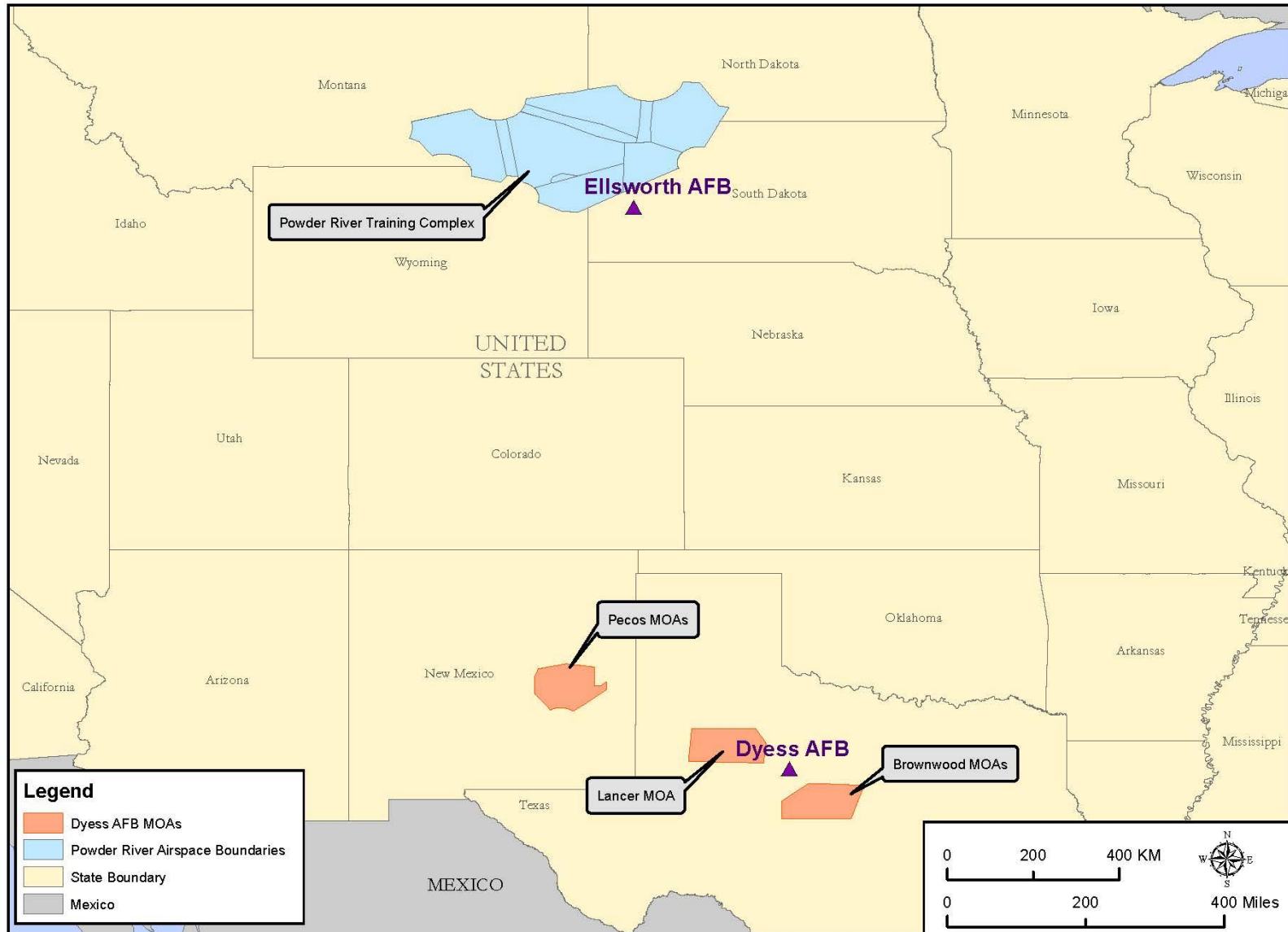
### 8 **ES.3.1.3 Airspace and Range Utilization**

9 The Draft EIS also addresses the B-21 training mission (Figure ES-1). There are no plans  
10 to modify any of the airspace listed above as a result of the Proposed Action. For any  
11 military aircraft flying out of Ellsworth AFB, the Powder River Training Complex (PRTC)  
12 airspace is the most cost-effective and convenient training area. For military aircraft flying  
13 out of Dyess AFB, the Lancer Military Operating Area (MOA) and the Pecos MOA and all  
14 associated Air Traffic Control Assigned Airspaces (ATCAAs) are the most cost-effective  
15 and convenient training areas to use. Dyess AFB-based aircraft would utilize PRTC and  
16 the Brownwood MOA as supplemental training airspaces.

17 All PRTC-related B-21 air operations would adhere to the legal descriptions for the PRTC  
18 MOAs published in the National Flight Data Digest (effective date: September 17, 2015).  
19 This airspace was analyzed in the USAF's 2014 *Final EIS for the Powder River Training*  
20 *Complex, Ellsworth Air Force Base, and South Dakota* (the "2014 PRTC EIS") Record of  
21 Decision (ROD) (signed on January 16, 2015) (USAF, 2015) and the Federal Aviation  
22 Administration (FAA) ROD (signed on March 24, 2015) (FAA, 2015).

### 23 **ES.3.1.4 Weapons Generation Facility**

24 The WGF is a facility that is unique and would require new construction at the selected  
25 base. The WGF will provide a safe and secure location for the storage of USAF nuclear  
26 munitions. The WGF will require a construction footprint of approximately 35 acres, with  
27 an approximately 52,000-square-foot building as well as a 17,600 square-foot munitions  
28 maintenance building. The USAF will implement construction and operations in a manner  
29 consistent with Air Force Instruction 20-110, *Nuclear Weapons-Related Materiel*  
30 *Management*. Due to national security implications, the details regarding the  
31 infrastructure associated with the WGF is not releasable. It should be noted that the  
32 munitions storage areas for each of the candidate bases have adequate capacity for  
33 conventional USAF assets. The WGF provides a consolidated facility within a single,  
34 controlled site that accommodates maintenance, storage, and support functions under  
35 one roof to provide enhanced operations and security measures for the entire mission.  
36 The configuration of the facility allows for efficient movements of all assets in various  
37 configurations, which improves both the safety and security associated with mission  
38 requirements.



AFB = Air Force Base; MOA = Military Operating Area

Figure ES-1. Range and Airspace Boundaries

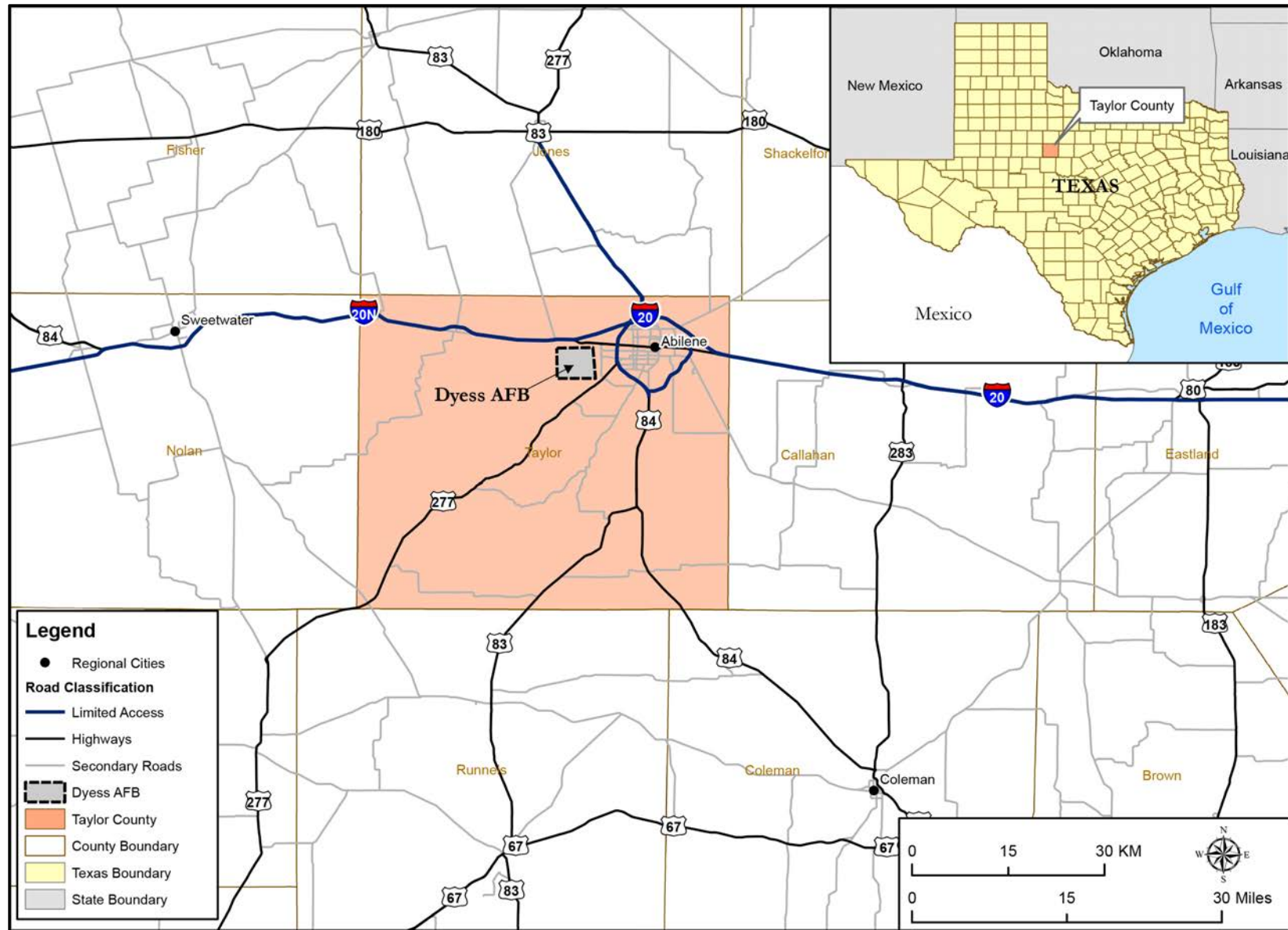


Figure ES-2. Dyess AFB Location

1 **ES.3.2 Dyess AFB Alternative**

2 The Dyess AFB Alternative would establish MOB 1 at Dyess AFB (Figure ES-2), which  
 3 includes all common elements described above in Section ES.3.1 (Commonalities) plus  
 4 the construction of the facilities, infrastructure, and the WGF.

5 **ES.3.2.1 Facilities and Infrastructure**

6 The proposed facilities and infrastructure required to support the B-21 MOB 1 beddown  
 7 at Dyess AFB are presented in Table ES-2. Due to operational security concerns, the  
 8 specific locations of the facilities included in Table ES-2 cannot be illustrated. However,  
 9 USAF planners evaluated land use limitations and identified the general planned area of  
 10 construction, or construction footprint, shown in Figure ES-3. Construction associated  
 11 with each of these facilities and infrastructure projects would allow both initial operational  
 12 flying and flight training activities associated with both the Operations and FTU  
 13 squadrons.

**Table ES-2. Facilities and Infrastructure for Dyess AFB Alternative**

Facility	Size (square feet)	Status
Low Observable Facility	87,000	New
Fire Pump House	3,000	New
Central Maintenance Hangar Apron	235,000	New
Airfield Operations Facility	12,845	New
Fuels Support (Administrative, Lab)	6,342	New
Fuel Truck Parking Area	120,000	New
Fuel Truck Maintenance Facility	7,703	New
Long Range Strike (LRS) Cargo/Terminal	5,972	New
Network Infrastructure Upgrade	50,000	New
Formal Training Unit (FTU) Operations (Ops)/Aircraft Maintenance Unit (AMU) (co-located)	50,000	New
General Maintenance (1 bay)	34,776	New
General Maintenance (1 bay)	34,776	New
Simulation Facility	20,000	New
Field Training Detachment	26,000	New
Mission Planning Cell	35,000	New
Squadron Ops/AMU 1	120,000	New
Overhead Mission Generation Shelters	18,000	New
Phase Dock (2 bays)	87,000	New
Northern Maintenance Hangar Apron	190,000	New
Parts Store	11,000	New
Warehouse SAP and Cold Storage	10,000	New
Measurements Hangar (1 bay)	60,000	New
Weapons Load Training	37,258	New
Southern Maintenance Hangar Apron	210,000	New
Fuel Cell (1 bay)	34,776	New
Fuel Cell (1 bay)	34,776	New
Armament Shop	54,993	New

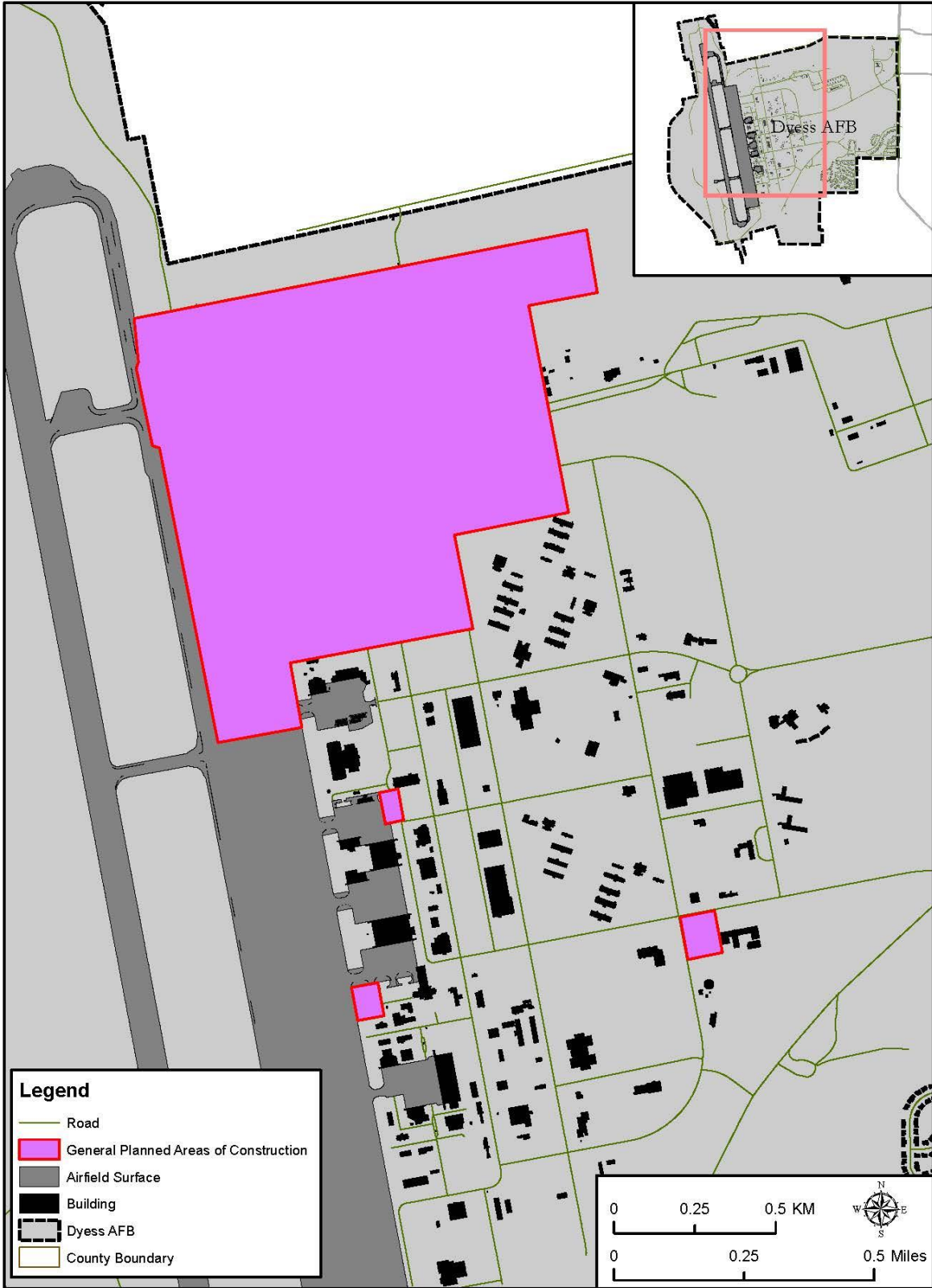
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**Table ES-2. Facilities and Infrastructure for Dyess AFB Alternative**

Facility	Size (square feet)	Status
1 Bay Wash Rack	34,776	New
1 Bay Wash Rack	34,776	New
Alert Facility	19,000	New
Alert Ramp	825,000	New
Aerospace Ground Equipment (AGE)	15,000	New
AGE Refueling	3,000	New
Squadron Ops 2	113,000	New
Privately Owned Vehicle (POV) Parking	16,000	New
Simulation Facility Phase II	20,000	New
Base Operating Support (BOS) – Dormitory	62,000	New
BOS – Child Development Center	10,000	Renovation
BOS – Fitness Center	15,000	Renovation
BOS – Dining Facility	4,000	Renovation
Avionics	18,000	New
AGE	10,000	Renovation
BOS – Command Post	7,000	Renovation
Alert Support Facilities	10,000	New
Engine Run Up Areas/Test Areas	630	New
Engine Shop	20,000	New
HAZMART (Hazardous Materials Pharmacy)	2,000	New
Building 4112	5,972	Demolition
Building 4119	3,382	Demolition
Building 4170	7,703	Demolition
Building 4111	7,089	Demolition
Building 9001	12,840	Demolition
1 Bay Wash Rack	34,776	Demolition

### 1 **ES.3.2.2 Weapons Generation Facility**

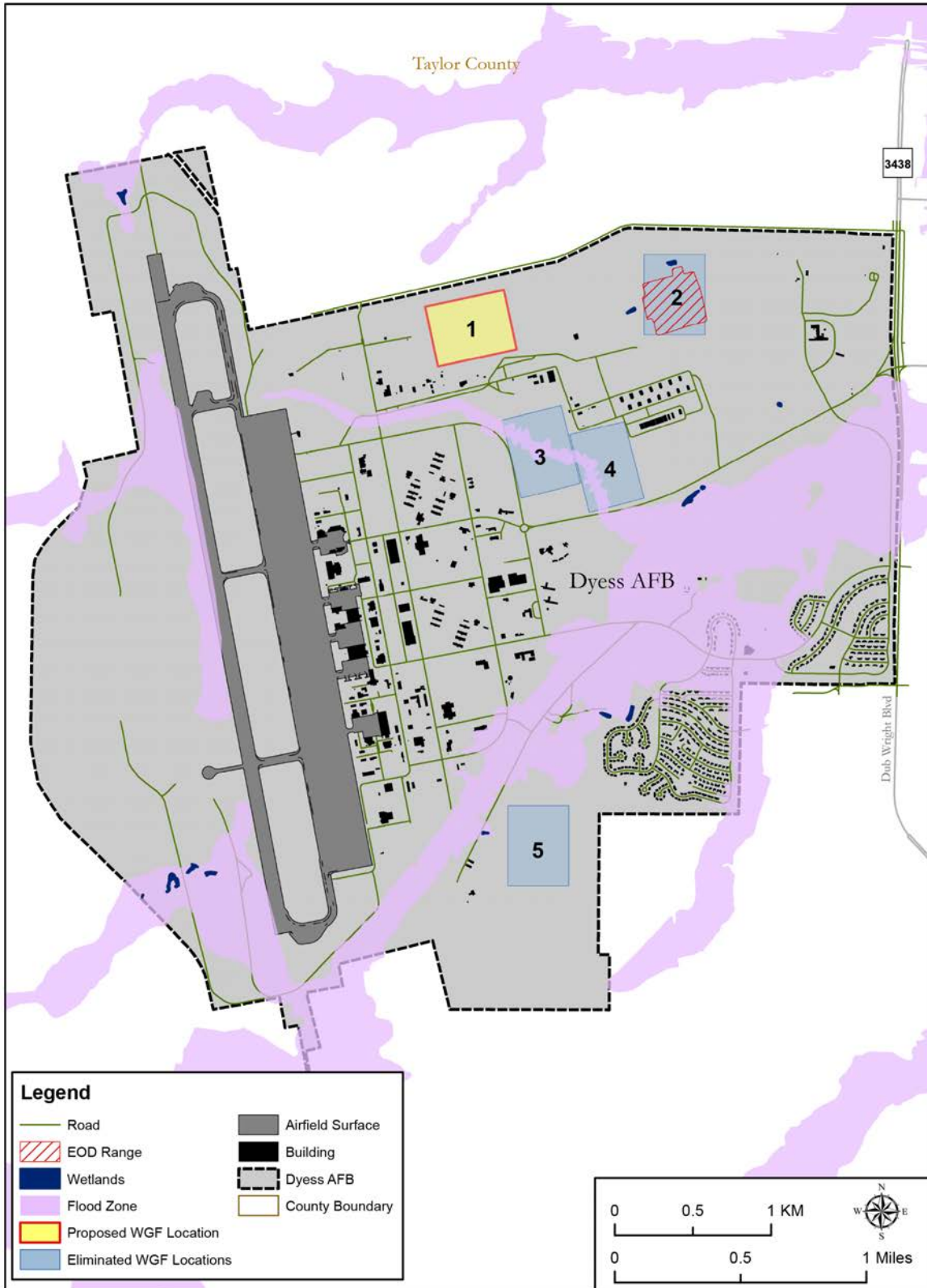
2 USAF planners identified five locations at Dyess AFB as possible sites for the WGF  
3 (Figure ES-4). Four locations were eliminated due to the presence of one or more  
4 negative site evaluation criteria discussed in Section 2.2.2 (Screening Criteria for Base  
5 Infrastructure Development) of the Draft EIS. As shown on Figure ES-4, Location 2 was  
6 eliminated because it occurs at an existing Explosive Ordnance Disposal range where  
7 the presence of unexploded ordnance is possible and would require closure studies and  
8 necessitate construction of a new range at an undisturbed site. Locations 3 and 4 were  
9 eliminated because flood zones run across both sites. Location 5 was eliminated based  
10 on a combination of operational readiness concerns, including nearness to the airfield.  
11 The remaining proposed location satisfies all evaluation criteria that are unique to the  
12 WGF and is depicted as Location 1 on Figure ES-4.



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**Figure ES-3. Facilities and Infrastructure Planned Areas of Construction – Dyess AFB Alternative**





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**Figure ES-4. Weapons Generation Facility (WGF) Planned Areas of Construction – Dyess AFB Alternative**

1 **ES.3.3 Ellsworth AFB Alternative**

2 The Ellsworth AFB Alternative would establish MOB 1 at Ellsworth AFB (Figure ES-5),  
3 which includes all common elements described above in Section ES.3.1 (Commonalities).  
4 The siting of facilities, infrastructure, and the WGF on Ellsworth AFB presented the USAF  
5 with a scenario where multiple solutions have been identified for establishing MOB 1 at  
6 Ellsworth AFB. As a result, two subalternatives are associated with the Ellsworth AFB  
7 Alternative, described below.

8 **ES.3.3.1 Facilities and Infrastructure**

9 The proposed facilities and infrastructure required to support the B-21 MOB 1 beddown  
10 at Ellsworth AFB are presented in Table ES-3. Similar to the Dyess AFB Alternative, due  
11 to operational security concerns, the exact locations of the facilities included in  
12 Table ES-3 cannot be illustrated. However, Figure ES-6 shows where USAF planners  
13 evaluated land use limitations and identified a general planned area of construction, or  
14 construction footprint.

15 **ES.3.3.2 Weapons Generation Facility**

16 USAF planners identified six possible locations at Ellsworth AFB for the WGF (see  
17 Figure ES-7). After applying the screening criteria (see Section 2.2.2, Screening Criteria  
18 for Base and Infrastructure Development, in the Draft EIS), USAF planners eliminated  
19 four locations. Locations 2 and 3 were eliminated because they did not adequately satisfy  
20 operational readiness requirements because they were considered to be too far away  
21 from the runway and the alert apron to accommodate time-sensitive mission requirements.  
22 Location 4 was eliminated due to its proximity to wetlands, and Location 6 was eliminated  
23 due to unfavorable topography that would result in construction complications. Therefore,  
24 Locations 1 and 5 were selected as proposed locations because they satisfied the site  
25 evaluation criteria unique to the WGF.

26 **ES.3.3.2.1 North WGF Site Subalternative at Ellsworth AFB**

27 In addition to the commonalities described in Section ES.3.1 (Commonalities), the North  
28 WGF Site Subalternative consists of constructing the WGF at a location on Ellsworth AFB  
29 hereafter referred to as the North WGF Site (Location 1 on Figure ES-7). The North WGF  
30 Site is located at the north end of the runway, which facilitates operational readiness  
31 requirements for the B-21 mission.

32 **ES.3.3.2.2 South WGF Site Subalternative at Ellsworth AFB**

33 In addition to the commonalities described in Section ES.3.1 (Commonalities), the South  
34 WGF Site Subalternative consists of constructing the WGF at a location referred to as the  
35 South WGF Site (Location 5 on Figure ES-7). The South WGF Site occurs in a flat area  
36 adjacent to the alert apron on the south side of the base. Similar to the North WGF Site,  
37 this location meets operational readiness requirements for the B-21 mission and does not  
38 contain any other site constraint features, such as uneven topography or wetlands.

**Table ES-3. Facilities and Infrastructure for the Ellsworth AFB Alternative**

Facility	Size (square feet)	Building Type
Low Observable Facility	95,691	New
Aerospace Ground Equipment (AGE) Refueling	268,000	New
Pavement associated with 60 Row	268,000	New
Demolition associated with 60 Row	109,632	Demolition
Field Training Detachment	57,333	New
Formal Training Unit (FTU) Operations/Aircraft Maintenance Unit	93,263	New
Mission Planning Complex	47,117	New
Operations 1	4,000	Re-Use
Parts (B-1) Reno	29,165	Re-Use
AGE and Corrosion/Paint/Crane	124,694	Re-Use
Wash/Maintenance Hangar (2 bays)	56,810	New
Overhead Mission Generation Shelters (30 total)	600,000	New
Pavement	307,000	New
Simulator Building Phase 1	26,340	Add/Alter
Radio Frequency Facility (1 bay)	67,000	New
Weapons Load Training	46,624	Re-Use
Fire Pump House	3,000	New
Armament Shop	26,316 <sup>a</sup>	Re-Use
Pavement	105,000	New
Parts and Prop (B-21) Reno	40,249	Re-Use
Privately Owned Vehicle (POV) Parking	732	New
Simulator Building Phase 2	30,304	Re-Use
Weapons Load Training	46,624	Re-Use
Fuel Cell	32,094	Re-Use
Fuel Cell	28,885	Re-Use
Phase Hangar (2 bays)	54,935 <sup>b</sup>	Re-Use
Pavement	1,211,000	New
POV Parking	244	New
Alert Facility and Ramp	131,897 <sup>c</sup>	Re-Use
Alert Apron	510,088	New
Maintenance Hangar	30,729	Re-Use
Maintenance Hangar	30,776	Re-Use
Weapons Load Training	36,437	Re-Use
Operations 2	4,000	Re-Use (B7270)
Pavement	845,000	Re-Use
Base Operating Support (BOS) – Dormitories (2)	170,000 <sup>d</sup>	New
BOS – Youth Center/Childhood Development Center	48,450	New
BOS – Ballfields	243,320 <sup>e</sup>	New
Combat Arms Training and Maintenance	30,000	New
Fire Station #2	23,000	New
HAZMART (Hazardous Materials Pharmacy)	16,500	Add/Alter
Rushmore Center Upgrades	66,985	Re-Use
Contractor Laydown Areas/Batch Plant	67,000	New
Supply Warehouse (replace B7510)	40,000	New

## Notes:

a. Includes additional storage space

b. Total square footage for two bays

c. Includes facility and apron

d. Total square footage for two dormitories, based on 198 occupants in each

e. Assumes two football fields, one baseball field, and a 10 percent buffer area around the fields

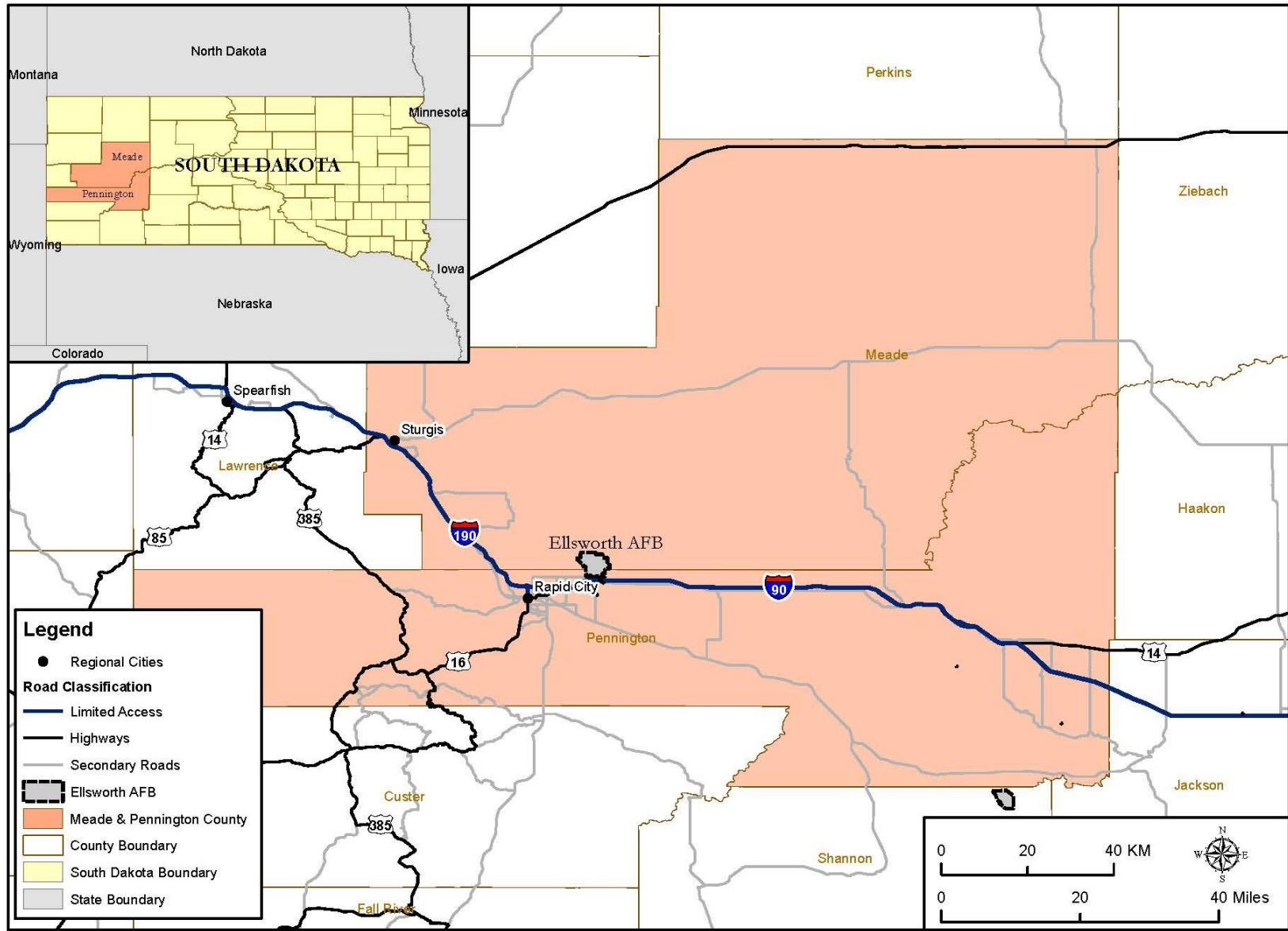
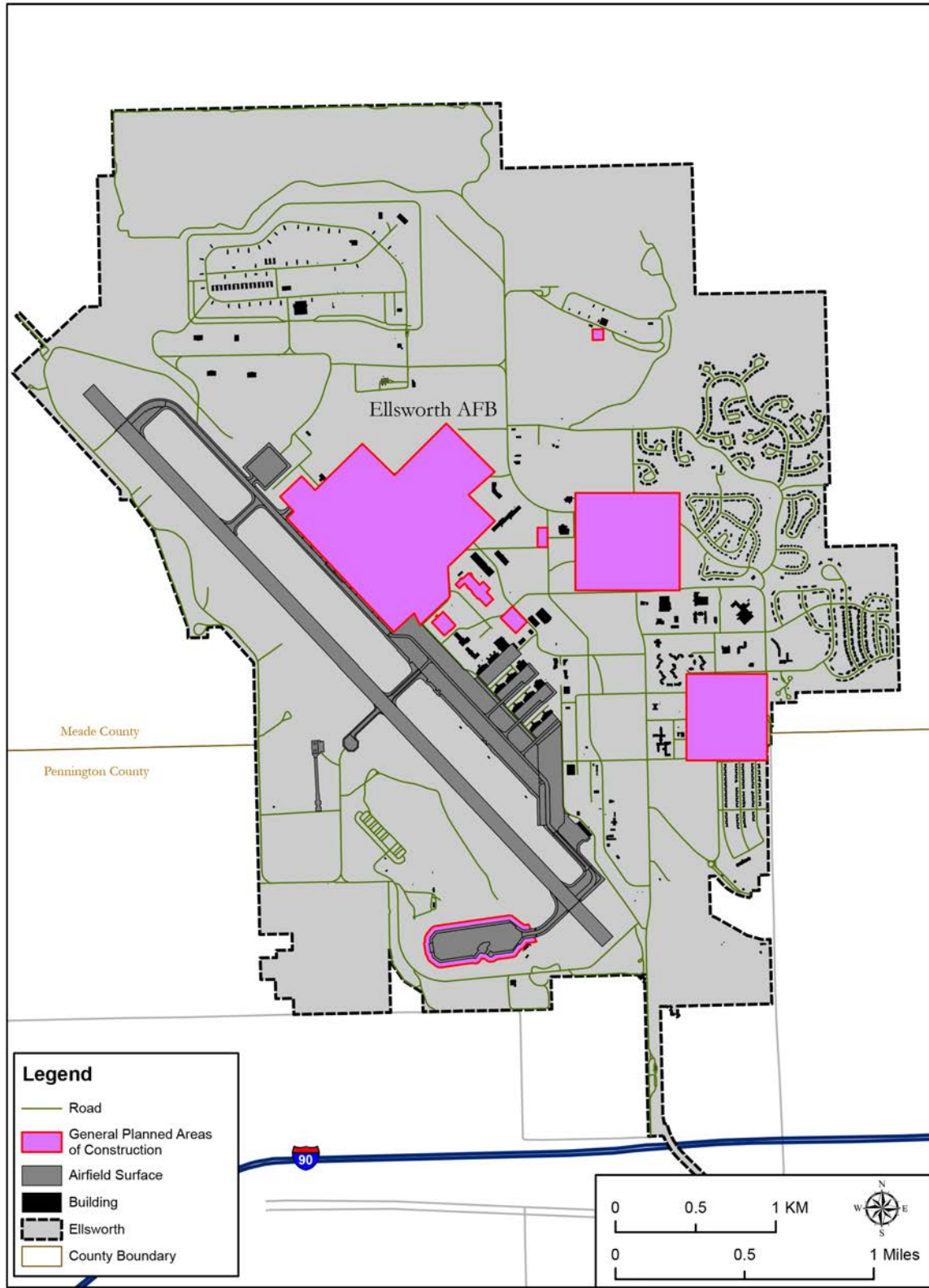
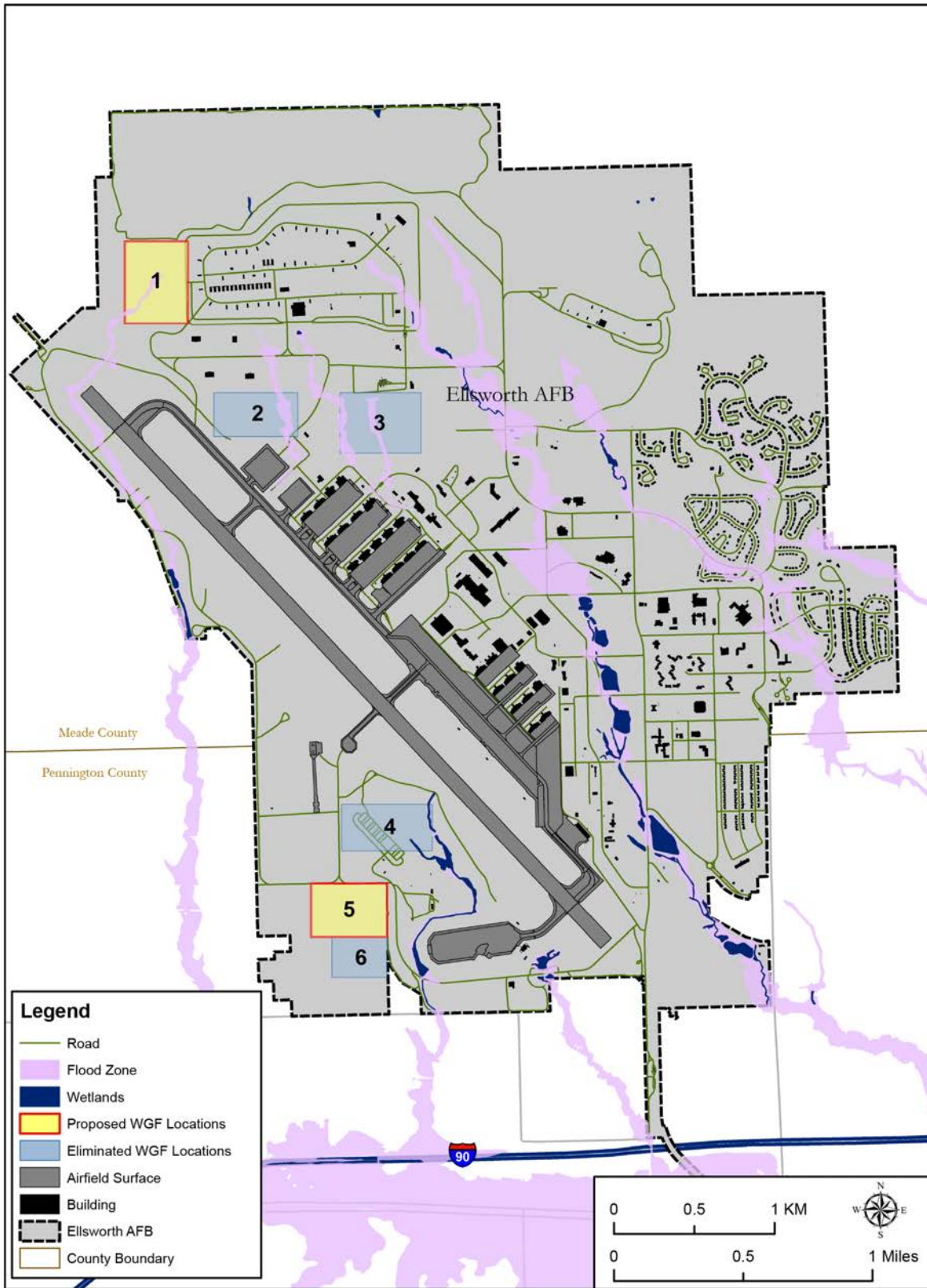


Figure ES-5. Ellsworth AFB Location



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**Figure ES-6. Facilities and Infrastructure Planned Areas of Construction – Ellsworth AFB Alternative**



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**Figure ES-7. Weapons Generation Facility (WGF) Planned Areas of Construction – Ellsworth AFB Alternative**

1 **ES.3.4 No Action Alternative**

2 Under the No Action Alternative, the B-21 would not be based at either Dyess AFB or  
 3 Ellsworth AFB. This would mean that each alternative installation would continue their  
 4 individual missions at current, or baseline, levels. While implementation of the No Action  
 5 Alternative is not likely, the analysis of this alternative provides a baseline against which  
 6 decision makers can compare the magnitude of potential environmental effects resulting  
 7 from the action alternatives.

8 The following sections provide descriptions of the activities associated with the No Action  
 9 Alternative, categorized by (1) personnel, (2) airfield operations, (3) airspace and range  
 10 utilization, and (4) facilities.

11 **ES.3.4.1 No Action Alternative at Dyess AFB**

12 **ES.3.4.1.1 Personnel**

13 Table ES-4 lists the total number of active military and civilian personnel and dependents  
 14 associated with the No Action Alternative at Dyess AFB (Dyess AFB, 2018a), along with  
 15 personnel currently supporting B-1 operations at the base.

**Table ES-4. No Action Alternative at Dyess AFB – Personnel**

Personnel <sup>a</sup>	Total Number of Individuals	Number of B-1 Mission Individuals
Active Military	4,369	1,855
Civilian <sup>b</sup>	665	NA
Contractor	NA	NA
Spouses	2,769 <sup>c</sup>	1,020 <sup>d</sup>
Children	2,342 <sup>c</sup>	872 <sup>d</sup>
<b>Total</b>	<b>10,145</b>	<b>3,747</b>

Source: (Dyess AFB, 2018a)  
 AFB = Air Force Base; NA = not available  
 Notes:  
 a. Does not include private businesses on base (Branch Banks/Credit Union) or retirees  
 b. Includes appropriated and non-appropriated fund civilians  
 c. Numbers of spouses and children were extrapolated from the total dependent number of 5,111, assuming 55 percent of military and civilian personnel are married and the remaining dependents are children.  
 d. The number of spouses and children at Dyess AFB associated with the B-1 mission was derived by calculating the ratio of actual dependents to total active military and civilian personnel. This resulted in ratios of 0.55 spouses and 0.47 children per active military personnel. These ratios were multiplied by 1,855 to obtain numbers of spouses and children associated with the B-1 mission at Dyess AFB.

16 **ES.3.4.1.2 Airfield Operations**

17 Table ES-5 presents the number of air operations that would occur under the No Action  
 18 Alternative at Dyess AFB.

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**Table ES-5. No Action Alternative at Dyess AFB – Airfield Operations**

Aircraft Type	Airfield Operations
B-1	9,720
C-130J	36,400
Transient Aircraft	2,820
<b>Total</b>	<b>48,940</b>

Source: (Dyess AFB, 2019)

AFB = Air Force Base

Note: Operation counts are based on pilot estimates for fiscal year 2019.

Due to the numerous different types of aircraft that use Dyess AFB for transient activities, the T-38 was selected as a surrogate for air quality and noise modeling because the T-38 represents the highest percentage of transient aircraft activities at Dyess AFB.

2 **ES.3.4.1.3 Airspace and Range Utilization**

3 Airspace and range utilization for the No Action Alternative at Dyess AFB would continue  
 4 to include PRTC, the Nevada Test and Training Range, and the Utah Test and Training  
 5 Range for supersonic training activities, as well as additional training in the airspace above  
 6 the Brownwood MOA, Lancer MOA, and the Pecos MOA (Figure ES-1) and their  
 7 associated ATCAAs.

8 **ES.3.4.1.4 Facilities**

9 There would be no construction associated with the No Action Alternative at Dyess AFB.  
 10 However, there would be annually planned demolition, construction, and maintenance  
 11 activities, which is reflected in the cumulative impacts section of the Draft EIS.

12 **ES.3.4.2 No Action Alternative at Ellsworth AFB**

13 **ES.3.4.2.1 Personnel**

14 Table ES-6 lists the total number of active military, civilian, and contractor personnel and  
 15 dependents associated with the No Action Alternative at Ellsworth AFB (Ellsworth AFB,  
 16 2016a), along with personnel currently supporting B-1 operations at the base.

17

**Table ES-6. No Action Alternative at Ellsworth AFB – Personnel**

Personnel <sup>a</sup>	Total Number of Individuals	Number of B-1 Mission Individuals
Active Military	3,196	1,836
Civilian <sup>b</sup>	930	NA
Contractor	139	NA
Spouses	2,346 <sup>c</sup>	1,010 <sup>d</sup>
Children	3,985 <sup>c</sup>	1,707 <sup>d</sup>
<b>Total</b>	<b>10,596</b>	<b>4,553</b>

Source: (Ellsworth AFB, 2016a)

AFB = Air Force Base; NA = not available

Notes:

a. Does not include private businesses on base (branch banks/credit union): 26 personnel

b. Includes appropriated and non-appropriated fund civilians

c. Numbers of spouses and children were extrapolated from the total dependent number of 6,331, assuming 55 percent of military, civilian, and contractor personnel are married and the remaining dependents are children.

d. The number of spouses and children at Ellsworth AFB associated with the B-1 mission was derived by calculating the ratio of actual dependents to total active military, civilian, and contractor personnel. This resulted in ratios of 0.55 spouses and 0.93 children per active military personnel. These ratios were multiplied by 1,836 to obtain numbers of spouses and children associated with the B-1 mission at Ellsworth AFB.



1 **ES.3.4.2.2 Airfield Operations**

2 Table ES-7 presents the number of airfield operations that would occur under the No  
 3 Action Alternative at Ellsworth AFB.

4 **Table ES-7. No Action Alternative at Ellsworth AFB – Airfield Operations**

Aircraft Type	Airfield Operations
B-1	8,256
Transient	654
<b>Total</b>	<b>8,910</b>

Source: (Ellsworth AFB, 2019)  
 AFB = Air Force Base  
 Note: Operation counts are based on projected fiscal year 2020 annual sorties. Transient aircraft at Ellsworth AFB include C-130J, T-38, F/A-18E/F, C-12, KC-135, P-8A, and H-60.

5 **ES.3.4.2.3 Airspace and Range Utilization**

6 Until the completion of the time-phased drawdown of existing B-1 aircraft, range utilization  
 7 for the No Action Alternative at Ellsworth AFB would continue to include PRTC, the  
 8 Nevada Test and Training Range, and the Utah Test and Training Range for supersonic  
 9 training activities.

10 **ES.3.4.2.4 Facilities**

11 There would be no new construction associated with the No Action Alternative at  
 12 Ellsworth AFB. However, there would be annually planned demolition, construction, and  
 13 maintenance activities, which is reflected in the cumulative impacts section.

14 **ES.4. AFFECTED ENVIRONMENT AND ENVIRONMENTAL**  
 15 **CONSEQUENCES**

16 **ES.4.1 Introduction**

17 For each environmental resource analyzed in the Draft EIS, the No Action Alternative  
 18 analysis is presented before the action alternatives’ analysis, which allows the reader and  
 19 decision makers to easily compare the consequences from the baseline conditions with  
 20 consequences of the action alternatives. Additionally, to help illustrate the gradual change  
 21 from B-1 to B-21 aircraft operations over time, an approximation, or “snapshot” scenario  
 22 was developed. This “snapshot” assumes there will be a period of time when there would  
 23 be a temporary overlap of B-1 and B-21 operations and that personnel levels would be  
 24 10 percent higher and flight operations would be 20 percent above those expected at the  
 25 end state of the Proposed Action, as illustrated in Table ES-8, Table ES-9, and  
 26 Table ES-10. (The “end state” reflects the point in time when all B-21s are in place and  
 27 all B-1s have been removed.) Only the resources that would be impacted by overlapping  
 28 B-1 and B-21 operations present potential impacts for the “snapshot” scenario.  
 29 Table ES-11 below indicates whether a given resource area section includes a “snapshot”  
 30 analysis.

**Table ES-8. Summary of Personnel at Dyess AFB with Snapshot Scenario**

Personnel <sup>a</sup>	No Action Alternative Individuals	B-1 Mission Individuals	B-21 Mission Individuals	Snapshot Analysis <sup>g</sup>			End State Personnel	End State Change Over No Action
				10% B-1 Individuals	B-21 + 10% B-1 Individuals	Total Snapshot		
Active Military	4,369	1,855	3,500	186	3,686	6,200	6,014	1,645
Civilian <sup>b</sup>	665	NA	NA	NA	NA	665	665	0
Contractor	NA	NA	NA	NA	200 <sup>h</sup>	200 <sup>h</sup>	NA	NA
Spouses	2,769 <sup>c</sup>	1,020 <sup>d</sup>	1,925 <sup>e</sup>	102	2,027	3,776	3,674	905
Children	2,342 <sup>c</sup>	872 <sup>d</sup>	2,275 <sup>f</sup>	87	2,362	3,832	3,745	1,403
<b>Total</b>	<b>10,145</b>	<b>3,747</b>	<b>7,700</b>	<b>375</b>	<b>8,275</b>	<b>14,673</b>	<b>14,098</b>	<b>3,953 (39%)</b>

Source: (Dyess AFB, 2018a)

AFB = Air Force Base; NA = not available

Notes:

a. Does not include private businesses on base (branch banks/credit union) or retirees

b. Includes appropriated and non-appropriated fund civilians

c. Numbers of spouses and children were extrapolated from the total dependent number of 5,111, assuming 55 percent of military and civilian personnel are married and the remaining dependents are children.

d. The number of spouses and children at Dyess AFB associated with the B-1 mission was derived by calculating the ratio of actual dependents to total active military and civilian personnel. This resulted in ratios of 0.55 spouses and 0.47 children per active military personnel. These ratios were multiplied by 1,855 to obtain numbers of spouses and children associated with the B-1 mission at Dyess AFB.

e. Based on statistics in the 2018 Demographics Profile of the Military Community (DoD, 2018b), 55 percent of the Air Force is married. The number of spouses was calculated by multiplying B-21 active military personnel by 55 percent.

f. Based on statistics in the 2018 Demographics Profile of the Military Community (DoD, 2018b), there are 1.2 dependents for each active duty Air Force member, for a total of 4,200 dependents for the B-21 mission. The number of children was estimated by subtracting the number of spouses (1,925) from the total dependents (4,200).

g. Snapshot analysis considers overlap between B-21 and B-1 transition. Assumes all B-21 personnel and 10 percent of B-1 personnel are present on the base at the same time along with temporary contractor support. Snapshot personnel number = Baseline population – B-1 personnel + B-21 personnel + 10% B-1 personnel + temporary contractor support.

h. Dependents were not calculated for temporary contractors (200 personnel) associated with supporting the B-21 and B-1 transition depicted in the snapshot analysis.

**Table ES-9. Summary of Personnel at Ellsworth AFB with Snapshot Scenario**

Personnel <sup>a</sup>	No Action Alternative Individuals	B-1 Mission Individuals	B-21 Mission Individuals	Snapshot Analysis <sup>g</sup>			End State Personnel	End State Change Over No Action
				10% B-1 Individuals	B-21 + 10% B-1 Individuals	Total Snapshot		
Active Military	3,196	1,836	3,500	184	3,684	5,044	4,860	1,664
Civilian <sup>b</sup>	930	NA	NA	NA	NA	930	930	0
Contractor	139	NA	NA	NA	200 <sup>h</sup>	339 <sup>h</sup>	139	0
Spouses	2,346 <sup>c</sup>	1,010 <sup>d</sup>	1,925 <sup>e</sup>	101	2,026	3,362	3,261	915
Children	3,985 <sup>c</sup>	1,707 <sup>d</sup>	2,275 <sup>f</sup>	172	2,447	4,724	4,553	568
<b>Total</b>	<b>10,596</b>	<b>4,553</b>	<b>7,700</b>	<b>457</b>	<b>8,357</b>	<b>14,398</b>	<b>13,743</b>	<b>3,147 (30%)</b>

Source: (Ellsworth AFB, 2016a)

AFB = Air Force Base; NA = not available

Notes:

a. Does not include private businesses on base (branch banks/credit union): 26 personnel

b. Includes appropriated and non-appropriated fund civilians

c. Numbers of spouses and children were extrapolated from the total dependent number of 6,331, assuming 55 percent of military, civilian, and contractor personnel are married and the remaining dependents are children.

d. The number of spouses and children at Ellsworth AFB associated with the B-1 mission was derived by calculating the ratio of actual dependents to total active military, civilian, and contractor personnel. This resulted in ratios of 0.55 spouses and 0.93 children per active military personnel. These ratios were multiplied by 1,836 to obtain numbers of spouses and children associated with the B-1 mission at Ellsworth AFB.

e. Based on statistics in the 2018 Demographics Profile of the Military Community (DoD, 2018b), 55 percent of the Air Force is married. The number of spouses was calculated by multiplying B-21 active military personnel by 55 percent.

f. Based on statistics in the 2018 Demographics Profile of the Military Community (DoD, 2018b), there are 1.2 dependents for each active duty Air Force member, for a total of 4,200 dependents for the B-21 mission. The number of children was estimated by subtracting the number of spouses (1,925) from the total dependents (4,200).

g. Snapshot analysis considers overlap between B-21 and B-1 transition. Assumes all B-21 personnel and 10 percent of B-1 personnel are present on the base at the same time along with temporary contractor support. Snapshot personnel number = Baseline population – B-1 personnel + B-21 personnel + 10% B-1 personnel + temporary contractor support.

h. Dependents were not calculated for temporary contractors (200 personnel) associated with supporting the B-21 and B-1 transition depicted in the snapshot analysis.

**Table ES-10. Summary of Operations at Both Bases with Snapshot Scenario**

Airfield/Airspace	No Action <sup>a</sup> Alternative	Proposed Action <sup>b</sup>	Airfield Operations Change from No Action Alternative	Snapshot <sup>c</sup>	Snapshot Change from No Action Alternative
<b>Dyess AFB Alternative</b>					
Dyess AFB Airfield	48,940	48,394	-546	50,327	1,387
PRTC	2,778	2,760	-18	2,834	56
Brownwood MOA	2,467	2,454	-13	2,461	-6
Lancer MOA	1,376	1,132	-244	1,301	-75
Pecos MOA	2,425	2,781	356	2,799	374
<b>Ellsworth AFB Alternative</b>					
Ellsworth AFB Airfield	8,910	10,318	1,408	11,860	2,950
PRTC	2,778	3,921	1,143	4,203	1,425

AFB = Air Force Base; MOA = Military Operating Area; PRTC = Powder River Training Complex

Notes:

- a. Current flight operations data provided and validated by Dyess AFB personnel, HAF/SAF, and the Air Force Civil Engineer Center.
- b. The Proposed Action flight operations represent the end-state operations removing the B-1 operations and adding B-21 operations maintaining existing operations for other PAA and transient aircraft.
- c. The Snapshot flight operations represent a transitional condition in which approximately 20 percent of current B-1 operations would potentially occur simultaneous with proposed B-21 operations maintaining existing operations for other PAA and transient aircraft.

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**Table ES-11. Snapshot Analysis – Affected Resources**

EIS Section	Resource Area	Snapshot Analysis Included	
		Personnel	Operations
Section 3.1	Airspace	No	Yes
Section 3.2	Noise	No	Yes
Section 3.3	Air Quality	Yes	Yes
Section 3.4	Land Use	No	No
Section 3.5	Socioeconomics	Yes	No
Section 3.6	Environmental Justice	No	Yes
Section 3.7	Biological Resources	No	No
Section 3.8	Cultural Resources	No	No
Section 3.9	Physical Resources	No	No
Section 3.10	Hazardous Materials and Hazardous and Solid Wastes	No	No
Section 3.11	Health and Safety	No	No
Section 3.12	Transportation	Yes	No
Section 3.13	Utilities and Infrastructure	Yes	No

EIS = Environmental Impact Statement

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In the analysis of anticipated impacts, the USAF has done its best to accurately predict potential impacts and anticipate future conditions using the best available information and tools for the EIS analysis, including the “snapshot” scenario. As a new aircraft under development, B-21 data for noise, air quality, and safety analyses are currently incomplete or unavailable. While the costs to obtain complete data for these purposes are not exorbitant, those data cannot be obtained at this time due to limitations on aircraft testing during its early developmental stage, the need for analyses during normal (versus developmental) flying conditions, and the time required to develop a flight safety record (40 Code of Federal Regulations [CFR] 1502.22(b) and 1502.22(b)(1)). The Council on Environmental Quality (CEQ) regulations implementing NEPA recognize that such a situation may occur. Agencies manage such situations in accordance with 40 CFR 1502.22, *Incomplete or Unavailable Information*. Detailed guidance to address incomplete or unavailable information is included in Section 3.0 of the Draft EIS.

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The Affected Environment and Environmental Consequences discussions have been summarized in this Executive Summary. More detailed descriptions of each affected resource and associated consequences are provided in Chapter 3 in the Draft EIS.

18

**ES.4.2 Airspace**

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**ES.4.2.1 Affected Environment**

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Special Use Airspace (SUA) is airspace where military airborne activities must be confined because of their nature and/or where limitations may be imposed on aircraft operations that are not part of those activities. An SUA has defined dimensions that are associated with an area on the surface of the earth. With the exception of Controlled Firing Areas, SUA is depicted on aeronautical charts. SUA includes the following types of charted airspace: MOAs, Restricted Areas, Warning Areas, Alert Areas, Prohibited Areas,

1 and National Security Areas. Controlled Firing Areas are uncharted. The MOAs are the  
2 primary type of SUA of concern in this document.

### 3 **ES.4.2.1.1 Dyess AFB**

4 Figure ES-8 shows the airspace associated with the three MOAs that would be used by  
5 the B-21 if Dyess AFB is selected as the location for MOB 1. The airspace associated  
6 with PRTC, which includes all associated MOAs and ATCAAs, was described in the 2014  
7 PRTC EIS and its associated ROD (USAF, 2014a; USAF, 2015) and is shown in  
8 Figure ES-9.

### 9 **ES.4.2.1.2 Ellsworth AFB**

10 If Ellsworth AFB is selected as the MOB 1 location, PRTC airspace would be the primary  
11 training area for aircraft operations (Figure ES-9).

## 12 **ES.4.2.2 Environmental Consequences**

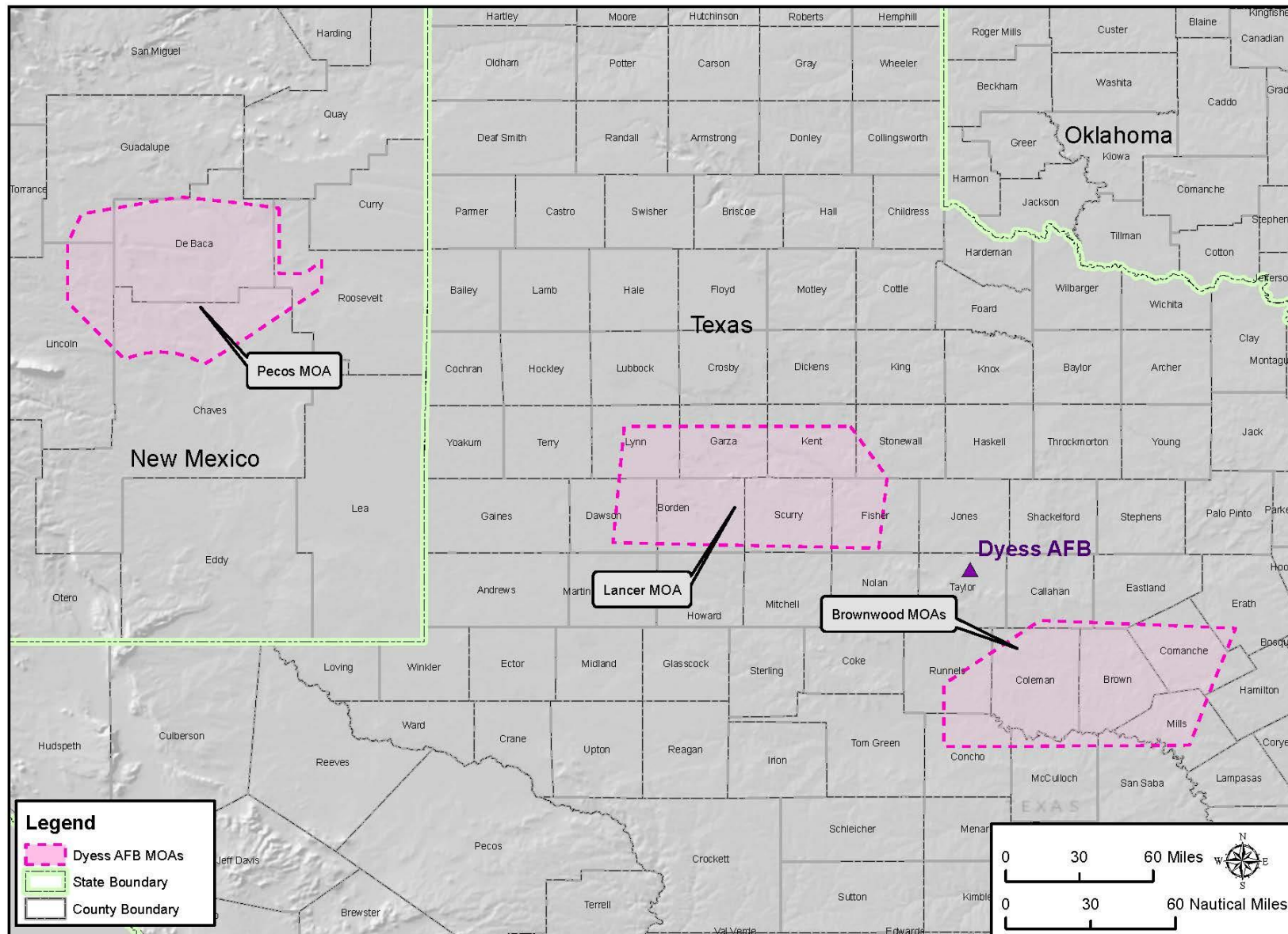
13 Airspace would not be affected by construction activities under any of the Alternatives  
14 and is therefore not discussed further for this resource area.

### 15 **ES.4.2.2.1 No Action Alternative Consequences**

16 Table ES-5 in Section ES.3.4.1 (No Action Alternative at Dyess AFB) presents annual  
17 airfield operations under the No Action Alternative at Dyess AFB and Table ES-7 in  
18 Section ES.3.4.2.2 (Airfield Operations) presents the same information under the No  
19 Action Alternative at Ellsworth AFB. Additionally, Table ES-10 in Section ES.4.1  
20 (Introduction) presents aircraft operations in the proposed airspace units for the Proposed  
21 Action, including the Snapshot Scenario. Airspace utilization under the No Action  
22 Alternative would be comparable to current conditions and would not contribute to air  
23 traffic controller workload or congestion in the airspace areas.

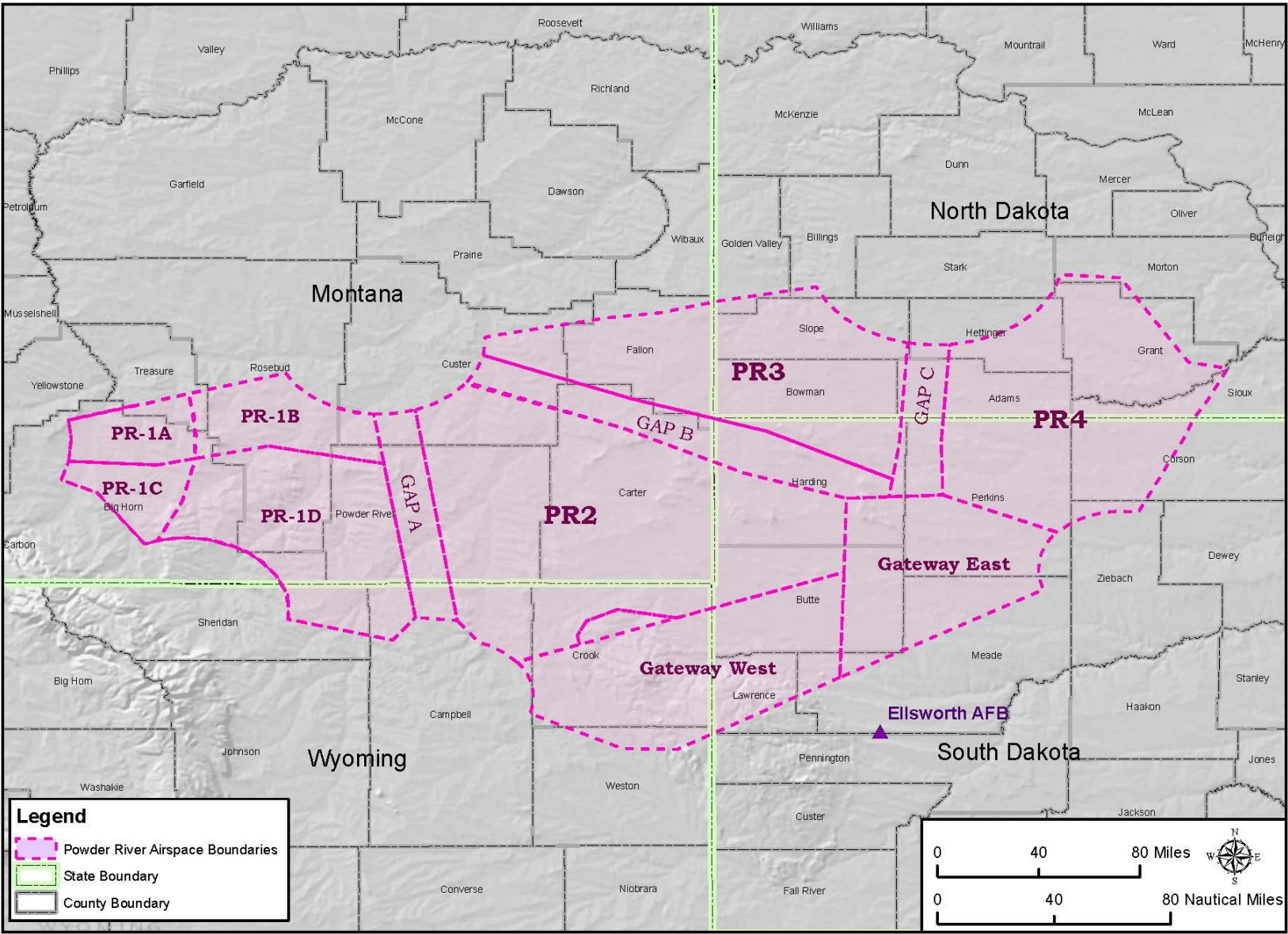
### 24 **ES.4.2.2.2 Dyess AFB Alternative**

25 Air operations (takeoffs, landings, and closed patterns) at Dyess AFB would decrease by  
26 1.12 percent from baseline levels. Flight operations would decrease across all SUAs with  
27 the exception of the Pecos MOA, which would increase by approximately 15 percent; this  
28 could lead to increased congestion and/or scheduling impacts. However, because the  
29 B-21 would tend to use higher airbands, airspace would not likely be adversely impacted.  
30 Furthermore, as the program develops, MOA usage and distribution may be adapted to  
31 better accommodate the B-21 training mission. For instance, the Lancer MOA, where  
32 operations would be decreased by nearly 18 percent, could be utilized more extensively  
33 to alleviate any strains in the Pecos MOA.



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Figure ES-8. Brownwood, Lancer, and Pecos MOAs Airspace



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Figure ES-9. Powder River Training Complex Airspace



1 Under the Snapshot Scenario at Dyess AFB, operations would increase by a maximum  
2 of 15.42 percent for the Pecos MOA over the baseline levels. This change in airfield  
3 operations may contribute to increased airspace congestion and/or scheduling conflicts  
4 but would not be likely to adversely impact airspace use, Air Traffic Control (ATC), or  
5 scheduling at Dyess AFB. The change in operations under the Snapshot Scenario would  
6 be temporary and would not be likely to adversely impact airspace use, ATC, or  
7 scheduling at PRTC or in the Lancer, Brownwood, or Pecos MOAs.

### 8 **ES.4.2.2.3 Ellsworth AFB Alternative**

9 Aircraft operations would increase by up to 15.8 percent at Ellsworth AFB. Total flight  
10 operations at PRTC would increase by 41.1 percent. This could lead to increased  
11 congestion and/or scheduling impacts. However, because the B-21 would tend to use  
12 higher airbands, airspace would not likely be adversely impacted. Additionally, as the  
13 program develops, SUA usage and distribution may be adapted to better accommodate  
14 the B-21 training mission.

15 Under the Snapshot Scenario at Ellsworth AFB, airfield operations would increase by  
16 2.83 percent and aircraft operations in the PRTC would increase by 51.3 percent. The  
17 minimal change in airfield operations would not be likely to adversely impact airspace  
18 use, ATC, or scheduling at Ellsworth AFB. Increased aircraft operations in the PRTC  
19 would be substantial, but since the B-21 would typically fly in altitude bands that are  
20 currently under-utilized and distribution could be adapted to accommodate the B-21  
21 mission as the program develops, adverse impacts on airspace congestion or scheduling  
22 are unlikely.

## 23 **ES.4.3 Noise**

### 24 **ES.4.3.1 Affected Environment**

25 Noise is defined as unwanted sound. Potential noise impacts are dependent on  
26 characteristics of the noise such as sound level, pitch, and duration. Noise impacts are  
27 also strongly influenced by characteristics of the noise receiver (i.e., persons, animals, or  
28 objects that hear or are affected by noise). Noise analysis considers potential impacts  
29 that could result in annoyance, speech interference, sleep disturbance, human health  
30 effects (auditory and nonauditory), wildlife impacts, and structural damage.

31 The region of influence (ROI) for noise includes Dyess AFB, Ellsworth AFB, and the areas  
32 surrounding each installation, as well as land areas included under the airspace units  
33 where B-21 flight operations and training would occur. The ROI for noise also includes  
34 lands under and near the PRTC MOAs/ATCAAs, Lancer MOA, Brownwood MOA, and  
35 Pecos MOA.

1 **ES.4.3.2 Environmental Consequences**

2 The number of personnel at Dyess AFB and Ellsworth AFB would not appreciably  
3 contribute to noise in these areas. Personnel would continue to commute on established  
4 roads and the relatively minor increases in personnel and traffic overall would not result  
5 in adverse noise impacts. Therefore, changes in personnel under any of the alternatives  
6 are not discussed further for this resource area.

7 **ES.4.3.2.1 No Action Alternative Consequences**

8 **ES.4.3.2.1.1 No Action at Dyess AFB**

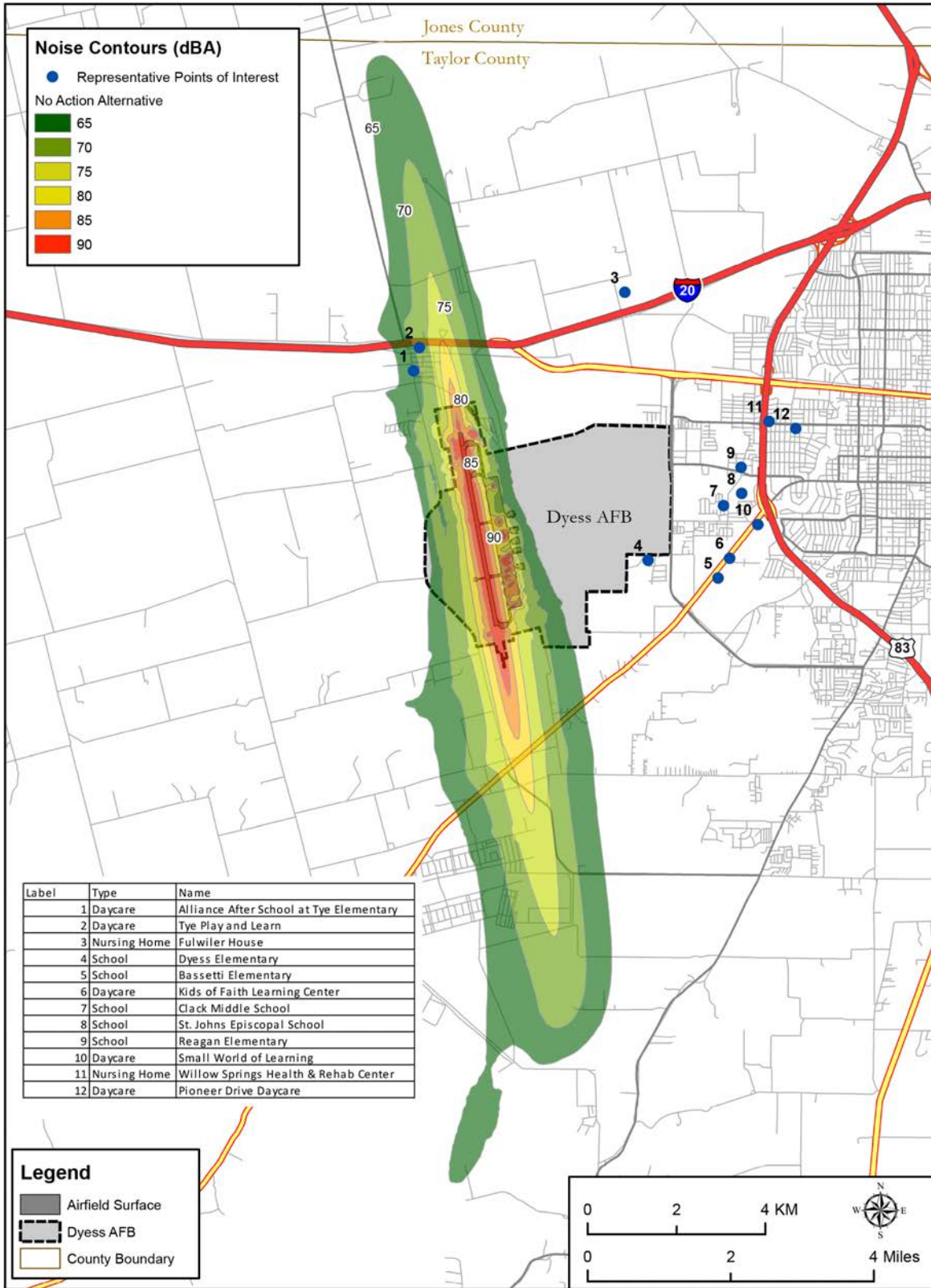
9 Noise modeling was conducted to reflect current baseline aircraft operations under the  
10 No Action Alternative at Dyess AFB (Figure ES-10). Model results indicate that  
11 11,497 acres and an estimated 1,419 persons could be exposed to noise levels  
12 exceeding 65 decibels (dB) day-night average sound level (DNL) near Dyess AFB. Noise  
13 modeling was also conducted to assess baseline aircraft noise in the SUAs used by  
14 Dyess AFB for training. Noise levels range from less than 35 dB onset-rate adjusted  
15 monthly day-night average sound level ( $L_{dnmr}$ ) to 46.1 dB  $L_{dnmr}$  across PRTC. Baseline  
16 noise levels beneath the Brownwood, Pecos, and Lancer MOAs would be less than 35,  
17 55.9, and 43.4 dB  $L_{dnmr}$ , respectively. These levels are well below the 65 dB DNL level  
18 that would potentially impact land use, so there would be no adverse noise impacts.

19 There are no proposed construction, demolition, or renovation projects under the No  
20 Action Alternative at Dyess AFB. Ongoing various construction and demolition (C&D)  
21 activities would result in temporary, localized increases in noise levels that could be  
22 disruptive and annoying. The temporary and localized noise generated by C&D activities  
23 on the installation could be disruptive and annoying but would not be significant.

24 **ES.4.3.2.1.2 No Action at Ellsworth AFB**

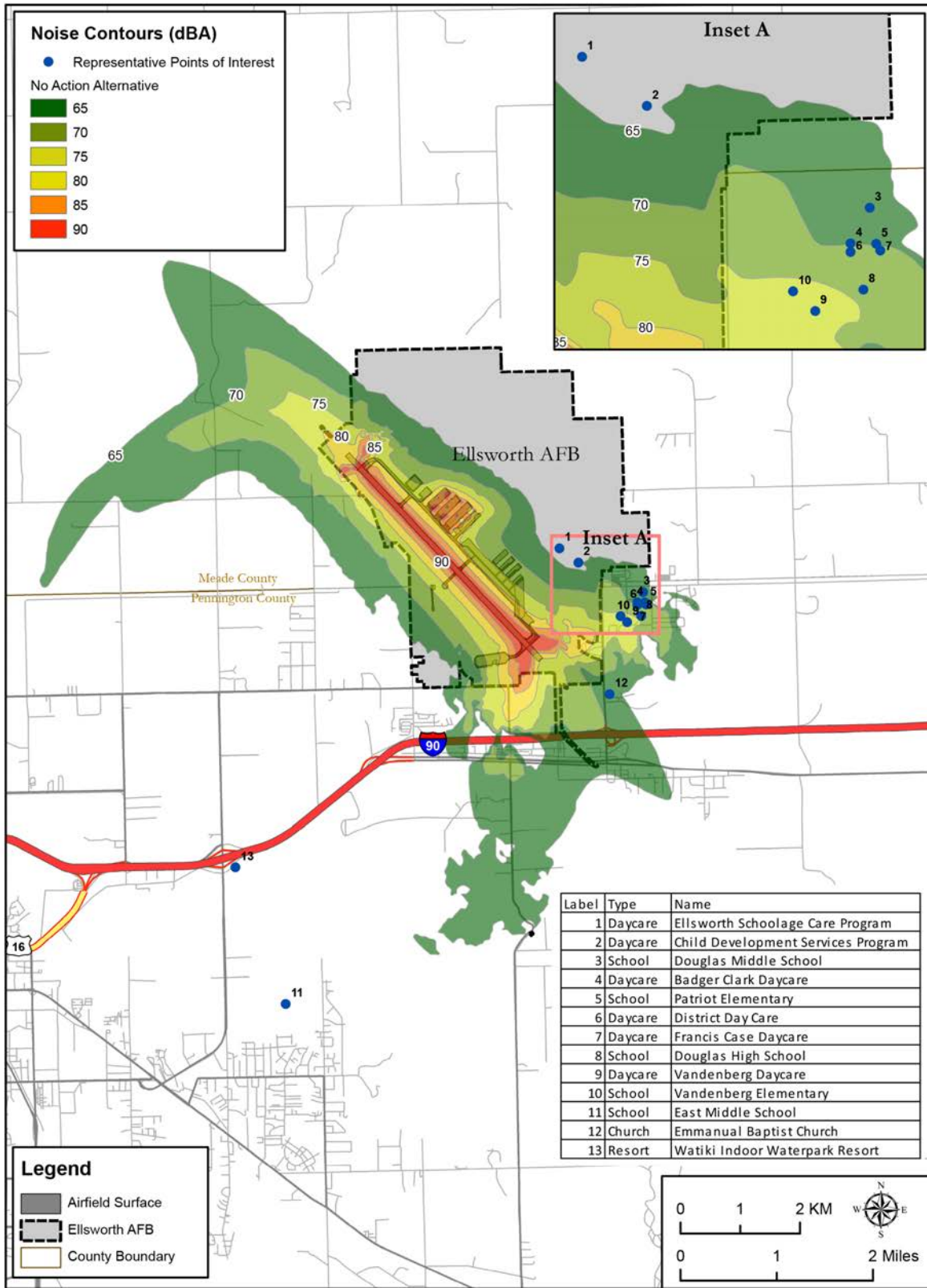
25 Noise model results for the No Action Alternative at Ellsworth AFB (Figure ES-11) indicate  
26 that 5,834 acres and an estimated 1,985 persons could be exposed to noise levels  
27 exceeding 65 dB DNL near Ellsworth AFB. Baseline aircraft noise in the PRTC would  
28 range from less than 35 dB  $L_{dnmr}$  to 46.1 dB  $L_{dnmr}$  across PRTC.

29 While no construction, demolition, or renovation projects are proposed under the No  
30 Action Alternative at Ellsworth AFB, there are likely to be other construction, demolition,  
31 and/or renovation projects occurring at Ellsworth AFB as part of other actions. At  
32 distances greater than 600 feet, noise levels would be below 65 dB DNL and would not  
33 be likely to significantly impact public annoyance. The temporary and localized noise  
34 generated by C&D activities on the installation could be disruptive and annoying but would  
35 not be significant.



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**Figure ES-10. Noise Contours at Dyess AFB Under the No Action Alternative**



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**Figure ES-11. Noise Contours at Ellsworth AFB Under the No Action Alternative**

1 **ES.4.3.2.2 Dyess AFB Alternative**

2 Under the Dyess AFB Alternative, 4,355 acres and an estimated 496 persons could be  
 3 exposed to noise levels exceeding 65 dB DNL near Dyess AFB. This is a decrease of  
 4 7,142 acres and 923 persons overall from the No Action Alternative (Figure ES-12).

5 Table ES-12 presents noise levels under the Dyess AFB Alternative. Noise levels in all  
 6 the airspace areas would either decrease or remain the same compared to the No Action  
 7 Alternative. There would be no adverse impacts to noise beneath the SUAs under the  
 8 Dyess AFB Alternative.

9 **Table ES-12. Dyess AFB Alternative Airspace Noise**

Location	Special Use Airspace	No Action Alternative (dB)	Air Operations Dyess (dB)	Change from No Action Alternative (dB)
MOAs	Lancer	43.4	<35	-8.4
	Pecos	55.9	36.9	-19
	Brownwood	<35	<35	0
PRTC	Gap A	44.2	44.2	0
	Gap B	41.9	41.9	0
	Gap C	35.5	35.5	0
	Gateway East	<35	<35	0
	Gateway West	36.4	36.4	0
	Powder River 1A	42.8	42.8	0
	Powder River 1B	42.8	42.8	0
	Powder River 1C	45.7	45.7	0
	Powder River 1D	39.1	39.1	0
	Powder River 2	46.1	46.1	0
	Powder River 3	37.1	37.1	0
	Powder River 4	<35	<35	0

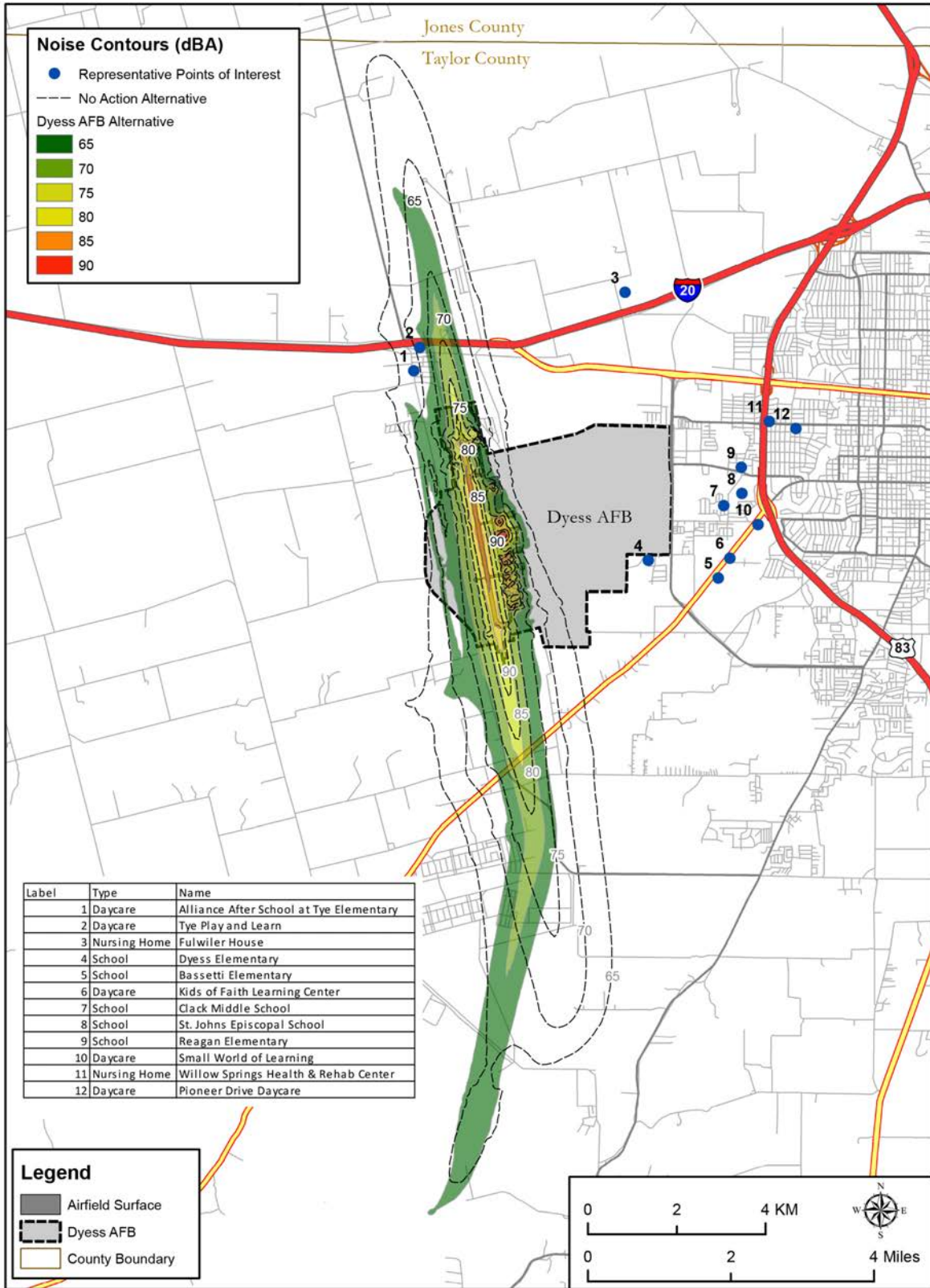
< = less than; AFB = Air Force Base; dB = decibel; MOA = Military Operating Area; PRTC = Powder River Training Complex

10 The temporary and localized noise generated by C&D activities on the installation from  
 11 the proposed facilities and infrastructure projects and the WGF could be disruptive and  
 12 annoying but would not be significant.

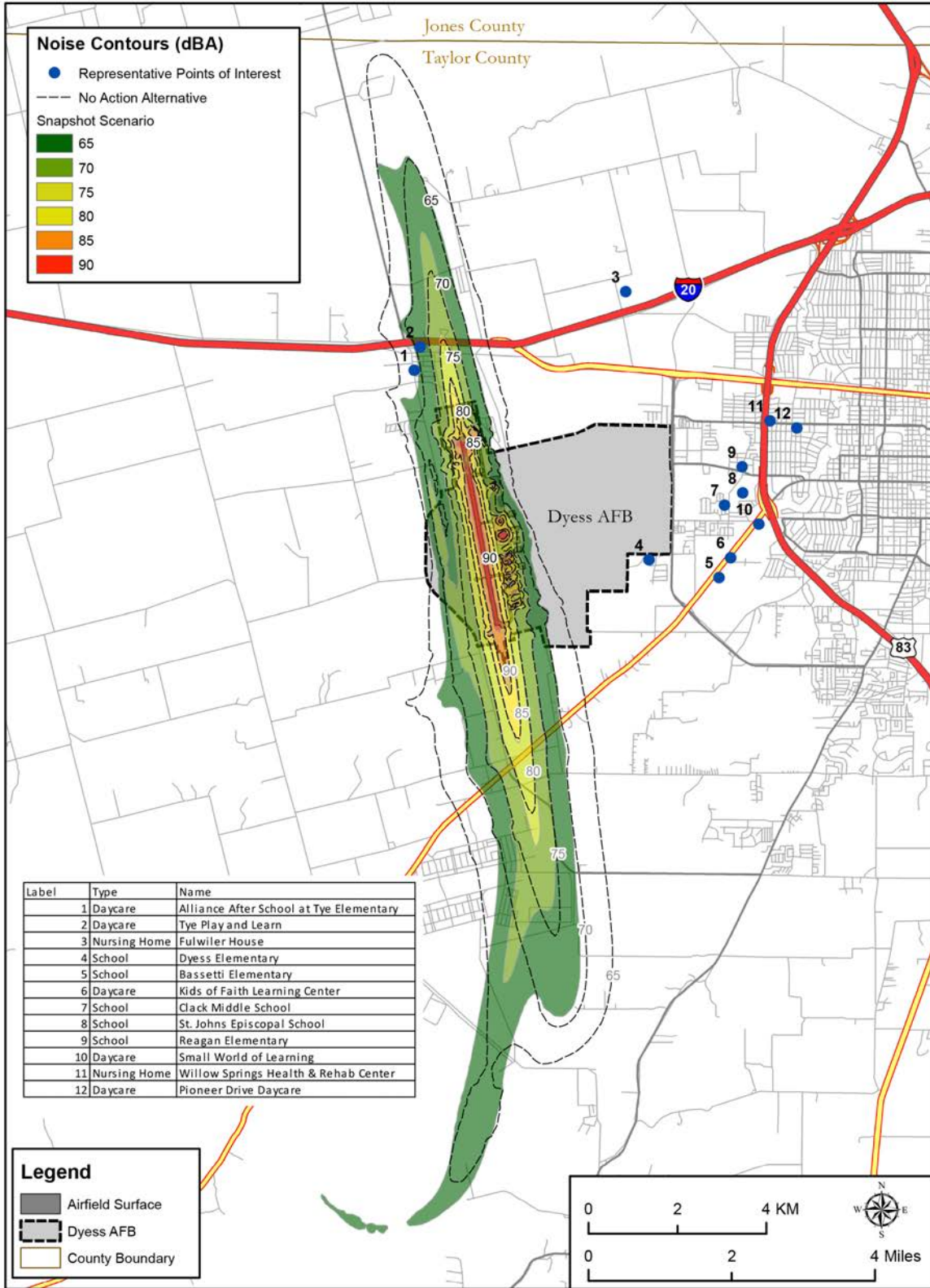
13 **Snapshot**

14 Noise contours in the vicinity of Dyess AFB under the Dyess AFB Snapshot Scenario are  
 15 depicted in Figure ES-13. Approximately 7,243 acres and an estimated 869 persons could  
 16 be exposed to noise levels exceeding 65 dB DNL near Dyess AFB. This represents a  
 17 decrease of 4,254 acres and 550 persons from the No Action Alternative.

18 Snapshot noise levels in PRTC and Brownwood MOA would not change from the No  
 19 Action Alternative and the Dyess AFB Alternative end-state noise levels. Noise in the  
 20 Lancer MOA and Pecos MOA would decrease by 6.8 dB L<sub>dnmr</sub> and 6.7 dB L<sub>dnmr</sub> from the  
 21 No Action Alternative, but would be 1.6 dB L<sub>dnmr</sub> and 12.3 dB L<sub>dnmr</sub> higher than the  
 22 end-state, respectively. No adverse impacts would be expected in any of the airspace  
 23 areas under the Snapshot Scenario.



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2 **Figure ES-12. Noise Contours at Dyess AFB Under the Dyess AFB Alternative Compared**  
3 **with No Action Alternative**



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**Figure ES-13. Noise Contours at Dyess AFB Under the Snapshot Scenario at Dyess AFB Compared with the No Action Alternative**

1 **ES.4.3.2.3 Ellsworth AFB Alternative**

2 Under the Ellsworth AFB Alternative, 1,610 acres and an estimated 358 persons could  
 3 be exposed to noise levels exceeding 65 dB DNL near Ellsworth AFB. This is a decrease  
 4 of 4,224 acres and 1,627 persons from the No Action Alternative (Figure ES-14).

5 Under the Ellsworth AFB Alternative, noise in PRTC would decrease or remain below  
 6 35 dB L<sub>dnmr</sub> across the board (Table ES-13). There would be no adverse impacts to noise  
 7 beneath the SUAs under the Ellsworth AFB Alternative.

8 **Table ES-13. Ellsworth AFB Alternative Airspace Noise**

Location	Special Use Airspace	No Action Alternative (dB)	Ellsworth AFB Alternative (dB)	Change from No Action Alternative (dB)
PRTC	Gap A	44.2	38.9	-5.3
	Gap B	41.9	36.5	-5.4
	Gap C	35.5	<35	-0.5
	Gateway East	<35	<35	0
	Gateway West	36.4	<35	-1.4
	Powder River 1A	42.8	35.8	-7
	Powder River 1B	42.8	37.1	-5.7
	Powder River 1C	45.7	42.0	-3.7
	Powder River 1D	39.1	<35	-4.1
	Powder River 2	46.1	<35	-11.1
	Powder River 3	37.1	<35	-2.1
	Powder River 4	<35	<35	0

< = less than; AFB = Air Force Base; dB = decibel; PRTC = Powder River Training Complex

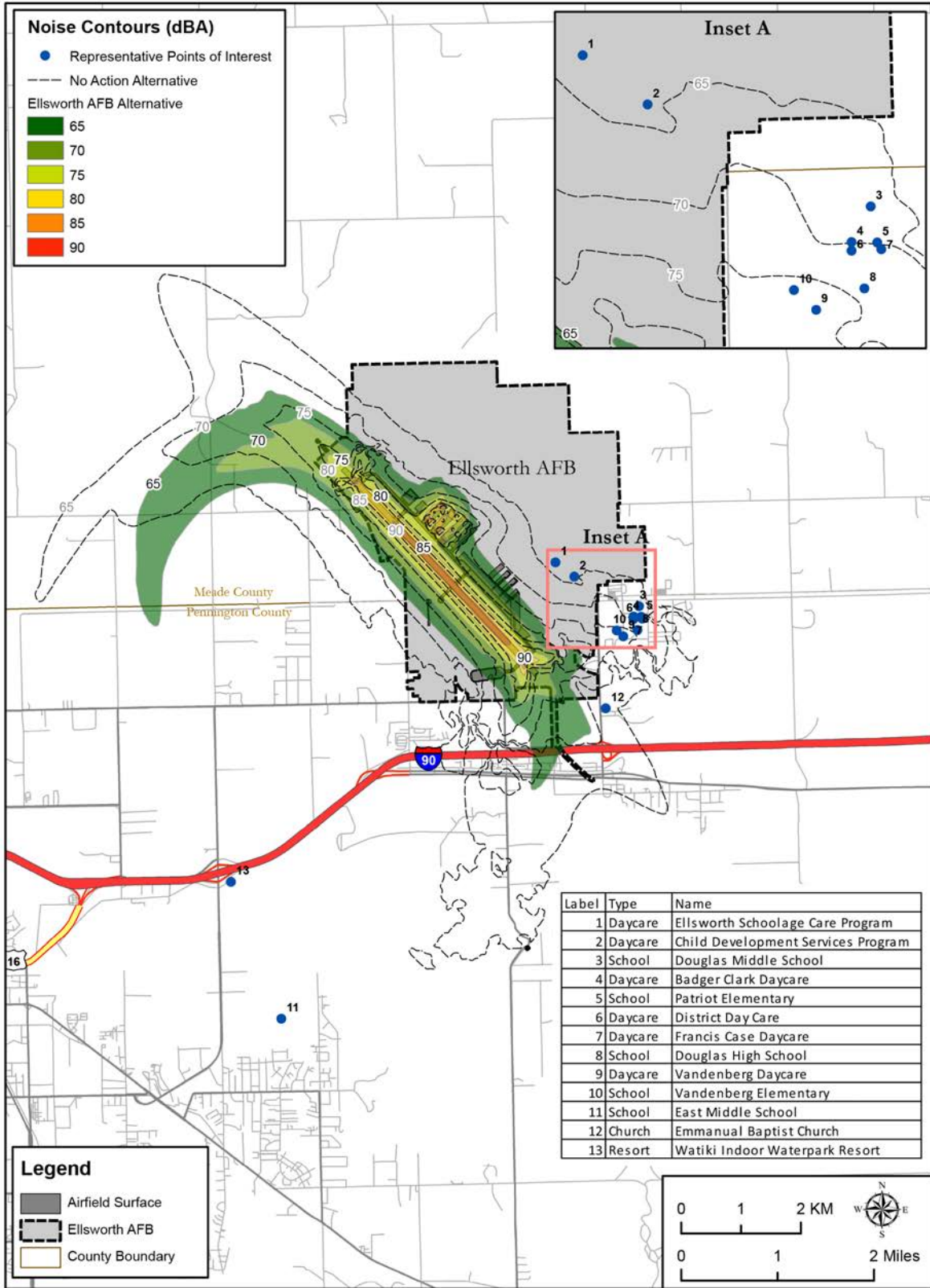
9 The temporary and localized noise generated by C&D activities on the installation from  
 10 the proposed facilities and infrastructure projects, as well as the North and South WGF  
 11 locations, could be disruptive and annoying but would not be significant. Noise impacts  
 12 would be temporary and minor and would not adversely affect noise at Ellsworth AFB.  
 13 The South WGF Site is closer to the residential community of Box Elder, but is still over  
 14 1,000 feet away from the nearest residence. Therefore, noise levels would be below  
 15 65 dB, and annoyance would still be minor and temporary and would not adversely affect  
 16 noise on or outside Ellsworth AFB.

17 **Snapshot**

18 Noise contours in the vicinity of Ellsworth AFB under the Ellsworth AFB Snapshot  
 19 Scenario are depicted in Figure ES-15. Approximately 2,880 acres and an estimated  
 20 978 persons could be exposed to noise levels exceeding 65 dB DNL near Ellsworth AFB,  
 21 representing a decrease of 2,954 acres and 1,007 persons from the No Action Alternative.

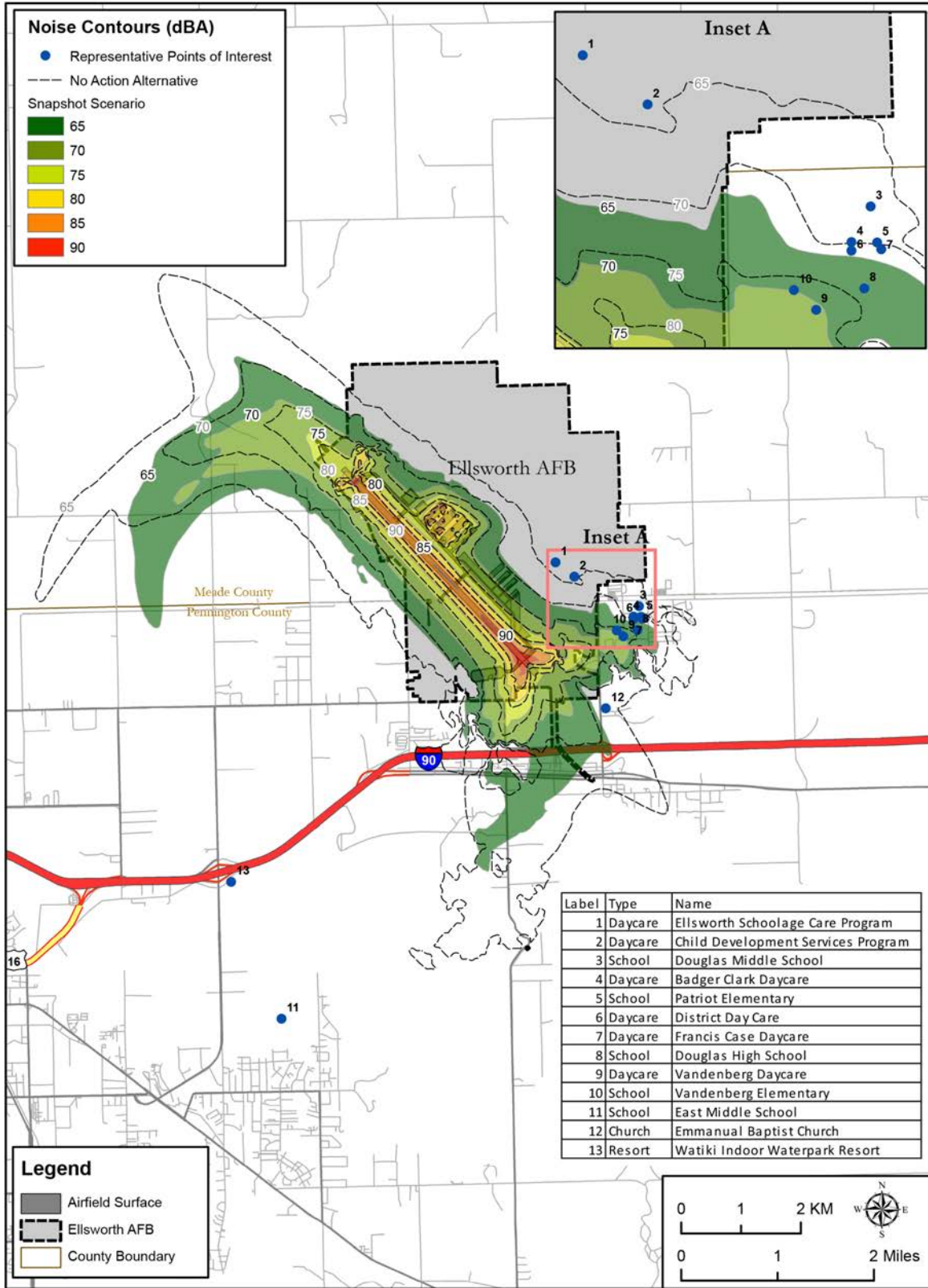
22 Snapshot scenario noise in PRTC would decrease by 6.3 dB L<sub>dnmr</sub> from No Action  
 23 Alternative levels but would be 4.8 dB L<sub>dnmr</sub> higher than the Ellsworth AFB Alternative  
 24 end-state.





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**Figure ES-14. Noise Contours at Ellsworth AFB Under the Ellsworth AFB Alternative Compared with the No Action Alternative**



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2 **Figure ES-15. Noise Contours Under the Snapshot Scenario at Ellsworth AFB Compared**  
3 **with the No Action Alternative**

1 **ES.4.4 Air Quality**

2 **ES.4.4.1 Affected Environment**

3 Air quality is determined by the type and amount of pollutants emitted into the  
4 atmosphere, the size and topography of the air basin, and the prevailing meteorological  
5 conditions. The levels of pollutants are generally expressed on a concentration basis in  
6 units of parts per million or micrograms per cubic meter.

7 The baseline standards for pollutant concentrations are the National Ambient Air Quality  
8 Standards and state air quality standards established under the Clean Air Act of 1990.  
9 These standards represent the maximum allowable atmospheric concentration that may  
10 occur and still protect public health and welfare. The National Ambient Air Quality  
11 Standards provide both short- and long-term standards for the following criteria pollutants:  
12 carbon monoxide (CO), nitrogen dioxide, sulfur dioxide, particulate matter with a diameter  
13 of less than or equal to 10 microns or 2.5 microns, ozone, and lead.

14 In order to evaluate air emissions and their impact on the overall ROI, the emissions  
15 associated with the Proposed Action activities were compared with the total emissions on  
16 a pollutant-by-pollutant basis for the ROI’s 2017 National Emissions Inventory data, which  
17 is the most recent version that has been finalized. Potential impacts to air quality are  
18 evaluated with respect to the extent, context, and intensity of the impact in relation to  
19 relevant regulations, guidelines, and scientific documentation. The CEQ defines  
20 significance in terms of context and intensity in 40 CFR 1508.27. This requires the  
21 significance of the action to be analyzed with respect to the setting of a proposed action  
22 and based relative to the severity of the impact. The CEQ NEPA regulations (40 CFR  
23 1508.27[b]) provide 10 key factors to consider in determining an impact’s intensity. These  
24 ten key factors are outlined in Section 3.3.1.3 (Analysis Methodology) of the Draft EIS.  
25 To provide a more conservative analysis, counties associated with each alternative were  
26 selected as the ROI instead of the U.S. Environmental Protection Agency (EPA)-  
27 designated Air Quality Control Region, which is a much larger area.

28 Dyess AFB is located in Taylor County. According to EPA, Taylor County is in attainment  
29 for all criteria pollutants (EPA, 2019a). Ellsworth AFB is located in Meade and Pennington  
30 Counties, South Dakota. Meade and Pennington Counties, like all of South Dakota, are  
31 also in attainment for all pollutants (EPA, 2019b). PRTC airspace covers all or part of  
32 10 counties in North Dakota, 8 in South Dakota, 7 in Montana, and 4 in Wyoming. The  
33 entire states of North and South Dakota are in attainment for all criteria pollutants. All  
34 counties in the PRTC ROI over Montana are in attainment for all pollutants, except for  
35 Rosebud County, part of which is in moderate nonattainment for particulate matter with a  
36 diameter of less than or equal to 10 microns (1987 standard) (EPA, 2020c). In Wyoming,  
37 Campbell and Crook Counties are in attainment for all pollutants. All the counties under  
38 Lancer MOA, Brownwood MOA, and Pecos MOA airspace are in attainment for all criteria  
39 pollutants, so General Conformity is not applicable (EPA, 2020f; EPA, 2020g).

1 **ES.4.4.2 Environmental Consequences**

2 **ES.4.4.2.1 No Action Alternative Consequences**

3 Under the No Action Alternative, there would be no changes to operations and the  
 4 emissions would remain at baseline levels. In addition, there would be no new  
 5 construction. Therefore, regional air quality would not be adversely impacted.

6 Table ES-14 and Table ES-15 present the estimated annual emissions for both personnel  
 7 and aircraft emissions under the No Action Alternative (baseline conditions) at Dyess AFB  
 8 and Ellsworth AFB, respectively.

9 **Table ES-14. Summary of No Action Alternative Emissions at Dyess AFB**

Source	Pollutants (tons/year)						
	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>x</sub>	VOC	CO <sub>2e</sub>
Dyess AFB Personnel Emissions (No Action)	121.37	8.79	0.22	0.19	0.08	10.30	11,109
Dyess AFB Aircraft Emissions (No Action)	268.54	268.39	45.82	31.58	29.27	50.07	88,475
Total Dyess AFB No Action Alternative Emissions	389.91	277.18	46.04	31.77	29.35	60.37	99,584
ROI Baseline <sup>1</sup>	14,298	4,626	6,598	1,250	50.30	8,477	1,243,235
<b>Percentage of ROI</b>	<b>2.73%</b>	<b>5.99%</b>	<b>0.70%</b>	<b>2.54%</b>	<b>58.36%</b>	<b>0.71%</b>	<b>8.01%</b>

Source: (EPA, 2020b)

% = percent; AFB = Air Force Base; CO = carbon monoxide; CO<sub>2e</sub> = carbon dioxide equivalent; NO<sub>x</sub> = nitrogen oxides; PM<sub>10</sub> or PM<sub>2.5</sub> = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO<sub>x</sub> = sulfur oxides; VOC = volatile organic compound

Note:

1. The ROI for Dyess AFB emissions is Taylor County, Texas. See Table 3.3-2 and Table 3.3-3 in the EIS.

10 **Table ES-15. Summary of No Action Alternative Emissions at Ellsworth AFB**

Source	Pollutants (tons/year)						
	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>x</sub>	VOC	CO <sub>2e</sub>
Ellsworth AFB Personnel Emissions (No Action)	115.61	8.96	0.30	0.26	0.06	10.22	9,068
Ellsworth AFB Aircraft Emissions (No Action)	220.84	191.32	49.46	35.48	21.11	4.27	63,813
Total Ellsworth AFB No Action Alternative Emissions	336.45	200.28	49.76	35.74	21.17	14.49	72,881
ROI Baseline <sup>1</sup>	43,459	8,523	13,201	3,856	614	33,439	2,264,313
<b>Percentage of ROI</b>	<b>0.77%</b>	<b>2.35%</b>	<b>0.38%</b>	<b>0.93%</b>	<b>3.45%</b>	<b>0.04%</b>	<b>3.22%</b>

Source: (EPA, 2020b)

% = percent; AFB = Air Force Base; CO = carbon monoxide; CO<sub>2e</sub> = carbon dioxide equivalent; NO<sub>x</sub> = nitrogen oxides; PM<sub>10</sub> or PM<sub>2.5</sub> = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO<sub>x</sub> = sulfur oxides; VOC = volatile organic compound

Note:

1. The ROI for Ellsworth AFB emissions includes Meade and Pennington Counties in South Dakota. See Table 3.3-4 and Table 3.3-5 in the EIS.

1 **ES.4.4.2.2 Dyess AFB Alternative**

2 Under the Dyess AFB Alternative, air emissions at Dyess AFB due to increased personnel  
 3 and training operations would increase from the ROI baseline. However, emissions of all  
 4 criteria pollutants other than CO would increase by less than 3.5 percent. CO emissions  
 5 would decrease under the Dyess AFB Alternative. B-21 flight operations in the SUAs  
 6 would typically occur higher than the B-1 currently, so emissions in the SUAs would  
 7 decrease or remain nominal. Therefore, there would be no adverse impacts to regional  
 8 air quality.

9 Air quality impacts from construction/demolition/renovation activities would be minor and  
 10 temporary. Particulate matter impacts could be reduced through the use of best  
 11 management practices (BMPs), such as spraying with water and covering of haul loads.  
 12 Additionally, construction would likely be phased, which would serve to further minimize  
 13 impacts over the length of the construction timeframe.

14 **Snapshot**

15 Changes in pollutant emissions associated with the Snapshot Scenario personnel under  
 16 the Dyess AFB Alternative would range between 0.00 and 0.33 percent of the ROI when  
 17 compared with the baseline emissions. Emissions of all criteria pollutants from airfield  
 18 operations would increase from the baseline levels except for CO, which would decrease  
 19 by 76.25 tons per year. The highest increase would be for sulfur oxides, which would  
 20 increase by 18.67 percent over the ROI baseline for Taylor County.

21 Emissions from operations in the PRTC, Lancer MOA, and Pecos MOA would decrease  
 22 under the Snapshot Scenario because the B-21 would not fly below the mixing layer and  
 23 B-1 operations would decrease. There would not be any B-1 or B-21 operations in the  
 24 Brownwood MOA below the mixing layer.

25 **Summary of Dyess AFB Alternative Air Quality Environmental Consequences**

26 Table ES-16 summarizes the estimated annual emissions for personnel, aircraft, and  
 27 construction under the Dyess AFB Alternative and compares them with the emissions  
 28 estimated for the No Action Alternative at Dyess AFB.

**Table ES-16. Summary of Dyess AFB Alternative Emissions**

Source	Pollutants (tons/year)						
	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>x</sub>	VOC	CO <sub>2e</sub>
Dyess AFB Alternative Personnel Emissions	161.03	11.66	0.29	0.25	0.10	13.67	14,740
Dyess AFB Alternative Aircraft Emissions	191.56	431.35	55.59	45.75	30.61	48.26	92,527
Dyess AFB Alternative Facilities Construction and Demolition Emissions	16.64	22.16	684.36	0.86	0.06	36.05	5,886

*Continued on the next page...*

**Table ES-16. Summary of Dyess AFB Alternative Emissions**

Source	Pollutants (tons/year)						
	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>x</sub>	VOC	CO <sub>2e</sub>
Dyess AFB Alternative WGF Construction Emissions	3.92	3.69	12.57	0.15	0.01	1.20	944
Total Dyess AFB Alternative Emissions	373.15	468.86	752.81	47.01	30.78	99.18	114,097
Total Dyess AFB No Action Alternative Emissions	389.91	277.18	46.04	31.77	29.35	60.37	99,584
Net Change from No Action Alternative	-16.76	191.68	706.77	15.24	1.43	38.81	14,514
ROI Baseline <sup>1</sup>	14,298	4,626	6,598	1,250	50.30	8,477	1,243,235
<b>Net Change as Percentage of ROI</b>	<b>-0.12%</b>	<b>4.14%</b>	<b>10.71%</b>	<b>1.22%</b>	<b>2.84%</b>	<b>0.46%</b>	<b>1.17%</b>

Source: (EPA, 2020b)

- = minus; % = percent; AFB = Air Force Base; CO = carbon monoxide; CO<sub>2e</sub> = carbon dioxide equivalent; NO<sub>x</sub> = nitrogen oxides; PM<sub>10</sub> or PM<sub>2.5</sub> = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO<sub>x</sub> = sulfur oxides; VOC = volatile organic compound; WGF = Weapons Generation Facility

Note:

1. The ROI for Dyess AFB emissions is Taylor County, Texas. See Table 3.3-2 and Table 3.3-3 in the EIS.

1 **ES.4.4.2.3 Ellsworth AFB Alternative**

2 Under the Ellsworth AFB Alternative, air emissions at Ellsworth AFB due to increased  
 3 personnel and training operations would decrease from the ROI baseline for all criteria  
 4 pollutants except for nitrogen oxides emissions, which would increase by approximately  
 5 1.6 percent. The B-21 would typically fly higher than the B-1 currently, so emissions in  
 6 the PRTC would decrease for all criteria pollutants. Emissions of all criteria pollutants  
 7 associated with airfield operations would decrease from the baseline levels except for  
 8 nitrogen oxides, which would increase by 131.55 tons per year. This represents only  
 9 1.54 percent of the ROI baseline for Meade and Pennington Counties. Therefore, there  
 10 would be no adverse impacts to regional air quality.

11 Air quality impacts from construction/demolition/renovation activities would be minor and  
 12 temporary. Particulate matter impacts could be reduced through the use of BMPs, such  
 13 as spraying with water and covering of haul loads. Additionally, construction would likely  
 14 be phased, which would serve to further minimize impacts over the length of the  
 15 construction timeframe.

16 **Snapshot**

17 Changes in pollutant emissions associated with the Snapshot Scenario personnel under  
 18 the Ellsworth AFB Alternative would range between 0.00 and 0.19 percent of the ROI  
 19 when compared with the baseline emissions. Emissions of CO and volatile organic  
 20 compounds from airfield operations would decrease slightly and all other criteria  
 21 pollutants would increase up to 1.99 percent from the baseline levels at Ellsworth AFB.  
 22 Emissions from operations in the PRTC would decrease under the Snapshot Scenario  
 23 because the B-21 would not fly below the mixing layer and B-1 operations would  
 24 decrease.

1 **Summary of Ellsworth AFB Alternative Air Quality Environmental Consequences**

2 Table ES-17 summarizes the estimated annual emissions for personnel, aircraft, and  
 3 construction under the Ellsworth AFB Alternative and compares them with the emissions  
 4 estimated for the No Action Alternative at Ellsworth AFB.

**Table ES-17. Summary of Ellsworth AFB Alternative Emissions**

Source	Pollutants (tons/year)						
	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>x</sub>	VOC	CO <sub>2e</sub>
Ellsworth AFB Alternative Personnel Emissions	160.71	12.45	0.41	0.36	0.09	14.21	12,606
Ellsworth AFB Alternative Aircraft Emissions	144.57	322.87	42.6	31.2	20.07	2.56	60,682
Ellsworth AFB Alternative Facilities Construction and Demolition Emissions	18.08	25.49	806.37	0.91	0.06	41.43	6,266
Ellsworth AFB Alternative WGF Construction Emissions	5.05	5.29	12.61	0.19	0.01	1.41	1,416
Total Ellsworth AFB Alternative Emissions	328.41	366.10	861.99	32.66	20.23	59.61	80,970
Total Ellsworth AFB No Action Alternative Emissions	336.45	200.28	49.76	35.74	21.17	14.49	72,881
Net Change from No Action Alternative	-8.04	165.82	812.23	-3.08	-0.94	45.12	8,089
ROI Baseline <sup>1</sup>	43,459	8,523	13,201	3,856	614	33,439	2,264,313
<b>Net Change as Percentage of ROI</b>	<b>-0.02%</b>	<b>1.95%</b>	<b>6.15%</b>	<b>-0.08%</b>	<b>-0.15%</b>	<b>0.13%</b>	<b>0.36%</b>

Source: (EPA, 2020b)

% = percent; - = minus; AFB = Air Force Base; CO = carbon monoxide; CO<sub>2e</sub> = carbon dioxide equivalent; NO<sub>x</sub> = nitrogen oxides; PM<sub>10</sub> or PM<sub>2.5</sub> = particulate matter with a diameter less than or equal to 10 or 2.5 microns, respectively; ROI = region of influence; SO<sub>x</sub> = sulfur oxides; VOC = volatile organic compound; WGF = Weapons Generation Facility

Note:

1. The ROI for Ellsworth AFB emissions includes Meade and Pennington Counties in South Dakota. See Table 3.3-4 and Table 3.3-5 in the EIS.

5 **ES.4.5 Land Use**

6 **ES.4.5.1 Affected Environment**

7 Land use refers to the management and use of land by people. Attributes of land use  
 8 include general land use patterns, land ownership, land management plans, and special  
 9 use areas. Typical land uses include residential, commercial, industrial, agricultural,  
 10 transportation, communication/utilities, military, public/institutional, and recreational. Land  
 11 use also includes areas set aside for preservation or protection of natural resources or  
 12 unique features. Management plans, policies, ordinances, zoning, and regulations  
 13 determine the types of uses that are allowable or that protect specially designated or  
 14 environmentally sensitive uses. Typically, the primary objectives of land use planning are  
 15 to ensure managed growth and compatible uses relative to adjacent properties.

16 The ROI for land use includes all existing areas within the alternative MOB 1 locations  
 17 (Dyess AFB and Ellsworth AFB), as well as adjacent off-base land areas that would  
 18 potentially be affected by noise and safety risks associated with B-21 operations. The

1 ROI also includes all land areas under the airspace of the PRTC and the Brownwood,  
2 Lancer, and Pecos MOAs.

### 3 **ES.4.5.2 Environmental Consequences**

#### 4 **ES.4.5.2.1 No Action Alternative Consequences**

5 There would be no change to existing noise zones or accident potential zones resulting  
6 from aircraft operations. Incompatible land use would continue, but impacts would be less  
7 than significant due to the relatively small area affected. There are no known USAF  
8 initiatives that would result in ground-disturbing activities that would cause changes to  
9 land use under the PRTC, Lancer MOA, Brownwood MOA, or Pecos MOA airspace.  
10 Aircraft operations would continue at current levels because the B-21 MOB 1 beddown  
11 would not occur.

12 On-base development at Dyess AFB or Ellsworth AFB would continue to adhere to  
13 existing land use planning procedures and requirements. Any future development  
14 projects would be subject to project-specific environmental review. There would be no  
15 significant impacts to land use under the No Action Alternative.

#### 16 **ES.4.5.2.2 Dyess AFB Alternative**

17 On-base development at Dyess AFB resulting from the beddown would occur in  
18 accordance with the established tiering system and with guidance in the base's  
19 Installation Development Plan, Joint Land Use Study, Air Installation Compatible Use  
20 Zone study, Installation Complex Encroachment Management Action Plan, and future  
21 land use plan. There would be an overall decrease of on-base and off-base areas  
22 encompassed by noise levels greater than 65 dB DNL. Due to the overall reduction in  
23 on-base and off-base noise levels, there would be no adverse impacts to land use  
24 resulting from the B-21 beddown under the Dyess AFB Alternative. Potentially, there  
25 would be beneficial impacts in the context of land use compatibility.

26 Noise levels under the airspace of the PRTC and the Lancer, Brownwood, and Pecos  
27 MOAs would either decrease or remain the same relative to the No Action Alternative and  
28 would be well below 65 dB DNL. There would be no significant impacts to land use due  
29 to airspace and range utilization under the Dyess AFB Alternative.

30 All on-base development activities at Dyess AFB associated with the B-21 beddown  
31 would be conducted in accordance with installation land use planning procedures and  
32 requirements. There would be no change to existing land use designations. No significant  
33 impacts would result from the Dyess AFB Alternative.

#### 34 **ES.4.5.2.3 Ellsworth AFB Alternative**

35 Any on-base development at Ellsworth AFB resulting from the beddown would occur in  
36 accordance with guidance in the base's Installation Development Plan, Joint Land Use  
37 Study, and Air Installation Compatible Use Zone study, and incompatible land use would



1 not be expected. There would be an overall decrease of on-base and off-base areas  
2 encompassed by noise levels greater than 65 dB DNL. Due to the overall reduction in  
3 on-base and off-base noise levels, there would be no adverse impacts to on-base and  
4 off-base land use and there would potentially be beneficial impacts in the context of  
5 off-base land use compatibility in developed portions of Box Elder and other adjacent  
6 communities.

7 Noise levels under PRTC airspace would decrease from the No Action Alternative and  
8 there would be no significant impacts to land use due to airspace and range utilization  
9 under the Ellsworth AFB Alternative.

10 All on-base development activities at Ellsworth AFB associated with the B-21 beddown  
11 would be conducted in accordance with installation land use planning procedures and  
12 requirements. There would be no change to existing land use designations. No significant  
13 impacts to land use would result from implementation of the Ellsworth AFB Alternative.

## 14 **ES.4.6 Socioeconomics**

### 15 **ES.4.6.1 Affected Environment**

16 Socioeconomic resources are defined as the basic attributes associated with human  
17 activities. Of particular interest are the population characteristics; economic factors  
18 including employment and income; and public services including schools, law  
19 enforcement, and emergency services. Actions that impact these socioeconomic  
20 indicators may have effects on other socioeconomic factors such as housing availability.

21 The ROI for the socioeconomics analysis focuses on the area most affected by the action  
22 alternative. Dyess AFB is located immediately west of Abilene, Texas. The ROI for Dyess  
23 AFB is the Abilene Metropolitan Statistical Area (MSA), which includes Taylor, Jones, and  
24 Callahan Counties. Ellsworth AFB is located in Meade and Pennington Counties in South  
25 Dakota. These two counties comprise the ROI for Ellsworth AFB. The ROI also includes  
26 areas under the Lancer MOA, Pecos MOA, Brownwood MOA, and the PRTC.

### 27 **ES.4.6.2 Environmental Consequences**

#### 28 **ES.4.6.2.1 No Action Alternative Consequences**

29 Under the No Action Alternative, there would be no personnel changes. Population,  
30 employment, housing, education, and public services in the ROI would continue to follow  
31 existing trends and grow at average annual growth rates similar to those experienced  
32 over the last several years. Additionally, there would be no new construction, demolition,  
33 or renovation activities required, and no socioeconomic effects would result.

#### 34 **ES.4.6.2.2 Dyess AFB Alternative**

35 Under the Dyess AFB Alternative, there would be a total end state of 14,098 active  
36 military, civilians, contractors, and dependents, which equates to approximately  
37 3,953 more people in the ROI than under the No Action Alternative.

1 There would be a total of 7,419 dependents at the end state, which is approximately  
2 2,308 more than under the No Action Alternative. Of the 7,419 dependents, approximately  
3 1,951 would be children of school age (5 to 18 years old), a change of 727 from the No  
4 Action Alternative, and would be enrolled in the Abilene Independent School District within  
5 the ROI.

6 An end state of 6,014 active military and 665 civilian USAF employees would have a  
7 direct impact of 6,679 jobs. Direct jobs would have an impact of 2,232 indirect jobs, with  
8 a value of \$84,874,718; this would be approximately 1,645 more direct jobs, 477 indirect  
9 jobs, and a \$19,945,461 value from indirect jobs compared to the No Action Alternative.

10 An end state of 6,014 active military personnel would result in approximately  
11 1,347 personnel on base and 4,667 personnel off base, with a total demand for  
12 4,282 housing units; this would be an increase of 1,170 units above what would be  
13 demanded under the No Action Alternative.

14 There would be greater demand for public service professionals in the Abilene MSA ROI.  
15 For example, to keep the level of service (LOS) similar to the national average,  
16 approximately 22 medical professionals, 26 career firefighters, 85 volunteer firefighters,  
17 and 39 law enforcement personnel may be required to support the incoming  
18 14,098 personnel and dependents associated with the Dyess AFB Alternative. This would  
19 represent an estimated change of 6 medical professionals, 7 career firefighters,  
20 24 volunteer firefighters, and 11 law enforcement personnel. A greater number of public  
21 service professionals may be required during construction activities.

22 Approximately 496 people are estimated to reside within noise levels of 65 dB DNL or  
23 greater, representing a decrease of 922 people from the No Action Alternative. The  
24 number of homes whose property values are adversely impacted by aircraft noise would  
25 also decrease under this alternative.

26 Noise levels in the Lancer MOA, Pecos MOA, and Brownwood MOA, and the PRTC would  
27 either decrease or not change from the No Action Alternative. These noise levels are well  
28 below the EPA level of 55 dB DNL below which no effects to public health and welfare  
29 would occur (EPA, 1974), therefore no significant impacts are anticipated.

30 Construction, demolition, and renovations for base facilities, infrastructure and the WGF  
31 under the Dyess AFB Alternative would result in near-term economic benefits to the ROI  
32 driven by an increase in construction spending.

### 33 **Snapshot**

34 Under the Snapshot Scenario at Dyess AFB, there would be an increase of  
35 4,528 personnel and 2,497 dependents compared to the No Action Alternative. Of the  
36 additional dependents, approximately 772 would be children of school age (i.e., 5 to  
37 18 years old) entering the local area schools. The crowding of students would likely  
38 increase the student to teacher ratio and put additional pressure on school resources  
39 during the transition. The additional military personnel associated with the Snapshot  
40 Scenario would increase housing demand by approximately 1,340 more housing units

1 compared to under the No Action Alternative. There would also be an increased demand  
2 for public service personnel throughout the Abilene MSA, which may require up to an  
3 additional 7 medical professionals, 8 career firefighters, 27 volunteer firefighters, and  
4 13 law enforcement professionals to keep the personnel per capita ratios similar to the  
5 existing national averages. Socioeconomic impacts for the Snapshot Scenario would be  
6 temporary during the transition period.

### 7 **ES.4.6.2.3 Ellsworth AFB Alternative**

8 Under the Ellsworth AFB Alternative, there would be a total end state of 13,743 active  
9 military, civilians, contractors, and dependents under this alternative, which equates to  
10 approximately 3,147 more people in the ROI than under the No Action Alternative.

11 There would be a total of 7,795 dependents at the end state, which is approximately  
12 1,464 more than under the No Action Alternative. Of the 7,795 dependents, approximately  
13 2,358 would be children of school age (5 to 18 years old), a change of 284 from the No  
14 Action Alternative, and would be enrolled in the local school districts within the ROI.

15 An end state of 4,860 active military and 930 civilian USAF employees would have a  
16 direct impact of 5,790 jobs. Direct jobs would have an impact of 2,110 indirect jobs, with  
17 a value of \$86,518,200; this would be approximately 1,664 more direct jobs, 582 indirect  
18 jobs, and \$23,878,400 value from indirect jobs compared to the No Action Alternative.

19 An end state of 4,860 active military personnel would result in approximately 1,638  
20 personnel on base and 3,222 personnel off base, with a total demand for 2,956 houses;  
21 this would be an increase of 1,011 units above what would be demanded under the No  
22 Action Alternative.

23 There would be greater demand for public service professionals in Meade and  
24 Pennington Counties. For example, to keep the LOS similar to the national average,  
25 approximately 22 medical professionals, 25 career firefighters, 83 volunteer firefighters,  
26 and 38 law enforcement personnel may be required to support the incoming  
27 13,743 personnel and dependents associated with the Ellsworth AFB Alternative. This  
28 would represent an estimated change of 5 medical professionals, 6 career firefighters,  
29 19 volunteer firefighters, and 9 law enforcement personnel. A greater number of public  
30 service professionals may be required during construction activities

31 Approximately 358 people are estimated to reside within noise levels of 65 dB DNL or  
32 greater, representing a decrease of 1,627 people from the No Action Alternative. The  
33 number of homes whose property values are adversely impacted by aircraft noise would  
34 also decrease under this alternative.

35 Under the Ellsworth AFB Alternative, noise levels in the PRTC would decrease from the  
36 No Action Alternative. These noise levels are well below the EPA level of 55 dB DNL  
37 below which no effects to public health and welfare would occur (EPA, 1974). Therefore,  
38 no significant impacts from noise would occur.

1 Construction, demolition, and renovations for base facilities, infrastructure, and the WGF  
2 under the Ellsworth AFB Alternative would result in near-term economic benefits to the  
3 ROI driven by an increase in construction spending. The location of the North WGF Site  
4 and South WGF Site would have no change on the associated socioeconomic impacts.

### 5 **Snapshot**

6 Under the Snapshot Scenario at Ellsworth AFB, there would be an increase of  
7 3,802 personnel and 1,755 dependents compared to the No Action Alternative. Of the  
8 additional dependents, approximately 383 would be children of school age (i.e., 5 to 18  
9 years old) entering the local area schools. The crowding of students would likely increase  
10 the student to teacher ratio and put additional pressure on school resources during the  
11 transition. The additional military personnel associated with the Snapshot Scenario would  
12 increase housing demand by approximately 1,180 more housing units compared to under  
13 the No Action Alternative. There would also be an increased demand for public service  
14 personnel throughout the Abilene MSA, which may require up to an additional 6 medical  
15 professionals, 7 career firefighters, 23 volunteer firefighters, and 11 law enforcement  
16 professionals to keep the personnel per capita ratios similar to the existing national  
17 averages. Socioeconomic impacts described above for the Snapshot Scenario would be  
18 temporary during the transition period.

### 19 **ES.4.7 Environmental Justice**

#### 20 **ES.4.7.1 Affected Environment**

21 Environmental justice addresses impacts to minority and low-income populations. If there  
22 is a potential for the Proposed Action to result in adverse impacts to resource areas that  
23 may affect human populations, analysis is conducted to determine whether environmental  
24 justice Communities of Comparison would be disproportionately impacted. This analysis  
25 focuses on increased aircraft noise resulting from the Proposed Action as the primary  
26 impact to these populations. Noise from construction activities is not applicable because  
27 all construction would occur within installation boundaries and noise would be intermittent  
28 and temporary. Per USAF guidelines for environmental justice analysis, Census data (i.e.,  
29 percentages of populations identifying themselves as minority, low-income, etc.) was  
30 used to determine potential impacts to these populations. The guidelines also address  
31 youth (under 18) and elderly (65 and older) as additional sensitive populations. The  
32 analysis is completed to determine if implementation of the Proposed Action would result  
33 in disproportionate noise impacts to environmental justice populations (i.e., DNL of 65 dB  
34 or greater).

35 Environmental justice analysis overlays the 65 dB DNL contour on the census data  
36 polygons. For Dyess AFB, there are five census tracts containing six block groups, which  
37 are partially or wholly exposed to DNL of 65 dB or greater under baseline conditions. For  
38 Ellsworth AFB, there are seven census tracts containing 11 block groups which are  
39 partially or wholly exposed to DNL of 65 dB or greater under baseline conditions.

No adverse impacts to environmental justice or sensitive populations are anticipated from the use of PRTC or the Brownwood MOA, Lancer MOA, and Pecos MOA airspace and ranges by the B-21 aircraft, so those areas are not further discussed for this resource area.

## ES.4.7.2 Environmental Consequences

### ES.4.7.2.1 No Action Alternative Consequences

Under the No Action Alternative, residents within the Dyess AFB and Ellsworth AFB ROI would continue to be exposed to noise levels described under baseline conditions. Table ES-18 identifies the number of environmental justice and sensitive populations currently impacted under the No Action Alternative.

**Table ES-18. Number of Residents Exposed to Aircraft Noise in the Region of Influence Under Existing Conditions (No Action – Dyess AFB)**

Average Noise Levels	Total Affected Off-Base Population	Minority	Low-Income	Youth	Elderly
65–69 dB	700	202	49	189	94
70–74 dB	448	142	28	122	60
75–79 dB	180	76	8	49	24
80–84 dB	64	28	2	17	8
85+ dB	27	12	1	8	3
<b>Total &gt;65 dB DNL<sup>1</sup></b>	<b>1,419</b>	<b>460</b>	<b>88</b>	<b>385</b>	<b>189</b>

Source: (U.S. Census Bureau, 2018d; U.S. Census Bureau, 2018e) Block group data used.

> = greater than; AFB = Air Force Base; dB = decibel; DNL = day-night average sound level

Note:

1. During data analysis, numbers were rounded and then totaled.

Table ES-19 identifies the number of environmental justice and sensitive populations currently impacted under the No Action Alternative.

**Table ES-19. Number of Residents Exposed to Aircraft Noise in the Region of Influence Under Existing Conditions (No Action – Ellsworth AFB)**

Average Noise Levels	Total Affected Off-Base Population	Minority	Low-Income	Youth	Elderly
65–69 dB	1,313	186	166	418	114
70–74 dB	391	75	59	136	28
75–79 dB	190	43	39	79	12
80–84 dB	78	10	15	29	6
85+ dB	13	4	3	6	1
<b>Total &gt;65 dB DNL<sup>1</sup></b>	<b>1,985</b>	<b>318</b>	<b>282</b>	<b>668</b>	<b>161</b>

Source: (U.S. Census Bureau, 2018d; U.S. Census Bureau, 2018e) Block group data used.

> = greater than; AFB = Air Force Base; dB = decibel; DNL = day-night average sound level

Note:

1. During data analysis, numbers were rounded and then totaled.

1 **ES.4.7.2.2 Dyess AFB Alternative**

2 Implementation of the Dyess AFB Alternative would result in a 65 percent decrease in  
3 total residents exposed to noise levels greater than 65 dB once all B-21 aircraft have  
4 replaced the B-1, and a 39 percent decrease during the Dyess AFB Alternative Snapshot  
5 Scenario.

6 Environmental justice and sensitive populations exposed to noise levels greater than  
7 65 dB would also decrease. Minority and low-income residents would decrease by 63 and  
8 73 percent, respectively; youth and elderly residents would decrease by 70 and  
9 66 percent, respectively, under the Dyess AFB Alternative. Under the Dyess AFB  
10 Alternative Snapshot Scenario, minority and low-income residents would decrease by  
11 38 and 44 percent, respectively; youth and elderly residents would decrease by 39 and  
12 37 percent, respectively.

13 Therefore, positive impacts to environmental justice and sensitive populations would  
14 occur, due to decreased noise levels in the ROI.

15 **ES.4.7.2.3 Ellsworth AFB Alternative**

16 Implementation of the Ellsworth AFB Alternative would result in an 82 percent decrease  
17 in total residents exposed to noise once all B-21 aircraft have replaced the B-1, and a  
18 51 percent decrease during the Ellsworth AFB Alternative Snapshot Scenario.

19 Environmental justice and sensitive populations exposed to noise levels greater than  
20 65 dB would also decrease. Minority and low-income residents would decrease by 86 and  
21 82 percent, respectively; youth and elderly residents would decrease by 83 and  
22 81 percent, respectively, under the Ellsworth AFB Alternative. Under the Ellsworth AFB  
23 Alternative Snapshot Scenario, minority and low-income residents would decrease by  
24 52 and 43 percent, respectively; youth and elderly residents would decrease by 48 and  
25 52 percent, respectively.

26 Therefore, positive impacts to environmental justice and sensitive populations would  
27 occur, due to decreased noise levels in the ROI.

28 **ES.4.8 Biological Resources**

29 **ES.4.8.1 Affected Environment**

30 Biological resources include the plant and animal species, habitats, and ecological  
31 relationships of the land and water areas within the ROI, which is defined as the area  
32 directly or indirectly affected by the Proposed Action. Particular consideration is given to  
33 sensitive species, which are those species protected under federal or state law, including  
34 threatened and endangered species, migratory birds, and bald and golden eagles.

35 For the purposes of this EIS, sensitive and protected biological resources include plant  
36 and animal species that are federally listed or state-listed for protection. Identifying which

1 species occur in an area affected by an action may be accomplished through literature  
2 reviews and coordination with appropriate federal and state regulatory agency  
3 representatives, resource managers, and other knowledgeable experts.

4 The EIS uses the Integrated Natural Resources Management Plan for each installation,  
5 other USAF NEPA documents, and U.S. Fish and Wildlife Service (USFWS) geographic  
6 information system data to identify and describe biological resources in the ROI. No  
7 federally listed plant or animal species or designated critical habitat are known to occur  
8 on Dyess AFB or Ellsworth AFB (Laurence, 2020; Dyess AFB, 2017a; USFWS, 2020a;  
9 USFWS, 2020b; Ellsworth AFB, 2020a).

10 Four bird and three mammal species federally listed as threatened or endangered have  
11 the potential to occur under the PRTC, but there is no designated critical habitat. There  
12 are four federally listed bird species with the potential to occur under the Lancer MOA,  
13 five federally listed bird species with the potential to occur under the Brownwood MOA,  
14 and five federally listed bird and two mammal species (one endangered and one  
15 candidate) with the potential to occur under the Pecos MOA. Only the Pecos MOA has  
16 designated critical habitat for a fish species, which was excluded from analysis because  
17 no ground disturbance would occur under the existing airspace.

## 18 **ES.4.8.2 Environmental Consequences**

19 Changes to personnel would not impact biological resources and therefore are not  
20 discussed further for this resource area.

### 21 **ES.4.8.2.1 No Action Alternative Consequences**

22 On-base biological resources at Dyess AFB and Ellsworth AFB would continue to be  
23 managed through each of the installations' Integrated Natural Resources Management  
24 Plan programs. Aircraft operations and airspace use under current operational  
25 parameters would continue at baseline levels.

26 For biological resources potentially impacted under the proposed airspace areas, aircraft  
27 operations and airspace use under current operational parameters would continue at  
28 baseline levels, because the B-21 MOB 1 beddown would not occur. Previous NEPA  
29 analyses generally concluded that aircraft operations within the training areas would not  
30 significantly impact any biological resources. Baseline noise levels in the airspace is well  
31 below the 65 dB level that would potentially affect noise-sensitive wildlife listed species.  
32 Potential bird-aircraft strikes could occur where migratory flyways converge.

### 33 **ES.4.8.2.2 Dyess AFB Alternative**

34 Under the Dyess AFB Alternative, the annual estimated number of total aircraft operations  
35 would vary by airspace. Decreases in air operations would occur at Dyess AFB, PRTC,  
36 Lancer MOA, and Brownwood MOA. An increase in air operations would occur at the  
37 Pecos MOA, potentially increasing bird/wildlife-aircraft strikes. Adherence to the existing  
38 bird/wildlife-aircraft strike hazard program and the USFWS-issued Depredation Permit

1 conditions would minimize the risk of bird-aircraft strikes at Dyess AFB, including those  
2 for migratory birds (including Birds of Conservation Concern) and special status bird  
3 species, to negligible levels.

4 Noise levels would decrease from the baseline conditions analyzed under the No Action  
5 Alternative. Because the B-21 is projected to be generally quieter and tends to fly higher  
6 than the B-1, the noise in the area, the number of acres, and wildlife exposed would  
7 decrease overall, as a result of establishing the B-21 MOB 1 beddown at Dyess AFB.

8 Activities associated with construction, renovation, and demolition projects would occur  
9 in previously developed, turf, or landscaped areas. Approximately 345 acres of land would  
10 be disturbed for facilities and infrastructure projects listed in Table ES-2, of which,  
11 approximately 106 acres, or 31 percent of the proposed construction footprint, would be  
12 newly impacted areas. These areas do not provide high quality habitat for wildlife species.  
13 However, to the extent practicable, Dyess AFB would avoid tree removal during migratory  
14 bird nesting season (March through August).

15 No significant impacts to vegetation, wildlife, or special status would result from  
16 implementation of the Dyess AFB Alternative.

17 **ES.4.8.2.3 Ellsworth AFB Alternative**

18 Under the Ellsworth AFB Alternative, the annual estimated number of total aircraft  
19 operations would increase. Any increase in operations would potentially increase the  
20 potential for bird/wildlife aircraft strikes. Adherence to the existing bird/wildlife-aircraft  
21 strike hazard program and the USFWS-issued Depredation Permit conditions would  
22 minimize the risk of bird-aircraft strikes at Ellsworth AFB, including those for migratory  
23 birds (including Birds of Conservation Concern) and special status bird species, to  
24 negligible levels.

25 Noise levels would decrease from the baseline conditions analyzed under the No Action  
26 Alternative. Because the B-21 is projected to be generally quieter and tends to fly higher  
27 than the B-1, the noise in the area, the number of acres, and wildlife exposed would  
28 decrease overall, as a result of establishing the B-21 MOB 1 beddown at Ellsworth AFB.

29 Activities associated with construction, renovation, and demolition projects would occur  
30 in previously developed, turf, or landscaped areas. Approximately 394 acres of land would  
31 be disturbed for facilities and infrastructure projects listed in Table ES-3, of which,  
32 approximately 78 acres, or 20 percent of the proposed construction footprint, would be  
33 newly impacted areas. The North WGF Site occurs within 50 acres of unimproved areas,  
34 consisting of native and introduced grasses and forbs. The South WGF Site Impacts  
35 occurs within 39 acres of unimproved areas consisting of native and introduced grasses  
36 and forbs. These areas do not provide high quality habitat for wildlife species. A reduction  
37 in low-quality habitat is not considered significant and would not result in population level  
38 effects to wildlife species that occur on the base.



1 No significant impacts to vegetation, wildlife, or special status would result from  
2 implementation of the Ellsworth AFB Alternative.

### 3 **ES.4.9 Cultural Resources**

#### 4 **ES.4.9.1 Affected Environment**

5 Cultural resources consist of prehistoric and historic sites, structures, artifacts, and any  
6 other physical or traditional evidence of human activity considered relevant to a particular  
7 culture or community for scientific, traditional, religious, or other reasons. For regulatory  
8 purposes, cultural resources are assessed to determine if they are significant and exhibit  
9 integrity, in accordance with the National Register criteria (36 CFR Part 63) to qualify for  
10 listing in the National Register of Historic Places.

11 This section describes known historic properties within the affected areas that are eligible  
12 for listing in the National Register of Historic Places. As the affected environment is limited  
13 to areas already used by the USAF for current bomber operations, information is drawn  
14 from existing studies, cultural resource management plans, and previous environmental  
15 documents. The USAF has initiated government-to-government consultation with Native  
16 American tribes with potential interest in the Proposed Action and is currently engaging  
17 the appropriate State Historic Preservation Officers (SHPOs) and other consulting parties  
18 as they complete the necessary reviews under Section 106 of the National Historic  
19 Preservation Act.

20 The Area of Potential Effects to historic properties is the ROI for cultural resources in the  
21 Draft EIS. The Area of Potential Effects for this Proposed Action includes areas directly  
22 or indirectly affected by construction and implementation of the proposed B-21 MOB 1  
23 beddown at Dyess AFB or Ellsworth AFB, as well as areas beneath the airspace to be  
24 utilized for B-21 training operations.

#### 25 **ES.4.9.2 Environmental Consequences**

##### 26 **ES.4.9.2.1 No Action Alternative Consequences**

27 Under the No Action Alternative, cultural resources at Dyess AFB and Ellsworth AFB  
28 would continue to be managed in accordance with the Integrated Cultural Resources  
29 Management Plan. No historic properties would be affected because the B-21 would not  
30 beddown at either location. Aircraft from Dyess AFB would continue to utilize the PRTC  
31 and Lancer, Brownwood, and Pecos MOAs and aircraft from Ellsworth AFB would  
32 continue to utilize the PRTC for training operations. Operations would not exceed levels  
33 or parameters currently authorized for these training areas. All PRTC-related B-21 air  
34 operations would adhere to the legal descriptions for the PRTC MOAs published in the  
35 National Flight Data Digest (effective date: September 17, 2015). The PRTC  
36 Programmatic Agreement is currently being renewed. The new agreement is expected to  
37 contain similar stipulations as the 2014 PRTC Programmatic Agreement which are  
38 expected to minimize potential adverse effects to historic properties under the airspace  
39 and guide ongoing coordination with the tribes and other stakeholders.

1 **ES.4.9.2.2 Dyess AFB Alternative**

2 Noise contours for Dyess AFB show that noise received by each of the historic properties  
3 on the base would be expected to decrease under the Dyess AFB Alternative. Noise  
4 levels are well below the thresholds that might cause damage to structures. There would  
5 be no change in noise levels compared to the No Action Alternative at PRTC and the  
6 Brownwood MOA. Additionally, noise levels within the Lancer MOA and the Pecos MOA  
7 would be less than the No Action Alternative. Furthermore, the B-21 generally flies higher  
8 than the B-1, so the visibility of the aircraft from historic properties below these airspaces  
9 would decrease. As a result, no adverse impacts to cultural resources are anticipated.  
10 The USAF would continue to adhere to stipulations in the 2014 PRTC Programmatic  
11 Agreement until the new agreement is renegotiated.

12 Construction, demolition, and renovation activities would not directly impact any historic  
13 properties at Dyess AFB.

14 **ES.4.9.2.3 Ellsworth AFB Alternative**

15 Noise contours for the Ellsworth AFB show that noise received by each of the historic  
16 properties on the base would decrease under the Ellsworth AFB Alternative. In all cases,  
17 these noise levels are well below the thresholds that might cause damage to structures.  
18 Noise levels under the Ellsworth AFB Alternative at PRTC would also decrease from the  
19 No Action Alternative. Since the B-21 flies higher than the B-1, the visibility of the aircraft  
20 from historic properties below these airspaces would decrease. Additionally, the USAF  
21 would continue to adhere to stipulations in the 2014 PRTC Programmatic Agreement until  
22 the new agreement is renegotiated. Therefore, no adverse impacts to cultural resources  
23 would occur.

24 The development of facilities and infrastructure for the Ellsworth AFB Alternative would  
25 require the demolition of three historic properties and renovation of a fourth historic  
26 property. The USAF has consulted with the South Dakota SHPO regarding the renovation  
27 of the Professional Results in Daily Efforts Hangar (PRIDE Hangar), and on February 4,  
28 2020, received concurrence that the project would result in no adverse effect. The  
29 demolition of Buildings 7258, 7260, and 7262 would result in an adverse effect to these  
30 historic properties. The USAF initiated consultation with the South Dakota SHPO and the  
31 Advisory Council on Historic Preservation to resolve this adverse effect. The South  
32 Dakota SHPO concurred that the demolition of these buildings would result in an adverse  
33 effect, and the Advisory Council on Historic Preservation declined to participate in the  
34 Section 106 consultation process (Appendix F, Cultural Resources). The Final EIS will be  
35 updated with the findings.

36 No historic properties occur within the North WGF Site location or South WGF Site  
37 location. However, based on recommendations from the South Dakota SHPO, the South  
38 WGF Site Subalternative location requires an archaeological survey for Section 106  
39 compliance because the USAF acquired this land after the 1994 archaeological survey  
40 was conducted. The Final EIS will be updated with the findings of the new archaeological

1 survey and the overall results of the Section 106 consultation with the South Dakota  
2 SHPO.

### 3 **ES.4.10 Physical Resources**

#### 4 **ES.4.10.1 Affected Environment**

5 Physical resources analyzed in the Draft EIS include topography, soils, and water.  
6 Section 3.9.1.1 of the Draft EIS provides detailed definitions of each of these features.

7 The ROI for physical resources consists of areas within and adjacent to Dyess AFB and  
8 Ellsworth AFB where soil and water resources may be directly or indirectly affected by  
9 components of the Proposed Action (e.g., construction activities). Aircraft operations  
10 within the proposed airspace would not affect physical resources at PRTC, or the  
11 Brownwood, Lancer, or Pecos MOAs. Therefore, these areas are not discussed further  
12 for this resource area.

#### 13 **ES.4.10.2 Environmental Consequences**

##### 14 **ES.4.10.2.1 No Action Alternative Consequences**

15 Under the No Action Alternative, new impacts to physical resources on Dyess AFB and  
16 Ellsworth AFB would not occur because the B-21 would not beddown at either location.  
17 However, demolition, construction, and maintenance would continue as part of normal  
18 operations and installation development, and these activities may affect physical  
19 resources. Continuing implementation of Environmental Impact Analysis Process  
20 reviews, the erosion control program, the stormwater inspection program, and associating  
21 permitting procedures would prevent significant impacts on soils at either location under  
22 the No Action Alternative. Additionally by continuing implementation of each installation's  
23 Storm Water Pollution Prevention Plan (SWPPP), Spill Prevention, Control, and  
24 Countermeasures (SPCC) Plan, and associated BMPs, significant impacts on water  
25 resources would not occur.

##### 26 **ES.4.10.2.2 Dyess AFB Alternative**

27 There would be low potential for soil erosion from land disturbance during construction,  
28 due to flat topography. The Civil Engineering Squadron Environmental Group reviews all  
29 projects and requires erosion and sediment control measures be implemented for  
30 construction projects. Coverage under a construction general permit would be required  
31 for land disturbances greater than 1 acre. The SWPPP includes BMPs for erosion and  
32 sediment control.

33 Increased runoff associated with increased impervious surfaces can be addressed  
34 through design of stormwater conveyances using established engineering standards.  
35 Increased runoff can be managed by stormwater features that treat, store, and promote  
36 infiltration of stormwater before it can impact surface waters. Stormwater management

1 controls would be implemented in accordance with requirements in Section 438 of the  
2 Energy Independence and Security Act.

3 Buildings would be sited to avoid the 100-year floodplain, where feasible, which is present  
4 in a limited area within the planned primary area of construction. The existing aircraft  
5 parking apron would need to be expanded, impacting a portion of the Northern Diversion  
6 Ditch and approximately 2 acres of floodplain delineated within the ditch (an already  
7 disturbed environment). The proposed extension of the ramp to the north would require  
8 extending the existing 10-foot by 10-foot concrete box culvert that runs west to east under  
9 the main runway, maintaining similar flow capacity and discharging to the existing lined  
10 culvert of the diversion ditch. The hydrological properties of the floodplain would not be  
11 impacted. If the Dyess AFB Alternative is chosen, a Finding of No Practicable Alternative  
12 will be included in the Record of Decision.

13 B-21 operations would not result in impacts to water quality if personnel adhere to  
14 operational requirements specified in the SWPPP, SPCC Plan, and requirements  
15 specified by the base Hazardous Material Management and Hazardous Waste Disposal  
16 Programs.

17 Additional petroleum, oil, and lubricant (POL) use and storage associated with the B-21  
18 MOB would increase the potential for spills, but this potential would be reduced through  
19 the application of industry standards in designing the POL storage facilities and  
20 adherence to the base SPCC Plan.

21 Water resources could potentially be impacted by inadvertent releases of hazardous  
22 chemicals that may occur during airfield operations and from leaking fuel storage tanks.  
23 The volume of fuels and hazardous chemicals used and volume of hazardous waste  
24 generated are not expected to change under any alternative. With continued  
25 implementation of hazardous material and hazardous waste management actions, as well  
26 as spill prevention and response plans, significant impacts would not be expected under  
27 either alternative.

28 Overall, no significant impacts to physical resources would occur under the Dyess AFB  
29 Alternative.

### 30 **ES.4.10.2.3 Ellsworth AFB Alternative**

31 There would be moderate to high soil erosion potential in areas with moderate to steep  
32 topography. The base recognizes the presence of erosion-prone areas and has included  
33 erosion and sediment control measures for moderate to steep slopes in the base SWPPP.  
34 Coverage under a construction general permit would be required for land disturbance  
35 greater than 1 acre.

36 Increased runoff associated with increased impervious surfaces can be addressed  
37 through design of stormwater conveyances using established engineering standards.  
38 Increased runoff can be managed by stormwater features that treat, store, and promote  
39 infiltration of stormwater before it can impact surface waters. Stormwater management

1 controls would be implemented in accordance with requirements in Section 438 of the  
2 Energy Independence and Security Act.

3 Buildings would be sited to avoid 100-year floodplains, where feasible. Two of the planned  
4 construction areas and the planned North WGF site include 100-year floodplains. If this  
5 subalternative is selected and the floodplain area at the North WGF Site cannot be  
6 avoided, the USAF would prepare a Finding of No Practicable Alternative and include it  
7 in the Record of Decision.

8 B-21 operations would not result in impacts to water quality if personnel adhere to  
9 operational requirements specified in the SWPPP, SPCC Plan, and requirements  
10 specified by the base Hazardous Material Management and Hazardous Waste Disposal  
11 Programs. It is particularly important that personnel recover aircraft deicing residuals from  
12 aprons as soon as practicable.

13 Additional POL use and storage associated with the B-21 MOB would increase the  
14 potential for spills, but this potential would be reduced through the application of industry  
15 standards in designing the POL storage facilities and adherence to the base SPCC Plan.

16 Water resources could potentially be impacted by inadvertent releases of hazardous  
17 chemicals that may occur during airfield operations and from leaking fuel storage tanks.  
18 The volume of fuels and hazardous chemicals used and volume of hazardous waste  
19 generated are not expected to change under any alternative. With continued  
20 implementation of hazardous material and hazardous waste management actions, as well  
21 as spill prevention and response plans, significant impacts would not be expected under  
22 either alternative.

23 Overall, no significant impacts would be expected under the Ellsworth AFB Alternative  
24 with implementation of erosion control measures in areas with moderate to steep  
25 topography, and with proper design of facilities in the 100-year floodplain.

## 26 **ES.4.11 Hazardous Materials and Hazardous and Solid Wastes**

### 27 **ES.4.11.1 Affected Environment**

28 This resource area evaluates hazardous material usage and hazardous waste generation  
29 and storage. Affected resources include Environmental Restoration Program (ERP) sites  
30 as well as the potential presence of toxic substances such as asbestos in building  
31 materials and lead in paints. This resource area also evaluates impacts associated with  
32 solid waste disposal from proposed activities such as C&D debris and municipal and solid  
33 waste. The ROI consists of installation boundaries where hazardous materials are used;  
34 where hazardous and solid wastes are generated; on-base contamination areas (i.e.,  
35 ERP sites); off-base areas potentially impacted by contamination; and off-base landfills  
36 where solid wastes are disposed of.

1 Training operations at PRTC, and the Lancer MOA, Brownwood MOA, and Pecos MOA  
2 would have no impact on the affected environment for hazardous materials, hazardous  
3 or solid wastes, or ERP sites; consequently, these are not discussed further for this  
4 resource area.

## 5 **ES.4.11.2 Environmental Consequences**

### 6 **ES.4.11.2.1 No Action Alternative Consequences**

7 Under the No Action Alternative, the B-21 would not beddown at either Dyess AFB or  
8 Ellsworth AFB and there would be no change in the storage or use of hazardous materials  
9 or the generation of solid or hazardous wastes. Ongoing activities related to the  
10 management of ERP sites would continue. As such, implementation of the No Action  
11 Alternative would not result in significant impacts at either Dyess AFB or Ellsworth AFB.

### 12 **ES.4.11.2.2 Dyess AFB Alternative**

13 Management of toxic substances and hazardous wastes would be accomplished in  
14 accordance with all regulatory requirements. Hazardous and nonhazardous waste  
15 generated from aircraft maintenance would also be managed according to established  
16 procedures. No change to permits, hazardous waste generator status, or management  
17 procedures would be required and no adverse environmental impacts are anticipated. No  
18 significant impacts related to hazardous materials would occur under the Dyess AFB  
19 Alternative.

20 The general planned areas of construction would overlap areas associated with five ERP  
21 sites on Dyess AFB; construction activities would also avoid identified per- and  
22 polyfluoroalkyl substances (PFAS) sites. Development on or near any ERP or PFAS sites  
23 would be coordinated with the state regulatory agency and other relevant stakeholders,  
24 as applicable. No significant impacts related to ERP issues are anticipated.

25 Municipal Solid Waste (MSW) would be generated as a result of new personnel assigned  
26 to Dyess AFB. The combined quantity of C&D debris and MSW generated at Dyess AFB  
27 under this alternative would not result in significant impacts to landfill capacity.  
28 Implementation of appropriate waste recycling, diversion, and management measures  
29 would further minimize any potential impacts.

### 30 **ES.4.11.2.3 Ellsworth AFB Alternative**

31 Management of toxic substances and hazardous wastes would be the same as that  
32 described for the Dyess AFB Alternative. Hazardous and nonhazardous waste generated  
33 from aircraft maintenance would also be managed according to established procedures.  
34 No change to permits, hazardous waste generator status, or management procedures  
35 would be required and no adverse environmental impacts are anticipated. No significant  
36 impacts related to hazardous materials would occur under the Ellsworth AFB Alternative.

1 The general planned areas of construction would only overlap areas associated with one  
2 ERP site on Ellsworth AFB. Development on or near any ERP or PFAS sites would be  
3 coordinated with the state regulatory agency and other relevant stakeholders, as  
4 applicable. No significant impacts related to ERP issues are anticipated.

5 MSW would be generated as a result of new personnel assigned to Ellsworth AFB. The  
6 combined quantity of C&D debris and MSW generated at Ellsworth AFB under this  
7 alternative would not result in significant impacts to landfill capacity. Implementation of  
8 appropriate waste recycling, diversion, and management measures would further  
9 minimize any potential impacts.

## 10 **ES.4.12 Health and Safety**

### 11 **ES.4.12.1 Affected Environment**

12 The health and safety resource area addresses the following concerns: flight safety,  
13 including the potential for aircraft mishaps; hazards related to day-to-day operations and  
14 construction activities; and potential impacts associated with munitions storage and  
15 explosive safety. The affected environment for flight safety and mishap risks would be the  
16 same as under those discussed for Dyess AFB for Lancer, Brownwood, and Pecos MOAs  
17 and Ellsworth AFB for PRTC. Airspace and range utilization would have no impact on the  
18 affected environment for explosive or construction safety; consequently, these are not  
19 discussed further for this resource area.

### 20 **ES.4.12.2 Environmental Consequences**

21 There would be no specific or unique health and safety impacts to changes in personnel  
22 or airspace and range utilization. Therefore, these components of the Proposed Action  
23 are not discussed further for this resource area. Potential impacts to health and safety  
24 from airfield operations at Dyess AFB and Ellsworth AFB would be associated with flight  
25 safety and mishap prevention.

#### 26 **ES.4.12.2.1 No Action Alternative Consequences**

27 Under the No Action Alternative, Dyess AFB and Ellsworth AFB would continue current  
28 operations using the B-1 aircraft. Established procedures would continue for flight safety  
29 and mishap prevention and for weapons safety. Ground operations and ongoing  
30 reconstruction activities would continue to be conducted using the same safety processes  
31 and procedures as under current operations. All actions would be accomplished by  
32 technically qualified personnel and would be conducted in accordance with applicable  
33 USAF safety requirements, approved technical data, and Air Force Occupational and  
34 Environmental Safety, Fire Protection, and Health standards; consequently, no significant  
35 impacts would occur.

1 **ES.4.12.2.2 Dyess AFB Alternative**

2 **Facilities and Infrastructure**

3 Quantity-distance (QD) arcs for aircraft parking would move from the south end of the  
4 parking apron to the north end. Additionally, general planned areas of construction  
5 located near the center and north portions of the flightline would fall within existing QD  
6 arcs. Proposed structures in these areas would undergo an explosive safety review to  
7 ensure occupancy and land uses would be compatible with these locations. Based on  
8 that review, Dyess AFB may implement compensatory measures, such as identifying  
9 which buildings need to be evacuated when munitions are loaded on certain areas of the  
10 flightline. As part of this process, existing explosive safety plans (e.g., Explosive Site Plan  
11 [ESPs] or Aircraft Parking Plans) would be updated accordingly. With implementation of  
12 these measures, there would be no adverse impacts related to explosive safety.

13 **Weapons Generation Facility**

14 The footprint for the WGF would fall within the existing QD arcs at the munitions storage  
15 area. The WGF would be used to maintain nuclear ordnance carried on the B-21. This  
16 ordnance contains nuclear components as well as components employing small  
17 quantities of conventional explosives. The WGF would be purpose-built to ensure that  
18 nuclear material and conventional explosives would be stored separately. Additionally,  
19 building design (i.e., reinforced concrete construction, interior layout, blast resistant  
20 walls), combined with would incorporate dedicated explosive safety and fire suppression  
21 systems to eliminate risks to the public. The facility would also be subject to the ESP  
22 process to ensure that appropriate QD arcs are established and adjoining land uses are  
23 compatible; consequently, there would be no adverse impacts related to explosives  
24 safety.

25 **ES.4.12.2.3 Ellsworth AFB Alternative**

26 **Facilities and Infrastructure**

27 General planned areas of construction would be located within existing QD arcs at  
28 munitions storage area, near the center the flightline, and near the south end of the  
29 runway. Potential impacts and associated measures would be the same as those  
30 described for the Dyess AFB Alternative.

31 **Weapons Generation Facility**

32 The footprint for the North WGF Site Subalternative would fall within existing QD arcs, but  
33 the South WGF Site Subalternative would not. Regardless of the subalternative selected,  
34 the WGF would be purpose-built to store B-21 ordnance and would employ dedicated  
35 explosives safety and fire suppression systems to eliminate any risk to the public. The  
36 facility would also be subject to the ESP process to ensure that appropriate QD arcs are  
37 established and adjoining land uses are compatible; consequently, there would be no  
38 adverse impacts related to explosive safety.



## 1 **ES.4.13 Transportation**

### 2 **ES.4.13.1 Affected Environment**

3 Transportation resources evaluated in the Draft EIS consist of the infrastructure  
4 components, such as public roadways and associated features (e.g., intersections,  
5 roundabouts, entry/exit points) that provide access to Dyess AFB or Ellsworth AFB, as  
6 well as the road network and associated features within the boundaries of Dyess and  
7 Ellsworth AFBs.

8 Airfield operations would not affect transportation at either Dyess AFB or Ellsworth AFB.  
9 Additionally, airspace and range utilization would not affect transportation at PRTC or the  
10 Brownwood, Lancer, or Pecos MOAs. Therefore, these components of the Proposed  
11 Action are not carried forward in the Transportation analysis.

### 12 **ES.4.13.2 Environmental Consequences**

#### 13 **ES.4.13.2.1 No Action Alternative Consequences**

14 Under the No Action Alternative, the B-21 beddown would not take place at Dyess AFB  
15 or Ellsworth AFB, and there would be no associated construction, demolition, or  
16 renovation activities. Additionally, there would be no personnel changes or associated  
17 effects to traffic operations on or adjacent to the installations. Transportation projects not  
18 associated with the B-21 beddown would continue with a project-specific environmental  
19 review. Traffic operations on and outside the bases would continue as under existing  
20 conditions. The on-base road system at Dyess AFB would continue to function  
21 adequately, with the exception of a few intersections. Traffic in areas adjacent to the base  
22 would continue to function adequately at times, but substantial traffic congestion would  
23 likely be experienced on some roads during peak hours. The on-base road system at  
24 Ellsworth AFB would continue to function adequately, with little traffic congestion. Traffic  
25 in areas adjacent to the base would generally continue to function adequately, but some  
26 intersections would likely operate at poor service levels. Although off-base transportation  
27 service levels would be low at some times and locations, activities at Dyess AFB and  
28 Ellsworth AFB would have little effect on operations, and impacts would be less than  
29 significant.

#### 30 **ES.4.13.2.2 Dyess AFB Alternative**

31 An increase in personnel associated with the B-21 beddown would result in increased  
32 on-base and off-base traffic operations. In at least some areas of Dyess AFB, higher  
33 traffic volume would likely increase traffic congestion and decrease road segment or  
34 intersection service levels, and could possibly cause some segments to operate near  
35 capacity. Increased off-base traffic operations, would potentially cause a substantial  
36 increase in congestion and queuing near base gates during peak hours. In the absence  
37 of management actions, additional personnel would potentially cause a significant  
38 increase in congestion and queuing near installation gates.

1 Construction, renovation, and demolition projects on Dyess AFB could potentially result  
2 in traffic congestion and reduced service levels, particularly during peak hours.  
3 Unaffected roads could potentially accommodate rerouted traffic, and LOS would not  
4 likely be affected substantially on most parts of the base. Delivery and removal of  
5 materials and debris, as well as base access by construction crews, would result in a  
6 small increase in off-base traffic. However, the number of vehicles involved would be  
7 small, and activities would potentially occur throughout the work day. The effects of these  
8 actions would be temporary and would cease with completion of the projects. No  
9 significant impacts would result from implementation of the Dyess AFB Alternative.

10 **Snapshot**

11 Overlap of B-1 and B-21 operations would result in a temporary increase of 386 active  
12 military and contractor personnel (not including dependents), compared to the end-state  
13 associated with the B-21 beddown. There would be a temporary corresponding increase  
14 in on-base and off-base traffic in the ROI. Additional traffic caused by the overlap could  
15 be noticeable on base and in adjacent areas but would not likely affect LOS substantially  
16 in the context of overall personnel numbers.

17 **ES.4.13.2.3 Ellsworth AFB Alternative**

18 Potential impacts to transportation from increased personnel under the Ellsworth AFB  
19 Alternative would be similar to those described for the Dyess AFB Alternative. On-base  
20 and off-base traffic operations would increase, with higher traffic volume concentrated  
21 near the base gates during peak commute hours. Although existing capacity would be  
22 able to accommodate some of the increased usage, there would likely be substantial  
23 congestion and queuing near the gates. In the absence of management actions, impacts  
24 would potentially be significant in areas of concentrated operation, such as near the base  
25 gates.

26 Construction, renovation, and demolition projects on Ellsworth AFB could potentially  
27 result in traffic congestion and reduced service levels, particularly during peak hours.  
28 Unaffected roads could potentially accommodate rerouted traffic, and LOS would not  
29 likely be affected substantially on most parts of the base. Delivery and removal of  
30 materials and debris, as well as base access by construction crews, would result in a  
31 small increase in off-base traffic. However, the number of vehicles involved would be  
32 small, and activities would potentially occur throughout the work day. The effects of these  
33 actions would be temporary and would cease with completion of the projects. No  
34 significant impacts would result from implementation of the Ellsworth AFB Alternative.

35 **Snapshot**

36 As discussed for the Snapshot Scenario at Dyess AFB, there would be a temporary  
37 increase in on-base and off-base traffic in the ROI due to the temporary increase in  
38 personnel. Additional traffic caused by the overlap of B-1 and B-21 operations could be  
39 noticeable on base and in adjacent areas but would not likely affect LOS substantially in  
40 the context of overall personnel numbers.

1 **ES.4.14 Utilities and Infrastructure**

2 **ES.4.14.1 Affected Environment**

3 The utilities described and analyzed for potential impact resulting from the beddown of  
4 the B-21 MOB 1 include potable water, wastewater, electricity, and natural gas. The  
5 description of each utility in Section 3.13.1.1 of the Draft EIS focuses on the existing  
6 infrastructure, current utility use, and any pre-defined capacity or limitations as set forth  
7 in permits or regulations. Airfield operations at each base and airspace and range  
8 utilization associated with the B-21 MOB 1 beddown would not directly impact utilities and  
9 infrastructure and are not discussed further in this section.

10 **ES.4.14.2 Environmental Consequences**

11 **ES.4.14.2.1 No Action Alternative Consequences**

12 Under the No Action Alternative, the B-21 would not beddown at Dyess AFB or Ellsworth  
13 AFB and would not require the use of existing utilities or the establishment of new utilities  
14 in areas on base currently without utilities. The existing conditions for potable water,  
15 wastewater, electricity and natural gas at each base would continue under the No Action  
16 Alternative and serve as a baseline for the analysis under the Proposed Action.

17 **ES.4.14.2.2 Dyess AFB Alternative**

18 Potable water usage, wastewater discharge, usage of electricity, and natural gas would  
19 be expected to increase based on the projected personnel increase. The current water  
20 supply capacity, wastewater discharge permit limits, electrical system capacity, and  
21 natural gas system capacity at Dyess AFB is more than sufficient to support the increased  
22 growth associated with the B-21 MOB 1 beddown.

23 The general construction footprint for facilities and infrastructure would occur in areas  
24 where existing utilities systems are already established. Therefore, impacts to utilities  
25 would be in relation to the number of personnel, discussed above. Extension of the natural  
26 gas, potable water, and wastewater systems may be required for the proposed WGF  
27 location. There is ample available capacity in regards to potable water, wastewater,  
28 electricity, and natural gas systems at Dyess AFB to support the new WGF.

29 Overall, utility usage would not exceed any permitted/allowed usage capacity limits and  
30 there would be no significant impacts on utilities under the Dyess AFB Alternative.

31 **Snapshot**

32 During the transition, there would be a slight, but temporary, increase in personnel over  
33 the No Action Alternative. The temporary increase would be minute (4 percent) when  
34 compared to the available utility capacity described under the current baseline conditions.

1 **ES.4.14.2.3 Ellsworth AFB Alternative**

2 Similar to the Dyess AFB Alternative, potable water usage, wastewater discharge, usage  
3 of electricity, and natural gas would be expected to increase based on the projected  
4 personnel increase. The current water supply capacity, wastewater discharge permit  
5 limits, electrical system capacity, and natural gas system capacity at Ellsworth AFB is  
6 more than sufficient to support the increased growth associated with the B-21 MOB 1  
7 beddown.

8 Impacts to utilities from the proposed facilities and infrastructure would only be in relation  
9 to the increased personnel described above. There is ample available capacity in regards  
10 to potable water, wastewater, electricity, and natural gas systems to support the WGF at  
11 either the North WGF Site Subalternative or the South WGF Site Subalternative. The  
12 North WGF Site Subalternative may require extension of the electrical, natural gas,  
13 potable water, and wastewater systems while the South WGF Site Subalternative may  
14 require extension of the wastewater system.

15 Overall, utility usage would not exceed any permitted/allowed usage capacity limits and  
16 there would be no significant impacts on utilities under the Ellsworth AFB Alternative.

17 **Snapshot**

18 During the B-1 and B-21 transition, there would be a slight, but temporary, increase in  
19 personnel over the No Action Alternative. The temporary increase would be minute  
20 (5 percent) when compared to the available utility capacity described under the current  
21 baseline conditions.

22 **ES.5. MITIGATION**

23 Specified mitigation measures have been identified and will be carried forward, to the  
24 extent practicable, in implementing the selected alternative and will be defined in the  
25 Record of Decision. Chapter 3 (Environmental Consequences) in the Draft EIS includes  
26 and analyzes mitigations for impacts identified or required by regulation or agency  
27 guidance for each affected resource.

28 **ES.5.1 Mitigation Measures**

29 The mitigations discussed in an EIS cover a range of issues. Generally mitigations may  
30 be applied in the development of the proposed action or alternatives (i.e., mitigation by  
31 avoidance) or applied during the impact analysis. Mitigation measures may also be  
32 considered for impacts that, by themselves, would not be considered “adverse.” The  
33 proposed action is considered as a whole to address specific effects on the environment  
34 (regardless of the level of the impacts), and mitigations are developed where it is feasible  
35 to do so.

1 CEQ regulations (at 40 CFR 1508.20) define mitigation in the following five ways:

- 2 1. **Avoiding** the impact altogether by not taking a certain action or parts of an action
- 3 2. **Minimizing** impacts by limiting the degree or magnitude of the action, and its
- 4 implementation
- 5 3. **Rectifying** the impact by repairing, rehabilitating, or restoring the affected
- 6 environment
- 7 4. **Reducing or eliminating** the impact over time by preservation and maintenance
- 8 operations during the life of the action
- 9 5. **Compensating** for the impact by replacing or providing substitute resources or
- 10 environments

11 A mitigation plan will be developed in accordance with 32 CFR 989.22(d) to address  
12 specific mitigations selected in the Record of Decision. The mitigation plan, for example,  
13 will also include a SWPPP and a SPCC Plan or updates to these plans specific to the  
14 alternative selected. These plans are in addition to and complement any permits that may  
15 be issued to implement mission actions at the chosen alternative.

16 NEPA imposes a continuing duty to supplement (40 CFR 1502.9(c)) existing NEPA  
17 documents when substantial changes are made that are relevant to environmental  
18 concerns or in response to the identification of “significant new circumstances or  
19 information relevant to environmental concerns and bearing on the proposed action or its  
20 impacts (40 CFR 1502.9(c)(1)(ii)). The USAF is responsible for monitoring the predictions  
21 (e.g., impact, mitigations) made in its completed NEPA documentation (40 CFR 1505.3,  
22 1505.2(c)). If substantial changes are recognized that are relevant to environmental  
23 concerns or that bear on a proposed action or its impacts, the USAF would reevaluate for  
24 potential impacts related to those changes.

25 Table ES-20 provides a list of resource-specific mitigations and management actions  
26 associated with the B-21 MOB 1 beddown.

**Table ES-20. Proposed Resource-Specific Mitigations and Management Actions to Reduce the Potential for Environmental Impacts**

Resource Area	Dyess AFB Alternative	Ellsworth AFB Alternative
Noise	Based on the noise analysis in this Environmental Impact Statement, no mitigations would be necessary. However, the U.S. Air Force (USAF) is responsible for monitoring the predictions (e.g., impact, mitigations) made in its completed National Environmental Policy Act documentation (40 Code of Federal Regulations 1505.3, 1505.2(c)). If substantial changes are recognized that are relevant to environmental concerns or that bear on a proposed action or its impacts, the USAF will reevaluate for potential impacts related to those changes. This would include monitoring noise and public noise complaints and developing potential mitigation measures that could be implemented based on USAF monitoring.	
Air Quality	Construction activities would employ standard management measures for construction such as watering of graded areas, covering of soil stockpiles, and contour grading (if necessary), to minimize temporary generation of dust and particulate matter. This would serve to minimize air emissions associated with the elements of the Proposed Action.	
Socioeconomics	The USAF would work with the local community to assist in any way possible with the planning for the increased population and increased requirements for support.	
Cultural Resources	No mitigations would be necessary.	Appropriate mitigation for the demolition of Buildings 7258, 7260, and 7262, and any other adverse effects at Ellsworth Air Force Base is being established through consultation with the South Dakota State Historic Preservation Officer and other stakeholders and will be formalized in an agreement document as required by Section 106 of the National Historic Preservation Act.
Physical Resources	Construction-related impacts on soil and surface water quality can be reduced through implementation of erosion and sediment control measures. Examples of controls include minimization of earth-moving activities during wet weather/conditions, covering soil stockpiles, installation of silt fencing and sediment traps, and revegetation of disturbed areas with native plants as soon as possible to contain and prevent off-site migration of sediment or	Construction-related impacts on soil and surface water quality can be reduced through implementation of erosion and sediment control measures. If possible, buildings should be sited in areas with moderate slopes and avoid disturbing areas with steep slopes, specifically at the North Weapons Generation Facility site.  Site drainage around the new facilities should be designed to manage the anticipated increased runoff from the increased impervious surface through properly sized

*Continued on the next page...*

**Table ES-20. Proposed Resource-Specific Mitigations and Management Actions to Reduce the Potential for Environmental Impacts**

Resource Area	Dyess AFB Alternative	Ellsworth AFB Alternative
	<p>eroded soils from the project areas.</p> <p>Site drainage around the new facilities should be designed to manage the anticipated increase in runoff from increased impervious surfaces through properly sized stormwater conveyance structures and incorporating stormwater management features such as porous pavements and infiltration basins that treat, store, and infiltrate runoff onsite before it can affect downstream water bodies (EPA, 2020a).</p> <p>Building sites should be located to avoid the 100-year floodplain areas, if possible.</p>	<p>stormwater conveyance structures, and by incorporating stormwater management features such as porous pavements and infiltration basins that treat, store, and infiltrate runoff onsite before it can affect downstream water bodies (EPA, 2020a).</p> <p>Facilities and structures where military operations would involve handling of hazardous chemicals or fueling operations would be best placed where spill control valves serve as physical barriers that could prevent releases from flowing into the ponds and offsite streams.</p> <p>Building sites should be located to avoid the 100-year floodplain areas. These areas are present at the North Weapons Generation Facility site and in two planned construction areas but are limited in areal extent and could be easily avoided.</p>
Hazardous Materials and Solid Wastes	<p>There is a potential that construction sites could be impacted by perfluorooctane sulfonate/perfluorooctanoic acid or other contaminants (e.g., fuels, solvents). If construction would require soil removal/disposal, then characterization and disposal would be conducted in accordance with USAF policy and guidance (Air Force Guidance Memorandum 2019-32-01). Contaminated soils may be addressed on site or disposed of in an appropriate landfill. No other mitigation measures or additional management actions other than those described in the Commonalities section would be necessary to reduce impacts to below significant levels for hazardous materials and hazardous and solid waste as no significant impacts are anticipated.</p>	
Transportation	<p>During construction, demolition, and renovation activities, consider scheduling commercial deliveries outside peak traffic hours and requiring all construction crews to use the commercial gate.</p> <p>During project planning, include measures to ensure proper emergency response ability is maintained during construction activities and after project completion.</p>	

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1 The CD located below includes this Executive Summary, the Draft EIS, and its  
2 appendices. To view the files on the CD, you will need Adobe Acrobat® Reader. If you  
3 do not already have Adobe Acrobat® Reader, you can download it at [www.adobe.com](http://www.adobe.com).  
4 To view the files:

- 5 • Insert the CD in your computer's CD drive and double-click on the file you wish to  
6 read in the CD directory.
- 7 • Scroll through the document or click on a bookmark on the left side of the screen  
8 or on a heading in the Table of Contents, which will jump to that section of the file.

9 The CD files are read-only, which means you may view and/or print them from the CD.

10 A copy of the EIS is available online at [www.B21EIS.com](http://www.B21EIS.com) and at each of the public  
11 libraries that are listed inside the front cover of this Executive Summary.

