

# Ellsworth Air Force Base Expansion



## ISSUE MEMORANDUM 2020-01

### Introduction

Ellsworth Air Force Base (AFB) is significant to the U.S. national defense strategy, the state economy, and its surrounding communities in the Black Hills. Located approximately nine miles northeast of Rapid City and adjacent to Box Elder, Ellsworth AFB is home to the 28th Bomb Wing assigned to the Global Strike Command's Eighth Air Force. On March 27, 2019, the U.S. Air Force announced Ellsworth AFB as the preferred base to host the first B-21 Raider bombers, creating a need for expansion to accommodate the increase of personnel and military activities of the B-21 mission. This memorandum encompasses the projected expansion of the base, impact on surrounding communities, and how the Legislature may address funding and policy considerations related to the expansion.

### Background

The Legislature created the Ellsworth Development Authority (SDEDA) in 2009 for the "purpose of protecting and promoting the economic impact of Ellsworth Air Force Base and associated industry, and to promote the health and safety of those living or working near the base."<sup>1</sup> The SDEDA was also established to help prevent the U.S. Department of Defense (DOD) from placing Ellsworth AFB on the Base Realignment and Closure (BRAC) list. The DOD listed Ellsworth AFB for closure in 2005, but the recommendation was overturned through coordinated efforts of the South Dakota Congressional delegation and state and local officials.

Since 2005, much has been done to safeguard Ellsworth AFB from future BRAC considerations. Several of the key improvements over the last fifteen years include expansion of the Powder River Training Complex, a new regional wastewater treatment plant shared with Box Elder, increased acquisition of incompatible properties around the base, and use of federal Readiness and Environmental Protection Integration (REPI) funds, which the state matches in part. These developments helped to form the groundwork of a favorable environment for the B-21 bomber mission.

As one of the largest employers in the state, Ellsworth AFB significantly impacts the regional economy. According to a 2017 report, the total economic impact of Ellsworth AFB was \$359 million.<sup>2</sup> This includes:

- 3,196 active duty personnel; 1,095 civilian personnel; 6,331 dependents;
- \$191,341,00 military payroll; \$44,832,701 civilian payroll; 4,291 total jobs; and
- \$58,971,998 annual contract expenditures to the local area.

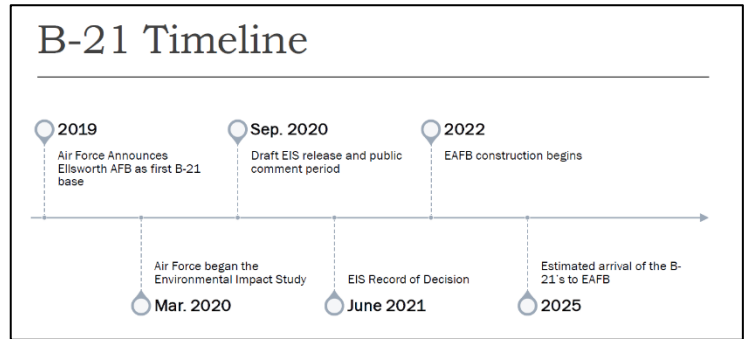
<sup>1</sup> SDCL 1-16J-7.

<sup>2</sup> Further information from the 2017 Economic Impact Statement can be found at <https://ellsworthauthority.org/ellsworth-economic-impact>.

**B-21 Mission**

The USAF chose Ellsworth AFB as the preferred B-21 Main Operating Base (MOB) 1, which includes the B-21 Operational Squadron, B-21 Formal Training Unit (FTU), and a Weapons Generation Facility (WGF). The B-21 is a long-range strike bomber with both conventional and nuclear roles and the first new Air Force bomber since 1988. The USAF formally named the aircraft B-21 "Raiders" in honor of the Doolittle Raiders of World War II. The USAF plans to have its contractor, Northrop Grumman, manufacture at least 100 B-21s, gradually replacing the B-1 bombers currently housed at Ellsworth AFB and Dyess AFB in Texas.

According to the preliminary Environmental Impact Statement (EIS) for the MOB 1, the number of military personnel needed to support the B-21 mission is 3,500.<sup>3</sup> The number of associated dependents is approximately 4,200, including 1,925 spouses and 2,275 children. The B-21 mission will conduct approximately 9,100 operations per year, an increase of 15.8% of total yearly operations at Ellsworth AFB.



Source: South Dakota Ellsworth Development Authority

While airspace will not be modified for the B-21 mission, construction of facilities and infrastructure on-base must be completed to allow the initial operational flying and flight training activities. Figure 3.12-3 at the end of this document shows the general areas of planned construction.

The Weapons Generation Facility (WGF) also requires construction of new infrastructure on base. The WGF would offer a secure location for the storage of nuclear munitions while also accommodating the maintenance, storage, and support functions for the entire B-21 mission. The facility is planned to be 52,000 square feet with a 17,000 square foot munitions maintenance building, requiring a 35-acre footprint. Two locations within the base satisfied the criteria for the WGF, also shown in Figure 3.12-3.

When all B-21s are in place and all B-1s retired, the EIS projects the total number of active military personnel at Ellsworth AFB will be 4,860. Including all civilians, contractors, and dependents, the total number of personnel will be 13,743, an approximate 30% increase from today.<sup>4</sup>

**Economic Impact**

The increase in personnel and employment would have a positive long-term economic impact on the region. The EIS estimates direct and indirect jobs would increase by 2,246, with total direct jobs at 5,790 and indirect jobs at 2,110. The additional total value of annual pay for indirect jobs is estimated at \$23,878,400, with a total value of \$86,518,200.

<sup>3</sup> The comprehensive Draft Environmental Impact Statement can be found at [https://www.b21eis.com/draft\\_eis.aspx](https://www.b21eis.com/draft_eis.aspx).

<sup>4</sup> See Table 3.0-2 for a breakdown of current and projected personnel.



The influx of personnel would also require an additional 1,011 units of housing and 39 additional public service professionals in Meade and Pennington Counties. This includes an additional 25 firefighters, nine law enforcement personnel, and five medical professionals.

During the transitional period before all B-1s are retired, there will be a temporary overlap of bomber operations. The USAF generally accounts that personnel levels would be 10 percent higher during the overlap. Thus, many of the related metrics, such as active duty personnel or the number of school-age children of military families, would be above the end-state levels during this timeframe.

Overall, the impact of the B-21 mission is projected to significantly impact the region's economy, increasing state and local tax revenue. The construction activities related to the expansion, both on base and off base, is expected to provide near-term economic benefits. Other impacts, such as increased sales tax revenue and higher K-12 enrollments, would affect the state budget.

## Community Impact

### *Liberty Wellness Center*

The SDEDA is planning the construction of a \$12.6 million recreation center located in Box Elder. The Liberty Wellness Center is slated to be 58,000 square feet and accessible by both military members and the public. To finance the center, the SDEDA received a \$6.3 million grant from the federal Defense Community Infrastructure Pilot Program. Pennington County will finance \$2 million through a tax increment financing (TIF) district in Box Elder, part of a larger retail and housing development. The SDEDA is providing \$1.1 million and will seek the remaining \$3.2 million from the Legislature via an appropriation of state dollars during the 2021 Legislative Session.

### *Education*

The estimated number of dependent children of military personnel after B-21 implementation is 4,553. Of those children, 2,359 would be school age, resulting in 294 additional students enrolled in local districts. The Douglas School District and the Rapid City Area School District primarily serve Ellsworth AFB families. The Douglas School District, located in Box Elder, would be particularly impacted and is already experiencing considerable growth.

The Douglas School District had a Fall 2019 enrollment of 2,856 students in K-12. School administrators anticipate the district enrollment could climb to between 4,500 to 5,000 students in five years. Currently, the district comprises one preschool/special services school, three elementary schools, one middle school, and one high school. The district purchased land to add a new elementary school in the near-term, which is planned to be followed by a new high school for 1,400 students and three more elementary schools to accommodate 500 students each. In existing plans, the current high school would become a second middle school. Federal funds would likely be used to help finance building expansions. The Douglas School District receives approximately \$15.6 million in state funds, along with an additional \$4.5 million in federal Impact Aid.<sup>5</sup>

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<sup>5</sup> The Douglas School District Fiscal 2021 Adopted Budget can be found at [https://www.dsdk12.net/apps/pages/index.jsp?uREC\\_ID=359653&type=d&pREC\\_ID=831595](https://www.dsdk12.net/apps/pages/index.jsp?uREC_ID=359653&type=d&pREC_ID=831595).



The Rapid City School District is the second largest district in the state and recently proposed a bond plan to replace and renovate aging facilities. The vote for a bond authorization of nearly \$190 million failed to receive the 60 percent majority required by state law, receiving 56 percent. With increased growth already occurring in the Rapid City area, school capacity and aging facilities may be a challenge to address with additional incoming personnel both from Ellsworth AFB and indirect employment.

### *Transportation*

Increased personnel would likely affect transportation infrastructure around Ellsworth AFB. The USAF expects most areas of impact to be concentrated where new personnel choose to live and roads that indirectly or directly lead to the base. While traffic on Interstate 90 near the base is not expected to be significantly impacted, highways around the base could experience noticeable increases in volume and congestion. Road infrastructure in Box Elder is particularly important because of the growth and development already occurring. However, local planning agencies, such as the Rapid City Metropolitan Planning Organization, work in conjunction with local cities, Meade and Pennington Counties, state and federal agencies, school districts, and Ellsworth AFB to address infrastructure improvements.

Various projects in the short and long terms are being planned or considered to support transportation needs, e.g., improvements to the Exit 63/Box Elder interchange, an extension of Mall Road to Box Elder for an additional connection between Ellsworth AFB and Rapid City, and rebuilds of Radar Hill Road and Highway 1416. The USAF also works with local planning agencies and the SDDOT so that long-term transportation issues can be mitigated. The Defense Access Road Program is one avenue the DOD can partner with local governments to fund improvements caused by military-generated traffic.

### *Housing*

An estimated 1,011 additional off-base housing units are needed for incoming personnel, with the total amount of housing units at 2,956. Many Ellsworth AFB personnel live in Box Elder, Rapid City, or the unincorporated community of Ashland Heights. Housing may present a particular challenge of expansion. Both Box Elder and Rapid City have experienced high demand and low inventory for affordable housing in recent years.

Already one of the fastest growing cities in South Dakota, the incoming B-21 mission would likely exacerbate that trend in Box Elder. New housing developments are both planned and ongoing. For example, a new subdivision that could comprise 1,400 acres is planned on the southwest edge of Box Elder. Continued collaboration between city officials and private developers will be important to address the critical housing need. Also, because Box Elder is already near its limit in value for TIF districts pursuant to SDCL 11-9-7, Pennington County may play an important role for future TIF districts related to housing. Currently, Pennington County has one TIF district in Box Elder, with another proposed district to be acted on in December.<sup>6</sup>

### *Shooting Range*

The type of shooting range needed to train USAF security forces, namely for long range shots, is not available at or near the base. Personnel must travel off-site to where the required training can be conducted. The SDEDA hopes to develop plans for a shooting range off-base that could be used jointly with the South Dakota National

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<sup>6</sup> See details about both TIF districts at <https://www.pennco.org/tif>.



Guard, as the National Guard must also travel for necessary training. The SDEDA has considered potential partnership with the South Dakota Department of Game, Fish and Parks, coupled with the goal that community members could also use the range for recreational purposes.

### **Legislative Considerations**

The Legislature's most immediate consideration in support of the expansion is funding. As noted earlier, the SDEDA will seek an appropriation for the recreational center in Box Elder for \$3.2 million during the 2021 Legislative Session. Future requests for funding are possible. The Legislature has appropriated funds in the past for the REPI program match, the last being through SB 175 in 2019 for \$1.845 million. Similar requests could be possible for future land acquisition or for projects like the prospective shooting range.

The Legislature might also consider policies related to quality of life. The USAF maintains strong emphasis in quality of life initiatives for military families when considering missions, such as availability of high-quality education or employment for spouses. For example, HB 1111 enacted by the Legislature in 2019 was of particular importance to the USAF.<sup>7</sup> HB 1111 allowed a military spouse to obtain a temporary professional license in South Dakota if already licensed and in good standing in another state, therefore expediting entrance to the workforce. Policies related to educational assistance or reducing barriers to workforce entry could further strengthen USAF investment in Ellsworth AFB and the region.

The Legislature might also consider adding a legislative liaison to the SDEDA board, which is a seven-member board appointed by the Governor with the advice and consent of the Senate.<sup>8</sup> The SDEDA reports to the Governor's Office of Economic Development. Therefore, opportunity for increased legislative partnership or participation may be facilitated by adding a legislative liaison or ex-officio member to the SDEDA board.

### **Conclusion**

The incoming B-21 mission to Ellsworth AFB will significantly impact base operations and surrounding communities. With the increase of personnel needed to support the B-21 mission, local, state, and federal officials estimate the economic impact to the surrounding area to be great. However, the expansion also calls for increases in housing, school capacities, services, and infrastructure. The Legislature may address these concerns in various ways.

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<sup>7</sup> 2019 SD Session Laws, Chapter 167 (HB 1111).

<sup>8</sup> SDCL 1-16J-2.



Figures

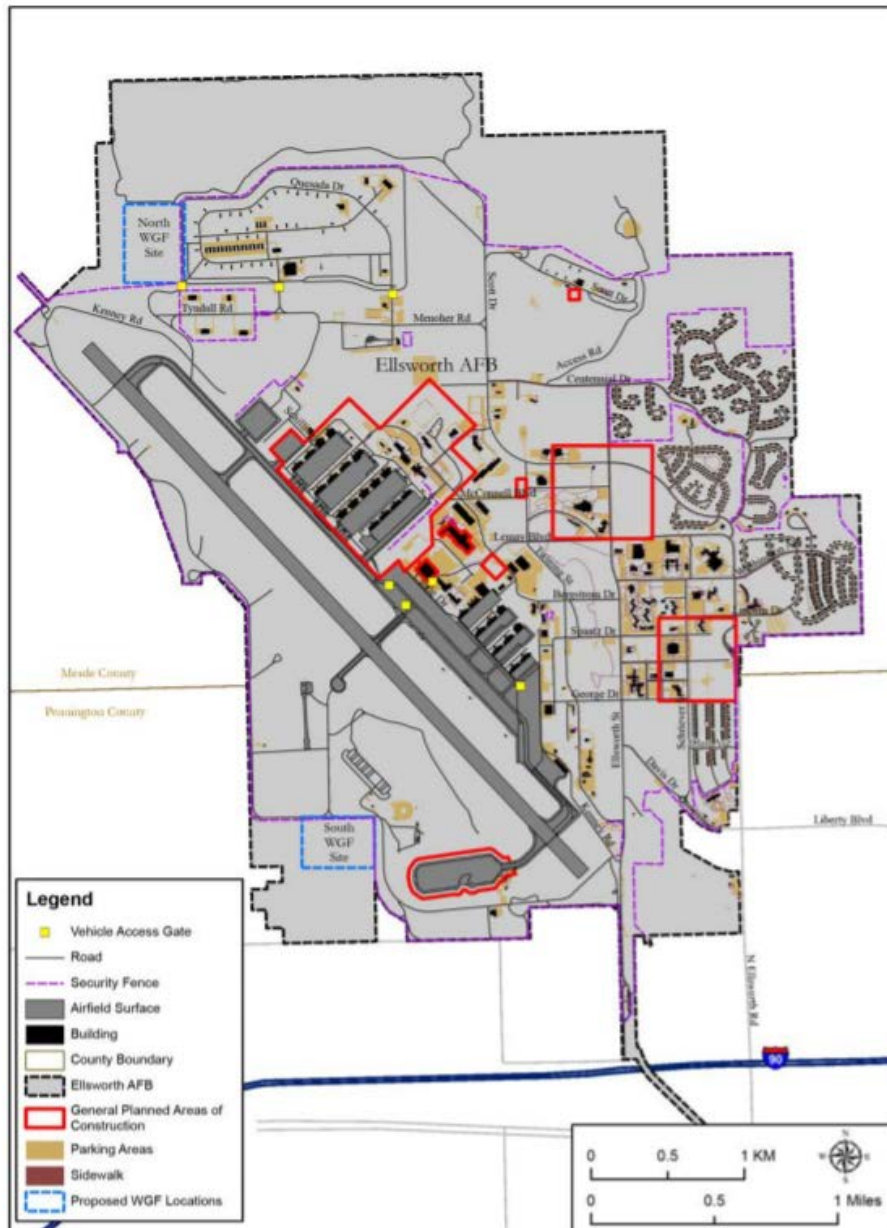


Figure 3.12-3. Road Network on Ellsworth AFB

Source: Draft Environmental Impact Statement, B-21 MOB 1 Beddown at Dyess AFB or Ellsworth AFB, August 2020; Page 3-297.



**Table 3.0-2. 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)

% = percent; + = plus; 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 percent 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.

*Source: Draft Environmental Impact Statement, B-21 MOB 1 Beddown at Dyess AFB or Ellsworth AFB, August 2020; Page 3-3.*

**Table 3.5-24. Estimated Indirect Jobs and Value in the Region of Influence Under the Ellsworth AFB Alternative**

Type of Personnel	No Action Alternative	End State	Change
Active Military	3,196	4,860	1,664
Civilian	930	930	0
<b>Total Base Direct Jobs<sup>1</sup></b>	<b>4,126</b>	<b>5,790</b>	<b>1,664</b>
<b>Total Indirect Jobs</b>	<b>1,528</b>	<b>2,110</b>	<b>582</b>
<b>Value of Indirect Jobs</b>	<b>\$62,639,800</b>	<b>\$86,518,200</b>	<b>\$23,878,400</b>

Note:

1. Total base direct jobs include active military and civilian employed by the USAF and does not include contractors.

*Source: Draft Environmental Impact Statement, B-21 MOB 1 Beddown at Dyess AFB or Ellsworth AFB, August 2020; Page 3-143.*

This issue memorandum was written by Anna Madsen, Research Analyst, on November 16, 2020 for the Legislative Research Council. It is designed to provide background information on the subject and is not a policy statement made by the Legislative Research Council.

