

Environmental Impact Statement

Fallon Range Training Complex Modernization

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3.13 Socioeconomics

The purpose of this analysis is to assess the potential socioeconomic impacts of the Proposed Action, which, in the context of the National Environmental Policy Act (NEPA), encompasses impacts on the economic and social conditions of the region potentially affected by a Proposed Action. In accordance with 40 Code of Federal Regulations (CFR) 1508.14, economic or social impacts are analyzed in the Environmental Impact Statement (EIS) to the extent they are interrelated with natural or physical effects on the human environment.

Since Churchill County would be the county most affected (in terms of socioeconomic and resource-specific impacts) by the proposed land withdrawal, the EIS utilizes key aspects of the County's Master Plan in analyzing social impacts (to include custom and culture) and applies these aspects to all of the other affected counties as well.

For Churchill County, custom and culture are important in forming the foundation of the community (Churchill County, 2015), as reflected in the *2015 Churchill County Master Plan*, which emphasizes preservation of custom and culture in relation to

- prehistoric resources (preservation of identified and potential archaeological sites),
- socio-cultural diversity (Native Americans, pioneers, and immigrants of European heritage),
- economic impacts (mining, ranching and farming), and
- visual/architectural resources (buildings of historic significance).

The socioeconomic analysis in this EIS includes economic data for communities affected by the Proposed Action related to population and demographics, housing occupancy status, employment characteristics, economic activity, and tax revenue. Social impacts are addressed in the discussion below, but they are not discussed with respect to each action alternative individually because potential social impacts would not be significantly different among the various alternatives, and because discussion of such impacts is captured in the analysis of impacts on other resource areas. Social impacts are addressed in the EIS largely through analysis of impacts on resource areas that contribute or are connected to the various activities, resources, traditions, values, and practices that collectively comprise the social conditions (or custom and culture) in the local area and region. As such, overlapping impacts related to custom and culture, specifically in regards to prehistoric resources, socio-cultural diversity, and visual/architectural resources, are generally addressed in Section 3.11 (Cultural Resources). With respect to the categories set forth in Churchill County's Master Plan, the Proposed Action would not be likely to alter or otherwise impact the socio-cultural diversity currently found in the region, nor would it affect any buildings of historic significance. Mining and ranching are discussed in Sections 3.3 (Mining and Mineral Resources) and 3.4 (Livestock Grazing), and access and management of public lands are addressed in Sections 3.2 (Land Use) and 3.12 (Recreation).

Based on the analysis presented in the above referenced sections, the U.S. Department of the Navy (Navy) acknowledges that there would be impacts on a number of resource areas that contribute to local and regional custom and culture, and that some of these impacts could be characterized in whole or in part as social impacts, rather than being exclusively economic in nature. For example, impacts in the form of reduced grazing or lost potential opportunities in mining might primarily be viewed as economic, but they would represent social impacts as well due to impacts on family traditions and way of life. While the number of individuals affected by such impacts would be relatively small, there would likely be some degree of adverse social impact insofar as the Proposed Action would result (to some extent) in reduced mining and grazing opportunities that are closely and historically associated with the

region. For example, reducing grazing opportunities would impact individual ranchers but would also result in at least some reduction in the overall level of ranching activity, which is an important and historical component of the economy in northern Nevada. However, the vast majority of currently active grazing land in the area would not be impacted by the Proposed Action, and the economic activity associated with livestock ranching or farming would not be substantially reduced.

There is uncertainty in addressing the social impacts of the potential loss of mineral mining and renewable energy opportunities under the Proposed Action because impacts could be viewed as positive and negative. Accordingly, there is also uncertainty when trying to determine how particular communities might perceive or react to certain impacts. For example, development of a mine or renewable energy source could result in a positive social and economic change for a community. Eliminating mining or renewable energy opportunities could limit social and sustainable development and possibly contribute to a potential decline in employment growth and wealth rates. However, allowing development of mining or renewable energy opportunities could result in ecological and physical impacts on the environment, public health issues, or a decline in property values. Therefore, impacts can be perceived or felt differently by the individual or community as a whole.

As noted in the 2015 Churchill County Master Plan, the existence of Naval Air Station (NAS) Fallon itself provides a unique component to the local culture. Many individuals who have worked at NAS Fallon have stayed in Churchill County as retirees because of the quality of life in the area (Churchill County, 2015). If the mission of NAS Fallon were to change such that the level of overall military activity in the area decreases, the city of Fallon and Churchill County could experience a decline in populations. As such, a decrease in population at NAS Fallon could have an overall effect on the wellbeing, both socially and economically, of the community because NAS Fallon provides a significant positive impact on Churchill County (Churchill County, 2015).

3.13.1 Methodology

This section will evaluate the potential impacts of the Proposed Action and Alternatives as they relate to socioeconomic resources in the region of influence. Unlike other sections in this EIS, this section is analyzed in the context of state, regional, and local trends rather than in terms of the defined geographical areas (e.g., B-16, B-17). Organizing this section in such a way facilitates a data-driven description of the affected environment and a broader perspective on potential socioeconomic impacts focused at the community, city, and county level.

3.13.1.1 Region of Influence

The region of influence for socioeconomic and economic impact analysis primarily focuses on Churchill, Lyon, Mineral, Pershing, and Nye Counties because they would be directly affected by the Proposed Action as it relates to changes in land use and corresponding changes, for example in, demographics, housing tax revenues, employment, and business and industry. Eureka, Elko, and Lander Counties are also included in the region of influence, but the analysis is limited because impacts within these counties would be relatively negligible as they are located under the airspace, and lands requested for withdrawal and proposed for acquisition do not occur in these counties. Data for Lander County, Nevada, and Plumas, California are included but only as it relates to agricultural resources and grazing allotments.

3.13.1.2 Regulatory Framework and Management

Socioeconomic data shown in this section are presented at the United States (U.S.) Census Bureau city or town, county, state, and national levels to characterize baseline socioeconomic conditions in the context of regional, state, and national trends. Data have been collected from previously published documents issued by federal, state, and local agencies and from state and national databases (e.g., U.S. Bureau of Economic Analysis' Regional Economic Information System). Data were also collected from the U.S. Census in 2000 and 2010 and five-year estimates from the American Community Survey in 2015.

While the list below is not intended to be exhaustive, it reflects the key requirements with respect to relevant management plans and applicable laws, regulations, and policies. There are many plans, regulations, handbooks, instructional memoranda, and other formal policies that influence economic development, including the following:

- Carson City Bureau of Land Management (BLM) Resource Management Plan (Bureau of Land Management, 2014)
- Stillwater National Wildlife Refuge Comprehensive Conservation Management Plan (U.S. Fish and Wildlife Service, 2002)
- Newlands Project Resource Management Plan (Bureau of Land Management, 2013)
- Churchill County 2015 Master Plan (Churchill County, 2015)
- Elko County Public Land Policy Plan (Elko County Board of Commissioners, 2008)
- Eureka County Master Plan (Eureka County Board of Commissioners, 2010)
- Lander County Master Plan (Lander County Board of County Commissioners, 2010)
- Lyon County Master Plan (Lyon County, 2010)
- Mineral County Code (Mineral County Code 17.06.010)
- Nye County Comprehensive Plan (Nye County Board of County Commissioners, 2011)
- Pershing County Master Plan (Pershing County, 2012)
- Washoe County Master Plan (Washoe County Board of Commissioners, 2011)
- Chief of Naval Operations Instruction (OPNAVINST) 3770.2
- Common Varieties Act (30 United States Code [U.S.C.] section 611)
- Defense Withdrawal ("Engle") Act of 1958 (43 U.S.C. sections 155–158)
- Executive Order 13817, *A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals*
- Farmland Protection Policy Act
- Federal Land Policy Management Act
- General Mining Law of 1872 (30 U.S.C. section 22 et seq.)
- Geothermal Steam Act of 1970 (30 U.S.C. section 1001 et seq.)
- Material Site Right-of-Way (23 U.S.C. section 317)
- Materials Act of 1947 ("Common Varieties Act") (30 U.S.C. sections 601–604)
- Mineral Leasing Act of 1920 (30 U.S.C. section 181 et seq.)
- Mining and Mineral Policy Act of 1970 (30 U.S.C. section 21 et seq.)
- Nevada Revised Statute 533.025 (discussed in Section 3.9, Water Resources)
- Regulations governing contracts and permits for mineral materials contained in 43 CFR subparts 3610 and 3620
- Strategic and Critical Materials Stock Piling Act (50 U.S.C. section 98)
- Taylor Grazing Act

3.13.1.3 Approach to Analysis

Significance of population and expenditure impacts is assessed in terms of their direct impact on the local economy and related effects on socioeconomic resources. Socioeconomic impacts are significant when they result in a substantial shift in population trends or when they notably affect regional employment or income, spending and earning patterns, or community resources.

For this EIS, an Economic Impact Analysis was conducted to determine potential economic impacts associated with the requested land withdrawal and proposed acquisition (see Supporting Study: Socioeconomic Report, available at <https://frtcmodernization.com>). The methodology for determining impacts uses input-output or inter-industry modeling techniques. Modeling techniques represent the interdependencies between different economic sectors in a study area (Leontief, 1936). This type of analysis specifically shows how economic sectors are linked together by sales and purchases between other economic sectors. Output or sales of one economic sector will appear as input or purchases of another economic sector.

Input-output models create a picture of a study area economy describing monetary flows to and from economic sectors and institutions (e.g., local, state, and federal government). These monetary flows are called interrelationships. Examples of interrelationships between sections include

- sectors purchase from other sectors,
- sectors sell to other sectors,
- sectors sell outside local economy, and
- sectors buy outside local economy.

The input-output analysis can be used to predict changes in regional economic activity because of some changes in the local economy. The input-output analysis provides a description of a local economy that is politically and behaviorally neutral. The outcome of the analysis includes direct impacts that represent the initial changes by the selected economic section, indirect impacts of businesses buying and selling between each other, and induced impacts for household spending.

The input-output model used for this analysis is the Impact Analysis for Planning (IMPLAN) model. Details of the IMPLAN Model are provided in Supporting Study: Socioeconomic Report (available at <https://frtcmodernization.com>). IMPLAN is one of the most used input-output models. The IMPLAN database includes information on 528 different economic sectors along with a national input-output model to derive regional or county level input-output models. The IMPLAN model allows users to verify and validate data used to derive county-wide and zip-code wide output, employment, income, and sales tax impacts from changes in the economy.

For this analysis, socioeconomic impacts include multiplier effects. The multiplier is interpreted as the impact of a one-unit change in sales, employment, or income that results in a corresponding total impact on sales, employment, or income in the larger study area economy. There are three types of multiplier effects based on the type of economic impact analysis undertaken: direct, indirect, and induced. The direct effect is based on a sector's initial economic impact on the study area's economy; for example, if a range livestock operation had revenues of \$500,000, then this figure becomes the direct economic impact on the study area economy. The indirect multiplier effect is based on industry-to-industry transactions only. For example, the range livestock sector purchases local alfalfa hay, agricultural supplies, and contract services. These impacted sectors also expand their purchases from local economic sectors, which in turn repeats itself in the local economy. Induced multiplier effects are

the response of local economic sectors to employee spending both from direct and indirect effects. Local household purchases primarily impact the commercial sectors of a study area economy. The total economic impact is defined as direct plus indirect plus induced economic impacts. For this analysis, indirect and induced effects will be aggregated and designated as secondary effects. Therefore, total impacts are delineated into direct and secondary impacts.

Since the publication of the Draft EIS, the Navy has obtained revised data with respect to allotment acreages and associated animal unit months (AUMs). As a result, the Final EIS has been revised to reflect relevant changes in the predicted direct and secondary economic impacts. In determining impacts associated with the change in AUMs, potential direct and secondary losses for value of output, employment, and labor income were re-calculated based on percentage increases or decreases in the AUMs (because of the linear relationship applied in the IMPLAN model). Although the calculations differ from the Supporting Study: Socioeconomic Report (available at <https://frtcmodernization.com>), the methodology for determining losses remains the same.

3.13.1.3.1 Determining Loss of Animal Unit Months

Closing portions of active grazing allotments on public lands would be likely to affect the number of livestock permitted on an allotment. An allotment is a designated area or management unit where livestock grazing is permitted; it can be made up of multiple pastures (Bureau of Land Management, 2014). The regulating authorities for public land grazing, previously listed in Section 3.4.1.2 (Regulatory Framework), require the BLM to determine the carrying capacity of allotments. Carrying capacity is defined as the number of grazing animals an allotment is able to support without depleting rangeland vegetation or soil resources (Holechek et al., 2011). The carrying capacity of an allotment determines the permitted livestock numbers and AUMs on an allotment grazing permit.

The BLM provided guidance to the Navy in developing a methodology for estimating the potential loss in AUMs for affected allotments. A technical memo was prepared that documents the Navy's approach to determining the loss of AUMs (Supporting Study: Technical Memo, Livestock Grazing AUM Restrictive Analysis for Fallon Range Training Complex). Since forage is not uniformly distributed across an allotment, a reduction in AUMs for a given allotment would not necessarily be proportional to a percentage decrease in the lands comprising that allotment. The Navy used the following factors to estimate a change in AUMs for each BLM allotment and Bureau of Reclamation pasture:

- Percent of allotment closed to livestock grazing
- Percent of allotment with a greater than 30 percent slope
- Percent of allotment that is farther than 4 miles from water
- Percent of allotment with an annual forage production per acre of less than 100 pounds
- Percent of allotment with an annual forage production per acre between 100 pounds and 300 pounds
- Percent of allotment with an annual forage production per acre greater than 300 pounds

These factors were chosen because they are consistent with BLM parameters and are critical factors in determining how livestock will utilize forage in an allotment. It is acknowledged that this is influenced by the type and class of cattle, and that cattle can graze on slopes greater than 30 percent slope or will travel over 4 miles to water, but that they are less likely to do so under satisfactory grazing conditions. The factor to restrict the analysis to areas with less than 30 percent slope was chosen for consistency with the BLM, which uses the *National Range and Pasture Handbook*, referencing the section titled Procedures and Worksheets for Planning Grazing Management (Natural Resources Conservation Service,

2003), and *Range Management: Principles and Practices*, 2011 (Holechek et al., 2011), both of which use this factor to restrict the analysis. Local knowledge of the areas and the breed of cattle were factored into any adjustments that would be made.

The AUM restrictive analysis produced a range of AUMs that could be lost for each allotment for each action alternative (Table 3.13-13 and Table 3.13-23), which was used in the economic analysis. It is anticipated that any potential loss in AUMs would be within the range and values identified in this EIS. However, the BLM would complete site-specific environmental analysis for each allotment prior to taking any action concerning such allotments based on any alternatives implemented.

Rangeland production data was sourced from the Natural Resources Conservation Service (NRCS) Web Soil Survey, which utilizes the Soil Survey Geographic Database developed by the National Cooperative Soil Survey (Natural Resources Conservation Service, 2017). The NRCS defines rangeland production as “the amount of vegetation that can be expected to grow annually in a well-managed area that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals.” Rangeland production is measured in pounds per acres of air-dry vegetation (Natural Resources Conservation Service, 2017). This information was supplemented by identifying the ecological site descriptions for the land proposed to be closed from grazing. Ecological site descriptions were obtained from the NRCS’s Ecological Site Information Services (<https://esis.sc.egov.usda.gov/Welcome/pgReportLocation.aspx?type=ESD>), which is the NRCS’s repository for ecological site descriptions and for forestland and rangeland plot data. However, ecological site descriptions are not available for all areas within the region of influence. The Navy performed vegetation surveys of the existing Fallon Range Training Complex (FRTC) lands in 2008 (Tierra Data Inc., 2008) and of the proposed expansion areas as part of this EIS effort in 2017 (Supporting Study: Plant Community Surveys and Mapping Report, available at <https://frtcmodernization.com>). Although these surveys did not estimate production potential, they did identify the dominant vegetation classifications within the requested withdrawal areas.

3.13.1.4 Public Concerns

The public identified several areas of concern during scoping and the public comment period on the Draft EIS, in regards to socioeconomic impacts related to the following categories:

- Agriculture
- Mining
- Geothermal
- Recreation and Tourism
- Property Values
- County Revenues and Payment in Lieu of Taxes (PILT)
- Custom and Culture

In regards to agricultural activities, commenters were concerned with the potential loss of grazing allotments, access to public grazing lands, and watering sites for cattle and other livestock. With a potential loss of grazing lands, commenters were also concerned about the potential loss of ranches, homes, and a way of life; about their ability to potentially relocate if relatively less land suitable for profitable ranch operations remains available; and about potential compensation or other payments for any loss of private lands, loss of grazing permits and related privileges, and associated water rights. Finally, public scoping comments identified concerns regarding socioeconomic impacts resulting from the loss of grazing lands, including a reduction in cattle and associated AUMs and declines in the

livestock industry, and the resulting economic impacts on local counties, the State of Nevada, and the United States from the reduction in agricultural products.

In regards to mining and geothermal activities, the public inquired about a potential compensation process for loss of claims, mining exploration and production, and associated rights located on withdrawn lands. Also, with the potential withdrawal of public lands, the mining industry raised concerns about the potential loss of access to mineral resources on withdrawn lands. Commenters also expressed concern about potential restrictions or other limitations on mineral exploration and development in the event that the bombing ranges were to be expanded, even if any such withdrawn lands were to remain open to the public. The Navy received numerous comments regarding accessibility to areas (e.g., Denton-Rawhide Mine) if State Route 839 were to be closed within the proposed expansion area. With potential loss of access to the Denton-Rawhide Mine, the public was concerned about loss of jobs and therefore income for those employees living in Churchill County and other adjacent counties.

There were several areas of concern raised during scoping and commenting regarding recreation and tourism opportunities. Primarily, the public inquired about the potential reduction in tourism revenue from multiple localities and businesses subsequent to any potential land withdrawal, including possible revenue losses from hotels, restaurants, gas stations, campsites, and grocery stores. Associated with a potential loss of access to land, the public raised concerns regarding loss of tourism revenue associated with off-road vehicle activities or other activities, including hunting, camping, and wildlife viewing. The public identified several areas of concern regarding property values during scoping for this EIS. Primarily, the public was concerned about potential adverse impacts on property values due to FRTC expansion (i.e., that ranches that would lose access to grazing lands would be likely to decline in value), and expressed concern that any proposed compensation by the government for the acquisition of any private lands should take into account access to grazing lands and watering rights in any fair-market evaluation. Finally, the public voiced concern regarding any potential further expansion or acquisition in the future by the Navy or BLM of public and private lands, as well as the ability of ranchers whose lands would not be acquired under the Proposed Action to engage in long-term planning.

Several commenters expressed concerns regarding county revenues and PILT during scoping and commenting for this EIS. Primarily, affected counties are concerned about the potential loss of PILT revenue due to the proposed withdrawal of additional public lands for defense purposes and loss of property tax revenue by counties due to the proposed acquisition of private lands (e.g., farms and ranches) by the U.S. government. In addition, counties raised concerns over the potential loss of revenue from planned or potential development (e.g., geothermal) that presumably could take place on, or benefit from access to, the additional lands proposed for withdrawal. Churchill County has submitted comments during the NEPA process requesting that the EIS take into consideration impacts related to custom and culture, in addition to the economy. Churchill County noted that resources related to custom and culture include access to public lands, management of public lands, agriculture and grazing, and development of mineral and renewable energy resources.

Issues associated with socioeconomic resources that were identified through scoping and that are within the scope of the Proposed Action will be addressed in this section of the EIS. Certain related issues are addressed in other sections of the EIS, including Section 3.1 (Geological Resources), Section 3.2 (Land Use), Section 3.3 (Mining and Mineral Resources), Section 3.4 (Livestock Grazing), and Section 3.12 (Recreation). Where appropriate, the reader will be directed to those sections for additional information. For further information regarding comments received during the public scoping and

commenting process, please refer to Appendix E (Public Participation) and Appendix F (Public Comments and Responses).

3.13.2 Affected Environment

The sections that follow provide information on the economic conditions of the region potentially affected by the Proposed Action. Specifically, data and information are presented to describe the population and demographics, housing, employment, businesses and industry, property values, and PILT. For the socioeconomic impact analysis, the five-county study area consists of Churchill County, Lyon County, Mineral County, Pershing County, and northern Nye County. Elko, Lander, and Eureka Counties are only located under the airspace and they are not anticipated to experience impacts from the land withdrawal (grazing, mining, etc.) on the ground. However, they are included in the analysis as they relate to indirect impacts from changes to land uses in other counties that would have impacts on their economy as well. As previously noted, data are included for Lander County as it relates to grazing and associated base property.

The majority of the proposed land expansion areas are located in Churchill County. The proposed expansion area west of B-16 extends into Lyon County. The proposed expansion area south of B-17 extends into Mineral and Nye Counties and the proposed expansion area north of B-20 extends into Pershing County. For the areas outside of Churchill County, only the socioeconomic resources potentially affected are discussed.

3.13.2.1 Population and Demographics

Fallon, Nevada, is the largest metropolitan area in Churchill County and serves as the county seat. The cities of Fernley and Silver Springs, both in Lyon County, are the two largest nearby cities. Fernley is located approximately 28 miles northwest of Fallon along U.S. Route 50 (Alternate), and Silver Springs is located just under 25 miles to the southwest of Fallon, off of U.S. Route 50. Outside of the cities, the region is primarily rural and sparsely populated.

Table 3.13-1 presents population characteristics for Churchill, Lyon, Mineral, Nye, and Pershing Counties as well as the city of Fallon, community of Gabbs, and the State of Nevada. The reported data from the U.S. Census in 2000 and 2010 depicts population trends between these two, time series and projected population growth for 2020 and 2030.

Table 3.13-1: Population Trends in the Project Area

Jurisdiction	2000 ¹	2010 ²	Percent Change 2000–2010	2020 Projection ³	2030 Projection ³	Expected Percent Change 2010–2030 ⁴
Counties						
Churchill	23,982	24,877	3.7	27,299	31,223	25.5
Lyon	34,501	51,980	50.1	55,107	59,919	15.3
Mineral	5,071	4,772	-5.9	3,960	4,277	-10.4
Nye	32,485	43,946	35.3	45,618	48,093	9.4
Pershing	6,693	6,753	0.9	6,794	6,498	-3.8

Table 3.13-1: Population Trends in the Project Area (continued)

Jurisdiction	2000 ¹	2010 ²	Percent Change 2000–2010	2020 Projection ³	2030 Projection ³	Expected Percent Change 2010–2030 ⁴
Communities						
City of Fallon	7,536	8,606	14.2	(X)	(X)	(X)
Gabbs	416	388	(X)	(X)	(X)	(X)
State						
Nevada	1,998,257	2,700,551	35.1	2,959,642	3,222,107	19.3

Note: (X) = data not available from the U.S. Census Bureau.

Sources:

¹U.S. Census Bureau U.S. Census Bureau (2000a, 2000b, 2000c)

²U.S. Census Bureau U.S. Census Bureau (2010a, 2010b, 2010c)

³Nevada State Demographers Office Nevada State Demographers Office (2014)

⁴U.S. Census Bureau (U.S. Census Bureau, 2015a, 2015b, 2015c, 2015d)

3.13.2.1.1 Churchill County

In 2010, approximately 35 percent of Churchill County’s population resided in the city of Fallon. Between 2000 and 2010, the population of the city of Fallon grew by 14.2 percent, which was higher than Churchill County’s rate of growth (3.7 percent) but less than Nevada’s rate of growth (35.1 percent). Continued county population growth is expected through the year 2030 (Table 3.13-1). More specifically, Churchill County’s total population is expected to increase by nearly 26 percent from 2010 to 2030, while the State’s population is projected to increase by 19 percent, which is a slower rate over the same time period.

Projections of population growth for the city of Fallon to 2020 and 2030 are not available. However, the population was estimated to be 8,410 in 2016 (U.S. Census Bureau, 2017f). The population associated with NAS Fallon includes approximately 1,423 civilian and military personnel who are permanently stationed on the base (U.S. Department of the Navy, 2014b). In addition, up to 20,000 transient personnel visit the base annually to participate in training programs at NAS Fallon (Churchill County, 2015). Nearly two-thirds of the population of the city of Fallon either live alone or with just one other person and the largest age-defined group, with almost 9 percent of the population, is between 24 and 29 years old. The largest age bracket for military and civilian personnel at NAS Fallon is 28–32 years old.

The population at NAS Fallon has increased incrementally since the 1990s. The driver for most of the increases has been additional training requirements added to the FRTC mission. Increases in the number of permanent personnel stationed at NAS Fallon to meet the additional training requirements have been fairly small and consisted mainly of instructors, subject matter experts, and program management personnel. Future increases in the population at NAS Fallon are expected to be similar and associated mainly with incremental changes in mission-related requirements.

3.13.2.1.2 Lyon County

The proposed expansion area west of B-16 extends into Lyon County. Between 2000 and 2010, the population of the county grew by over 50 percent, which was higher than Nevada’s growth rate (35.1 percent) for the same period (Table 3.13-1). Lyon County’s total population is expected to increase by 15.3 percent from 2010 to 2030.

3.13.2.1.3 Mineral County

The proposed expansion area south of B-17 extends into Mineral County. Between 2000 and 2010, the population of the county shrank by 5.9 percent, which was less than Nevada’s growth rate (35.1 percent) for the same period (Table 3.13-1). Mineral County’s total population is expected to drop by over 10 percent from 2010 to 2030.

3.13.2.1.4 Nye County

The proposed expansion area southeast of B-17 extends into Nye County. Between 2000 and 2010, the population of the county increased by 35.3 percent, which is approximately the same as the state of Nevada’s growth rate (35.1 percent) for the same period (Table 3.13-1). Nye County’s total population is expected to increase by 9.4 percent from 2010 to 2030.

3.13.2.1.5 Pershing County

The proposed expansion area north of B-20 extends into Pershing County. Between 2000 and 2010, the population of the county grew by 0.9 percent, which was less than Nevada’s growth rate (35.1 percent) for the same period (Table 3.13-1). Pershing County’s total population is expected to drop by nearly 4 percent from 2010 to 2030.

3.13.2.2 Housing

Table 3.13-2 shows housing occupancy type and vacancy trends for Churchill, Lyon, Mineral, Nye, and Pershing Counties, and Table 3.13-3 presents housing occupancy data for the city of Fallon, the community of Gabbs, and the state of Nevada. Data are from the U.S. Census in 2000 and 2010 and estimates from the American Community Survey in 2015.

3.13.2.2.1 Churchill County

According to the 2010 census, there were 10,826 housing units in Churchill County in 2010 (Table 3.13-2), and 3,979 of those units (or 36.8 percent) were located in the city of Fallon. The largest portion of the county’s housing units in 2010 was comprised of single-family detached units (67.9 percent). Mobile homes accounted for 16.0 percent of the remaining housing stock in the county (U.S. Census Bureau, 2010b). Between 2000 and 2010, the total number of housing units in Churchill County, the city of Fallon, and Nevada increased (Table 3.13-2 and Table 3.13-3). The percent of occupied housing units (i.e., occupancy) decreased in the state of Nevada, Churchill County, and city of Fallon between 2000 and 2016, with a greater decrease occurring at the state level, where occupancy declined by 4.9 percent over the 16-year time span (U.S. Census Bureau, 2017f). Occupancy in Churchill County and the city of Fallon decreased by 2.8 percent and 0.8 percent, respectively, between 2000 and 2016.

Table 3.13-2: Housing Trends in Churchill, Lander, Lyon, Mineral, Nye, and Pershing

	Churchill County	Lyon County	Mineral County	Nye County	Pershing County
Total Housing Units					
2000	9,732	14,279	2,866	15,934	2,389
2010	10,826	22,547	2,830	22,350	2,464
2016	10,683	22,427	2,775	21,786	2,403
Percent Change (2000–2015)	9.8%	57.1%	-3.2%	36.7%	0.6%
Occupied Units					
2000	91.6%	91.1%	76.7%	83.5%	82.1%
2010	89.3%	87.9%	79.2%	80.7%	81.9%

Table 3.13-2: Housing Trends in Churchill, Lander, Lyon, Mineral, Nye, and Pershing (continued)

	Churchill County	Lyon County	Mineral County	Nye County	Pershing County
Occupied Units (continued)					
2016	88.8%	87.3%	74.4%	80.2%	83.9%
Vacancy Status: For Rent					
2000	34.4%	27.5%	35.0%	26.0%	48.5%
2010	37.4%	23.6%	21.9%	23.2%	31.6%
2016	(X)	(X)	(X)	(X)	(X)

Sources: U.S. Census Bureau (U.S. Census Bureau, 2000a, 2000b, 2000c, 2010a, 2010b, 2010c, 2017f)

Table 3.13-3: Housing Trends in the State of Nevada, the City of Fallon, and Gabbs

	Nevada	City of Fallon	Gabbs
Total Housing Units			
2000	827,457	3,336	183
2010	1,173,814	3,979	183
2016	1,200,517	3,986	(X)
Percent Change (2000–2015)	45.1%	19.5%	0.0%
Occupied Units			
2000	90.8%	90.0%	72.7%
2010	85.7%	88.3%	66.1%
2016	85.9%	89.2%	(X)
Vacancy Status: For Rent			
2000	41.5%	52.4%	22.0%
2010	37.0%	54.5%	21.0%
2016	(X)	(X)	(X)

Sources: U.S. Census Bureau (U.S. Census Bureau, 2000a, 2000b, 2000c, 2010a, 2010b, 2010c, 2017f)

3.13.2.2.2 Lyon County

According to the 2010 census, 22,547 housing units were available in Lyon County in 2010 (Table 3.13-2), and 22,427 housing units were available in 2016. Despite the slight decrease between 2010 and 2015, the overall number of housing units increased by 57 percent between 2000 and 2016. The percent of occupied housing units decreased in Lyon County by 3.8 percent over the 16-year time span between 2000 and 2016.

3.13.2.2.3 Mineral County

According to the 2010 census, 2,830 housing units were available in Mineral County, and 2,775 housing units were available in 2016 (Table 3.13-2). Between 2000 and 2016, total housing units decreased by 3.2 percent, and the percent of occupied housing units decreased in Mineral County by 2.3 percent over the 16-year time span.

3.13.2.2.4 Nye County

According to the 2010 census, 22,350 housing units were available in Nye County in 2010, and 21,786 housing units were available in 2016 (Table 3.13-2). Despite the decrease between 2010 and

2016, total housing units increased by 36.7 percent between 2000 and 2016. The percent of occupied housing units decreased by 3.3 percent over the 16-year time span.

3.13.2.2.5 Pershing County

According to the 2010 census, 2,464 housing units were available in Pershing County in 2010 and 2,403 housing units were available in 2016 (Table 3.13-2). However, between 2000 and 2016, total housing units increased by 0.6 percent, and the number of occupied housing units increased by 1.8 percent.

3.13.2.2.6 Housing Summary

There are a number of reasons that housing units are classified as vacant, including homes being available for rent, for sale (and unoccupied), or used only on a seasonal or occasional basis (e.g., a vacation home). However, the largest percentage of vacancies in the state of Nevada, Churchill County, and city of Fallon are rental vacancies. The percentage of vacant housing available for rent increased in Churchill County and the city of Fallon from 2000 to 2010 while it decreased statewide over the same time period. Over 50 percent of vacant housing in the city of Fallon is for rent, which greatly exceeds state and county levels.

At NAS Fallon, on-base housing is provided in one primary area on the west side of Pasture Road (U.S. Department of the Navy, 2014a). According to the NAS Fallon Integrated Natural Resources Management Plan, on-base housing accommodations include 310 family housing units, 532 unaccompanied officer units, and 1,931 unaccompanied enlisted units (U.S. Department of the Navy, 2014a).

3.13.2.3 Regional and Local Economy

The following discusses employment and other local economic activity trends related to the counties that would be affected by the proposed land acquisition.

3.13.2.3.1 Employment

The employment status for the state of Nevada, regional counties, the city of Fallon, and the community of Gabbs is summarized in the tables below from the U.S. Census Bureau’s American Community Survey for 2016 (Table 3.13-4 through Table 3.13-5) (U.S. Census Bureau, 2017f). The section analyzes where employees reside regardless of where they are employed. The labor force is made up of the employed and the unemployed. People are classified as unemployed if they do not have a job, have actively looked for work in the prior four weeks, and are currently available for work. The remaining people—those who have no job and are not looking for one—are counted as not in the labor force. Many people who are not in the labor force are either going to school or are retired.

Table 3.13-4: Employment Status for the Working Age Populations in Churchill, Lyon, Mineral, and Pershing Counties (2016)

Category	Churchill County		Lyon County		Mineral County		Nye County		Pershing County	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total Population 16 years and over	19,102	100	41,531	100	3,810	100	35,473	100	5,713	100
In labor force	11,014	57.7	22,937	55.2	2,125	55.8	16,808	46.1	2,198	38.5

Table 3.13-4: Employment Status for the Working Age Populations in Churchill, Lyon, Mineral, and Pershing Counties (2016) (continued)

Category	Churchill County		Lyon County		Mineral County		Nye County		Pershing County	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Civilian labor force	10,301	53.9	22,835	55.0	2,125	55.8	16,808	46.1	2,198	38.5
Armed Forces	713	3.7	102	0.2	0	0.0	0	0.0	2	0.0
Employed	9,094	47.3	20,136	48.5	1,849	48.5	14,446	39.6	2,120	37.1
Not in labor force	8,088	42.3	18,594	44.8	1,685	44.2	19,665	53.9	3,515	61.5
Unemployed	1,207	6.3	2,699	6.5	276	7.2	2,362	6.5	78	1.4
Unemployment Rate	(X)	11.7	(X)	11.8	(X)	13.0	(X)	14.1	(X)	3.5

Source: (U.S. Census Bureau, 2017d, 2017e, 2017g); U.S. Census Bureau (2017h); (U.S. Census Bureau, 2017i)

Table 3.13-5: Employment Status for the Working Age Populations in Nevada, the City of Fallon, and the Community of Gabbs (2016)

Category	Nevada		City of Fallon, NV		Gabbs	
	Number	Percent	Number	Percent	Number	Percent
Total Population 16 years and over	2,248,477	100	6,608	100	111	100
In labor force	1,443,621	64.2	4,037	61.1	32	28.8
Civilian labor force	1,435,687	63.9	3,771	57.1	32	28.8
Armed Forces	7,934	0.4	266	4.0	0	0.0
Employed	1,302,162	57.9	3,296	4.9	32	28.8
Not in labor force	804,856	35.8	2,571	38.9	79	71.2
Unemployed	133,525	5.9	475	7.2	0	0.0
Unemployment Rate	(X)	9.3	(X)	1.6	(X)	0.0

Source: (U.S. Census Bureau, 2017a, 2017b); U.S. Census Bureau (2017c)

Churchill County

Nearly 60 percent of the population over the age of 16 was in the labor force in Churchill County in 2016 (Table 3.13-4). This is slightly less than in the city of Fallon and below the state’s rate of 64.2 percent (Table 3.13-5). The percentage of the labor force in the Armed Forces in Churchill County and the city of Fallon greatly exceeded the statewide level and the level in all other counties (Table 3.13-4 and Table 3.13-5).

In 2016, NAS Fallon directly employed 1,423 military and civilian personnel, 99 percent of whom lived in Churchill, Lyon, or Washoe Counties. Total direct annual payroll spending for personnel that work at NAS Fallon is \$84 million. NAS Fallon indirectly supported an additional 3,145 jobs in 2015, including jobs essential to base operations, payroll, and other spending-related operations (U.S. Department of the Navy, 2016).

Lyon County

In 2016, 55.2 percent of the population over the age of 16 were in the labor force in Lyon County (Table 3.13-4), which is below the state's rate of 64.2 percent. The percentage of labor force in the Armed Forces is below the statewide levels at only 0.2 percent of the population (Table 3.13-4).

Mineral County

In 2016, 55.8 percent of the population over the age of 16 were in the labor force in Mineral County (Table 3.13-4), which is below the state's rate of 64.2 percent. No one residing in Mineral County reported being in the Armed Forces in 2016 (Table 3.13-5).

Nye County

In 2016, 46.1 percent of the population over the age of 16 were in the labor force in Nye County (Table 3.13-4), which is below the state's rate of 64.2 percent. No one residing in Nye County reported being in the Armed Forces in 2016 (Table 3.13-5). Gabbs is an unincorporated town in Nye County. Only 28.8 percent of the working age population in Gabbs were in the labor force in 2016.

Pershing County

In 2016, 38.5 percent of the population over the age of 16 were in the labor force in Pershing County (Table 3.13-4), which falls below the state's rate of 64.2 percent. The percentage of the labor force in the Armed Forces in Pershing County is well below the statewide level. No one residing in Pershing County reported being in the Armed Forces (Table 3.13-5).

3.13.2.3.2 Businesses and Industry

Employment by place of work for the state of Nevada, Churchill County, Mineral County, Nye County, Pershing County, and Lyon County are shown on Table 3.13-6.

Sectors with the largest employment growth over the 10-year period (2006–2016) are the Management of Companies and Enterprise Sector; the Mining, Oil and Gas Extraction Sector; the Education Services sector; and the Health Care and Social Assistance Sector. For the state of Nevada, the Federal Military Sector accounts for 1.05 percent of the state's total employment (Table 3.13-6).

Churchill County

For Churchill County, the importance of NAS Fallon to the local economy is seen in Table 3.13-6. For Churchill County, 5.68 percent of the county's total employment is with the Federal Military Sector, which is approximately 5.5 times greater than at the state level.

Lyon County

For Lyon County, employment in 2006 was 18,157, dropped to 16,088 in 2010, but then increased to 16,764 in 2016. The Federal Military Sector only accounted for 0.86 percent of total county employment in 2016 (Table 3.13-6).

Mineral County

For Mineral County, total employment from 2006 to 2016 decreased from 2,321 to 2,137. The Federal Military Sector only made up 0.61 percent of its total employment in 2016 (Table 3.13-6).

Table 3.13-6: Employment by Industry in Nevada and Churchill County, Mineral, Nye, Pershing, and Lyon Counties (2016)

Category	Nevada		Churchill		Mineral		Nye		Pershing		Lyon	
	Employed	% of Total	Employed	% of Total	Employed	% of Total	Employed	% of Total	Employed	% of Total	Employed	% of Total
Farm employment	5,664	0.33	806	6.80	87	4.07	206	1.32	232	9.82	816	4.87
Nonfarm employment	1,708,399	99.67	11,051	93.20	2,050	95.93	15,405	98.68	2,130	90.18	15,948	95.13
Private nonfarm employment	1,536,496	89.64	8,514	71.81	1,512	70.75	13,512	86.55	1,384	58.59	13,643	81.38
Forestry, fishing, and related activities	1,614	0.09	(D)	.	(D)	.	95	0.61	(D)	.	192	1.15
Mining, quarrying, and oil and gas extraction	19,510	1.14	137	1.16	(D)	.	1,189	7.62	570	24.13	383	2.28
Utilities	4,444	0.26	95	0.80	(D)	.	164	1.05	-	0.00%	64	0.38
Construction	92,220	5.38	643	5.42	(D)	.	786	5.03	(D)	.	1,058	6.31
Manufacturing	49,395	2.88	528	4.45	(D)	.	256	1.64	(D)	.	2,297	13.70
Wholesale trade	43,932	2.56	225	1.90	(D)	.	145	0.93	(D)	.	325	1.94
Retail trade	175,386	10.23	1,267	10.69	(D)	.	2,063	13.22	204	8.64	1,848	11.02
Transportation and warehousing	76,256	4.45	709	5.98	(D)	.	271	1.74	(D)	.	860	5.13
Information	19,508	1.14	103	0.87	(D)	.	150	0.96	(D)	.	84	0.50
Finance and insurance	85,487	4.99	333	2.81	(D)	.	379	2.43	34	1.44	483	2.88
Real estate and rental and leasing	102,536	5.98	530	4.47	(D)	.	771	4.94	36	1.52	800	4.77

Table 3.13-6: Employment by Industry in Nevada and Churchill County, Mineral, Nye, Pershing, and Lyon Counties (2016) (continued)

Category	Nevada		Churchill		Mineral		Nye		Pershing		Lyon	
	Employed	% of Total	Employed	% of Total	Employed	% of Total	Employed	% of Total	Employed	% of Total	Employed	% of Total
Professional, scientific, and technical service	96,007	5.60	416	3.51	28	1.31	1,688	10.81	54	2.29	778	4.64
Management of companies and enterprises	29,091	1.70	(D)	.	(D)	.	41	0.26	(D)	.	74	0.44
Administrative and support and waste management and remediation services	123,207	7.19	487	4.11	(D)	.	981	6.28	(D)	.	713	4.25
Education services	17,099	1.00	73	0.62	(L)	.	245	1.57	(D)	.	(D)	.
Health care and social assistance	135,339	7.90	1,005	8.48	29	1.36	899	5.76	(D)	.	(D)	.
Arts, entertainment, and recreation	53,284	3.11	482	4.07	(D)	.	720	4.61	(D)	.	919	5.48
Accommodation and food services	325,961	19.02	728	6.14	(D)	.	1,648	10.56	(D)	.	909	5.42
Other services (except public administration)	86,220	5.03	637	5.37	66	3.09	1,021	6.54	81	3.43	1,105	6.59

Table 3.13-6: Employment by Industry in Nevada and Churchill County, Mineral, Nye, Pershing, and Lyon Counties (2016) (continued)

Category	Nevada		Churchill		Mineral		Nye		Pershing		Lyon	
	Employed	% of Total	Employed	% of Total	Employed	% of Total	Employed	% of Total	Employed	% of Total	Employed	% of Total
Government and government enterprises	171,903	10.03	2,537	21.40	538	25.18	1,893	12.13	746	31.58	2,305	13.75
Federal, civilian	18,935	1.10	601	5.07	61	2.85	124	0.79	17	0.72	73	0.44
Military	17,920	1.05	673	5.68	13	0.61	118	0.76	13	0.55	145	0.86
State and local	135,048	7.88	1,263	10.65	464	21.71	1,651	10.58	716	30.31	2,087	12.45
State government	36,178	2.11	131	1.10	10	0.47	196	1.26	(D)	.	89	0.53
Local government	98,870	5.77	1,132	9.55	454	21.24	1,455	9.32	(D)	.	1,998	11.92

Note: (D) = disclosure, meaning economic data cannot be singled out by firm, person, or group.

Source: (Bureau of Economic Analysis, 2017)

Nye County

For Nye County, the number of jobs from 2006 to 2016 decreased from 17,696 to 15,611. The Federal Military Sector only made up 0.76 percent of total Nye County population in 2016 (Table 3.13-6).

Pershing County

Jobs in Pershing County have decreased slightly from 2,380 in 2006 to 2,362 in 2016. The Agricultural Sector makes up approximately 9.82 percent of the county's total employment. The Mining Sector is an important contributor in the county, making up 24.13 percent of total county 2016 employment. The Federal Military Sector only makes up 0.55 percent of Pershing County's total employment (Table 3.13-6).

3.13.2.3.3 Employee Compensation

Table 3.13-7 shows total employee compensation for the state of Nevada and the five affected counties in 2016. For the state, in 2016 the Federal Military Sector had total employee compensation of \$1,222,390,000, which is \$68,214 per job.

Churchill County

For Churchill County, the Utilities Sector (which includes geothermal exploration, development, and operations) had the highest per job compensation of \$123,274, followed by the Federal Military Sector (Bureau of Economic Analysis, 2017). Given the NAS Fallon presence, this sector is prominent in county income. These incomes are also spent in the community and impact local economic activity.

Mineral County

For Mineral County, the Local Government Sector made up 28.5 percent of total county employee compensation (Bureau of Economic Analysis, 2017). The Federal Government, Civilian Sector had the highest compensation per job at \$104,934.

Nye County

For Nye County, Professional, Scientific, and Technical services Sector had total employment compensation of \$141,387,000, or 19.6 percent of county total. The Utilities Sector recorded the highest per job employee compensation at \$134,701. The Federal Government Military Sector had total employee compensation of \$3,849,000 in 2016 with a per job employee compensation of \$32,619 (Bureau of Economic Analysis, 2017).

Pershing County

For Pershing County, the Mining Sector had the highest employee compensation at \$96,581. The Federal Government Military Sector in Pershing County had only \$408,000 in total compensation with a per job employee compensation of \$31,385 (Bureau of Economic Analysis, 2017).

Lyon County

For Lyon County, the largest private sector for employee compensation was the Manufacturing Sector with employee compensation of \$139,332,000, or 22.8 percent of the county total. The Federal Government Military Sector had \$4,433,000 in total employee compensation or \$30,572 in per job compensation (Bureau of Economic Analysis, 2017).

Table 3.13-7: Employment by Sector in Nevada, and Churchill, Mineral, Nye, Pershing, and Lyon Counties (2016)

Category	Nevada		Churchill		Mineral		Nye		Pershing		Lyon	
	Total (\$1,000)	Per Job (\$)	Total (\$1,000)	Per Job (\$)	Total (\$1,000)	Per Job (\$)	Total (\$1,000)	Per Job (\$)	Total (\$1,000)	Per Job (\$)	Total (\$1,000)	Per Job (\$)
Total Earnings	\$79,724,614	\$46,512	\$521,410	\$43,975	\$101,958	\$47,711	\$721,765	\$46,234	\$137,295	\$58,127	\$609,902	\$36,382
Farm	\$100,060	\$17,666	\$12,757	\$15,828	\$337	\$3,874	\$2,832	\$13,748	\$8,054	\$34,716	\$19,802	\$24,267
Nonfarm	\$79,624,554	\$46,608	\$508,653	\$46,028	\$101,621	\$49,571	\$718,933	\$46,669	\$129,241	\$60,677	\$590,100	\$37,002
Private	\$64,906,031	\$42,243	\$310,000	\$36,411	\$64,737	\$42,815	\$584,848	\$43,284	\$72,775	\$52,583	\$437,203	\$32,046
Forestry, fishing, and related activities	\$30,033	\$18,608	(D)	.	(D)	.	\$2,291	\$24,116	(D)	.	\$4,462	\$23,240
Mining, oil, and gas extraction	\$1,535,415	\$78,699	\$2,245	\$16,387	(D)	.	\$116,149	\$97,686	\$55,051	\$96,581	\$199,965	\$52,128
Utilities	\$588,921	\$132,520	\$11,711	\$123,274	(D)	.	\$22,091	\$134,701	\$0	.	\$6,761	\$105,641
Construction	\$5,157,280	\$55,924	\$31,581	\$49,115	(D)	.	\$28,017	\$35,645	(D)	.	\$42,506	\$40,176
Manufacturing	\$3,037,142	\$61,487	\$37,183	\$70,422	(D)	.	\$10,651	\$41,605	(D)	.	\$139,332	\$60,658
Wholesale trade	\$2,871,371	\$65,359	\$6,781	\$30,138	(D)	.	\$5,226	\$36,041	(D)	.	\$13,449	\$41,382
Retail trade	\$5,234,202	\$29,844	\$32,402	\$25,574	(D)	.	\$49,566	\$24,026	\$4,462	\$21,873	\$41,697	\$22,563
Transportation and warehousing	\$3,743,254	\$49,088	\$53,763	\$75,829	(D)	.	\$7,016	\$25,889	(D)	.	\$30,993	\$36,038
Information	\$1,120,089	\$57,417	\$4,157	\$40,359	(D)	.	\$6,269	\$41,793	(D)	.	\$2,741	\$32,631
Finance and insurance	\$3,107,479	\$36,350	\$7,485	\$22,477	(D)	.	\$5,933	\$15,654	\$789	\$23,206	\$7,322	\$15,159
Real estate and rental and leasing	\$1,476,609	\$14,401	\$2,896	\$5,464	(D)	.	\$4,411	\$5,721	\$218	\$6,056	\$5,060	\$6,325
Professional, scientific, and technical services	\$4,706,255	\$49,020	\$14,457	\$34,752	\$842	\$30,071	\$141,387	\$83,760	\$550	\$10,185	\$22,075	\$28,374
Management of companies and enterprises	\$3,573,831	\$122,850	(D)	.	(D)	.	\$1,439	\$35,098	(D)	.	\$4,839	\$65,392

Table 3.13-7: Employment by Sector in Nevada, and Churchill, Mineral, Nye, Pershing, and Lyon Counties (2016) (continued)

Category	Nevada		Churchill		Mineral		Nye		Pershing		Lyon	
	Total (\$1,000)	Per Job (\$)	Total (\$1,000)	Per Job (\$)	Total (\$1,000)	Per Job (\$)	Total (\$1,000)	Per Job (\$)	Total (\$1,000)	Per Job (\$)	Total (\$1,000)	Per Job (\$)
Administrative and support and waste management and remediation services	\$3,707,737	\$30,094	\$18,886	\$38,780	(D)	.	\$55,040	\$56,106	(D)	.	\$14,943	\$20,958
Educational services	\$522,722	\$30,570	\$2,434	\$33,342	\$0	.	\$7,708	\$31,461	(D)	.	(D)	.
Health care and social assistance	\$7,404,744	\$54,713	\$48,602	\$48,360	\$783	\$27,000	\$44,416	\$49,406	(D)	.	(D)	.
Arts, entertainment, and recreation	\$1,762,966	\$33,086	\$10,737	\$22,276	(D)	.	\$18,615	\$25,854	(D)	.	\$23,184	\$25,227
Accommodation and food services	\$13,388,599	\$41,074	\$13,097	\$17,990	(D)	.	\$39,346	\$23,875	(D)	.	\$15,479	\$17,029
Other services (except public administration)	\$1,937,382	\$22,470	\$9,958	\$15,633	\$932	\$14,121	\$19,277	\$18,881	\$1,887	\$23,296	\$19,600	\$17,738
Government	\$14,718,523	\$85,621	\$198,653	\$78,302	\$36,884	\$68,558	\$134,085	\$70,832	\$56,466	\$75,692	\$152,897	\$66,333
Federal, civilian	\$1,875,344	\$99,041	\$41,614	\$69,241	\$6,401	\$104,934	\$11,481	\$92,589	\$1,168	\$68,706	\$5,696	\$78,027
Military	\$1,222,390	\$68,214	\$67,491	\$100,284	\$615	\$47,308	\$3,849	\$32,619	\$408	\$31,385	\$4,433	\$30,572
State and local	\$11,620,789	\$86,049	\$89,548	\$70,901	\$29,868	\$64,371	\$118,755	\$71,929	\$54,890	\$76,662	\$142,768	\$68,408
State government	\$3,051,153	\$84,337	\$10,489	\$80,069	\$846	\$84,600	\$15,160	\$77,347	(D)	.	\$8,101	\$91,022
Local government	\$8,569,636	\$86,676	\$79,059	\$69,840	\$29,022	\$63,925	\$103,595	\$71,199	(D)	.	\$134,667	\$67,401

Note: (D) = disclosure, meaning economic data cannot be singled out by firm, person, or group.

Source: Bureau of Economic Analysis (2017)

3.13.2.3.4 Agriculture

Agriculture is one of Nevada’s most important industries, contributing substantially to the economies of rural communities and the state as a whole. Combined, Nevada’s farms covered nearly 6 million acres of land in 2012 (Table 3.13-8). Approximately 44 percent of Nevada’s farms were in Cattle and Calves production in 2012 (U.S. Department of Agriculture, 2014). In 2016, Nevada’s ranches ranked third in the nation in size, averaging 3,500 acres; however, the state was third smallest in number of farms nationally with approximately 4,000 farms (Nevada Department of Agriculture, 2017).

A report prepared for the Nevada Department of Agriculture and the Nevada Association of Counties in 2001 estimated a 16 percent decline in total AUMs in Nevada from 1980 to 1999. This report projected that the decrease in AUMs may continue but would nearly level off in the future (Resources Concepts Inc., 2001). Currently, there is a considerable interest in acquiring public land grazing permits as they become available within the region of influence. Some grazing land may lose available acreage as urban areas expand, resulting in further demand for areas open to livestock grazing in the foreseeable future (Bureau of Land Management, 2014). Wildfires and regulatory changes could also result in the loss of grazing land within the region of influence.

Table 3.13-9 represents alfalfa statistics for the affected counties and the state of Nevada. The Dairy Farmers of America dry milk plant is located in Fallon, Nevada. An economic cluster is being created around the dry milk plant with more dairy cattle in production and additional demands on alfalfa hay (Churchill County, 2015).

Lyon County is one of the largest agricultural counties in the state. The agricultural sector of Lyon is quite diverse, growing garlic, onions and alfalfa hay; and raising beef cattle (Table 3.13-9 and Table 3.13-10). Pershing County is also one of the state’s top agricultural counties.

Table 3.13-8: Overall Agricultural Statistics

Category	Nevada	Churchill County	Lyon County	Mineral County	Nye County	Pershing County
Total Farms	4,137	672	462	119	198	154
Land in farms (acres)	5,913,761	197,232	366,006	(D)	65,116	299,290
Average farm size (acres)	1429	294	792	(D)	329	1,943
Total Cropland	756,852	56,300	78,269	(D)	26,354	57,379
Harvested cropland (acres)	582,494	49,554	66,913	(D)	15,329	50,470
Irrigated land (acres)	687,790	53,617	87,673	(D)	20,017	52,785
Market Value of Agricultural Products Sold						
Total Sales (thousands)	764,144	89,936	133,037	2,943	70,495	62,751
Average per farm (\$)	184,710	133,833	287,959	7,426	356,035	407,472
Estimated Market Value of Land and Buildings						
Average per farm (\$)	1,324,673	713,604	1,738,119	863,599	703,429	1,813,416
Average per acre (\$)	927	2,431	2,194	429	2,139	933
Estimated market value of all machinery and equipment (\$ thousands)	556,947	74,319	63,585	4,627	25,189	40,458

Note: (D) indicates data suppressed due to disclosure issues, where published economic data would provide sensitive information about a firm, person, or group.

Source: U.S. Department of Agriculture (2014)

Table 3.13-9: Alfalfa Hay Statistics

Location	2002			2007			2012		
	Farms	Acres	Alfalfa Hay Production (Dry Tons)	Farms	Acres	Alfalfa Hay Production (Dry Tons)	Farms	Acres	Alfalfa Hay Production (Dry Tons)
Nevada	1,379	502,724	1,534,490	1,417	470,068	1,558,120	1,766	524,992	1,796,932
Churchill	323	33,491	153,938	322	28,862	130,719	358	40,802	16,665
Lyon	167	40,504	176,841	154	49,200	235,673	188	60,510	242,686
Mineral	6	8,219	31,009	4	(D)	(D)	82	2,350	(D)
Nye	59	17,105	(D)	45	11,607	(D)	55	13,981	73,207
Pershing	69	26,465	(D)	76	36,851	(D)	88	42,382	171,649

Note: (D) indicates data suppressed due to disclosure issues, where published economic data would provide sensitive information about a firm, person, or group. Source: U.S. Department of Agriculture (2004, 2009, 2014).

Table 3.13-10: Cattle and Calves Inventory

Location	2002		2007		2012	
	Farms	Cattle and Calves	Farms	Cattle and Calves	Farms	Cattle and Calves
Nevada	1,583	460,263	1,513	441,629	1,822	420,322
Churchill	269	47,136	244	36,834	297	38,814
Lyon	172	36,273	126	36,579	166	46,039
Mineral	11	1,422	30	2,816	65	2,221
Nye	79	27,657	80	29,422	88	28,672
Pershing	76	19,161	81	23,264	75	26,525

Source: U.S. Department of Agriculture (2004, 2009, 2014).

3.13.2.3.5 Mining

Twelve active industrial mineral mines are located in Churchill County and surrounding areas near the Bravo ranges (Perry & Visher, 2016). None of these industrial mines are located within the requested withdrawal or proposed acquisition areas in Churchill, Lyon, Mineral, Nye, or Pershing Counties. Refer to Section 3.3 (Mining and Mineral Resources) for more detailed information on types of mining in the region of influence.

Nevada mines produce over a dozen types of mineral commodities as well as aggregates and oil. In 2015, the total value of all commodities mined in the state was over \$7.4 billion, with approximately 86 percent from gold and silver production (Perry & Visher, 2016). Nevada produces about 83 percent of the gold mined in the United States (Perry & Visher, 2016). The 2015 production of minerals sold as commodities from 14 active industrial mineral mines in Churchill County was valued at over \$215 million.

3.13.2.3.6 Geothermal

Nevada is the second-largest producer of geothermal energy in the United States (California is the largest producer) and has more geothermal projects in development than any other state (U.S. Department of Energy, 2017). Nevada is ranked first in the nation in terms of geothermal use per capita, with roughly 65 percent of renewable energy generation produced by domestic geothermal resources in

northern Nevada. Nearly one-third of this generation is located within the Fallon area (Nevada Division of Minerals, 2016).

Ten geothermal projects are in various stages of development and located in Churchill County, where the majority of the state's known geothermal resources areas are located (Bureau of Land Management, 2017a). No geothermal power plants, active geothermal fields, or geothermal lease parcels are located in the withdrawal or proposed acquisition areas in Churchill, Lyon, Mineral, Nye, or Pershing Counties; however, land areas with high geothermal potential do overlap with both existing bombing ranges and proposed withdrawal areas. Refer to Section 3.3 (Mining and Mineral Resources) for more information on how the proposed land withdrawal would impact the availability of lands for geothermal energy development.

The Governor's Office of Energy stated during scoping that the State of Nevada offers tax incentives to attract renewable energy producers to the state and has supported eight geothermal projects in northern Nevada since 2010, representing approximately 238 megawatts of generating capacity. The total economic benefit to the State resulting from these projects, including taxes paid, construction and operational employee wages, and capital investment, is \$1.2 billion. This equates to a benefit, per megawatt capacity, of \$5 million to the State of Nevada and the counties in which the projects are constructed.

There are 10 existing geothermal power plants owned by five companies located in the region of influence that provide energy for the region. None of the power plants are located in the requested withdrawal or proposed acquisition areas. In 2016, energy output sold on the market exceeded 1.4 million megawatt hours from these nine power plants, which was nearly half of the total state-wide sales of over 3.3 million megawatt hours from geothermal power generation (Nevada Division of Minerals, 2017). Additional projects, including expansion of existing power plants, are planned in Churchill County and surrounding counties (Bureau of Land Management, 2017a).

3.13.2.3.7 Recreation and Tourism

Recreational activities occurring in the region of influence are described in Section 3.12 (Recreation) and include outdoor activities such as fishing, hiking, camping, birdwatching, rock/fossil collecting, horseback riding, sightseeing, and visiting historic sites; however, based on input from scoping, the public is predominantly interested in hunting and operating off-highway vehicles (e.g., four wheelers and motorcycles).

Businesses and organizations that provide opportunities for recreational activities in the region include Pine Nut Mountains Trail Association, Nevada Four Wheel Drive Association, California Four Wheel Drive Association, American Motorcyclist Association District 36, Rebelle Rally Enterprises, Sierra Trail Dogs Motorcycle Club, Hills Angels 4x4 Club, and the Sharetrails.org BlueRibbon Coalition, among others. Additional retail, food services (e.g., restaurants), and accommodations (e.g., motels) businesses benefit economically from organized recreational activities that attract visitors from across and outside of the state.

Hunting and wildlife viewing are popular recreational activities enjoyed by visitors and residents. Some of the lands used for these activities are proposed for withdrawal and may become closed to the public. Various organizations (primarily sportsmen's organizations) interested in preserving these activities have invested in and constructed approximately 65 water developments (i.e., guzzlers) that are located within the proposed expansion areas. Guzzlers provide water needed by wildlife during dry conditions.

3.13.2.3.8 Property Values

Approximately 80 percent of land in Nevada is owned and managed by the federal government, a higher percentage than in any other state (Vincent et al., 2017). The majority of privately owned residential properties in Churchill County are located in the city of Fallon and within a few miles of the intersection of state highways 95 and 50 (Zillow, 2017). The median price for listed homes is \$196,000 in Churchill County and \$162,500 in the city of Fallon. Home values have been increasing steadily since 2013. No properties are currently listed as sold or for sale in the vicinity of the B-16, B-17, B-20, and Dixie Valley Training Area (DVTA) expansion areas (Zillow, 2017).

The property values of privately owned cattle ranches, farms, and other livestock operations on the open market are based in part on the availability of adjacent or nearby grazing lands and water developments, which are often located on public lands.

The majority of residential and business properties and privately owned, undeveloped land potentially affected by the proposed expansion are located in Churchill County. Churchill County assesses property values for tax purposes on an annual basis. The 2017–2018 secured assessment roll lists the assessed value of all taxable property in the county, including the value of the land and any improvements (e.g., structures) on the land (Churchill County, 2017). The assessed value of specific properties in or near the proposed expansion areas is not identified in this EIS to protect the privacy of individuals who may not want that information disclosed. For information on specific properties, refer to Churchill County (2017).

3.13.2.3.9 County Revenues and Payment in Lieu of Taxes

Counties in which federal grazing districts are located may receive a portion of certain grazing-related funds received by the United States. Under the authority of the Taylor Grazing Act (43 United States Code section 315(i)), the U.S. Treasury distributes the funds to the State, which then distributes the funds to the relevant counties as determined by the State Legislature.

PILTs are federal payments to local governments that help offset losses in property taxes due to non-taxable federal lands within their boundaries (U.S. Department of the Interior, 2017a). The law recognizes that the inability of local governments to collect property taxes on federally owned land can create a fiscal impact. The payments are made annually for tax-exempt federal lands administered by the BLM, the National Park Service, the U.S. Fish and Wildlife Service (all agencies of the Interior Department), the U.S. Forest Service (part of the U.S. Department of Agriculture), and for federal water projects. The formula used to compute the payments is contained in the PILT Act (31 United States Code Section 6901-6907) and is based on population, receipt-sharing payments, and the amount of federal land within an affected county. A detailed analysis of PILT is located in Supporting Study: Socioeconomic Report (available at <https://frtcmmodernization.com>). In fiscal year 2016, Nevada received over \$25 million in payments in lieu of taxes from the BLM (U.S. Department of the Interior, 2017b). The payments are distributed by the State to counties with entitled acreage.

The number of acres of entitled land and the amount of payment in 2018 for Churchill, Lyon, Mineral, Nye, and Pershing Counties are presented in Table 3.13-11. It should be noted that the maximum payment made to each county is limited based on the population in the county. The payment is prorated depending on the appropriated funding for the year. The population is used to determine the population funding limit for all of the counties but Lyon. Lyon County is the only county that was not population limited under Formula A in 2018 but instead followed non-ceiling Alternative B. Whether a county is population limited or follows Alternative B depends on the payment amount received by the

county from other federal agencies in the previous year and the national authorization level for that year (Hoover, 2017).

Table 3.13-11: Payments In Lieu of Taxes to Churchill County, Mineral County, Nye County, Pershing County, and Lyon County, 2018

County	Entitlement Acres	Unit Population	2018 Payment to County
Churchill	2,158,245	24,000	\$2,298,812
Lyon	859,206	50,000	\$2,313,628
Mineral	1,936,566	5,000	\$718,024
Nye	8,548,402	42,000	\$3,326,751
Pershing	2,918,844	7,000	\$1,112,319

Source: Supporting Study: Socioeconomic Report (available at <https://frtcmmodernization.com>)

3.13.3 Environmental Consequences

Analysis of impacts on socioeconomic resources in the region focuses on the effects of the alternatives on the population and demographics, housing, and regional and local economy. A summary of the potential impacts with implementation of the No Action Alternative or any of the three action alternatives (Alternatives 1, 2, and 3) is provided at the end of this section (Section 3.13.3.6, Summary of Effects and Conclusions).

The economic analysis presented below is for the purposes of analyzing environmental consequences to the regional economy under NEPA and is not directly related to any potential payments that could be made in the future. Any decision and amount on potential payments would be subject to a separate implementation process.

3.13.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur, and the existing legislative withdrawals would expire on November 5, 2021. There would be no renewed or expanded land withdrawal and no airspace-related changes. Therefore, for purposes of socioeconomic resources, the No Action Alternative could result in the Navy returning previously withdrawn lands to the public domain, which in turn could create opportunities for new industry or the expansion of existing industries.

The analysis presented below is a broad discussion of possible socioeconomic impacts associated with the No Action Alternative because, in that case, future use of the land and airspace is unknown at this time. Any future actions undertaken as result of implementation of the No Action Alternative would require consideration of environmental impacts in accordance with NEPA, appropriate regulatory consultations, and socioeconomic analysis.

3.13.3.1.1 Potential Impacts on Population and Demographics

Under the No Action Alternative, it is assumed that populations in the city of Fallon and Churchill County could decline if the mission of NAS Fallon changes. In addition, the demographics of the city of Fallon and Churchill County could likely change the population ratio because a substantial number of military and civilian personnel and their dependents are represented in the 28- to 32-year-old demographic group in the city of Fallon (e.g., those living alone or with one other person). On the other hand,

population increases associated with the development of industries with growth potential, such as geothermal and mining, could occur over the long term as businesses in these industries become established.

Under the No Action Alternative, between the decrease in population associated with a potential mission change at NAS Fallon and a potential increase in population associated with future growth in the geothermal and mining industries, it is unlikely that there would be a significant impact on the populations or demographics of the region of influence.

3.13.3.1.2 Potential Impacts on Housing

Housing availability and construction of future housing is typically dependent on the existing and projected population of a community. Any decrease in the population associated with implementation of the No Action Alternative would likely result in higher vacancy rates, and slower-than-projected population growth could curtail the development and construction of new housing.

The city of Fallon could likely be impacted by any sudden decrease in the need for housing by NAS Fallon personnel. Base housing at NAS Fallon has been decreasing over the years, and that trend is expected to occur at least over the next four years as older housing units continue to be demolished and most military and civilian personnel who work at NAS Fallon now live in housing off base in the city of Fallon and Churchill County. Based on these data, a decrease in the local population would likely result in increased housing vacancies in or near the city of Fallon. Since the majority of Navy (military and civilian) personnel reside in the city of Fallon, the availability and development of housing in other areas of Churchill County and surrounding counties is not as dependent on the Navy population. Therefore, under the No Action Alternative, potentially significant impacts on housing would only be likely in the city of Fallon.

3.13.3.1.3 Potential Impacts on Regional and Local Economy

Potential Impacts on Employment

The unemployment rates in the city of Fallon and Churchill County both exceeded the state and national rates by several percentage points in 2015. The higher rates are attributed to the 2008–2009 economic downturn that forced the closure of several retail businesses in Churchill County and the city of Fallon (Churchill County, 2015). The loss of potential jobs at NAS Fallon under the No Action Alternative could impact the unemployment rate in both the city of Fallon and Churchill County. As reported in Section 3.13.2.3 (Regional and Local Economy), most military and civilian personnel who work at NAS Fallon reside in Churchill County, but residents in the surrounding counties who commute to NAS Fallon for work could also be impacted. Other economic sectors in the city of Fallon and Churchill County, including retail trade and education which together employ approximately 30 percent of the working-age population in both the city and the county, could also be indirectly impacted by the potential loss of jobs at NAS Fallon.

Employment in other sectors, such as energy production, could increase over time as geothermal and other energy-related infrastructure is developed. In the short term, the unemployment rate in the city of Fallon and Churchill County could be expected to increase, and job opportunities for similar positions may likely not be readily available in equal numbers.

Under the No Action Alternative, significant impacts on employment in the city of Fallon and Churchill County could occur if the current withdrawal were allowed to expire and the Navy were to relocate personnel and assets from NAS Fallon.

Potential Impacts on Businesses and Industry

Potential Impacts on Agriculture

Livestock operations, particularly cattle ranches, are the primary agricultural resources that could potentially be impacted. Under the No Action Alternative, the Navy would not expand the existing Bravo areas or the DVTA. In addition, as part of the No Action Alternative, the Navy could potentially relinquish currently held lands to the BLM, which in turn could open those lands to grazing. However, the ability for making these lands available to farmers and ranchers is unclear and would be contingent upon successfully remediating areas with hazardous materials, including unexploded ordnance. If the land did become available for grazing, it could have the potential to positively impact farming, cattle, and other livestock operations. Therefore, there could likely be beneficial impacts on agriculture, but overall impacts from the No Action Alternative would not be significant.

Potential Impacts on the Mining Industry

Under the No Action Alternative, all current mining claims would remain intact, and mines located on existing Navy-owned land could potentially become open to the public. Due to the availability of additional land, industrial mining operations could potentially expand operations and increase revenue. While the timeline for making these lands available to the mining industry is not known, the availability of additional potentially lucrative mineral resources could positively impact the mining industry. Accordingly, there could likely be beneficial impacts on the mining industry, but overall impacts from the No Action Alternative would not be significant.

Potential Impacts on the Geothermal Industry

Nevada has more geothermal projects in development than any other state (U.S. Department of Energy, 2017), and approximately 65 percent of renewable energy is produced by geothermal resources in northern Nevada. Nearly one-third of this energy generation comes from the Fallon area.

Under the No Action Alternative, geothermal parcels would remain open to the public and future development. Existing transmission and energy corridors would remain unchanged, and ongoing planning for future corridors would continue uninterrupted. Geothermal fields identified on existing Navy-managed lands could potentially become available for exploration and future development. While the timeline for potentially making these lands available to the geothermal industry is not known, the availability of additional geothermal resources could positively impact the energy industry. Accordingly, there could likely be beneficial impacts on the geothermal industry, but overall impacts from the No Action Alternative would not be significant.

Potential Impacts on the Recreation Industry and Tourism

Under the No Action Alternative, the Proposed Action would not occur, and the Navy would not expand the Bravo areas and the DVTA. Businesses that provide goods and services (e.g., hunting equipment or wildlife viewing guides) in support of recreation and tourism activities would be impacted to the extent that job loss at NAS Fallon could result in reduced spending on recreational activities. Therefore, there could likely be economic impacts related to recreation and tourism, but overall impacts from the No Action Alternative would not be significant.

Potential Impacts on Property Values

While some military personnel reside on NAS Fallon, the majority of military and all civilian and support personnel either own a home or rent in the local area. As shown in Table 3.13-2 and Table 3.13-3, the

number of available housing units, the percentage of vacant housing units, and the percentage of vacant rentals in Churchill County and the city of Fallon all increased between 2000 and 2015. These trends would likely continue at an accelerated rate under the No Action Alternative. A rapid increase in the number of available residential properties would likely negatively impact property values in Churchill County and the city of Fallon. Therefore, significant impacts on residential property values in the city of Fallon and Churchill County could be anticipated. Little or no impact on property values would be expected in the other counties, where few or no military or Department of Defense civilian personnel reside.

Potential Impacts on County Tax Revenue, State Grazing-Fee Derived Revenue, and Payments In Lieu of Taxes

Under the No Action Alternative, Churchill County and other affected counties would continue to receive PILT from the Federal Government. At this time, there is no sufficient data or information available to quantify potential future changes in population and associated PILT payments under the No Action Alternative. However, as stated above, because it is not anticipated that there would be significant impacts on the population, it is assumed there would be no significant impact related to PILT for the affected counties. The State of Nevada would continue to receive funds from grazing-related fees under the Taylor Grazing Act. Therefore, no significant impacts on county revenue would occur with implementation of the No Action Alternative.

3.13.3.2 Alternative 1: Modernization of the Fallon Range Training Complex

3.13.3.2.1 Potential Impacts on Population and Demographics

As described in Section 3.13.2.1 (Population and Demographics), the populations of the city of Fallon and Churchill County are expected to continue growing through the year 2030. The proposed expansion of the training ranges at FRTC would be likely to either maintain or slightly increase the projected population in the city of Fallon and Churchill County if additional permanent personnel were to be hired at NAS Fallon. Incremental growth of this type at NAS Fallon would be consistent with growth rates over the past few decades. Job opportunities created by short-term construction under Alternative 1 would not be expected to affect the permanent population in the city of Fallon or Churchill County, because workers are not likely to move into the county for a temporary job.

The demographics of the populations of the city of Fallon and Churchill County, as well as the surrounding counties, would not be expected to change under Alternative 1. As discussed in Section 3.13.2.1 (Population and Demographics), only a few full-time jobs would be expected to be created as a result of the proposed range expansion. Temporary jobs that support the installation of roads, reroute the Paiute Pipeline, or construct bombing targets would not be expected to change the population or demographics of the city of Fallon, Churchill County, or any of other counties in the geographical area. No substantial increase in the number of military or civilian personnel at NAS Fallon would be anticipated under Alternative 1. Therefore, no significant impacts on the population or demographics would occur with implementation of Alternative 1.

3.13.3.2.2 Potential Impacts on Housing

As discussed in Section 3.13.2.2 (Housing), the number of housing units in the city of Fallon grew by over 19 percent between 2000 and 2015. During that same period, the percent of occupied housing decreased, indicating that new construction may have outpaced the need for available housing (the population grew by 14 percent between 2000 and 2010). In addition, over 50 percent of housing for rent

in the city of Fallon is typically vacant. As described in Section 3.13.2.1 (Population and Demographics), the populations of the city of Fallon and Churchill County are expected to continue growing through the year 2030, increasing the need for housing in the city and the county. The expansion of the training ranges at FRTC, as described under Alternative 1, would be likely to only slightly increase the population in the city and Churchill County. As noted above, no substantial increase in the number of military and civilian personnel is projected in the coming years. The availability of existing housing would likely accommodate any slight to moderate increase in the population. Therefore, Alternative 1 would not significantly impact the availability or affordability of housing in the region of influence.

3.13.3.2.3 Potential Impacts on Regional and Local Economy

The regional and local economy refers to the economies of the city of Fallon, Churchill County, and the surrounding counties potentially impacted under Alternative 1. The socioeconomic indicators of employment, key businesses and industries, property values, and county revenue are analyzed to assess the significance of any potential impacts. In this section, potential impacts on employment growth are addressed under the relevant business or industry that is affected by the proposed land withdrawal under Alternative 1.

Potential Impacts on Businesses and Industry

Potential Impacts on Range Livestock

Public land grazing plays an important role in the range livestock sector of the study area economies. Under Alternative 1, 11 BLM allotments and one Bureau of Reclamation allotment would be affected by a permanent reduction in permitted AUMs associated with the public land grazing permits. Because ranching operations have economic linkages with other economic sectors in the county of the base property, changes in public land grazing also have impacts on the county economy where the base property is located.

While the BLM would conduct further site-specific evaluations to make a final determination as to whether permitted AUMs would need to be adjusted, the Navy estimates that Alternative 1 would result in the loss of between 7,896 and 10,432 AUMs. As depicted in Table 3.13-12, this would result in a loss of up to approximately 6.23 percent of AUMs within the BLM Carson City District, 0.21 percent of AUMs (approximately one-fifth of 1 percent) within the Winnemucca District, and 0.50 percent of all AUMs (approximately one-half of 1 percent) in Nevada.

The Navy calculated the loss of AUMs using the method discussed in Section 3.13.1.3.1 (Determining Loss of Animal Unit Months) and described in detail in the Supporting Study: Livestock Grazing Allotment Study (available at <https://frtcmodernization.com>). The Navy anticipates any potential loss in AUMs would be within the range and values identified in Table 3.13-13. However, the BLM's follow-on site-specific analysis would determine the actual change in permitted AUMs for each allotment.

Table 3.13-12: Alternative 1: Percent Loss of Animal Unit Months (AUMs) for BLM Districts and State of Nevada

State/BLM District	Approximate Existing AUMs	Projected AUMs Lost		Percent of AUMs Lost	
		Low	High	Low	High
BLM Carson City District	156,406 ¹	7,584	9,738	4.85%	6.23%
BLM Winnemucca District	335,435 ¹	312	694	0.09%	0.21%
Nevada	2,085,167 ²	7,896	10,432	0.38%	0.50%

¹The BLM provided the existing number of AUMs for the Carson City District and the Winnemucca District in July 2018. This number may not match the number of AUMs in the public Rangeland Administration System.

²Bureau of Land Management (2017b)

Table 3.13-13: Alternative 1: Allotments Within the Proposed FRTC Boundaries, Acres Closed, and Projected Loss of Animal Unit Months (AUMs)

Allotment Name	Existing Total Acres	Permitted Total AUMs	Alternative 1				
			Proposed FRTC Land	Acres Closed	Percent Closed	Projected Loss of AUMs	
						Low	High
Bell Flat	91,997	3,688	B-17, DVTA	77,743	85%	3,068 (83%)	3,346 (91%)
Bucky O’Neill	40,946	1,500	DVTA	0	0%	0 (0%)	0 (0%)
Copper Kettle	108,220	2,333	B-20	54,024	50%	857 (37%)	1,165 (50%)
Cow Canyon	149,168	2,382	DVTA	0	0%	0 (0%)	0 (0%)
Dixie Valley	275,782	6,341	DVTA	0	0%	0 (0%)	0 (0%)
Eastgate	311,221	9,770	B-17	657	<1%	21 (<1%)	32 (<1%)
Frenchman Flat	70,323	2,001	DVTA	0	0%	0 (0%)	0 (0%)
Horse Mountain	63,160	3,000	B-16	2,411	4%	67 (2%)	137 (5%)
Humboldt Sink	190,728	1,582	B-20	1,438	1%	0 (0%)	20 (1%)
La Beau Flat	122,640	3,035	B-17, DVTA	68,127	56%	1,551 (51%)	2,027 (67%)
Lahontan	77,882	1,155	B-16	30,681	39%	456 (39%)	619 (54%)
Mountain Well-La Plata	139,610	8,004	DVTA	0	0%	0 (0%)	0 (0%)
Phillips Well	80,618	1,450	B-17, DVTA	58,438	72%	989 (68%)	1,052 (73%)

Table 3.13-13: Alternative 1: Allotments within the Proposed FRTC Boundaries, Acres Closed, and Projected Loss of Animal Unit Months (AUMs) (continued)

Allotment Name	Existing Total Acres	Permitted Total AUMs	Alternative 1				
			Proposed FRTC Land	Acres Closed	Percent Closed	Projected Loss of AUMs	
						Low	High
Pilot Table Mountain	538,322	7,900	B-17	18,010	3%	36 (>1%)	317 (4%)
Rochester	255,390	3,963	B-20	43,374	17%	312 (8%)	674 (17%)
Salt Wells	51,421	1,624	DVTA	0	0%	0 (0%)	0 (0%)
Sheckler Pasture	22,210	145	B-16	4,187	19%	0 (0%)	27 ² (19%)
White Cloud	79,647	1,884	B-20, DVTA	26,338	33%	539 (29%)	1,043 (55%)
TOTAL¹	2,669,285	61,757	FRTC	385,428	14%	7,896 (13%)	10,459 (17%)

¹Total acres do not add up because of the overlap of Sheckler Pasture and the Lahontan Allotment.

²In the absence of production data, potential loss of AUMs was calculated as a ratio of available acreage to permitted AUMs.

Notes: (1) Acres were calculated using ArcGIS data provided by BLM (UTMz11 NAD83 projection) and may not be consistent with acres reported in the BLM’s public Rangeland Administration System. (2) FRTC = Fallon Range Training Complex, DVTA = Dixie Valley Training Area

Table 3.13-13 shows the allotments and the proposed minimum and maximum loss in AUMs under Alternative 1. Section 3.13.1.3.1 (Determining Loss of Animal Unit Months) provides a detailed definition and methodology for identifying AUM allotments affected by the proposed land withdrawal renewal and expansion. The economic impacts of reduced AUMs were determined based on where the base property is located, which is often the same location as the ranch headquarters, but occasionally the base property supporting the public land grazing permit is located separately from the ranch headquarters (see Supporting Study: Socioeconomic Report, available at <https://frtcmodernization.com>).

The economic impact of changing forage use and availability starts with an estimate of the economic value of the grazing capacity potentially eliminated or redirected (Bartlett et al., 2002). These assessments and values are often controversial because of the difficulty in estimating the value of a grazing permit on Federal land.

Federal grazing fees are set by statute and take place in a highly regulated environment; therefore, they do not have a ready analogue in the private market. Compounding this difficulty, there are different valuation approaches that can be used. For purposes of this EIS, four different valuation methods were evaluated to determine the most appropriate approach for analyzing potential economic impacts related to range livestock and a permanent reduction in AUMs. These methods are discussed below.

One method evaluated was to use a replacement cost approach to valuation. This method estimates the value of a Federal grazing permit based on the cost of replacing the lost forage previously accessible under a Federal grazing permit with private forage. In the area of Nevada around Fallon, the cost of private forage replacement valuation was estimated to be \$9.90 per AUM (U.S. Department of

Agriculture, 2018). A second method evaluated for valuing AUMs was to use a cow-calf costs and return budget developed for Eureka County by Curtis et al. (2005). Under that methodology, the AUM value of production was estimated to be \$38. This value was based on production practices and materials considered typical of a well-managed beef cattle operation in the region as determined by a producer panel conducted in November of 2004 (over 15 years ago); however, costs, materials, and practices are not applicable to every operation because production practices vary among ranchers within the region (Curtis et al., 2005).

A third methodology evaluated was to consider the contribution of a Federal grazing permit to the market value of a ranch property as a whole. This would include considering the value for livestock production and other intrinsic attributes such as exclusive access to permits, the desirable ranching and rural lifestyle, open spaces, and the solitude and tranquil experiences realized or perceived to exist when using public lands for grazing (Bartlett et al., 2002). This approach used a method published by Rimbey et al. (2007) and Torell et al. (2012) that estimated permit values ranging from approximately \$100 to \$350 per AUM based on situations where ranch operations were highly dependent on federal land grazing. These values were similar to capitalized return reductions estimated by Torell et al. (2014). Torell is notable in working with various co-authors (Torell & Fowler, 1986; Torell & Doll, 1991; Torell & Kincaid, 1996; Torell & Bailey, 2000; Xu et al., 1994) to explore how amenity and lifestyle attributes of ranch ownership influence ranch values (Bartlett et al., 2002). Specifically, Torell developed hedonic models (which use regression analysis to break down the price of an item into separate components) that included dummy variables (typically used in regression models) like percent of grazing capacity coming from public lands, time of sale, ranch size, rangeland productivity, house and building values, and cultivated acreage. Then, Torell and Bailey (2000) included aesthetic values like mountainous terrain and desirable quality of life factors. Bartlett et al. (2002) further expanded the model to include exclusive access to permits, the desirable ranching and rural lifestyle, open spaces, and the solitude and tranquil experiences realized or perceived to exist when using public lands for grazing. Since no formal market exists for these variables, this approach to economic valuation is highly dependent on variable human factors and results in a wide range of AUM valuation with the potential to skew outputs.

The fourth method evaluated uses a production function to valuation. This method estimates the value of a Federal grazing permit based on the market value of a cow-calf produced by a rancher. Following procedures for valuing AUMs from referenced studies by Torell et al. (2002), Alevy et al. (2006), and Taylor et al. (2004), a State of Nevada average cow-calf budget to estimate AUM value for Federal Grazing was derived. Based on 2015 University of Nevada Cooperative Extension cow-calf budgets and price indexing, a state average cow-calf budget for the State of Nevada was developed. Using the state average cow-calf budget, per AUM valuation of production was estimated to be \$56.83 per AUM (see Supporting Study: Socioeconomic Report, available at <https://frtcmodernization.com>).

In the context of the FRTC modernization, it is challenging to determine a preferred approach to valuation of the affected AUMs. The loss of some permitted grazing under any of the action alternatives would be highly localized, and the consequences in terms of the value of this loss would depend in part on the individual decisions made by the individual ranchers affected by any loss. Under Alternative 1, based on minimum and maximum AUMs lost, there would be approximately 7,896 to 10,459 AUMs lost among about a dozen permit holders (Table 3.13-14). Nationally, or even for Nevada, this number is not likely to be significant, but could be significant for the local stakeholders on an individual or ranch basis.

Table 3.13-14: Permitted AUMs, Minimum and Maximum AUMs Lost, and County Base Location for Allotments Impacted under Alternative 1 and Alternative 2

Allotment Name	County Base	Permitted AUMs	Minimum AUMs Lost	Maximum AUMs Lost
Bell Flat	Churchill	3,688	3,068	3,346
Copper Kettle	Churchill	2,339	857	1,165
Eastgate	Churchill (Nye) ¹	9,770	21	32
Humboldt Sink	Churchill	1,582	0	20
Lahontan	Churchill	1,155	456	619
Phillips Well	Churchill (Nye) ¹	1,450	989	1,052
White Cloud	Churchill	1,884	539	1,043
La Beau Flat	Lander (Eureka) ²	3,035	1,551	2,027
Pilot Table Mountain	Mineral	7,900	36	317
Rochester	Pershing	3,963	312	674
Horse Mountain	Plumas, CA (Churchill) ³	3,000	67	137
Total		39,760	7,896	10,432

Source: Supporting Study: Socioeconomic Report (available at <https://frtcmmodernization.com>)

¹Although the base property for Phillips Well and Eastgate are located in Churchill County, the majority of the allotments are physically located in Nye County, and therefore the Navy acknowledges that there may be impacts on Nye County as well, although the quantification of these impacts would be speculative.

²Although the base property for La Beau Flat is in Lander County, the ranch operations occur in Eureka County, and therefore the Navy acknowledges that there may be impacts on Eureka County as well, although the quantification of these impacts would be speculative.

³Although the base property for Horse Mountain is in Plumas, California, the allotment is physically located in Churchill County, and therefore the Navy acknowledges that there may be impacts on Churchill County as well, although the quantification of these impacts would be speculative.

Based on a review of the four methodologies for determining the socioeconomic impacts of potentially reduced AUMs on Federal grazing permits, the Navy concluded that the production function to valuation method, where the value per AUM was determined to be \$56.83 (a historical figure for Nevada), was the most appropriate methodology for valuing AUMs. The AUM value of \$56.83 is considered the most appropriate methodology to use in analyzing potential economic impacts on cattle grazing generally because it uses variables (e.g., commodity prices, cattle prices) that remain consistent across all permits (as listed in Table 3.13-14) with respect to which there would be a reduction in AUMs as a result of the Proposed Action, and because it is tied to actual ranch productivity and revenue. This methodology is used only for purposes of estimating potential socioeconomic impacts for this EIS. If the Proposed Action is implemented, the economic impacts on individual permit holders would likely vary on a case-by-case basis in light of the particular economic factors pertaining to each ranch operation, including alternative forage availability and the economic position of each rancher or ranching family. Table 3.13-15 show the projected range of AUM loss and production value loss as a result of the implementation of Alternatives 1 and 2.

Table 3.13-15: Minimum and Maximum Number of AUM's Lost and Production Value of AUMs Lost under Alternative 1 and Alternative 2

County	Alternative 1 and Alternative 2			Alternative 1 and Alternative 2 \$56.83/AUM	
	Total AUMs	Minimum AUMs Lost	Maximum AUMs Lost	Minimum AUMs Lost	Maximum AUMs Lost
Churchill (Nye) ¹	21,862	5,930	7,277	\$337,002	\$413,552
Lander (Eureka) ²	3,035	1,551	2,027	\$88,143	\$115,194
Mineral	7,900	36	317	\$2,046	\$18,015
Pershing	3,963	312	674	\$17,731	\$38,303
Plumas (Churchill) ³	3,000	67	137	\$3,808	\$7,786

¹Although the base property for Phillips Well and Eastgate are located in Churchill County, the majority of the allotments are physically located in Nye County, and therefore the Navy acknowledges that there may be impacts on Nye County as well, although the quantification of these impacts would be speculative.

²Although the base property for La Beau Flat is in Lander County, the ranch operations occur in Eureka County, and therefore the Navy acknowledges that there may be impacts on Eureka County as well, although the quantification of these impacts would be speculative.

³Although the base property for Horse Mountain is in Plumas, California, the allotment is physically located in Churchill County, and therefore the Navy acknowledges that there may be impacts on Churchill County as well, although the quantification of these impacts would be speculative.

Table 3.13-16, Table 3.13-17, and Table 3.13-18 reflect the output (or total economic activity associated with goods or services produced), employment, and household income impacts associated with the reduction of public land grazing for the county economies in Churchill, Lander, Mineral, Pershing, and Plumas Counties.

Total permanent economic impacts (both direct and secondary) associated with lost federal land grazing are presented in Table 3.13-16. For Churchill County, economic impacts range from a minimum loss of \$428,412 (\$337,002 in direct impacts and \$91,410 in secondary impacts) to a maximum loss of \$535,007 (\$413,552 in direct impacts and \$121,455 in secondary impacts) under Alternative 1. Table 3.13-17 represents employment impacts for affected counties; for instance, employment impacts for Churchill County would range from a loss of approximately 6 employees (4.73 in direct impacts and 0.79 in secondary impacts) to a maximum loss of approximately 7 employees (5.84 in direct impacts and 1.04 in secondary impacts). Table 3.13-18 represents labor income losses. Lost grazing in Churchill County would consist of a minimum loss in labor income of \$155,497 (\$121,930.61 in direct impacts and \$33,566.44 in secondary impacts) to a maximum loss of \$191,650 (\$150,458.13 in direct impacts and \$41,191.53 in secondary impacts) under Alternative 1.

Table 3.13-16: Direct and Secondary Losses in Value of Output by Minimum and Maximum Reductions in AUMs under Alternative 1 and Alternative 2

Area	Alternatives 1 and 2	
	Minimum Reduced Cattle Production	Maximum Reduced Cattle Production
Churchill (Nye)¹		
Direct	\$337,002	\$413,552
Secondary	\$91,410	\$121,455
Total	\$428,412	\$535,007
Lander (Eureka)²		
Direct	\$88,143	\$115,194
Secondary	\$1,464	\$16,269
Total	\$89,607	\$131,463
Mineral		
Direct	\$2,046	\$18,015
Secondary	\$126	\$1,103
Total	\$2,172	\$19,118
Pershing		
Direct	\$17,731	\$38,303
Secondary	\$229	\$574
Total	\$17,960	\$38,877
Plumas, CA (Churchill)³		
Direct	\$3,808	\$7,786
Secondary	\$1,097	\$2,245
Total	\$4,905	\$10,031

¹Although the base property for Phillips Well and Eastgate are located in Churchill County, the majority of the allotments are physically located in Nye County, and therefore the Navy acknowledges that there may be impacts on Nye County as well, although the quantification of these impacts would be speculative.

²Although the base property for La Beau Flat is in Lander County, the ranch operations occur in Eureka County, and therefore the Navy acknowledges that there may be impacts on Eureka County as well, although the quantification of these impacts would be speculative.

³Although the base property for Horse Mountain is in Plumas, California, the allotment is physically located in Churchill County, and therefore the Navy acknowledges that there may be impacts on Churchill County as well, although the quantification of these impacts would be speculative.

Source: Supporting Study: Socioeconomic Report (available at <https://frtcmodernization.com>); follow-on changes between the Draft and Final EIS based on changes to data for allotment acreages and AUM numbers altered the predicted losses slightly, therefore they do not match the numbers in the Supporting Study for all areas.

Table 3.13-17: Direct and Secondary Employment Loss Impacts by Minimum and Maximum Loss of AUMs under Alternatives 1 and 2

Area	Alternatives 1 and 2	
	Minimum Reduced Cattle Production	Maximum Reduced Cattle Production
Churchill (Nye)¹		
Direct	4.73	5.84
Secondary	0.79	1.04
Total	5.52	6.88
Lander (Eureka)²		
Direct	1.77	13.30
Secondary	0.21	1.70
Total	1.98	15.00
Mineral		
Direct	0.08	3.30
Secondary	0.00	0.08
Total	0.08	3.38
Pershing		
Direct	0.09	0.16
Secondary	0.09	0.08
Total	0.18	0.24
Plumas, CA (Churchill)³		
Direct	0.02	0.03
Secondary	0.01	0.02
Total	0.03	0.05

¹Although the base property for Phillips Well and Eastgate are located in Churchill County, the majority of the allotments are physically located in Nye County, and therefore the Navy acknowledges that there may be impacts on Nye County as well, although the quantification of these impacts would be speculative.

²Although the base property for La Beau Flat is in Lander County, the ranch operations occur in Eureka County, and therefore the Navy acknowledges that there may be impacts on Eureka County as well, although the quantification of these impacts would be speculative.

³Although the base property for Horse Mountain is in Plumas, California, the allotment is physically located in Churchill County, and therefore the Navy acknowledges that there may be impacts on Churchill County as well, although the quantification of these impacts would be speculative.

Source: Supporting Study: Socioeconomic Report (available at <https://frtcmmodernization.com>)

Table 3.13-18: Direct and Secondary Labor Income Losses for Impacted Areas by Minimum and Maximum Loss of AUMs under Alternative 1 and Alternative 2

Area	Alternatives 1 and 2	
	Minimum Reduced Cattle Production	Maximum Reduced Cattle Production
Churchill (Nye)¹		
Direct	\$121,930.61	\$150,458.13
Secondary	\$33,566.44	\$41,191.53
Total	\$155,497	\$191,650
Lander (Eureka)²		
Direct	\$44,107	\$337,480.71
Secondary	\$7,665	\$58,639
Total	\$51,771	\$396,119
Mineral		
Direct	\$434.00	\$3,825
Secondary	\$39	\$345
Total	\$473	\$4,170
Pershing		
Direct	\$3,845.38	\$8,300
Secondary	\$624	\$1,348
Total	\$4,469	\$9,648
Plumas, CA (Churchill)³		
Direct	\$852.00	\$1,742
Secondary	\$297	\$607
Total	\$1,149	\$2,349

¹Although the base property for Phillips Well and Eastgate are located in Churchill County, the majority of the allotments are physically located in Nye County, and therefore the Navy acknowledges that there may be impacts on Nye County as well, although the quantification of these impacts would be speculative.

²Although the base property for La Beau Flat is in Lander County, the ranch operations occur in Eureka County, and therefore the Navy acknowledges that there may be impacts on Eureka County as well, although the quantification of these impacts would be speculative.

³Although the base property for Horse Mountain is in Plumas, California, the allotment is physically located in Churchill County, and therefore the Navy acknowledges that there may be impacts on Churchill County as well, although the quantification of these impacts would be speculative.

Source: Supporting Study: Socioeconomic Report (available at <https://frtcmmodernization.com>)

As shown in this analysis presented above, there are economic linkages between ranching operations and other local economic sectors. Reductions would therefore impact the affected counties' annual economic activity; however, these impacts would not be significant. For example, total economic activity for Churchill County in 2015 for the beef cattle ranching and farming sector was over 35 million dollars (refer to Supporting Study: Socioeconomic Report, available at <https://frtcmmodernization.com>). Total permanent economic impacts (both direct and secondary) associated with lost federal land grazing are presented in Table 3.13-16.

By adding the overall economic impact from the decrease in AUMs (ranging from \$428,412 to \$535,007 [Table 3.13-16]) and the associated direct and secondary labor income loss (ranging from \$155,497 to \$191,650 [Table 3.13-18]) and comparing these figures to the total economic activity for the beef cattle ranching and farming sector in Churchill County (\$35 million), there would be a reduction in economic output ranging from 1.26 percent to 1.54 percent. The reduction is significantly less when compared to the total economic activity for all sectors for Churchill County, which is 1.7 billion dollars (refer to Supporting Study: Socioeconomic Report, available at <https://frtcmmodernization.com>, Table B-1). Economic losses associated with reduced AUMs would be similar in scale for Lander, Mineral, Pershing, and Plumas counties based on the percentage of lost revenue compared to sector and total economic activity. While there would be significant impacts on individual ranching operations, there would be no significant impacts on overall economic activity within the affected counties. Therefore, no significant impacts on overall economic activity would occur due to lost AUMs under Alternative 1.

Potential Impacts on Mining and Geothermal Industries

Access to geothermal power plant facilities and infrastructure, including miles of power transmission lines, both via road and air is critical to maintaining the financial viability, safety, and efficient operation of the facilities. For example, inefficient power transmission due to longer than necessary transmission lines would increase operating costs and reduce revenue for companies that own the power plants and potentially increase the cost of geothermal power for consumers. Limited access to facilities could also restrict or prevent future development.

The BLM classifies minerals and energy for development into three categories: locatable, leasable, and salable. Locatable minerals are those which, when found in valuable deposits, can be acquired under the General Mining Law of 1872 (17 Stat. 91; 30 U.S.C. 22 et seq.), as amended. Examples of locatable minerals include, but are not limited to, those minerals containing gold, silver, tungsten, fluorite, copper, lead, and zinc. Examples of leasable minerals include, but are not limited to, oil, gas, coal, oil shale, and geothermal resources. The Geothermal Steam Act (30 U.S.C. 1001 et seq.) regulates geothermal resources. Salable minerals (mineral materials, 43 CFR Part 3600) are common varieties of sand, stone, gravel, pumice, pumicite, cinders, and clay.

As stated earlier, there are 14 active industrial mining districts and 10 active geothermal power plants located in the region of influence. While none of these mines are actually located within the proposed withdrawal areas, aspects of their operation could potentially be affected by placing the public land into withdrawal status. Other commercial and private entities own large mining claims and geothermal opportunities on or adjacent to the proposed withdrawal, and their ability to exploit these claims could be affected by placing the public land into withdrawal status. The following provides an analysis of potential locatable, leasable, and salable minerals and energy opportunities (over the next 20 years) that could be impacted under Alternative 1.

Locatable. Depending on the market for gold, there may be the opportunity for multiple exploration projects within the proposed withdrawal and expansion area (refer to Section 3.3, Mining and Mineral Resources). One reasonably foreseeable scenario is that such exploration activity could potentially result in the discovery of 1 open-pit deposit, which could potentially employ between 100 and 300 people. During construction, the number of employees on such a site would typically be two to three times larger than the long-term staff for mine and milling operations. Any such potential deposit would likely be located in or adjacent to areas of known potential for gold or silver. The long-term estimates of commodity prices (for the metals which might be produced because of such a discovery) in the

economic and financial modeling are of critical importance to the economic viability of any such potential new deposits. A typical Nevada open-pit metal mine is expected to contain between 5 and 90 million tons of ore, with a probable size of 15 million tons, averaging 0.06 troy ounces of gold per ton.

Based on historic mineral exploration activity, and known occurrences in the planning area, a moderate amount of exploration for industrial minerals—mainly lithium—would be expected to occur during the next 20 years. Exploration activity would not be expected to result in the discovery of an economically viable mineable deposit. In spite of the low probability of such a discovery, the following scenario is based on mine models developed by the U.S. Bureau of Mines: an industrial mineral deposit (if one were to be discovered) would be expected to contain between 50,000 and 120,000 tons of ore, most probably about 85,000 tons, with an assumed moisture content of 25 percent.

Due to potential lithium deposits, it is possible that there would be an attempt to develop a lithium brine operation in the Study Area. Brine operations can require large amounts of land: a current brine operation in Clayton Valley, Nevada, located outside of the Study Area, reports having a total surface disturbance of 26,000 acres. Typical viable lithium carbonate operations produce 30,000–35,000 tons per year of finished product.

Leasable. It is reasonably foreseeable that exploration drilling would occur on all existing geothermal leases and that additional geothermal leases would be sought within the Study Area, including in the proposed Dixie Valley Training Area. Some of the exploration drilling could potentially lead to more exhaustive exploration efforts, with a few such efforts potentially leading to the discovery of commercially viable geothermal resources (e.g., resources capable of supporting a 15-megawatt geothermal power plant).

Salable. It is expected that one new sand and gravel deposit with good quality material could potentially be developed in easily accessible areas (such as within a few miles of major roads). It is also expected that one new rock aggregate deposit of good quality material could potentially be developed in easily accessible areas (such as within a few miles of major roads). It is expected that one new decorative stone collecting site could potentially be designated to meet the increase in demand.

Therefore, while reasonable foreseeable economic impacts associated with lost mining and geothermal opportunities cannot be accurately determined at this time, there is the potential that significant economic impacts could occur due to the potential loss of mining and geothermal opportunities under Alternative 1.

Potential Impacts on the Recreation Industry and Tourism

Recreational activities such as Off Highway Vehicle riding, camping, viewing of wildlife, hiking, and mountain biking would be affected by the land withdrawal and land acquisition because public access would be restricted on B-16, B-17, and B-20. However, the extent of the economic impacts of these closed areas would depend on the availability and access of alternative areas for public access. There are no formal procedures to estimate number of tourists that visit the public lands and associated reduced revenues as a result of implementation of the FRTC Modernization (see Supporting Study: Socioeconomic Report, available at <https://frtcmodernization.com>). Therefore, assumptions used for the Nevada Test and Training Range Study (U.S. Air Force, 2018) in regards to calculating potential tourism revenues were applied for the FRTC Modernization. As such, a value per acre was extrapolated using Bureau of Land Management's estimated economic impact of recreation activities on BLM land throughout Nevada (approximately 47.5 million acres) valued in 2016 at about \$507,900,000, a value of \$10.69 per acre (U.S. Department of the Interior, 2017c).

Under Alternative 1, B-16, B-17, and B-20 would not allow public recreation access, but public access would be allowed in the DVTA. This would mean there would be 327,742 acres of BLM land that would be withdrawn from hiking, biking, and other recreational activities. Using the factor of \$10.69 per acre as discussed earlier, the economic impact of BLM acres lost from reduced hiking and biking activities across all affected counties would be estimated to be \$3,503,562 for Alternative 1 (see Supporting Study: Socioeconomic Report, available at <https://frtcmodernization.com>).

Recreational activities also include small and big game hunting. Under Alternative 1, there would be a potential reduction in the number of hunting tags. Economic impacts from reduced access for hunting can affect retail sales by resident and non-resident hunters (for example, hunters spend money on items such as hotels, gas, and food). A reduction in retail sales has a ripple effect on employment in the local economy. With the potential lost economic impacts from reduced access for hunting that affects retail sales by resident and non-resident hunters, there are also potential impacts associated with a loss in employment and labor income and total value of output with the lost jobs.

Expenditures for hunting data from the U.S. Fish and Wildlife Service national survey (2011) were derived per hunter day (about \$319.07) to determine economic loss associated with access reductions for hunting (see Supporting Study: Socioeconomic Report, available at <https://frtcmodernization.com>, for more details). In addition, hunting expenditures by expenditure item were identified. If an expenditure item is purchased from a retail sector, the only impact that occurs locally is the value of the sale above operating costs. As shown in Table 3.13-19, for example, for Churchill County, reduced big and small game hunting would have a reduction of approximately \$822,412 (\$726,361 in direct impacts and \$96,051 in secondary impacts) in total value of output, 6.5 employees (5.8 in direct impacts and 0.7 in secondary impacts), and \$206,518 (\$173,107 in direct impacts and \$33,411 in secondary impacts) in labor income, respectively. These figures represent an annual loss; however, the withdrawal would be for an approximate term of 25 years, theoretically equating to approximately \$20.56 million without accounting for inflation over the term of the withdrawal (\$822,412 multiplied by 25 years).

The hunting-related economic losses would represent less than 0.05 percent of total economic activity in Churchill County since total economic activity for Churchill County in 2015 was over 1.7 billion dollars. Hunting-related economic losses would be similar in scale for Mineral, Pershing, and Nye counties based on the percentage of lost revenue compared to total economic activity (refer to Supporting Study: Socioeconomic Report, available at <https://frtcmodernization.com>, Table B-1). Therefore, no significant impacts would occur in the affected counties due to lost recreational opportunities under Alternative 1.

Table 3.13-19: Economic, Employment, and Labor Income Impacts from Lost Hunting Opportunities in Churchill, Mineral, Pershing, and Nye Counties under Alternative 1

Impacts	Churchill	Mineral	Pershing	Nye
Employment				
Direct	5.8	0.3	1.1	0.84
Secondary	0.7	0	0	0
Total	6.5	0.3	1.1	0.84
Labor Income				
Direct	\$173,107	\$13,381	\$22,951	\$21,264
Secondary	\$33,411	\$1,329	\$1,100	\$1,446
Total	\$206,518	\$14,710	\$24,051	\$22,710
Direct	\$726,361	\$35,580	\$79,891	\$37,414
Secondary	\$96,051	\$4,028	\$4,173	\$5,031
Total	\$822,412	\$39,608	\$84,064	\$42,445

Source: Supporting Study: Socioeconomic Report (available at <https://frtcmodernization.com>)

Potential Impacts on Property and Property Values

Under Alternative 1, the Navy would need to acquire privately held property from individuals to meet the requirements of the proposed expansion of the Bravo ranges and the DVTA. Private land owners would receive just compensation for loss of any privately owned land acquired by the U.S. government. Just compensation would be determined by calculating the fair market value of parcels in accordance with federal appraisal rules codified in the Uniform Appraisal Standards for Federal Land Acquisitions (The Appraisal Foundation, 2016). The determination of the value of any property proposed to be acquired by the United States, and for which just compensation would be required, would be subject to a separate process and would occur subsequent to implementation of the Proposed Action.

As described in Section 3.13.2.3.8 (Property Values), the property values of privately-owned cattle ranches, farms, and other livestock operations in the market are based in part on the availability of adjacent or nearby grazing lands and water developments, which are often located on public lands. If these lands were to become inaccessible, then the value of a ranch or other agricultural operation may be negatively impacted. Similarly, reducing the amount of public lands available for grazing or other agricultural operations may limit the expansion potential of a nearby cattle ranch or farming operation, which may impact the value of those properties to some extent, even if the United States would not be seeking to actually acquire these particular properties and if the properties would otherwise be unaffected by the proposed expansion as described under Alternative 1.

The vast majority of value of residential and commercial properties in the city of Fallon and Churchill County would not be expected to be impacted under Alternative 1. Any slight increase in personnel at NAS Fallon would not likely result in an increase in demand for residential properties and any associated property values. Therefore, no significant impacts on property values would occur under Alternative 1.

Potential Impacts on County Revenue¹ and Payments In Lieu of Taxes

Under Alternative 1, the withdrawal of public land for the proposed expansion would affect current and foreseeable operations and expansions in the livestock, mining and geothermal, potential water resources, and recreational sectors. Withdrawal of lands would also affect local government revenues. PILT payments are a primary source of county government revenues from public lands. During the calculation year of 2018, Churchill, Mineral, Nye, and Pershing Counties PILT payments are population limited under Formula A (though in years prior, Nye County fell under Formula B). This means that those counties are capped on PILT payments based on population and not on entitlement acreage or a 99.9 percent prorated adjustment (see Supporting Study: Socioeconomic Report, available at <https://frtcmmodernization.com>, for more details). Table 3.13-20 shows potential impacts on PILT payments using 2018 data from reductions in public lands from FRTC. Even with a reduction in public lands, Churchill and Nye counties would see no change in PILT payments due to the payment methodology. It is important to note that the methodology can change from year to year, and as mentioned in Section 3.13.2.3.9 (County Revenues and Payment in Lieu of Taxes) is based on population, previously received receipt-sharing payments, and the amount of federal land within an affected county. For example, in 2018 Nye County was under PILT Formula A. If the land withdrawal occurred in 2019, the appropriate PILT formula for Nye County would be PILT Formula B, and there would be a reduction in the authorized PILT payment of \$11,769. While this EIS uses the 2018 PILT methodology for estimating potential impacts on authorized PILT payments, actual impacts on authorized PILT payments will depend on the year in which any land withdrawal is enacted that reduces the number of PILT-eligible acres.

Only Lyon County is estimated to experience a loss in PILT payments based on 2018 PILT estimates. Lyon County followed non-ceiling Alternative B plans. This means that their PILT payment valuation is calculated based on acreage, not on population. Thus, Lyon County would experience changes to their PILT payments due to the proposed land withdrawal. Under Alternative 1, this would equate to approximately \$11,038 in loss of PILT or 0.49 percent of the 2018 PILT Payment estimate of \$2,313,628.

Under Alternative 1, livestock grazing operations would be reduced, and reasonably foreseeable potential opportunities in the mining and geothermal power industries could potentially be lost as well as lost recreational opportunities; therefore, there would likely be at least some appreciable reduction in potential state and local government revenues such as property taxes, future retail sales and use taxes, grazing-related fees, and PILT. In addition, taxes would be lost for some counties. In the state of Nevada, some rural counties receive a guaranteed amount of sales tax revenues. For counties that are not guaranteed counties (Churchill and Nye Counties), they would realize reduced sales tax revenues. However, given that the state legislature can change allocations procedures of sales and use taxes among Nevada counties during a legislative session, it would be difficult to estimate potential sales and use tax revenue impacts on impacted counties.

The state could also lose funding from wildlife applications fees, resident and non-resident licenses and tags, and reduced federal matching dollars from the Pittman-Robertson Act (16 U.S.C. 669 et seq.). The

¹ One source of governmental revenues that would be impacted is possessory interest of property. A taxable possessory interest may exist whenever there is a private beneficial use of publicly owned, non-taxable property. For ranches using public land, the capitalized value of additional production on public lands becomes possessory interest. As discussed by Gentner and Tanaka (2002), public land ranches are heterogeneous in their characteristics, including size of ranch, level of annual and seasonal dependency on public lands, and alternative forage by ranch. The degree of reduction in possessory interest would have to be assessed on a case-by-case analysis for ranches affected by FRTC Modernization, which is beyond the scope of this study.

Pittman-Robertson Act of 1937 (Federal Aid in Wildlife Restoration Act) collects an 11 percent excise tax paid by manufactures on firearms, ammunition, and archery equipment. This tax provides grant funds for wildlife and habitat conservation projects to the states. The funding is distributed by the U.S. Fish and Wildlife Service to state wildlife agencies, such as the Nevada Department of Wildlife, on an annual basis. When combined with state license and tag sales, these two sources constitute the majority of funding for habitat and wildlife conservation projects. In total, the State of Nevada Department of Wildlife could potentially lose an estimated \$373,179 in funding due to hunting access restrictions under Alternative 1. This is a conservative estimate because it assumes that a hunter will still likely hunt in Nevada. However, revenue could be somewhat impacted by hunters leaving the state for other hunting opportunities. Assuming a conservative estimate, a loss of \$373,179 represents a reduction of about 0.8 percent in total funding associated with access restrictions based on the Nevada Department of Wildlife’s budget (general fund appropriations and non-general fund authorizations) of over \$47 million dollars (Sandoval, 2017). These figures represent an annual loss; however, the withdrawal would be for an approximate term of 25 years, theoretically equating to approximately \$9.33 million without accounting for inflation over the term of the withdrawal (\$373,179 multiplied by 25 years).

In summary, there would be no change in PILT for Churchill, Mineral, Nye, and Pershing counties, and very little changes in PILT for Lyon County. Therefore, there would be no significant impacts from lost revenues from reduced PILT.

Table 3.13-20: Estimated Reduction in Payments In Lieu of Taxes (2018) Made to Counties under Alternative 1

PILT	Churchill County	Lyon County	Mineral County	Nye County	Pershing County
Acreage Proposed for Withdrawal (Alternative 1) (acres)	544,902	4,073	84,659	30,177	21,641
Authorized 2018 PILT Payments	\$2,298,812	\$2,313,628	\$781,024	\$3,326,751	\$1,112,319
Estimated Reduction in PILT (Alternative 1) (\$)	\$0	\$11,038	\$0	\$0	\$0
Percent Reduction (Based on 2018 PILT)	0%	0.49%	0%	0%	0%

Notes: (1) Estimates assume (1) no change in the county population and (2) all county land proposed for withdrawal is land entitled to PILT. (2) PILT = Payment in lieu of taxes.

Source: (National Association of Counties, 2017)

3.13.3.3 Alternative 2: Modernization of the Fallon Range Training Complex and Managed Access

3.13.3.3.1 Potential Impacts on Population and Demographics

The potential impacts on the population and demographics under Alternative 2 would be similar to the impacts described under Alternative 1 in Section 3.13.3.2.1 (Potential Impacts on Population and Demographics).

Under Alternative 2, allowable access in designated withdrawal areas for compatible activities (refer to Table 2-5), including grazing, hunting, limited mining and geothermal development, off-highway vehicle use, camping and hiking, and major racing events, would not alter or otherwise impact the populations of the city of Fallon, Churchill County, or the affected counties. Therefore, no significant impacts on the population or demographics would occur with implementation of Alternative 2.

3.13.3.3.2 Potential Impacts on Housing

The potential impacts on housing under Alternative 2 would be similar to the impacts described under Alternative 1 in Section 3.13.3.2.2 (Potential Impacts on Housing).

Under Alternative 2, expanding access to the withdrawal areas for compatible activities, including grazing, hunting, limited mining and geothermal development, off-highway vehicle use, camping and hiking, and major racing events, would not alter or otherwise impact housing of the city of Fallon, Churchill County, or the surrounding counties. Therefore, no significant impacts on housing would occur with implementation of Alternative 2.

3.13.3.3.3 Potential Impacts on Regional and Local Economy

The regional and local economy refers to the economies of the city of Fallon, Churchill County, and the surrounding counties potentially impacted under Alternative 2. The socioeconomic indicators of employment, key businesses and industries, property values, and county revenue are analyzed to assess the significance of any potential impacts. In this section, potential impacts on employment are addressed under the relevant business or industry that is affected by the proposed land withdrawal under Alternative 2.

Potential Impacts on Businesses and Industry

Potential Range Livestock Impacts

The potential impacts on livestock grazing under Alternative 2 would be similar to the impacts described under Alternative 1 in Section 3.13.3.2.3 (Potential Impacts on Regional and Local Economy). It is anticipated that this would result in the same percent loss of AUMs as Alternative 1 (see Table 3.13-12). A loss of AUMs would occur where large areas of land would be withdrawn, and currently available livestock grazing would be precluded. It is anticipated that any potential loss in AUMs would be the same estimated range as identified under Alternative 1 as shown in Table 3.13-15, but the final assessment as to any changes in in AUMs would be in the BLM's follow-on site-specific analysis.

The Navy estimates that Alternative 2 would result in a loss of between 7,896 and 10,432 AUMs for all livestock (approximately 13–17 percent from affected allotments). This would result in a loss of up to approximately 6.23 percent of AUMs within the BLM Carson City District, 0.21 percent of AUMs (approximately one-fifth of 1 percent) within the Winnemucca District, and 0.50 percent of all AUMs (one-half of 1 percent) in Nevada.

Under Alternative 2, total permanent economic impacts (both direct and secondary) associated with lost federal land grazing would be the same as presented in Table 3.13-16 under Alternative 1. For example, for Churchill County, economic impacts range from a minimum loss of \$428,412 to a maximum loss of \$535,007.

Under Alternative 2, reductions in local ranching operations would impact the affected counties' economic activity but not significantly. For example, total economic activity for Churchill County in 2015 for the beef cattle ranching and farming sector was over 35 million dollars (refer to Supporting Study: Socioeconomic Report, available at <https://frtcmodernization.com>). By adding the overall economic impact from the decrease in AUMs (ranging from \$428,412 to \$535,007 [Table 3.13-16]) and the associated direct and secondary labor income loss (ranging from \$155,497 to \$191,650 [Table 3.13-18]) and comparing these figures to the total economic activity for the beef cattle ranching and farming sector in Churchill County (\$35 million), there would be a reduction in economic output ranging from

1.26 percent to 1.54 percent. The reduction is significantly less when compared to the total economic activity for all sectors for Churchill County, which is 1.7 billion dollars (refer to Supporting Study: Socioeconomic Report, available at <https://frtcmodernization.com>, Table B-1). Economic losses associated with reduced AUMs would be similar in scale for Lander, Mineral, Pershing, and Plumas counties based on the percentage of lost revenue compared to sector and total economic activity. While there would be significant impacts on individual ranching operations, there would be no significant impacts on overall economic activity within the affected counties. Therefore, no significant impacts on overall economic activity would occur due to lost AUMs under Alternative 2.

Potential Impacts on Mining and Geothermal Industries

The potential socioeconomic impacts on mining and geothermal industries under Alternative 2 would be similar to the impacts described under Alternative 1 in Section 3.13.3.2.3 (Potential Impacts on Regional and Local Economy). Access to geothermal power plant facilities and infrastructure, including miles of power transmission lines, both via road and air, is critical to maintaining the financial viability, safety, and efficient operation of the facilities. Potential losses associated with currently unknown mining and geothermal opportunities as defined under Alternative 1 would be less under Alternative 2 because geothermal opportunities would be allowed in DVTA. However, significant impacts could still occur under Alternative 2 due to such potential lost mining and geothermal opportunities in the expanded B-16, B-17, and B-20.

Potential Impacts on the Recreation Industry and Tourism

The potential impacts on the recreation industry and tourism under Alternative 2 would be similar to the impacts described under Alternative 1. Sales of goods and services associated with recreational activities and tourism would be expected to be similar to Alternative 1, although potentially lower, rate because access for hunting would be allowed under Alternative 2.

Under Alternative 2, B-16, B-17, and B-20 would not allow public recreation access; however, limited public access for bighorn sheep hunting would be allowed in B-17 and public access would be allowed in the DVTA. The Navy is working with the Nevada Department of Wildlife on a Memorandum of Agreement (MOA) for bighorn sheep hunting on the B-17 range, a draft of which will be included in Appendix D (Memoranda, Agreements, and Plans), and the Navy would update the existing managed access Memorandum of Understanding (MOU) from 2000 with a MOA regarding access for management activities at the FRTC. This would mean there would be 327,377 acres of BLM land that would be withdrawn from hiking and biking. Using the factor of \$10.69 per acre as discussed earlier, the economic impact of BLM acres lost from reduced hiking and biking activities across all affected counties would be estimated to be \$3,499,660 for Alternative 2.

Under Alternative 2, lost hunting opportunities would be less than under Alternative 1 (Table 3.13-19). Similar to Alternative 1, Churchill County would be impacted the most from lost hunting. Total estimated economic losses would be \$587,794 (\$519,144 in direct impacts and \$68,650 in secondary impacts) along with an employment loss of 4.7 employees (4.2 in direct impacts and 0.5 in secondary impacts), and a labor income loss of \$147,602 (\$123,723 in direct impacts and \$23,879 in secondary impacts) (Table 3.13-21). These figures represent an annual loss; however, the withdrawal would be for an approximate term of 25 years, theoretically equating to approximately \$14.7 million without accounting for inflation over the term of the withdrawal (\$587,794 multiplied by 25 years).

The hunting-related economic losses would represent less than 0.03 percent of total economic activity in Churchill County since total economic activity for the county in 2015 was over 1.7 billion dollars (refer to Supporting Study: Socioeconomic Report, available at <https://frtcmmodernization.com>, Table B-1). Hunting-related economic losses would be similar in scale for Mineral, Pershing, and Nye counties based on the percentage of lost revenue compared to total economic activity.

Therefore, no significant impacts would occur due to lost recreational opportunities under Alternative 2.

Table 3.13-21: Economic, Employment, and Labor Income Impacts from Lost Hunting Opportunities in Churchill, Mineral, Pershing, and Nye Counties under Alternative 2

Impacts	Churchill	Mineral	Pershing	Nye
Employment				
Direct	4.2	0.3	0.9	0.6
Secondary	0.5	0	0	0
Total	4.7	0.3	0.9	0.6
Labor Income				
Direct	\$123,723	\$4,055	\$22,951	\$14,350
Secondary	\$23,879	\$402	\$1,112	\$976
Total	\$147,602	\$4,457	\$24,063	\$15,326
Value of Output				
Direct	\$519,144	\$10,785	\$79,889	\$25,241
Secondary	\$68,650	\$1,221	\$4,175	\$3,395
Total	\$587,794	\$12,006	\$84,064	\$28,636

Source: Supporting Study: Socioeconomic Report (available at <https://frtcmmodernization.com>)

Potential Impacts on Property and Property Values

The potential impacts on property values under Alternative 2 would be similar to the impacts described under Alternative 1.

Private land owners would receive just compensation for loss of any privately owned land acquired by the United States due to the proposed expansion of the Bravo ranges and the DVTA. Just compensation would be determined by calculating the fair market value of parcels in accordance with federal appraisal rules codified in the Uniform Appraisal Standards for Federal Land Acquisitions.

The value of most residential and commercial properties in the city of Fallon and Churchill County would not be expected to be impacted under Alternative 2. Therefore, no significant impacts on property values would occur with implementation of Alternative 2.

Potential Impacts on County Revenue and Payments In Lieu of Taxes

The potential impacts on county revenue, grazing-related fees, and PILT under Alternative 2 would be identical to the impacts described under Alternative 1 because the same acreage of land would be withdrawn under both alternatives. There would be no change in PILT for Churchill, Mineral, Nye, or Pershing counties, and very little change in PILT for Lyon County (0.49 percent as discussed under Alternative 1). Lost hunting opportunities would be the same as those described under Alternative 1; however, the reduction in funding would be slightly less because bighorn sheep hunting would be allowed in B-17. The Navy is working with the Nevada Department of Wildlife on a MOA for bighorn

sheep hunting on the B-17 range, a draft of which will be included in Appendix D (Memoranda, Agreements, and Plans), and the Navy would update the existing managed access MOU from 2000 with a MOA regarding access for management activities at the FRTC.

In summary, there would be no change in PILT for Churchill, Mineral, Nye, and Pershing counties, and very little changes in PILT for Lyon County. Therefore, there would be no significant impacts from lost revenues from reduced PILT.

3.13.3.4 Alternative 3: Bravo-17 Shift and Managed Access (Preferred Alternative)

3.13.3.4.1 Potential Impacts on Population and Demographics

The potential impacts on the population and demographics under Alternative 3 would be similar to the impacts described under Alternative 1.

Under Alternative 3, allowable access in designated withdrawal areas for compatible activities (refer to Table 2-7), including grazing, hunting, limited salable mining and geothermal development, off-highway vehicle use, camping and hiking, and major racing events, would not alter or otherwise impact the populations of the city of Fallon, Churchill County, or the affected counties. Therefore, no significant impacts on the population or demographics would occur with implementation of Alternative 3.

3.13.3.4.2 Potential Impacts on Housing

Alternative 3 would have similar potential impacts described under Alternative 1. Repositioning the B-17 and DVTA proposed withdrawal area would not impact housing in the affected counties. Therefore, like Alternative 1, implementation of Alternative 3 would not have significant impacts on housing.

3.13.3.4.3 Potential Impacts on Regional and Local Economy

Potential Impacts on Businesses and Industry

Potential Range Livestock Impacts

Under Alternative 3, minimum and maximum AUMs lost and lost value of AUMs would be higher as compared to Alternative 1 and 2. While the BLM would conduct further site-specific evaluations to make a final determination as to whether permitted AUMs would need to be adjusted, the Navy estimates that Alternative 3 would result in the loss of between 6,953 and 11,002 AUMs (approximately 11 to 18 percent from affected allotments) within the region of influence. As depicted in Table 3.13-22, this would result in a loss of up to approximately 6.58 percent of AUMs within the BLM Carson City District, 0.20 percent of AUMs (approximately one-fifth of 1 percent) within the Winnemucca District, and 0.53 percent of all AUMs (approximately one-half of 1 percent) in Nevada. Forage and rangeland improvement projects could be permanently lost as a result of the action, which could further affect AUM estimates.

Table 3.13-22: Alternative 3: Percent Loss of Animal Unit Months (AUMs) for BLM District and State of Nevada

State/BLM District	Approximate Existing AUMs	Projected AUMs Lost		Percent of AUMs Lost	
		Low	High	Low	High
BLM Carson City District	156,406 ¹	6,645	10,288	4.25%	6.58%
BLM Winnemucca District	335,435 ¹	307	688	0.09%	0.21%
Nevada	2,085,167 ²	6,952	10,976	0.33%	0.53%

¹The BLM provided the existing number of AUMs for the Carson City District and the Winnemucca District in July 2018. This number may not match the number of AUMs in the public Rangeland Administration System.

²(Bureau of Land Management, 2017b)

Notes: AUM = Animal Unit Month, BLM = Bureau of Land Management

The loss of AUMs was calculated using the method described in Section 3.13.1.3.1 (Determining Loss of Animal Unit Months). Table 3.13-23 identifies the allotments within the proposed FRTC boundaries, the number of acres that would be closed from livestock grazing, and the projected loss in AUMs that would result from Alternative 3. A loss of AUMs would occur where areas of land would be withdrawn, and currently available livestock grazing would be precluded. Forage and rangeland improvement projects could be permanently lost as a result of the action, which could further affect AUM estimates. However, it is anticipated that any potential loss in AUMs would be within the range identified in Table 3.13-23, and the BLM’s follow-on site-specific analysis would determine the actual change in AUMs for each affected allotment.

Table 3.13-24 represents allotments for the minimum and maximum allotment loss in AUMs annually under Alternative 3. Table 3.13-25 represents the direct minimum and maximum values of lost AUMs and lost value of AUMs by impacted counties under Alternative 3.

The total permanent economic impacts (both direct and secondary) associated with lost federal land grazing (e.g., in Churchill County) range from a minimum loss of \$448,526 (\$333,649 in direct impacts and \$114,877 in secondary impacts) to a maximum loss of \$639,389 (\$479,361 in direct impacts and \$160,028 in secondary impacts) under Alternative 3 (Table 3.13-26) (refer to Supporting Study: Socioeconomic Report, available at <https://frtcmodernization.com>). Table 3.13-27 represents employment impacts under Alternative 3 for affected counties; for instance, employment impacts for Churchill County would range from a loss of approximately 6 employees (4.69 in direct impacts and 0.82 in secondary impacts) to a maximum loss of approximately 8 employees (6.74 in direct impacts and 1.16 in secondary impacts).

Table 3.13-28 represents labor income losses. Lost grazing (e.g., in Churchill County) would consist of a minimum loss in labor income of \$122,498 (\$96,054.69 in direct impacts and \$26,443.03 in secondary impacts) to a maximum loss of \$168,600 (\$132,362.82 in direct impacts and \$36,237.51 in secondary impacts) under Alternative 3.

Total economic impacts would be similar under Alternative 3 in comparison to Alternatives 1 and 2. Adding the overall economic impact from the decrease in AUMs (ranging from \$448,526 to \$639,389

[Table 3.13-26]) and the associated direct and secondary labor income loss (ranging from \$122,498 to \$168,600 [Table 3.13-28]), and then comparing these figures to the total economic activity for the beef cattle ranching and farming sector in Churchill County (\$35 million), shows there would be a reduction in economic output ranging from 1.28 percent to 1.83 percent. The reduction is significantly less when compared to the total economic activity for all sectors for Churchill County, which is 1.7 billion dollars (refer to Supporting Study: Socioeconomic Report, available at <https://frtcmodernization.com>, Table B-1). Economic losses associated with reduced AUMs would be similar in scale for Lander, Mineral, Pershing, and Plumas counties based on the percentage of lost revenue compared to sector and total economic activity. While there would be significant impacts on individual ranching operations, there would be no significant impacts on overall economic activity within the affected counties due to lost AUMs. Therefore, no significant impacts on overall economic activity would occur due to lost AUMs under Alternative 3.

Table 3.13-23: Alternative 3: Allotments Within the Proposed FRTC Boundaries, Acres Closed, and Projected Loss of Animal Unit Months

Allotment Name	Existing Total Acres	Permitted Total AUMs	Alternative 3				
			Proposed FRTC Land	Acres Closed	Percent Closed	Projected Loss of AUMs	
						Low	High
Bell Flat	91,997	3,688	B-17	49,528	54%	1,986 (54%)	2,667 (72%)
Bucky O'Neill	40,946	1,500	DVTA	0	0%	0 (0%)	0 (0%)
Copper Kettle	108,220	2,333	B-20	43,515	40%	857 (37%)	939 (40%)
Cow Canyon	149,168	2,382	DVTA	0	0%	0 (0%)	0 (0%)
Dixie Valley	275,782	6,341	DVTA	0	0%	0 (0%)	0 (0%)
Eastgate	311,221	9,770	B-17	48,310	16%	1,517 (16%)	1,777 (18%)
Frenchman Flat	70,323	2,001	DVTA	0	0%	0 (0%)	0 (0%)
Horse Mountain	63,160	3,000	B-16	2,085	3%	45 (2%)	118 (4%)
Humboldt Sink	190,728	1,582	B-20	1,277	1%	0 (0%)	19 (1%)
La Beau Flat	122,640	3,035	B-17	22,628	18%	547 (18%)	640 (21%)
Lahontan	77,882	1,155	B-16	29,847	38%	443 (38%)	619 (54%)
Mountain Well-La Plata	139,610	8,004	DVTA	0	0%	0 (0%)	0 (0%)
Phillips Well	80,618	1,450	B-17	71,298	88%	548 (38%)	1,371 (95%)
Pilot Table Mountain	538,322	7,900	B-17	17,823	3%	182 (2%)	1,114 (14%)
Rochester	255,390	3,963	B-20	43,054	17%	307 (8%)	669 (17%)
Salt Wells	51,421	1,624	DVTA	0	0%	0 (0%)	0 (0%)
Sheckler Pasture	79,647	145	B-20, DVTA	4,187	19%	0 (0%)	27 ² (19%)
White Cloud	79,647	1,884	B-20, DVTA	23,936	30%	520 (28%)	1,043 (55%)
TOTAL¹	2,669,285	61,757	FRTC	357,488	13%	6,952 (11%)	11,003 (18%)

¹Total acres do not add up because of the overlap of Sheckler Pasture and the Lahontan Allotment.

²In the absence of production data, potential loss of AUMs was calculated as a ratio of available acreage to permitted AUMs. Notes: (1) Acres were calculated using ArcGIS data provided by BLM (UTMz11 NAD83 projection) and may not be consistent with acres reported in the BLM's public Rangeland Administration System. (2) FRTC = Fallon Range Training Complex, DVTA = Dixie Valley Training Area, B- = Bravo

Table 3.13-24: Total AUMs, Minimum and Maximum AUMs Lost, County Base Camp Location for Allotments Impacted under Alternative 3

Allotment Name	County of Base Camp	Total AUMs	Minimum AUMs Lost	Maximum AUMs Lost
Bell Flat	Churchill	3,688	1,986	2,667
Copper Kettle	Churchill	2,339	857	939
Eastgate	Churchill (Nye) ¹	9,770	1,517	1,777
Humboldt Sink	Churchill	1,582	0	19
Lahontan	Churchill	1,155	443	619
Phillips Well	Churchill (Nye) ¹	1,450	548	1,371
White Cloud	Churchill	1,884	520	1,043
La Beau Flat	Lander (Eureka) ²	3,035	547	640
Pilot Table Mountain	Mineral	7,900	182	1,114
Rochester	Pershing	3,963	307	669
Horse Mountain	Plumas, CA (Churchill) ³	3,000	45	118
Total		39,760	6,952	10,976

¹Although the base property for Phillips Well and Eastgate are located in Churchill County, the majority of the allotments are physically located in Nye County, and therefore the Navy acknowledges that there may be impacts on Nye County as well, although the quantification of these impacts would be speculative.

²Although the base property for La Beau Flat is in Lander County, the ranch operations occur in Eureka County, and therefore, the Navy acknowledges that there may be impacts on Eureka County as well, although the quantification of these impacts would be speculative.

³Although the base property for Horse Mountain is in Plumas, California, the allotment is physically located in Churchill County, and therefore the Navy acknowledges that there may be impacts on Churchill County as well, although the quantification of these impacts would be speculative.

Source: Supporting Study: Socioeconomic Report (available at <https://frtcmmodernization.com>)

Table 3.13-25: Minimum and Maximum Value of AUMs Lost and Value of AUMs Lost by Impacted Counties under Alternative 3

County	Alternative 3			Alternative 3 at \$56.83 per AUM	
	Total AUMs	Minimum AUMs Lost	Maximum AUMs Lost	Minimum AUMs Lost	Maximum AUMs Lost
Churchill (Nye) ¹	21,862	5,871	8,435	\$333,649	\$479,361
Lander (Eureka) ²	3,035	547	640	\$31,086	\$36,371
Mineral	7,900	182	1,114	\$10,343	\$63,309
Pershing	3,963	307	669	\$17,447	\$38,019
Plumas (Churchill) ³	3,000	45	118	\$2,557	\$6,706

¹Although the base property for Phillips Well and Eastgate are located in Churchill County, the allotments are mostly physically located in Nye County, and therefore the Navy acknowledges that there may be impacts on Nye County as well, although the quantification of these impacts would be speculative.

²Although the base property for La Beau Flat is in Lander County, the ranch operations occur in Eureka County, and therefore the Navy acknowledges that there may be impacts on Eureka County as well, although the quantification of these impacts would be speculative.

³Although the base property for Horse Mountain is in Plumas, California, the allotment is physically located in Churchill County, and therefore the Navy acknowledges that there may be impacts on Churchill County as well, although the quantification of these impacts would be speculative.

Source: Supporting Study: Socioeconomic Report (available at <https://frtcmmodernization.com>)

Table 3.13-26: Loss in Value of Output for Impacted Areas by Minimum and Maximum Reductions in AUMs under Alternative 3

Area	Alternative 3	
	Minimum Reduced Cattle Production	Maximum Reduced Cattle Production
Churchill (Nye)¹		
Direct	\$333,649	\$479,361
Secondary	\$114,877	\$160,028
Total	\$448,526	\$639,389
Lander (Eureka)²		
Direct	\$31,086	\$36,371
Secondary	\$1,464	\$16,269
Total	\$32,550	\$52,640
Mineral		
Direct	\$10,343	\$63,309
Secondary	\$740	\$1,694
Total	\$11,083	\$65,003
Pershing		
Direct	\$17,447	\$38,019
Secondary	\$229	\$574
Total	\$17,676	\$38,593
Plumas, CA (Churchill)³		
Direct	\$2,557	\$6,706
Secondary	\$1,097	\$2,245
Total	\$3,654	\$8,951

¹Although the base property for Phillips Well and Eastgate are located in Churchill County, the majority of the allotments are physically located in Nye County, and therefore the Navy acknowledges that there may be impacts on Nye County as well, although the quantification of these impacts would be speculative.

²Although the base property for La Beau Flat is in Lander County, the ranch operations occur in Eureka County, and therefore, the Navy acknowledges that there may be impacts on Eureka County as well, although the quantification of these impacts would be speculative.

³Although the base property for Horse Mountain is in Plumas, California, the allotment is physically located in Churchill County, and therefore the Navy acknowledges that there may be impacts on Churchill County as well, although the quantification of these impacts would be speculative.

Source: Supporting Study: Socioeconomic Report (available at <https://frtcmmodernization.com>); follow-on changes between the Draft and Final EIS based on changes to data for allotment acreages and AUM numbers altered the predicted losses slightly, therefore they do not match the numbers in the Supporting Study for all areas.

Table 3.13-27: Employment Loss Impacts for Impacted Area by Minimum and Maximum Loss of AUMs under Alternative 3

Area	Alternative 3	
	Minimum Reduced Cattle Production	Maximum Reduced Cattle Production
Churchill (Nye)¹		
Direct	4.69	6.74
Secondary	0.82	1.16
Total	5.51	7.90
Lander (Eureka)²		
Direct	0.56	4.69
Secondary	0.07	0.60
Total	0.62	5.29
Mineral		
Direct	2.22	5.07
Secondary	0.05	0.12
Total	2.27	5.19
Pershing		
Direct	0.09	0.16
Secondary	0.09	0.08
Total	0.18	0.23
Plumas, CA (Churchill)³		
Direct	0.02	0.03
Secondary	0.01	0.02
Total	0.03	0.05

¹Although the base property for Phillips Well and Eastgate are located in Churchill County, the majority of the allotments are physically located in Nye County, and therefore the Navy acknowledges that there may be impacts on Nye County as well, although the quantification of these impacts would be speculative.

²Although the base property for La Beau Flat is in Lander County, the ranch operations occur in Eureka County, and therefore the Navy acknowledges that there may be impacts on Eureka County as well, although the quantification of these impacts would be speculative.

³Although the base property for Horse Mountain is in Plumas, California, the allotment is physically located in Churchill County, and therefore the Navy acknowledges that there may be impacts on Churchill County as well, although the quantification of these impacts would be speculative.

Source: Supporting Study: Socioeconomic Report (available at <https://frtcmmodernization.com>)

Table 3.13-28: Labor Income Losses for Impacted Areas by Minimum and Maximum Loss of AUMs under Alternative 3

Area	Alternative 3	
	Minimum Reduced Cattle Production	Maximum Reduced Cattle Production
Churchill (Nye)¹		
Direct	\$96,054.69	\$132,362.82
Secondary	\$26,443.03	\$36,237.51
Total	\$122,498	\$168,600
Lander (Eureka)²		
Direct	\$119,021.24	\$13,926.17
Secondary	\$20,680.38	\$2,420.02
Total	\$139,702	\$16,346
Mineral		
Direct	\$370.83	\$8,749.66
Secondary	\$33.32	\$789.18
Total	\$404	\$9,539
Pershing		
Direct	\$3,783.75	\$8,238.68
Secondary	\$614.07	\$1,338.10
Total	\$4,398	\$9,577
Plumas, CA (Churchill)³		
Direct	\$572.18	\$1,500.35
Secondary	\$199.46	\$522.80
Total	\$772	\$2,023

¹Although the base property for Phillips Well and Eastgate are located in Churchill County, the majority of the allotments are physically located in Nye County, and therefore, the Navy acknowledges that there may be impacts on Nye County as well, although the quantification of these impacts would be speculative.

²Although the base property for La Beau Flat is in Lander County, the ranch operations occur in Eureka County, and therefore the Navy acknowledges that there may be impacts on Eureka County as well, although the quantification of these impacts would be speculative.

³Although the base property for Horse Mountain is in Plumas, California, the allotment is physically located in Churchill County, and therefore the Navy acknowledges that there may be impacts on Churchill County as well, although the quantification of these impacts would be speculative.

Source: Supporting Study: Socioeconomic Report (available at <https://frtcmmodernization.com>)

Potential Impacts on Mining and Geothermal Industries

Alternative 3 would have similar potential impacts as described under Alternative 2. Repositioning the B-17 and DVTA proposed withdrawal area would potentially allow greater access to areas located west of the B-17 expansion area under Alternative 2 for mining and geothermal opportunities; however, the socioeconomic impacts would likely be very similar to impacts under Alternative 1. In addition, State Route 839 would not potentially need to be rerouted, which would maintain access to locations off of the existing route (e.g., the Denton-Rawhide mine) as they are currently.

Potential losses associated with currently unknown mining and geothermal opportunities as defined under Alternative 1 would be less under Alternative 3 because geothermal opportunities would be allowed in DVTA. However, significant impacts could still occur under Alternative 3 due to such potential lost mining and geothermal opportunities in the expanded B-16, B-17, and B-20.

Potential Impacts on the Recreation Industry and Tourism

Alternative 3 would have increased potential impacts on recreation and tourism as those described under Alternative 1 and 2. Under Alternative 3, B-16, B-17, and B-20 would not allow public recreation access; however, limited public access for bighorn sheep hunting would be allowed in B-17, and public access would be allowed in the DVTA. The Navy is working with the Nevada Department of Wildlife on a MOA for bighorn sheep hunting on the B-17 range, a draft of which will be included in Appendix D (Memoranda, Agreements, and Plans), and the Navy would update the existing managed access MOU from 2000 with a MOA regarding access for management activities at the FRTC. This would mean there would be 361,464 acres of BLM land that would be withdrawn from hiking and biking. Using the factor of \$10.69 per acre as discussed earlier (under Alternative 1), the economic impact of BLM acres lost from reduced hiking and biking activities across all affected counties would be estimated to be \$3,864,050 for Alternative 3.

Lost hunting opportunities would be the same as those described under Alternative 1; however, the reduction in funding would be slightly less because bighorn sheep hunting would be allowed in B-17 (Table 3.13-29). Similar to Alternative 1, Churchill County would be impacted the most from lost hunting. For example, potential annual economic losses from lost hunting in Churchill County would total \$328,740 (\$290,346 in direct impacts and \$38,394 in secondary impacts) and would include employment decreases of 2.4 employees (2.2 in direct impacts and 0.2 in secondary impacts) and decreases in labor income of \$82,553 (\$69,197 in direct impacts and \$13,356 in secondary impacts). These figures represent an annual loss; however, the withdrawal would be for an approximate term of 25 years, theoretically equating to approximately \$8.22 million without accounting for inflation over the term of the withdrawal (\$328,740 multiplied by 25 years).

The hunting-related economic losses would represent about 0.0001 percent of total economic activity for Churchill County in 2015 since total economic activity for the county was over 1.7 billion dollars (refer to Supporting Study: Socioeconomic Report, available at <https://frtcmodernization.com>, Table B-1). Hunting-related economic losses would be similar in scale for Mineral, Pershing, and Nye counties based on the percentage of lost revenue compared to total economic activity. Therefore, no significant impacts would occur due to lost recreational opportunities under Alternative 3.

Table 3.13-29: Economic, Employment and Labor Income Impacts from Lost Hunting Opportunities from FRTC for Churchill, Mineral, Pershing, and Northern Nye Counties under Alternative 3

Impacts	Churchill	Mineral	Pershing	Nye
Employment				
Direct	2.2	0.5	0.9	0.6
Secondary	0.2	0	0	0
Total	2.4	0.5	0.9	0.6
Labor Income				
Direct	\$69,197	\$6,575	\$22,950	\$15,952
Secondary	\$13,356	\$653	\$1,110	\$1,084
Total	\$82,553	\$7,228	\$24,060	\$17,036
Value of Output				
Direct	\$290,346	\$17,848	\$79,890	\$28,067
Secondary	\$38,394	\$1,980	\$4,174	\$3,774
Total	\$328,740	\$19,828	\$84,064	\$31,841

Source: Supporting Study: Socioeconomic Report (available at <https://frtcmodernization.com>)

Potential Impacts on Property Values

Alternative 3 would have similar potential impacts as described under Alternative 2. Repositioning the B-17 and DVTA proposed withdrawal area would not affect property values in the region of influence. Therefore, like Alternative 2, no significant impacts on property values would occur under Alternative 3.

Potential Impacts on County Revenue and Payments In Lieu of Taxes

Alternative 3 would have similar potential impacts as described under Alternative 2. Repositioning the B-17 proposed withdrawal area would not change county revenue from PILT in Churchill, Lyon, Mineral, Nye, and Pershing counties. Under Alternative 3, B-17 would overlap a larger portion of Nye County and less of Churchill and Mineral counties than it would under Alternatives 1 and 2.

Under Alternative 3, even with a larger total expansion area, the potential impacts on county revenue, grazing-related fees, and PILT would be identical to the impacts described under Alternative 1 and Alternative 2 because population levels would not change. There would be no change in PILT for Churchill, Mineral, Nye, and Pershing County, and very little changes in PILT for Lyon County (0.48 percent as discussed under Alternative 1). Lost hunting opportunities would be the same as those described under Alternative 1; however, the reduction in funding would be slightly less because bighorn sheep hunting would be allowed in B-17.

In summary, there would be no change in PILT for Churchill, Mineral, Nye, and Pershing counties, and very little changes in PILT for Lyon County. Therefore, there would be no significant impacts from lost revenues from reduced PILT.

3.13.3.5 Proposed Management Practices, Monitoring, and Mitigation

3.13.3.5.1 Proposed Management Practices

For any acquisition of privately-owned property, private landowners would receive just compensation for loss of any privately-owned land acquired by the United States due to the proposed expansion of the Bravo ranges and DVTA. Just compensation would be determined by calculating the fair market value of

parcels in accordance with federal appraisal rules codified in the Uniform Appraisal Standards for Federal Land Acquisitions.

3.13.3.5.2 Proposed Monitoring

No monitoring measures would be warranted for socioeconomics based on the analysis presented in Section 3.13.3 (Environmental Consequences).

3.13.3.5.3 Proposed Mitigation

No mitigation measures are proposed for socioeconomic impacts except ones based on the analysis presented in Section 3.4 (Livestock Grazing). Though not a NEPA mitigation measure, the Navy acknowledges that it has the authority under 43 United States Code section 315q of the Taylor Grazing Act of 1934, as amended, to make payments to federal grazing permit holders for losses suffered by the permit holders as a result of the withdrawal or other use of former federal grazing lands for war or national defense purposes. The Navy would follow the procedures identified in Section 3.4.3.2.6 (Process for Determining Payment Amounts for Losses Resulting from Permit Modification or Cancellation) for making payment amount determinations.

3.13.3.6 Summary of Effects and Conclusions

Table 3.13-30 summarizes the impacts of the alternatives on socioeconomic resources.

Table 3.13-30: Summary of Effects and Conclusions for Socioeconomics

Summary of Effects and National Environmental Policy Act Determinations	
No Action Alternative	
Summary	<ul style="list-style-type: none"> • Would not result in significant impacts on population and demographics, agriculture, mining, geothermal, or recreation and tourism revenue. • Agricultural, mining, and geothermal operations as well as recreational opportunities may benefit from greater access to lands formerly used by the Navy. • Would result in significant impacts on housing for the city of Fallon, employment for the city of Fallon and Churchill County, and property values for the city of Fallon and Churchill County due to a potential decline in the civilian and military population associated with FRTC. Other counties would not be significantly impacted. • PILT payments would not likely change. There would be no significant impacts on county revenue.
Impact Conclusion	The No Action Alternative would have no significant impacts on population and demographics, agriculture, mining, geothermal, recreation, and county revenue. The No Action Alternative would have significant impacts on housing, employment, and property values in the city of Fallon and Churchill County.
Alternative 1	
Summary	<ul style="list-style-type: none"> • Would not result in significant impacts on population and demographics, housing, property values, agriculture, or recreation and tourism revenues. • Would result in permanent economic impacts associated with lost federal land grazing; however, while there would be impacts on individual ranchers, there would be no significant impact on the total economic activity within the affected counties. • Could potentially result in significant impacts with respect to mining and geothermal opportunities that could potentially be lost. • There would be no change in PILT for Churchill, Mineral, Nye, or Pershing County and very little changes in PILT for Lyon County. There would be no significant impact associated with lost sales and tax revenues; however, lost hunting opportunities could result in a reduction in wildlife application fees and funding sources for the Nevada Department of Wildlife.
Impact Conclusion	Alternative 1 would have no significant impacts on population and demographics, housing, property values, agriculture, or recreation and tourism revenues. Alternative 1 would result in significant impacts on geothermal and mining opportunities. Alternative 1 would have no significant impacts on PILT or lost sales and tax revenues but would impact funding sources for the Nevada Department of Wildlife.

Table 3.13-30: Summary of Effects for Socioeconomics (continued)

Summary of Effects and National Environmental Policy Act Determinations	
Alternative 2	
Summary	<ul style="list-style-type: none"> • Would not result in significant impacts on population and demographics, housing, agriculture, property values, or recreation and tourism revenues. • Would result in permanent economic impacts associated with lost federal land grazing; however, while there could be impacts on individual ranchers, there would be no significant impact on the total economic activity within the affected counties. • Could potentially result in significant impacts with respect to mining and geothermal opportunities that could potentially be lost. However, impacts would be less as compared to Alternative 1 due to greater access for geothermal operations within the DVTA and recreational opportunities (hunting) within B-17. • There would be no change in PILT for Churchill, Mineral, Nye, or Pershing County, and very little changes in PILT for Lyon County. There would be no significant impact associated with lost sales and tax revenues; however, lost hunting opportunities could result in a reduction in wildlife application fees and funding sources for the Nevada Department of Wildlife.
Impact Conclusion	<p>Alternative 2 would have no significant impacts on population and demographics, housing, agriculture, property values, or recreation and tourism revenues. Alternative 2 would result in significant impacts on geothermal and mining opportunities. Alternative 2 would have no significant impacts on PILT or lost sales and tax revenues but would impact funding sources for the Nevada Department of Wildlife.</p>
Alternative 3	
Summary	<ul style="list-style-type: none"> • Would not result in significant impacts on population and demographics, housing, agriculture, property values, or recreation and tourism revenues. • Would result in permanent economic impacts associated with lost federal land grazing. Under Alternative 3, total economic impacts associated with lost grazing would be similar to Alternative 1 and 2. However, while there would be impacts on individual ranchers, there would be no significant impact on the total economic activity within the affected counties. • Could potentially result in significant impacts with respect to mining and geothermal opportunities that could potentially be lost. However, impacts would be less as compared to Alternative 1 due to greater access for geothermal operations within the DVTA and recreational opportunities (hunting) within B-17. • There would be no change in PILT for Churchill, Mineral, Nye, or Pershing County, and very little changes in PILT for Lyon County. There would be no significant impact associated with lost sales and tax revenues; however, lost hunting opportunities could result in a reduction in wildlife application fees and funding sources for the Nevada Department of Wildlife.

Table 3.13-30: Summary of Effects for Socioeconomics (continued)

Summary of Effects and National Environmental Policy Act Determinations	
Alternative 3 (continued)	
Impact Conclusion	Alternative 3 would have no significant impacts on population and demographics, housing, agriculture, property values, or recreation and tourism revenues. Alternative 3 would result in significant impacts on geothermal and mining opportunities. Alternative 3 would have no significant impacts on PILT or lost sales and tax revenues but would impact funding sources for the Nevada Department of Wildlife.

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