



Fallon Range Training Complex Modernization

FINAL ENVIRONMENTAL IMPACT STATEMENT

VOLUME 2

SECTIONS 3.10 - 3.15 | CHAPTERS 4 - 8

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Fallon Range Training Complex Modernization Final Environmental Impact Statement



Volume 2

Sections 3.10 – 3.15
Chapters 4 – 8

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3.10 Biological Resources

No Action Alternative

Under the No Action Alternative, the 1999 Congressional land withdrawal of 201,933 acres from public domain (Public Law 106-65) would expire on November 5, 2021, and military training activities requiring the use of these public lands would cease. Expiration of the land withdrawal would terminate the Navy's authority to use nearly all of the Fallon Range Training Complex's (FRTC's) bombing ranges, affecting nearly 62 percent of the land area currently available for military aviation and ground training activities in the FRTC.

Alternative 1 – Modernization of the Fallon Range Training Complex

Under Alternative 1, the Navy would request Congressional renewal of the 1999 Public Land Withdrawal of 202,864 acres, which is scheduled to expire in November 2021. The Navy would request that Congress withdraw and reserve for military use approximately 618,727 acres of additional Federal land and acquire approximately 65,157 acres of non-federal land. Range infrastructure would be constructed to support modernization, including new target areas, and expand and reconfigured existing Special Use Airspace (SUA) to accommodate the expanded bombing ranges. Implementation of Alternative 1 would potentially require the reroute of State Route 839 and the relocation of a portion of the Paiute Pipeline. Public access to B-16, B-17, and B-20 would be restricted for security and to safeguard against potential hazards associated with military activities. The Navy would not allow mining or geothermal development within the proposed bombing ranges or the Dixie Valley Training Area (DVTA). Under Alternative 1, the Navy would use the modernized FRTC to conduct aviation and ground training of the same general types and at the same tempos as analyzed in Alternative 2 of the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada, Final Environmental Impact Statement* (EIS). The Navy is not proposing to increase the number of training activities under this or any of the alternatives in this EIS.

Alternative 2 – Modernization of Fallon Range Training Complex with Managed Access

Alternative 2 would have the same withdrawals, acquisitions, and SUA changes as proposed in Alternative 1. Alternative 2 would continue to allow certain public uses within specified areas of B-16, B-17, and B-20 (ceremonial, cultural, or academic research visits, land management activities) when the ranges are not operational and compatible with military training activities (typically weekends, holidays, and when closed for maintenance). Alternative 2 would also continue to allow grazing, hunting, off-highway vehicle (OHV) usage, camping, hiking, site and ceremonial visits, and large event off-road races at the DVTA. Additionally under Alternative 2, hunting would be conditionally allowed on designated portions of B-17, and geothermal and salable mineral exploration would be conditionally allowed on the DVTA. Large event off-road races would be allowable on all ranges subject to coordination with the Navy and compatible with military training activities.

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

Alternative 3 differs from Alternative 1 and 2 with respect to the orientation, size, and location of B-16, B-17, B-20 and the DVTA, and is similar to Alternative 2 in terms of managed access. Alternative 3 places the proposed B-17 farther to the southeast and rotates it slightly counter-clockwise. In conjunction with shifting B-17 in this manner, the expanded range would leave State Route 839 in its current configuration along the western boundary of B-17 and would expand eastward across State Route 361 potentially requiring the reroute of State Route 361. The Navy proposes designation of the area south of U.S. Route 50 as a Special Land Management Overlay rather than proposing it for withdrawal as the DVTA. This Special Land Management Overlay would define two areas, one east and one west of the existing B-17 range. These two areas, which are currently public lands under the jurisdiction of BLM, would not be withdrawn by the Navy and would not directly be used for land-based military training or managed by the Navy.

Environmental Impact Statement

Fallon Range Training Complex Modernization

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3.10 Biological Resources

Biological resources include living, native, or naturalized plant and animal species and the habitats within which they occur. Plant associations are referred to generally as vegetation, and animal species are referred to generally as wildlife. Habitat can be defined as the resources and conditions present in an area that support a plant or animal.

For the purposes of this Environmental Impact Statement (EIS), biological resources is divided into three categories: vegetation types, wildlife, and special-status species.

- *Vegetation Types:* Vegetation types include dominant plant species that occur within the project areas. Unvegetated, disturbed, and developed habitats are also discussed in this section. Vegetation types were based on 2017 and 2019 vegetation mapping of the proposed Fallon Range Training Complex (FRTC) expansion areas conducted in support of this EIS.
- *Wildlife:* The wildlife section includes all common animal species: birds, mammals, reptiles, and amphibians. Although the proposed FRTC expansion areas include small perennial streams and small man-made waterbodies that support fish species, surveys conducted in support of this EIS observed only non-native fish species within these areas (see Supporting Study: Fish Survey Report, available at <https://www.frtcmodernization.com>). In addition, proposed aircraft activities within the FRTC airspace would not impact fish species, and proposed ground-disturbing activities would not impact any potential fish habitat or areas that currently support fish. Therefore, this EIS does not address fish species.
- *Special-status Species:* For the purposes of this EIS, special-status species include the following:
 - Species listed under the Endangered Species Act (ESA) including associated critical habitat.
 - Species listed by the Bureau of Land Management (BLM) as sensitive species (Bureau of Land Management, 2017).
 - Bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) pursuant to the Bald and Golden Eagle Protection Act (BGEPA).
 - Species listed pursuant to the Migratory Bird Treaty Act (MBTA).
 - Birds of Conservation Concern as identified by the U.S. Fish and Wildlife Service (USFWS) as species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the ESA (U.S. Fish and Wildlife Service, 2008). The region of influence for this EIS falls within Bird Conservation Region 9, Great Basin.
 - Species listed as threatened, endangered, sensitive, or otherwise protected by the State of Nevada under the Nevada Administrative Code (NAC).
 - Species listed as Species of Conservation Priority by Nevada Department of Wildlife (NDOW) in the 2013 Nevada Wildlife Action Plan (WAP) (Nevada Wildlife Action Plan Team, 2012).
 - Species ranked by the Nevada Natural Heritage Program (NNHP) as critically imperiled, imperiled, or vulnerable (Nevada Natural Heritage Program, 2018a).

The Environmental Consequences section presents an analysis of the potential impacts with implementation of the No Action Alternative, Alternative 1, Alternative 2, and Alternative 3. For each alternative, the analysis is organized by potential stressors (noise, energy [i.e., electromagnetic radiation and lasers], and physical disturbance [i.e., training and construction activities]) within each of the proposed expansion areas (i.e., ranges B-16, B-17, and B-20, and the Dixie Valley Training Area [DVTa]). The analysis for each stressor begins with an overview of the potential effects on wildlife in general, and then provides more detailed analysis for specific groups of wildlife and special-status species, as appropriate.

3.10.1 Methodology

This analysis focuses on the potential for significant impacts on biological resources as a result of the Proposed Action discussed in this EIS.

3.10.1.1 Region of Influence

The region of influence for biological resources includes all proposed FRTC expansion areas and lands underlying the area proposed for the FRTC Special Use Airspace (SUA) expansion. The region of influence includes all or portions of the following counties within western and central Nevada: Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe. The region of influence is largely rural and encompasses federal, state, private, and tribal lands. With the exception of noise, potential direct and indirect effects of the Proposed Action to biological resources would be limited to certain areas within ground ranges within proposed expansion areas subject to ground-disturbing activities. Accordingly, the analysis focuses on these ranges within proposed expansion areas, but also considers the effects of noise on wildlife and special-status species beneath the proposed expanded SUA. With respect to the existing B-19, there are no proposed changes to land withdrawal and training activities, and there would be no construction activities associated with this area. Therefore, B-19 is not discussed further and would be maintained as discussed in the *Fallon Range Training Complex Final Environmental Impact Statement* (U.S. Department of the Navy, 2015).

3.10.1.2 Regulatory Framework

The following regulatory requirements are addressed within the biological resources impact analysis:

- ESA (16 United States Code [U.S.C.] section 1531 et seq.)
- BGEPA (16 U.S.C. 668–668d)
- MBTA (16 U.S.C. 703 et seq.)
- Executive Order (EO) 13186, Responsibilities of Federal Agencies to Protect Migratory Birds
- Wild Free-Roaming Horses and Burros Act (16 U.S.C. 1331–1340)
- EO 13112 and EO 13751 concerning invasive species
- Species listed as threatened, endangered, sensitive, or otherwise protected by the State of Nevada under NAC.

3.10.1.3 Data Sources and Surveys

To evaluate the presence of and potential impacts on species and their habitats, biological resource surveys have been conducted on proposed FRTC expansion areas in support of this EIS within the proposed action area (as described in Section 2.3, Alternatives Carried Forward for Analysis). The following surveys have been completed:

- vegetation mapping (2017, 2019)
- wetlands (2018, 2019)
- special-status plants (2017, 2018, 2019)
- wildlife camera trapping (2017, 2019)
- bats (2017, 2019)
- birds, including diurnal and nocturnal raptors (2018, 2019), greater sage-grouse (*Centrocercus urophasianus*) (2017, 2019), and MBTA-listed species (2017, 2018, 2019)
- small mammals (2018)
- reptiles and amphibians (2018, 2019)
- general invertebrates (2018, 2019)
- fish (2018, 2019)

Surveys were conducted within representative habitats within the proposed FRTC expansion lands, and findings from these locations are assumed to be representative of other areas not surveyed that possess similar habitat attributes. These survey reports are available at <https://www.frtcmodernization.com>. Each report provides figures depicting the individual study areas for each group or species surveyed.

In addition to surveys conducted in support of this EIS, previous survey reports and Geographic Information System (GIS) data from the U.S. Department of the Navy (Navy), USFWS, NDOW, BLM, and others were also used to assess the status and presence of biological resources within the region of influence. The sources used are listed below.

- Natural resource inventories and survey reports supporting the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement* (U.S. Department of the Navy, 2015).
- Integrated Natural Resources Management Plan (INRMP) for Naval Air Station (NAS) Fallon (U.S. Department of the Navy, 2014).
- NDOW wildlife surveys and associated GIS data.
- Rare plant GIS data from SEINet Arizona - New Mexico Chapter (SEINet is an online data portal that serves as a gateway to natural resources data such as herbarium specimens).
- Occurrence data from the NNHP for special-status species (plants and wildlife) within and in the vicinity of the proposed expansion areas.
- Other relevant EISs and Environmental Assessments for previous actions within the region of influence.

A summary of relevant and applicable biological field studies conducted within existing FRTC lands and proposed FRTC expansion lands is provided in Table 3.10-1.

Table 3.10-1: Biological Resource Field Studies within Existing FRTC Lands and Proposed FRTC Expansion Areas

Survey Type	Previous Surveys*	EIS-specific Surveys*
Vegetation Mapping	2007, 2015	2017, 2019
Special-status Plants	2015	2017, 2018, 2019
Wetlands	2007	2018, 2019
Birds		
MBTA-listed species	2007	2017, 2018, 2019
Raptors	2007†	2018, 2019
Burrowing owl	2007†	2018, 2019
Greater sage-grouse	2007	2017, 2019
Mammals		
Large mammals	2007‡	2017, 2019
Small mammals	2007	2018
Bats	2007	2017, 2019
Reptiles and amphibians	2007	2018, 2019
Fish	2007	2018, 2019
Invertebrates (focus on insects)	2007	2018, 2019

Notes: *Previous surveys were conducted on existing FRTC lands (i.e., B-16, B-17, B-19, B-20, DVTA, and Shoal Site); however, all survey types were not conducted in all survey areas. EIS-specific surveys were conducted on proposed FRTC expansion areas.

†Raptor- and burrowing owl-specific surveys were not conducted; only incidental sightings of raptors and owls were recorded while conducting general avian surveys.

‡Large mammal-specific surveys were not conducted in 2007; only incidental sightings were recorded while conducting other surveys.

Sources: (Natural Resources Conservation Service, 2010; Naval Air Station Fallon, 2015; Tierra Data Inc., 2008); and Supporting Studies available at <https://www.frtcmodernization.com>: Final Wetland Survey Report; Final Burrowing Owl Survey Report; Final Greater Sage-grouse Survey Report; Final Raptor Survey Report; Final Rare Plants Survey Report; Final Plant Community Surveys and Mapping Report; Final Wildlife Camera Trap Survey Report; Final Bat Survey Report; Final Amphibian and Reptile Survey Report; and Final Avian Survey Report.

3.10.1.4 Approach to Analysis

As discussed above, the biological resources impact analysis addresses potential effects to vegetation communities and wildlife (i.e., mammals, birds, fish, and amphibians/reptiles), with special focus on special-status species. The acreage and location of the proposed FRTC range expansion and the associated support facilities and infrastructure construction footprints (described in Chapter 2, Description of Proposed Action and Alternatives) were quantified using GIS analysis to determine potential impacts on habitat and special-status species.

The footprints of ground-disturbing activities within the proposed FRTC expansion areas were also accounted for to ensure that the full range of potential impacts was identified. Under the proposed action, impacts (or effects) may be either temporary (reversible) or permanent (irreversible). Direct and indirect impacts are distinguished as follows.

Direct impacts occur at the same place or time as actions generated by proposed construction (e.g., ground-disturbing activities) and training operations (e.g., range use). Direct impacts from construction ground disturbance and operational vegetation clearing were assumed within all areas labeled as facility footprints. These impacts may include, but are not limited to, the following consequences:

- permanent loss of habitat due to vegetation removal for construction of proposed new facilities;
- temporary loss of habitat due to vegetation removal during construction (e.g., some areas would be revegetated after construction), noise, lighting, or human activity;
- permanent loss of habitat due to human activity, noise, or lighting that could prevent a wildlife species, including special-status species, from occupying otherwise suitable habitat, including displacement of wildlife, loss of nesting or foraging habitat, habitat fragmentation, and disruption of migration corridors;
- temporary or permanent injury or mortality of wildlife or special-status species caused by the action and occurring at the same time and place as the action; and
- permanent or temporary loss of habitat due to potential wildfires generated by training activities.

Indirect impacts, caused by or resulting from project-related activities, may occur at a different time or place, but are reasonably foreseeable. Indirect impacts from construction ground disturbance and operational vegetation clearing were assumed within all areas labeled as facility footprints. Potential causes of indirect impacts include, but are not limited to, the following reasons:

- introduction of new or increased dispersal of existing non-native, invasive noxious species within the region of influence;
- potential to increase number of wildfires, rate of burn, and overall burned area/habitat as a result of introducing new invasive species or increasing dispersal of existing non-native, invasive, or noxious species; and
- temporary or permanent impacts on reproductive success or survival of wildlife or special-status species caused by the action but occurring later in time.

The following general principles were used to evaluate impacts:

- the extent, if any, that the action would result in substantial loss or degradation of habitat or ecosystem functions (natural features and processes) essential to the persistence of native flora or fauna populations;
- the extent, if any, that the action would diminish the population size, distribution, or habitat of special-status species or regionally important native plant or animal species; and
- the extent, if any, that the action would permanently degrade ecological habitat qualities that special-status species depend upon, and which partly determines the species' prospects for conservation and recovery.

Specific evaluation criteria are discussed below.

3.10.1.4.1 Vegetation Types and Special-status Plant Species

The methods for analysis of potential vegetation effects used a phased approach outlined below:

- **Step 1:** Define the spatial extent of the No Action Alternative and action alternatives.
- **Step 2:** Define the vegetation community types that are within the spatial extent of the alternatives and would be impacted by proposed ground-disturbing activities. This step primarily relied on ecological surveys conducted in 2017, 2018, and 2019 in support of this EIS. Additional

information from the NAS Fallon INRMP (U.S. Department of the Navy, 2014), NDOW, BLM, and USFWS supplemented the analysis.

- **Step 3:** Identify any individual special-status plant species and habitats or areas of special concern (e.g., wetlands, springs) that may be within the area subject to direct and indirect effects with implementation of the alternatives.
- **Step 4:** Assess qualitative factors that contribute to potential indirect effects, such as erosion and edge effects (changes in population or community structures that occur at the boundary of two habitats or new artificial infrastructure), and other potential indirect effects (wildfire potential). This step will include a literature review for potential edge effects in similar vegetation community types.

3.10.1.4.2 Wildlife and Special-Status Wildlife Species

The methods for analysis of potential effects on wildlife use a similar phased approach outlined below:

- **Step 1:** Define the spatial extent of the No Action Alternative and action alternatives.
- **Step 2:** Define the wildlife communities and major taxonomic groups (e.g., mammals, birds) found within areas of effects, as identified primarily from ecological surveys conducted in 2017, 2018, and 2019 in support of this EIS. Additional information from the NAS Fallon INRMP (U.S. Department of the Navy, 2014), NDOW, BLM, and USFWS supplemented the analysis.
- **Step 3:** Identify habitats or areas of special concern (e.g., wetlands, springs, wildlife water developments [e.g., guzzlers], Wildlife Management Areas, Areas of Critical and Environmental Concern).
- **Step 4:** Identify any individual special-status wildlife species with that may be within the area subject to direct and indirect effects with implementation of the alternatives.
- **Step 5:** Assess qualitative factors that contribute to potential indirect effects to wildlife, including but not limited to habitat degradation, loss, and fragmentation.

The overall effects in this analysis were determined in the context of impacts on populations and extent of habitats supporting wildlife. Impacts considerations included spatial scales (e.g., geographic distributions and abundance of wildlife species relative to the spatial extent of the effect) and temporal scales (e.g., timespan of effects, such as short-term construction effects of new roads and longer-term indirect effects of habitat fragmentation or migration disruptions). Potential impacts on bald and golden eagles are analyzed on an individual animal basis (not just on effects to populations). Species protected under the MBTA are analyzed by major taxonomic groups within subcategories (e.g., passerines, shorebirds), and the impact analysis is conducted in terms of potential effects to populations of migratory birds.

The evaluation criteria also include thresholds specified in various relative regulatory frameworks to assess potential effects of implementation of the action alternatives on species that intersect with the applicable regulatory frameworks. For example, evaluating if the proposed action meets or exceeds the requirement specified in the Department of Defense (DoD) authorization to take birds protected under the MBTA, thereby requiring the Navy to confer with the USFWS. For MBTA purposes, “take” is defined as “to pursue, hunt, shoot, wound, kill, trap, capture, or collect” (50 Code of Federal Regulations 10.12).

3.10.1.5 Public Concerns

During the public scoping process and the public review of the Draft EIS, a number of public comments were received concerning biological resources and potential effects of the Proposed Action. Comments included a general concern for potential vegetation effects on the Great Basin sagebrush ecosystem, with a particular concern on wildfire potential and impacts on USFWS National Wildlife Refuge (NWR) units and Nevada Wildlife Management Areas in the region (e.g., Stillwater NWR, Fallon NWR, Humboldt Wildlife Management Area). Public comments also addressed noise generated from training activities that would occur within proposed expanded range areas and adjacent lands and have potential impacts on wildlife and special-status species (e.g., greater sage-grouse, raptors) as well as game species. Churchill County raised concerns over operating areas extending into major migratory bird corridors and the potential for collisions.

Public comments are addressed within the description of the Affected Environment (Section 3.10.2) and within the Environmental Consequences section (Section 3.10.3). To address public concerns on vegetation, the EIS includes an updated description of vegetation communities and their distributions within the region of influence that relies on recent (2017 and 2019) surveys. Other surveys provide baseline information to address other concerns raised by the public (e.g., impacts on bird, big game, and other wildlife populations found within the region of influence).

For further information regarding comments received during the public comment process, please refer to Section 1.10 (Draft Environmental Impact Study Public Participation: Comment Themes) as well as the specific response to comments section, which is in Appendix F (Public Comments and Responses).

3.10.2 Affected Environment

The following sections provide a description of the existing conditions for each of the categories under biological resources within the proposed expansion areas described in Chapter 2 (Description of Proposed Action and Alternatives). The region of influence for biological resources includes all proposed expansion lands and lands underlying the area proposed for the FRTC airspace expansion, including the Reno Military Operations Area (MOA) to the northwest of the main FRTC airspace.

To support the discussion of the affected environment and associated impact analysis with implementation of the Alternatives 1, 2, or 3, the Navy conducted ecological surveys within the proposed expansion areas from March 2017 through July 2019.

3.10.2.1 General Physiographic and Climatic Factors that Influence Biological Resources

The project area lies within the geographic feature known as the Great Basin, specifically the Great Basin Desert. The Great Basin Desert is the largest desert in the U.S., covering roughly 158,000 square miles of southern Idaho, southeastern Oregon, western Utah, eastern California, and nearly all of Nevada (Figure 3.10-1). It is a high cold desert, with most of its elevations over 4,000 feet above mean sea level (Note: hereafter all elevations are above sea level), and most of its precipitation in the form of snow, although rain showers can occur throughout the hotter months. The western part as a whole averages 9 inches of precipitation per year, while the Fallon area averages considerably lower, at only 5 inches per year (Sowell, 2001).



Figure 3.10-1: Occurrence of the Great Basin Within the Western United States

The Great Basin Desert is located in the Basin and Range Province and named for the alternating topography between mostly north-south oriented mountain ranges and valleys with no or very few waterways leading out. The Great Basin has approximately 160 mountain ranges, with a corresponding number of basins in between. The geologic activity leading to this topography has also resulted in a diverse range of soil types and soil temperature moisture regimes, resulting in high species diversity and vegetation complexity in the Great Basin and hence the Great Basin Desert. The movement of sediments downhill from the mountains to the basins produces arroyos, bajadas, and eventually playas, which support shrublands, grasslands, wetlands, and alkali flat habitats, which in turn support their own suites of plant and animal species (Naval Air Station Fallon, 2015).

3.10.2.2 Vegetation Types

As ground-disturbing activities would only occur within the proposed FRTC expansion areas, the discussion of vegetation types or communities only addresses those areas and not the lands underlying the larger FRTC airspace.

The lowest elevation in the proposed expansion areas is 3,390 feet, and the lowest elevations are predominantly occupied by playas. At these low elevations, where temperatures are the hottest and the soil is the most saline, the vegetation is dominated by plant species in the family Chenopodiaceae. The most common dominant shrubs in the lowest areas are saltbush (*Atriplex*) and greasewood (*Sarcobatus*) species. Other dominant chenopod species of the valley bottoms and lower bajadas include four-wing saltbush (*Atriplex canescens*) and spiny hopsage (*Grayia spinosa*). Also common in these saline areas are bud sagebrush (*Picrothamnus desertorum*), sticky rabbitbrush (*Chrysothamnus viscidiflorus*), and rubber rabbitbrush (*Ericameria nauseosa*), all in the Asteraceae family (Mozingo, 1987). The valley bottom wetlands in the Dixie Valley area support dense stands of rushes (*Juncus* spp.), saltgrass (*Distichlis spicata*), and cattail (*Typha angustifolia*) (Naval Air Station Fallon, 2015). These areas have also been invaded by Russian olive (*Elaeagnus angustifolia*) and are heavily disturbed by cattle (*Bos taurus*) and wild horses (*Equus caballus*) (see Supporting Study: Final Wildlife Remote Camera Trapping Survey Report, available at <https://www.frtcmodernization.com>). At slightly higher elevations, where the soils are less saline and more moisture is available, varieties of sagebrush (*Artemisia* spp.) become the dominant vegetation. Sagebrush shrublands are the most common vegetation type in the Great Basin Desert, covering nearly 40 percent of the area (Brussard et al., 1998). The big sagebrush (*Artemisia tridentata*) varieties and closely related sagebrush species are morphologically and taxonomically difficult to distinguish, particularly when not flowering. Sticky and rubber rabbitbrush are also common in these areas, along with Nevada joint-fir (*Ephedra nevadensis*) and littleleaf horsebrush (*Tetradymia glabrescens*) (Mozingo, 1987).

The sagebrush-dominated regions are also the areas where non-native invasive cheatgrass (*Bromus tectorum*) often forms large, dense stands. The replacement of native shrubs and bunchgrasses by annual non-native grasses (e.g., cheatgrass), combined with warmer temperatures, have led to increased fire frequency, which in turn favors further establishment of invasive plant species (Eiswerth & Shonkwiler, 2006).

Riparian habitats are found in canyons and washes in the middle to upper elevations of the project area. These generally result from springs and small seeps, although a few riparian areas are perennial waterways. Species commonly encountered in the riparian areas include Fremont cottonwood (*Populus fremontii*), willows (*Salix* spp.), and Wood's rose (*Rosa woodsii*) (Naval Air Station Fallon, 2015; Peterson,

2008). The presence of relatively permanent water allows riparian areas to support among the highest species diversity in the Great Basin Desert (Naiman et al., 1993).

At the highest, coolest, moistest elevations of the project area, up to 8,000 feet elevation, trees become more common, and the vegetation changes to pinyon-juniper woodlands. Generally, the lower range of these elevations are dominated by Utah juniper (*Juniperus osteosperma*), the middle range is a mixture of Utah juniper and singleleaf pinyon pine (*Pinus monophylla*), and the upper end of the range is dominated by singleleaf pinyon pine. This woodland zone generally has an understory of sagebrush, rabbitbrushes, and other common shrubs (Peterson, 2008).

3.10.2.2.1 Vegetation Mapping within the Proposed Fallon Range Training Complex Expansion Areas

The following is a summary of the vegetation mapping and classification process used during the 2017 and 2019 survey efforts in support of this EIS. Further details can be found in the plant community mapping report (see Supporting Study: Final Plant Community Surveys and Mapping Report, available at <https://www.frtcmodernization.com>). The Navy mapped vegetation within the proposed FRTC expansion areas using the following step-wise process:

- Imagery selection and acquisition (using 2015 ortho-rectified imagery sourced from the U.S. Department of Agriculture Farm Service Agency).
- Determination of the minimum mapping units (a minimum of 5 acres for open habitats and a minimum of 2 acres for riparian zones to delineate habitats along stream corridors, seeps, and springs).
- Polygon delineation (mapping of distinct boundaries).
- Protocol development (for field data acquisition, including helicopter survey and photo-documentation methods).
- Scheduling surveys (for seasonality).
- Data curation and analysis (where polygons are assigned attributes based on field data).
- Accuracy assessment (quality assurance and quality control mapping vegetation using random points and photo-documentation).

Vegetation was categorized using the International Vegetation Classification (IVC) system, a standard hierarchical cataloging of plant groupings that incorporates basic environmental differences, physiognomy, and floristics. The first two levels of the IVC deal with environmental characteristics such as aquatic versus terrestrial. Physiognomy, or the shape and form that a plant takes on at maturity, forms the basis for the next four ranks within the hierarchy, with floristics, or plant species identity, forming the last two ranks. Lower in the classification, the identities of the plants become important, with the two lowest levels concerned with the top one or two dominant plant species. In the IVC system, “dominant” refers to visual dominance as well as percent cover. If a tree is present over a certain threshold, it will generally be considered to be dominant over a grass that may be present at a much higher percent cover. Similarly, shrubs can dominate over grasses, and grasses over microphytic types such as cryptobiotic crusts (Peterson, 2008).

For the purposes of mapping and classifying the vegetation within the proposed FRTC expansion areas, the ranks of *formation* and *alliance* were used. *Formations* can be defined as broad combinations of general dominant growth forms that are adapted to basic temperature (energy budget), moisture, and substrate conditions. *Alliances* refer to diagnostic species, including some from the dominant growth

form or layer (i.e., formation), and moderately similar composition that reflect regional to subregional climate, substrates, hydrology, moisture/nutrient factors, and disturbance regimes (NatureServe, 2016).

A total of 26 alliances within seven formations were recorded within the proposed FRTC expansion areas (Tables 3.10-2 through 3.10-7, Figure 3.10-2 through Figure 3.10-8). The majority of these were in the Cool Semi-Desert Scrub and Grassland Formation. Although the proposed B-16 expansion area is by far the smallest of the expansion areas, it was relatively diverse, with a good representation of upland alliances (Tables 3.10-2 and 3.10-4). The proposed B-20 expansion area was the least diverse, as most of it is a large, unvegetated playa (Tables 3.10-2 and 3.10-6). The margins of the proposed B-20 expansion area, particularly at the north end, were more diverse where soils and topography became more complex. The proposed B-17 and DVTA expansion areas had by far the most diverse assemblage of vegetation alliances, consistent with their large size and topographic complexity (Tables 3.10-2, 3.10-5, and 3.10-7).

The lowest elevations of Dixie Valley were highly complex due to the presence of small seeps and springs as well as development and grazing. The proposed DVTA expansion area is the only area that contains mapped riparian alliances, although small seeps were found in B-17 that fell below the 2-acre minimum mapping unit (see Supporting Study: Final Plant Community Surveys and Mapping Report, available at <https://www.frtcmodernization.com>).

In support of this EIS, additional focused mapping of wetland and riparian areas was conducted within the proposed expansion areas in spring-summer 2018 (see Supporting Study: Final Wetland Survey Report, available at <https://www.frtcmodernization.com>). A total of 75 potential wetlands totaling approximately 297 acres were mapped within the proposed DVTA, B-17, and B-20 expansion areas; the proposed B-16 expansion area did not include any potential wetlands. There were 55 potential wetlands totaling 273 acres in the northernmost portion of the proposed DVTA expansion area, 19 potential wetlands totaling 24 acres in the southernmost portion of the proposed B-17 expansion area, and 1 potential wetland totaling 0.1 acre within the northernmost portion of B-20 expansion area. In addition, the majority of the proposed B-20 expansion area consists of Microphytic Playa, which is considered an ephemeral wetland (Table 3.10-6 and Figure 3.10-6).

All of the potential wetlands observed fell into the Palustrine System of wetlands. Palustrine wetlands are dominated by trees; shrubs; persistent emergent; emergent mosses or lichens; or are wetland sites that lack this vegetation but are less than 20 acres in size without active wave-formed or bedrock shorelines, with shallow water and with low salinity. Palustrine wetlands are described as marshes, bogs, prairies, ponds, etc. The Palustrine System is further divided into classes, based on the nature of the vegetation or substrate. All but four potential wetlands were in the Emergent Wetland class within the Palustrine System. These potential wetlands were dominated by short graminoids or forbs, with only occasional shrubs or short trees. Four potential wetlands (three in the DVTA and one in B-20) were characterized as Scrub-Shrub Wetlands due to the dominance of native or exotic shrubs such as willows (*Salix* spp.), tamarisk or Russian olive (*Eleagnus angustifolia*). None of these recently mapped potential wetland areas within the proposed expansion areas are located in areas potentially subject to ground disturbance under the proposed action. For further details refer to the Supporting Study: Final Wetland Survey Report (available at <https://www.frtcmodernization.com>).

Table 3.10-2: Acreage and Elevation Range of Vegetation Alliances Mapped Within the Proposed FRTC Expansion Areas under Alternatives 1 and 2

FORMATION Alliance	Elevation (feet)	Area (acres)	Percent of Total	Proposed Expansion Area			
				B-16	B-17	B-20	DVTA
COOL SEMI-DESERT SCRUB & GRASSLAND							
Bailey's Greasewood Shrubland	3,460–7,120	271,106	39.6	X	X	X	X
Black Sagebrush Steppe & Shrubland	3,960–7,440	57,594	8.4		X	X	X
Wyoming Big Sagebrush Dry Steppe & Shrubland	4,320–6,880	47,778	7.0	X	X		X
Basin Big Sagebrush–Foothill Big Sagebrush Dry Steppe & Shrubland	3,400–7,200	16,604	2.4		X	X	X
Big Sagebrush–Mixed Shrub Dry Steppe & Shrubland	3,600–6,920	11,011	1.6	X	X	X	X
Shadscale Saltbush Scrub	3,960–6,000	5,396	0.8	X	X	X	X
Rubber Rabbitbrush–Sand Buckwheat–Four-part Horsebrush Sparse Scrub	3,390–6,600	4,969	0.7	X	X	X	X
Cheatgrass Ruderal Grassland	3,960–6,820	2,929	0.4		X	X	X
Nevada Joint-fir Scrub	4,440–7,120	1,045	0.2		X		X
Yellow Star-thistle–Dyer’s Woad–Prickly Russian Thistle Ruderal Annual Forb	3,960–4,880	758	0.1	X	X	X	X
Winterfat Steppe & Dwarf Shrubland	4,080–5,740	276	<0.1		X	X	
Fourwing Saltbush–Rubber Rabbitbrush Desert Wash	3,390–3,450	164	<0.1				X
Bud Sagebrush Shrubland	6,460	29	<0.1		X		
SALT MARSH							
Microphytic Playa	3,390–4,120	136,106	19.9		X	X	X
Intermountain Greasewood Wet Shrubland	3,390–6,600	61,537	9.0	X	X	X	X
Mojave Seablite–Red Swampfire Alkaline Wet Scrub	3,400–4,080	6,740	1.0		X	X	X
Western Wildrye Alkaline Wet Meadow	3,390–4,900	599	<0.1			X	X
Saltgrass Alkaline Wet Meadow	3,390–4,140	438	<0.1		X		X
COOL TEMPERATE FOREST & WOODLAND							
Great Basin Singleleaf Pinyon–Utah Juniper/Shrub Woodland	4,040–7,480	30,038	4.4				X
Utah Juniper/Shrub Woodland	5,000–8,280	9,352	1.4		X		X
WARM DESERT & SEMI-DESERT SCRUB & GRASSLAND							
Mojave-Sonoran Burrobrush–Sweetbush Desert Wash Scrub	3,480–6,960	17,692	2.6		X	X	X
Fremont's Smokebush–Nevada Smokebush Desert Wash Scrub	4,200–5,800	1,715	0.3	X	X		
TEMPERATE FLOODED & SWAMP FOREST							
Ruderal Tamarisk Riparian Scrub*	3,410–6,880	183	<0.1				X
Great Basin Fremont Cottonwood Riparian Forest*	5,080–7,280	87	<0.1				X
SHRUB & HERB WETLAND FORMATION							
Western Baltic Rush–Mexico Rush Wet Meadow*	3,390–3,440	228	<0.1				X
TEMPERATE TO POLAR FRESHWATER MARSH, WET MEADOW & SHRUBLAND							
Arroyo Willow Wet Shrubland*	4,440–6,960	346	<0.1				X

*Riparian alliance

Table 3.10-3: Acreage and Elevation Range of Vegetation Alliances Mapped Within the Proposed FRTC Expansion Areas under Alternative 3

FORMATION Alliance	Elevation (feet)	Area (acres)	Percent of Total	Proposed Expansion Area			
				B-16	B-17	B-20	DVTA
COOL SEMI-DESERT SCRUB & GRASSLAND							
Bailey's Greasewood Shrubland	3,460–7,120	307,293	46.0	X	X	X	X
Black Sagebrush Steppe & Shrubland	3,960–7,440	45,602	6.8		X	X	X
Wyoming Big Sagebrush Dry Steppe & Shrubland	4,320–6,880	24,569	3.7	X	X		X
Basin Big Sagebrush–Foothill Big Sagebrush Dry Steppe & Shrubland	3,400–7,200	13,771	2.1		X	X	X
Big Sagebrush–Mixed Shrub Dry Steppe & Shrubland	3,600–6,920	10,815	1.6	X	X	X	X
Shadscale Saltbush Scrub	3,960–6,000	5,002	0.7	X	X	X	X
Rubber Rabbitbrush–Sand Buckwheat–Four-part Horsebrush Sparse Scrub	3,390–6,600	5,073	0.8	X	X	X	X
Cheatgrass Ruderal Grassland	3,960–6,820	1,140	0.2		X	X	
Nevada Joint-fir Scrub	4,440–7,120	882	0.13		X		
Yellow Star-thistle–Dyer’s Woad–Prickly Russian Thistle Ruderal Annual Forb	3,960–4,880	1,885	0.3	X	X	X	X
Winterfat Steppe & Dwarf Shrubland	4,080–5,740	276	<0.1		X	X	
Fourwing Saltbush–Rubber Rabbitbrush Desert Wash	3,390–3,450	164	<0.1				X
Bud Sagebrush Shrubland	6,460	29	<0.1		X		
SALT MARSH							
Microphytic Playa	3,390–4,120	130,327	19.5		X	X	X
Intermountain Greasewood Wet Shrubland	3,390–6,600	61,076	9.2	X	X	X	X
Mojave Seablite–Red Swampfire Alkaline Wet Scrub	3,400–4,080	6,699	1.0			X	X
Western Wildrye Alkaline Wet Meadow	3,390–4,900	599	<0.1			X	X
Saltgrass Alkaline Wet Meadow	3,390–4,140	432	<0.1		X		X
COOL TEMPERATE FOREST & WOODLAND							
Great Basin Singleleaf Pinyon–Utah Juniper/Shrub Woodland	4,040–7,480	30,038	4.5				X
Utah Juniper/Shrub Woodland	5,000–8,280	2,509	0.4		X		X
WARM DESERT & SEMI-DESERT SCRUB & GRASSLAND							
Mojave-Sonoran Burrobrush–Sweetbush Desert Wash Scrub	3,480–6,960	16,739	2.5		X	X	X
Fremont's Smokebush–Nevada Smokebush Desert Wash Scrub	4,200–5,800	1,715	0.3	X	X		
TEMPERATE FLOODED & SWAMP FOREST							
Ruderal Tamarisk Riparian Scrub*	3,410–6,880	183	<0.1				X
Great Basin Fremont Cottonwood Riparian Forest*	5,080–7,280	87	<0.1				X
SHRUB & HERB WETLAND FORMATION							
Western Baltic Rush–Mexico Rush Wet Meadow*	3,390–3,440	228	<0.1				X
TEMPERATE TO POLAR FRESHWATER MARSH, WET MEADOW & SHRUBLAND							
Arroyo Willow Wet Shrubland*	4,440–6,960	346	<0.1				X

*Riparian alliance.

Table 3.10-4: Acreage of Vegetation Alliances Mapped Within the Proposed B-16 Expansion Area

Vegetation Alliance	Alternatives 1 & 2		Alternative 3	
	Acres	Percent	Acres	Percent
Bailey's Greasewood Shrubland	25,262	78.3	25,262	79.1
Shadscale Saltbush Scrub	2,328	7.2	2,328	7.3
Fremont's Smokebush–Nevada Smokebush Desert Wash Scrub	1,676	5.2	1,676	5.2
Intermountain Greasewood Wet Shrubland	1,355	4.2	1,035	3.2
Big Sagebrush–Mixed Shrub Dry Steppe & Shrubland	918	2.8	918	2.9
Rubber Rabbitbrush–Sand Buckwheat–Four-part Horsebrush Sparse Scrub	473	1.5	473	1.5
Yellow Star-thistle–Dyer's Woad–Prickly Russian-thistle Ruderal Annual Forb	129	0.4	129	0.4
Wyoming Big Sagebrush Dry Steppe & Shrubland	105	0.3	105	0.3
Total	32,246		31,926	

Table 3.10-5: Acreage of Vegetation Alliances Mapped Within the Proposed B-17 Expansion Area

Vegetation Alliance	Alternatives 1 & 2		Alternative 3	
	Acres	Percent	Acres	Percent
Bailey's Greasewood Shrubland	88,119	49.5	142,157	67.8
Black Sagebrush Steppe & Shrubland	19,648	11.0	12,750	6.1
Wyoming Big Sagebrush Dry Steppe & Shrubland	15,186	8.5	8,143	3.9
Intermountain Greasewood Wet Shrubland	14,749	8.3	15,387	7.3
Microphytic Playa	8,424	4.7	4,886	2.3
Utah Juniper/Shrub Understory Woodland	8,184	4.6	1,659	0.8
Big Sagebrush–Mixed Shrub Dry Steppe & Shrubland	5,967	3.4	6,340	3.0
Mojave-Sonoran Burrobrush–Sweetbush Desert Wash Scrub	5,550	3.1	6,536	3.1
Basin Big Sagebrush–Foothill Big Sagebrush Dry Steppe & Shrubland	3,735	2.1	2,778	1.3
Rubber Rabbitbrush–Sand Buckwheat–Four-part Horsebrush Sparse Scrub	2,556	1.4	2,715	1.3
Shadscale Saltbush Scrub	2,168	1.2	2,132	1.0
Cheatgrass Ruderal Grassland	1,623	0.9	1,046	0.5
Nevada Joint-fir Scrub	977	0.5	882	0.4
Yellow Star-thistle–Dyer's Woad–Prickly Russian-thistle Ruderal Annual Forb	514	0.3	1,641	0.8
Saltgrass Alkaline Wet Meadow	224	0.1	217	0.1
Winterfat Steppe Dwarf Shrubland	192	0.1	192	0.1
Mojave Seablite–Red Swampfire Alkaline Wet Scrub	41	<0.1	0	0
Fremont's Smokebush–Nevada Smokebush Desert Wash Scrub	39	<0.1	39	<0.1
Bud Sagebrush Shrubland	0	0	29	<0.1
Total	177,896		209,529	

Table 3.10-6: Acreage of Vegetation Alliances Mapped Within the Proposed B-20 Expansion Area

Vegetation Alliance	Alternatives 1 & 2		Alternative 3	
	Acres	Percent	Acres	Percent
Microphytic Playa	127,234	70.2	124,994	70.3
Intermountain Greasewood Wet Shrubland	23,651	13.1	23,064	13.0
Bailey's Greasewood Shrubland	22,551	12.5	22,162	12.5
Mojave Seablite–Red Swampfire Alkaline Wet Scrub	4,968	2.7	4,968	2.8
Rubber Rabbitbrush–Sand Buckwheat–Four-part Horsebrush Sparse Scrub	803	0.4	803	0.5
Shadscale Saltbush Scrub	358	0.2	358	0.2
Mojave-Sonoran Burrobrush–Sweetbush Desert Wash Scrub	580	0.3	580	0.3
Basin Big Sagebrush–Foothill Big Sagebrush Dry Steppe & Shrubland	321	0.2	321	0.2
Big Sagebrush–Mixed Shrub Dry Steppe & Shrubland	205	0.1	205	0.1
Black Sagebrush Steppe & Shrubland	173	0.1	173	0.1
Yellow Star-thistle–Dyer's Woad–Prickly Russian-thistle Ruderal Annual Forb	109	<0.1	109	<0.1
Cheatgrass Ruderal Grassland	94	<0.1	94	<0.1
Winterfat Steppe Dwarf Shrubland	84	<0.1	84	<0.1
Western Wildrye Alkaline Wet Meadow	3	<0.1	3	<0.1
Total	181,134		177,918	

Table 3.10-7: Acreage of Vegetation Alliances Mapped Within the Proposed DVTA Expansion Area

Vegetation Alliance	Alternatives 1 & 2		Alternative 3	
	Acres	Percent	Acres	Percent
Bailey's Greasewood Shrubland	135,174	46.1	117,712	47.4
Black Sagebrush Steppe & Shrubland	37,773	12.9	32,679	13.2
Great Basin Singleleaf Pinyon–Utah Juniper/Shrub Understory Woodland	30,038	10.2	30,038	12.1
Wyoming Big Sagebrush Dry Steppe & Shrubland	32,487	11.1	16,320	6.6
Intermountain Greasewood Wet Shrubland	21,782	7.4	21,590	8.7
Basin Big Sagebrush–Foothill Big Sagebrush Dry Steppe & Shrubland	12,548	4.3	10,672	4.3
Mojave-Sonoran Burrobrush–Sweetbush Desert Wash Scrub	11,561	3.9	9,622	3.9
Mojave Seablite–Red Swampfire Alkaline Wet Scrub	1,731	0.6	1,731	0.7
Big Sagebrush–Mixed Shrub Dry Steppe & Shrubland	3,921	1.3	3,353	1.4
Cheatgrass Ruderal Grassland	1,212	0.4	0	0
Rubber Rabbitbrush–Sand Buckwheat–Four-part Horsebrush Sparse Scrub	1,137	0.4	1,082	0.4
Utah Juniper/Shrub Understory Woodland	1,167	0.4	850	0.3
Western Wildrye Alkaline Wet Meadow	596	0.2	596	0.2
Ruderal Tamarisk Riparian Scrub	183	<0.1	183	<0.1
Microphytic Playa	448	0.2	448	0.2
Shadscale Saltbush Scrub	542	0.2	183	<0.1
Saltgrass Alkaline Wet Meadow	215	<0.1	215	<0.1
Western Baltic Rush - Mexican Rush Wet Meadow	228	<0.1	228	<0.1
Fourwing Saltbush–Rubber Rabbitbrush Desert Wash	164	<0.1	164	<0.1
Arroyo Willow Wet Shrubland	346	0.1	346	0.1
Great Basin Fremont Cottonwood Riparian Forest	87	<0.1	87	<0.1
Nevada Joint-fir Scrub	69	<0.1	0	0
Yellow Star-thistle–Dyer's Woad–Prickly Russian-thistle Ruderal Annual Forb	6	<0.1	6	<0.1
Total	293,415		248,105	

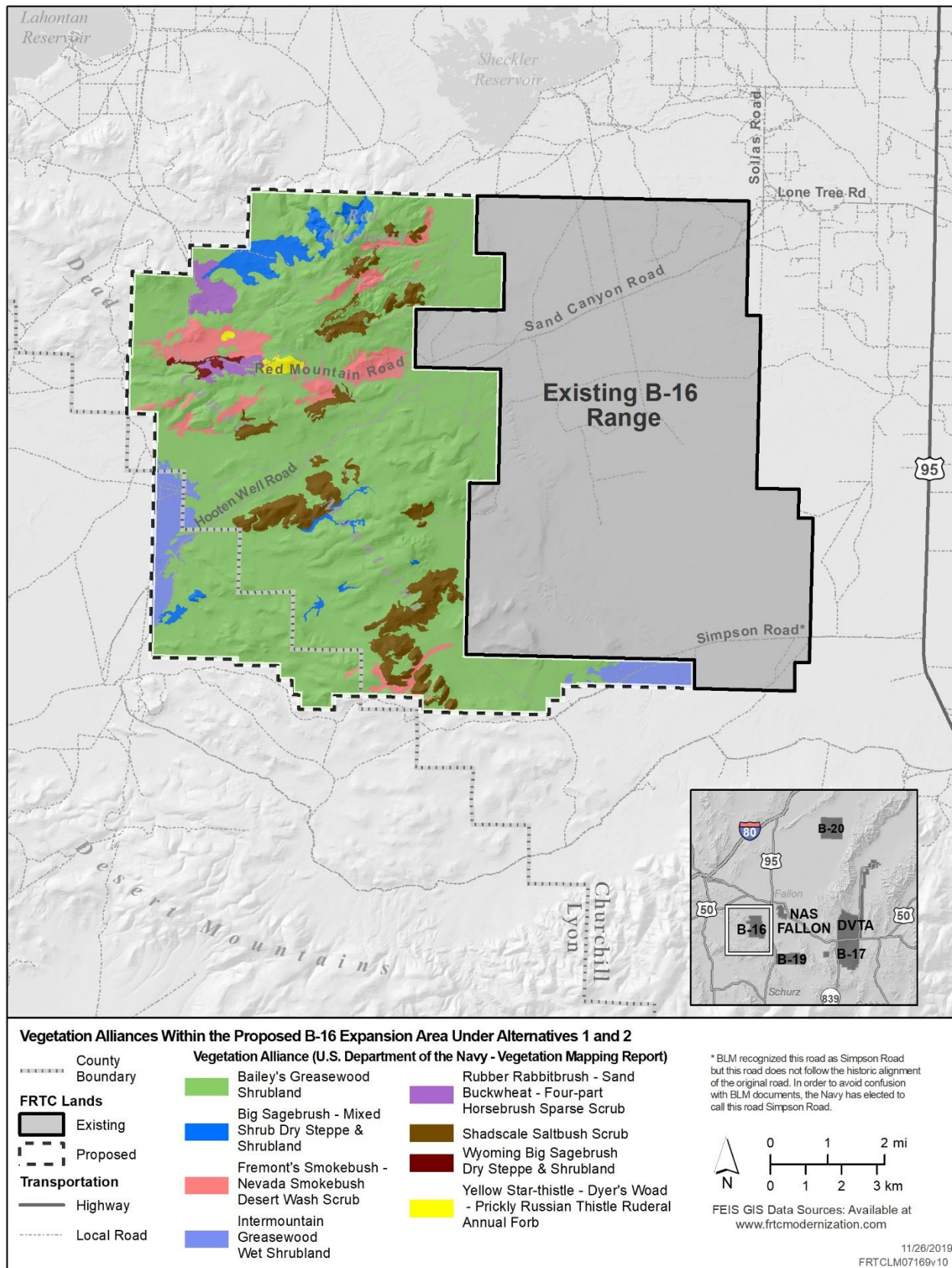


Figure 3.10-2: Vegetation Alliances Within the Proposed B-16 Expansion Area Under Alternatives 1 and 2

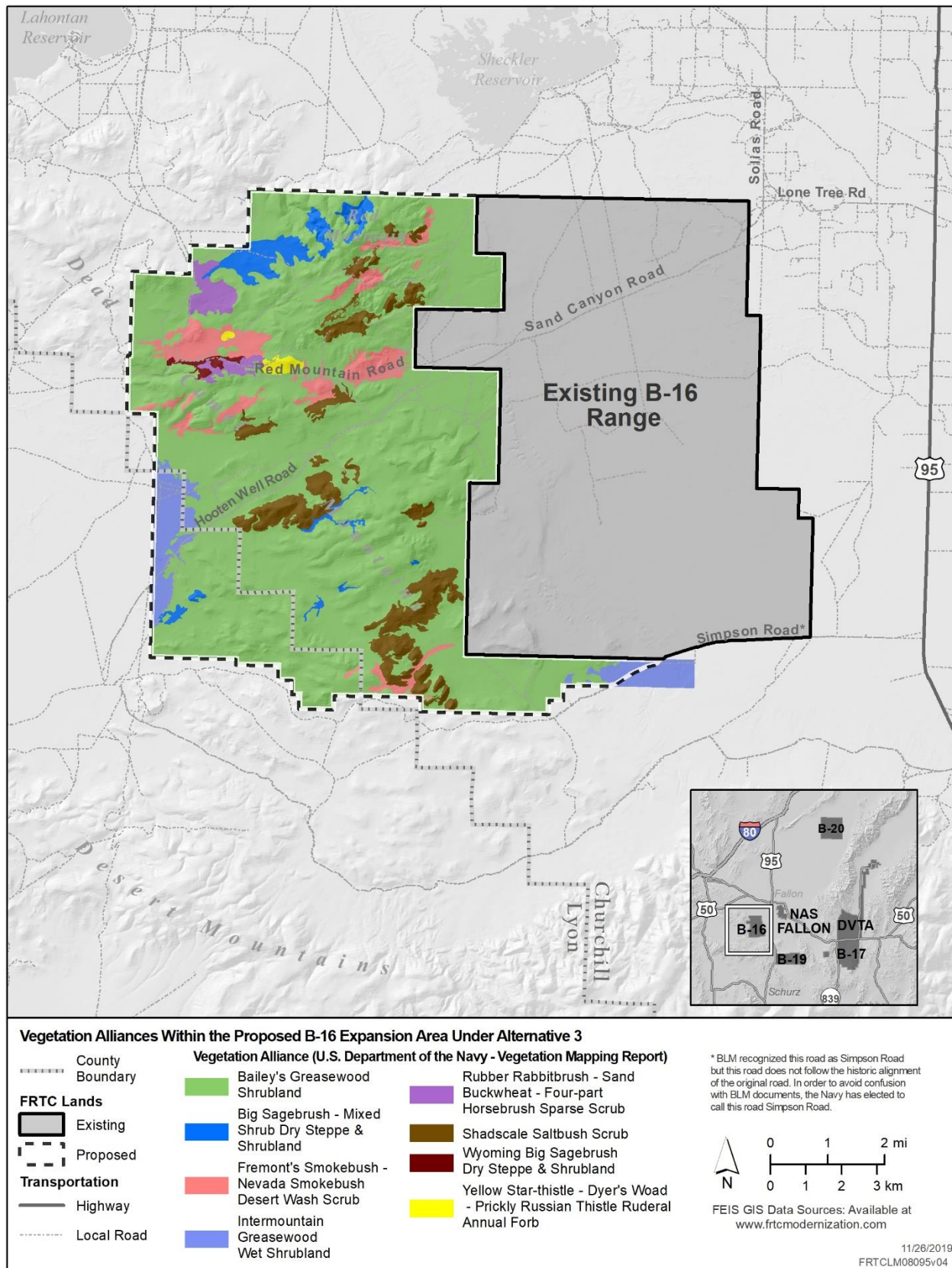


Figure 3.10-3: Vegetation Alliances Within the Proposed B-16 Expansion Area Under Alternative 3

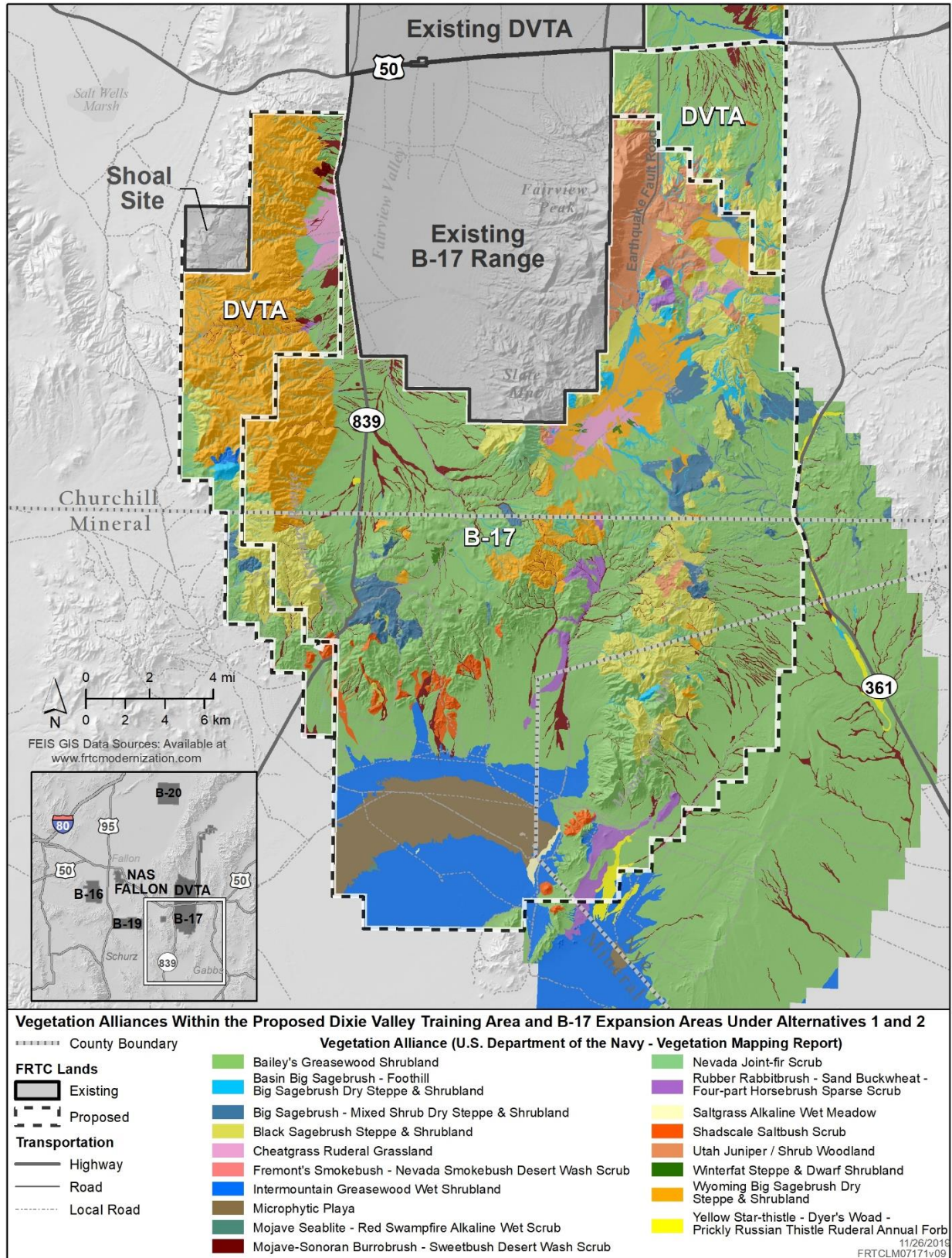


Figure 3.10-4: Vegetation Alliances Within the Proposed Dixie Valley Training Area and B-17 Expansion Areas Under Alternatives 1 and 2

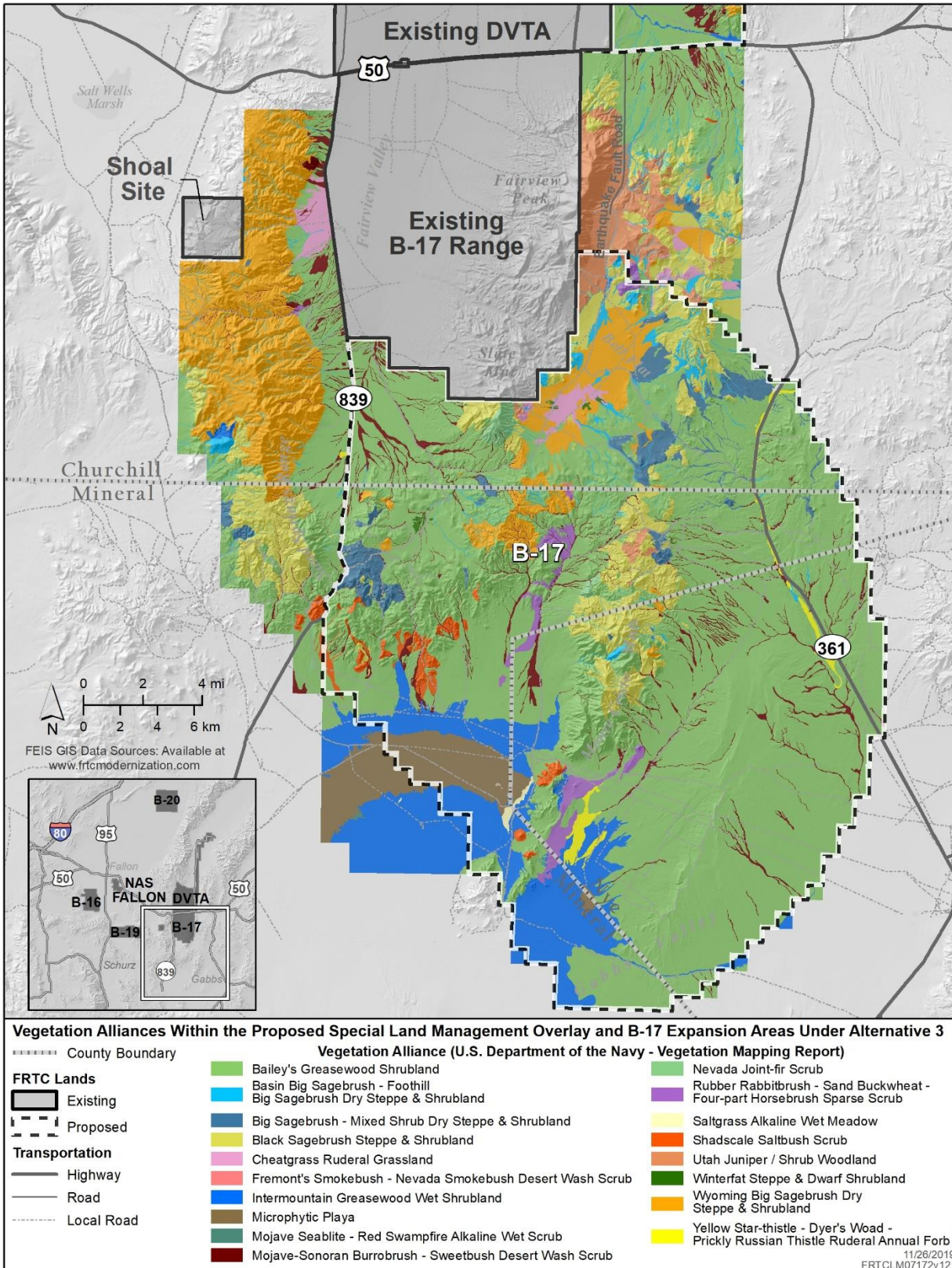


Figure 3.10-5: Vegetation Alliances Within the Proposed Special Land Management Overlay and B-17 Expansion Areas Under Alternative 3

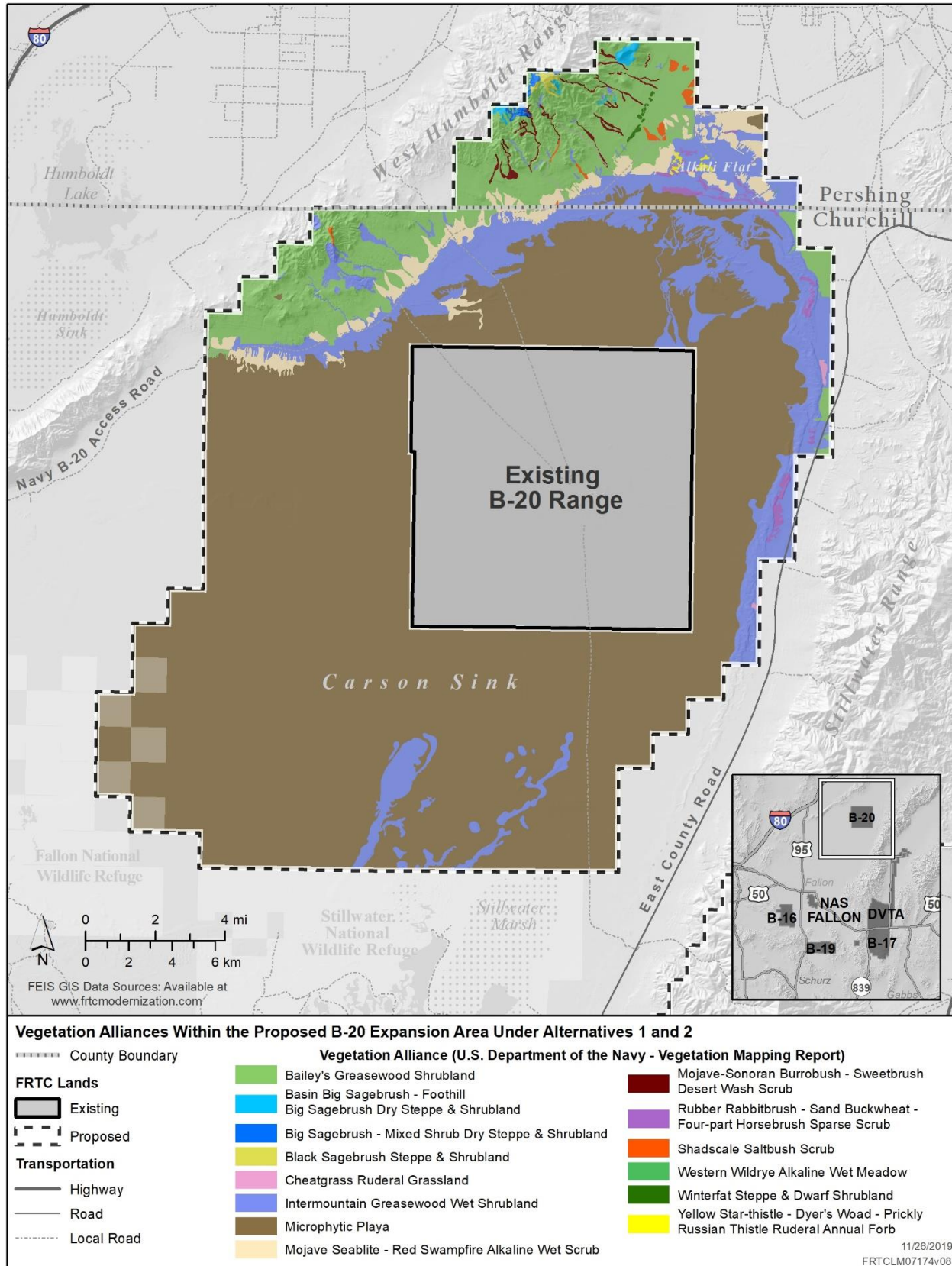


Figure 3.10-6: Vegetation Alliances Within the Proposed B-20 Expansion Area Under Alternatives 1 and 2

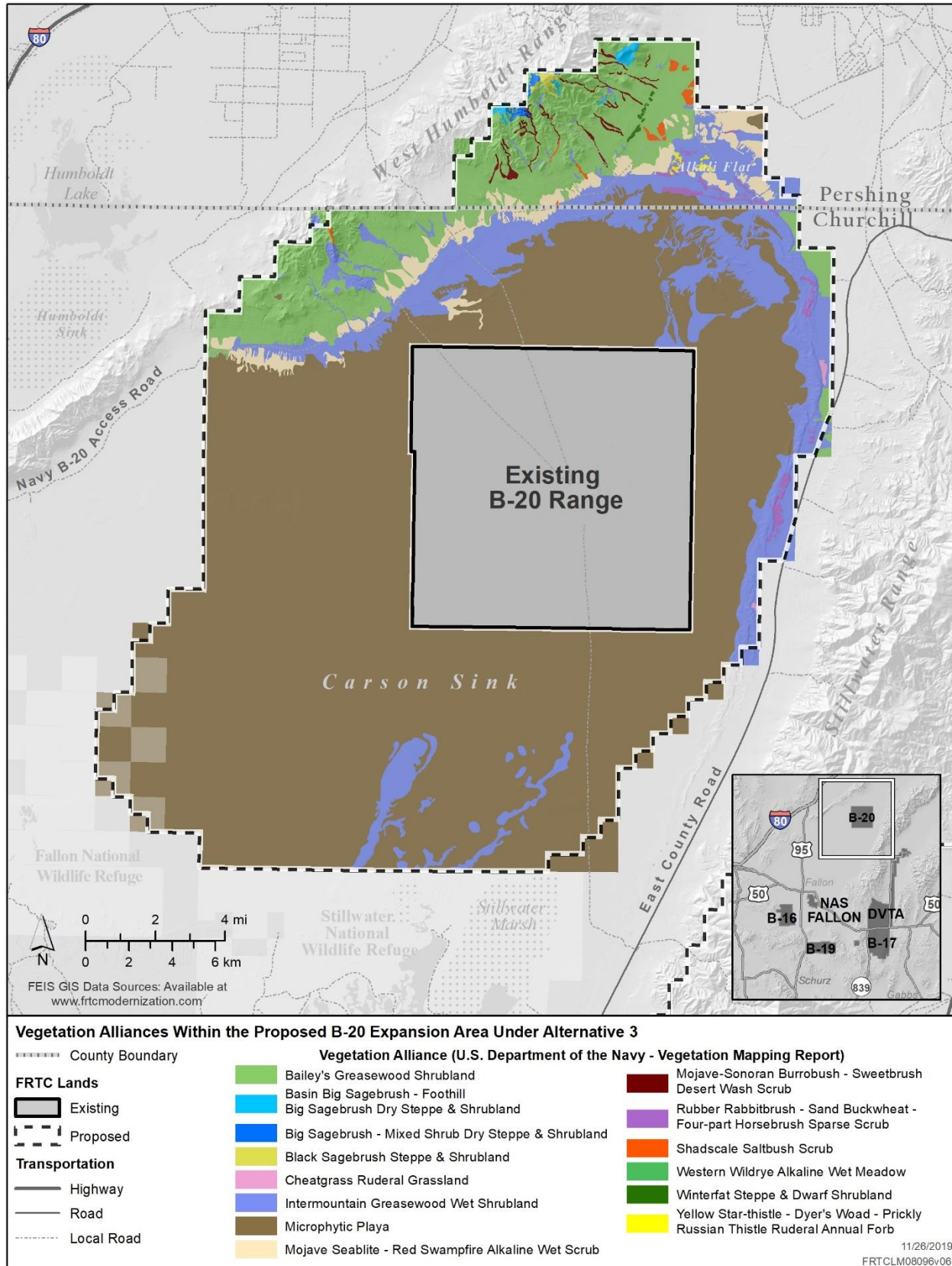


Figure 3.10-7: Vegetation Alliances Within the Proposed B-20 Expansion Area Under Alternative 3

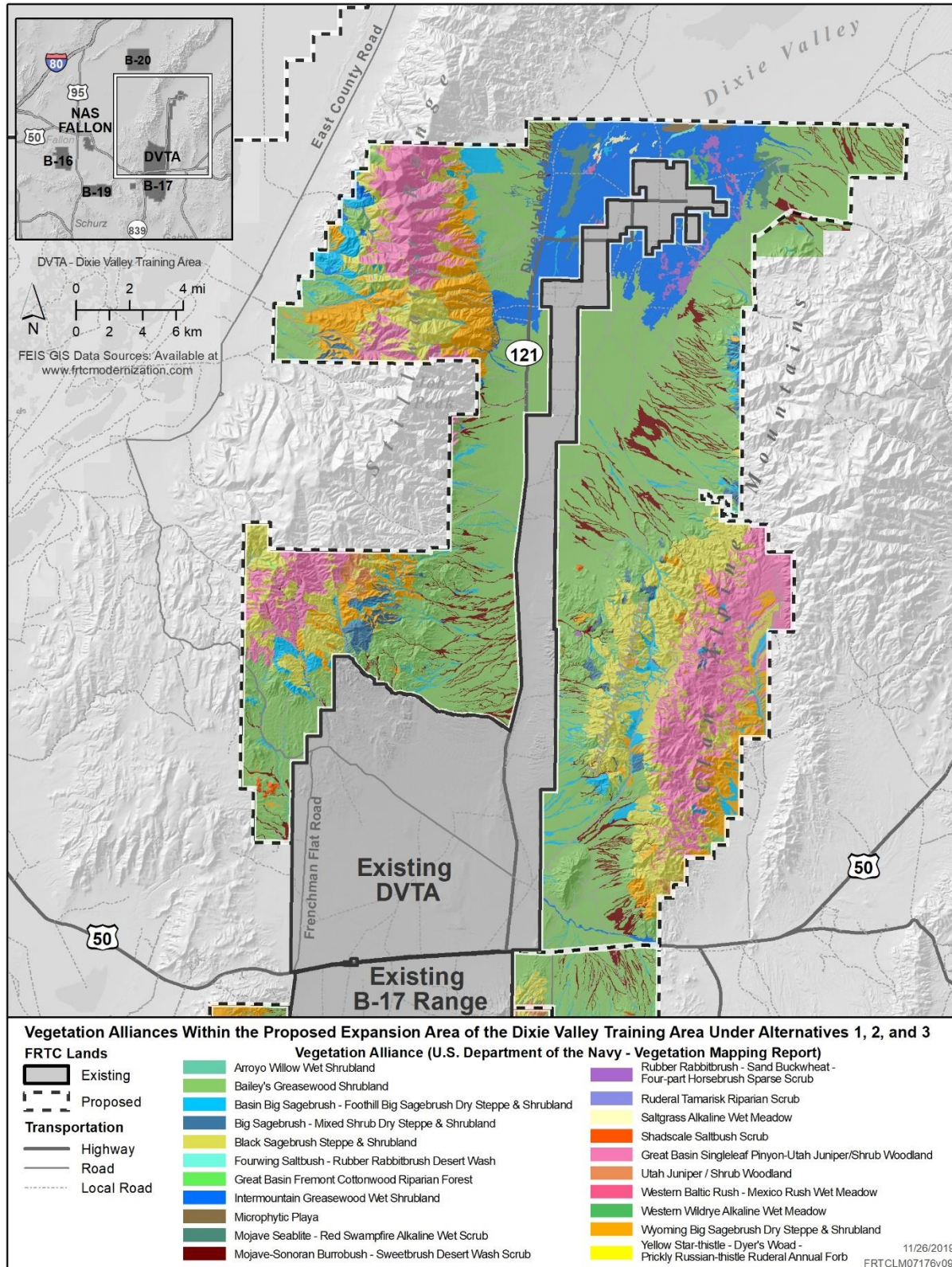


Figure 3.10-8: Vegetation Alliances Within the Proposed Expansion Area of the North Dixie Valley Training Area Under Alternatives 1 and 2, and the Proposed Expansion Area for the Dixie Valley Training Area Under Alternative 3

Vegetation Formation and Alliance Descriptions

Cool Semi-Desert Scrub and Grassland Formation. The Cool Semi-Desert Scrub and Grassland Formation encompasses the majority of the proposed range expansion areas, both in acres and in the number of alliances within it. Shrubs or non-native annual species dominate these alliances and occur at all but the highest elevations of the project. Although some alliances occur in washes and canyons, none of the members of this formation are truly riparian.

- *Bailey's Greasewood Shrubland Alliance.* This is the most common alliance in the proposed FRTC expansion areas, encompassing approximately 271,000 acres (40 percent of land within the proposed expansion areas) under Alternatives 1 and 2 (Table 3.10-2) and approximately 307,000 acres (46 percent of land within the proposed expansion areas) under Alternative 3 (Table 3.10-3). This alliance is based on the presence of Bailey's greasewood and occurs in all proposed expansion areas between 3,460 and 7,120 feet in elevation. Total cover in this alliance is generally sparse, with Bailey's greasewood generally occupying between 15 percent and 30 percent, with some cases as low as 5 percent if no other shrubs are present. Particularly low cover of the dominant shrub usually include high cover of cheatgrass, and these areas are presumably facing cheatgrass invasion. Other shrubs commonly found in this alliance include bud sagebrush and winterfat (*Krascheninnikovia lanata*) at up to 35 percent cover, shadscale (*Atriplex confertifolia*) up to 15 percent cover, intermountain greasewood up to 20 percent, and big sagebrush occasionally up to 30 percent cover. Understory forbs are quite diverse, including non-native cheatgrass and flixweed (*Descurainia sophia*), Menzie's fiddleneck (*Amsinckia menziesii*), yellow pepperweed (*Lepidium flavum*) and desert dandelion (*Malacothrix glabrata*).
- *Black Sagebrush Steppe and Shrubland Alliance.* This alliance occurred at slopes between 3,960 and 7,440 feet that intergrade into pinyon woodland at the upper elevations and are occupied by black sagebrush (*Artemisia nova*), a diminutive relative of the Basin and Wyoming varieties of big sagebrush, which prefers steeper, rockier, less productive sites. The fourth-largest in area, this alliance covers approximately 57,600 acres within the proposed expansion areas (8 percent of the total proposed expansion areas) under Alternatives 1 and 2 (Table 3.10-2) and approximately 45,600 acres (7 percent of the total proposed expansion areas) under Alternative 3 (Table 3.10-3). Black sagebrush occurs at up to 50 percent cover and should always contribute over 10 percent. This alliance was also heavily invaded with cheatgrass, at times with up to 70 percent cover when shrub cover was low. Bailey's greasewood can provide up to 30 percent cover, with sticky rabbitbrush and Wyoming sagebrush up to 15 percent cover. On slopes that transition to pinyon or juniper woodland, singleleaf pinyon and Utah juniper can occur at less than 4 percent. Both Basin big and Wyoming sagebrush can accompany black sagebrush in this alliance, but at a lower cover and only up to 20 percent. Understory elements include Sandberg bluegrass (*Poa secunda*), non-native crested wheatgrass (*Agropyron cristatum*), grizzlybear pricklypear (*Opuntia erinacea*), and ricegrass (*Stipa hymenoides*).
- *Wyoming Big Sagebrush Dry Steppe and Shrubland Alliance.* Wyoming big sagebrush occurs as the dominant shrub in upland sites between approximately 4,320 and 6,880 feet elevation, and occupied approximately 47,800 acres (7 percent of the total proposed expansion areas) under Alternatives 1 and 2 (Table 3.10-2) and approximately 24,600 acres (4 percent of the total proposed expansion areas) under Alternative 3 (Table 3.10-3). It occurs within all of the proposed expansion areas except B-20. Stands of this alliance are composed of approximately 20–30 percent cover of Wyoming big sagebrush, or as much as 50 percent in some cases. Cover

occasionally drops as low as 10 percent with an understory of grasses and forbs, but with shrubs subordinate. This alliance was also found to be heavily invaded by cheatgrass, with some stands registering up to 80 percent cover. Accompanying shrubs included sticky rabbitbrush and Nevada joint-fir with up to 15 percent cover, and occasionally Bailey's greasewood up to 10 percent cover. The understory contained up to 30 percent cover of James' galleta (*Pleuraphis jamesii*), as well as Sandberg bluegrass, tailcup lupine (*Lupinus argenteus*), and desert trumpet (*Eriogonum inflatum*).

- *Basin Big Sagebrush – Foothill Big Sagebrush Dry Steppe and Shrubland Alliance.* Wetter sites between 3,400 and 7,200 feet such as wash bottoms and talus slopes within Wyoming big sagebrush stands were frequently occupied by Basin big sagebrush and rubber rabbitbrush (*Ericameria nauseosa* var. *hololeuca*). This alliance covers approximately 16,600 acres of the proposed expansion areas except B-16 under Alternatives 1 and 2 (Table 3.10-2) and approximately 13,800 acres under Alternative 3 (Table 3.10-3). Membership in this alliance requires that at least one of the two key species occurs at up to 40 percent cover and always over 10 percent. Cheatgrass can also occur at up to 40 percent in heavily invaded sites. Both species of greasewood can be associated with this alliance, but only up to approximately 30 percent cover. Western wildrye (*Leymus cinereus*) and saltgrass occur in the graminoid layer, with only sparse forbs.
- *Big Sagebrush – Mixed Shrub Dry Steppe and Shrubland Alliance.* The transition zone between Wyoming sagebrush stands and Bailey's greasewood stands between 3,600 and 6,920 feet merits its own alliance, as these areas contain co-dominant proportions of these species. A total of approximately 11,000 acres of this alliance were mapped within the proposed expansion areas under Alternatives 1 and 2 (Table 3.10-2) and 10,800 acres under Alternative 3 (Table 3.10-3). In order to qualify, the greater of the two key species should occur at above 10 percent cover, with shrubs other than the codominant being subordinate. These stands also frequently contain winterfat at up to 15 percent cover, and spiny hopsage and Nevada joint-fir at 5–10 percent cover; cheatgrass can occupy up to 65 percent cover.
- *Shadscale Saltbrush Scrub Alliance.* Shadscale occupies lower elevations in sparse vegetation and frequently participates in other alliances, particularly Bailey's Greasewood. Delineating boundaries between these alliances can be difficult as they often intergrade. Sites between 3,960 and 6,000 feet elevation can be dominated by shadscale at 5–25 percent cover, with all other shrub species subordinate. Occurring within all the proposed expansion areas, a total of approximately 5,400 acres of this alliance were mapped within Alternatives 1 and 2 (Table 3.10-2) and approximately 5,000 acres under Alternative 3 (Table 3.10-3). Total vegetation cover is generally very low in these stands, although cheatgrass can grow at up to 40 percent cover in some stands. Shrub associates can include Mojave seabligh, Nevada joint-fir, and both species of greasewood. Other non-native species in this alliance include salt-lover (*Halogeton glomeratus*), clasping pepperweed (*Lepidium perfoliatum*), Russian thistle (*Salsola tragus*), and flixweed, all generally below 5 percent cover, although some stands can contain higher cover of salt-lover. Native forbs and graminoids can include silverscale saltbush (*Atriplex argentea*), squirreltail (*Elymus elymoides*), and Sandberg bluegrass.
- *Rubber Rabbitbrush – Sand Buckwheat – Four-part Horsebrush Sparse Scrub Alliance.* The playas and sinks that dominate low-lying areas within the proposed expansion areas provide a source of wind-transported sand that is deposited on the north and northeastern edges in short dunes.

These dune fields can be partially stabilized by a community of shrubs and grasses that can withstand the periodic burial and exposure of moving dune fields. Where this community is dominated by four-part horsebrush (*Tetradymia tetrameres*) at 5–10 percent cover and intermountain greasewood at up to 20 percent cover, it falls into its own alliance. This alliance was found in all the proposed expansion areas, occurs between 3,390 and 6,600 feet elevation, and encompasses approximately 5,000 acres under Alternatives 1, 2, and 3 (Tables 3.10-2 and 3.10-3). These stands occupy the leeward sides of dune faces, and occasionally creep up onto the tops of lower, protected dunes. Common shrub associates include fourwing saltbush and Mojave seabligh at up to 10 percent cover, and rubber rabbitbrush up to 5 percent. Russian thistle can be particularly troublesome, occurring at up to 10 percent cover. Ricegrass and desert needlegrass (*Stipa hymenoides*) are often present at low cover, and a wide assortment of sand-loving annuals occur in spring.

- *Cheatgrass Ruderal Grassland Alliance*. Although cheatgrass pervaded the survey areas and occurred at some level in most alliances, some areas were so thoroughly invaded by cheatgrass that they were defined as the Cheatgrass Ruderal Grassland Alliance (Tables 3.10-2 and 3.10-3). Within the proposed B-17 and B-20 expansion areas, this alliance spanned between the elevations of 3,960 and 6,820 feet, and was always over 80 percent cover. It occurred on approximately 2,900 acres within proposed expansion areas B-17 and B-20 under Alternatives 1 and 2, and on approximately 1,100 acres under Alternative 3 (Table 3.10-3). Shrubs and native grasses were less than 5 percent, and the original native alliance was so obscured as to be undefinable. These areas are likely linked to disturbance such as fires, overgrazing, or a combination of the two. The native shrubs shadscale and rubber rabbitbrush occasionally occurred at low levels (less than 2 percent).
- *Nevada Joint-fir Scrub Alliance*. Although a common associate of other alliances, Nevada joint-fir only rarely dominates a stand. However, on rocky, cobbly slopes and alluvial fans, particularly in the proposed B-17 expansion area, it can be the dominant shrub species, occupying up to 10 percent cover and occasionally as low as 5 percent. Associated subordinate shrubs included Mojave burrobrush (*Ambrosia salsola*), Bailey's greasewood, and sticky rabbitbrush. This alliance occupied between approximately 900 and 1,000 acres within the proposed expansion areas under Alternatives 1, 2, and 3. It typically occurred between the elevations of 4,440 and 7,120 feet (Tables 3.10-2 and 3.10-3). Cheatgrass can heavily infest these stands, occasionally as high as 30 percent cover. Areas with particularly high cheatgrass cover and remnant Nevada joint-fir may indicate a past burn, particularly when sticky rabbitbrush and cheatgrass are both present. These stands may represent a transitional phase from Bailey's greasewood or shadscale-dominated stands into fire-affected stands dominated by Nevada joint-fir and cheatgrass.
- *Yellow Star-thistle – Dyer's Woad – Russian Thistle Ruderal Annual Forb Alliance*. Russian thistle was frequently found in the survey areas, occurring between the elevations of 3,960 and 4,880 feet. In sandy sites in all four proposed expansion areas, Russian thistle was dense enough to characterize the stand, with between 10 and 40 percent cover. In B-20, these stands were closely associated with the Rubber Rabbitbrush – Sand Buckwheat – Four-part Horsebrush Sparse Scrub, occupying the tops of dunes and windward sides. In the other areas, this alliance was found on flat sandy areas, generally intermixed with heavy cover of cheatgrass as well. Shadscale, desert needlegrass, smokebush (*Psoralea polydenia*), and four-part

horsebrush may also occur within this alliance, but never at greater than 2 percent cover. This alliance occurred in all of the proposed expansion areas and covered approximately 760 acres under Alternatives 1 and 2 (Table 3.10-2) and approximately 1,900 acres under Alternative 3 (Table 3.10-3).

- *Winterfat Steppe and Dwarf Shrubland Alliance.* Winterfat generally occurs alongside and subordinate to Wyoming sagebrush and Bailey's greasewood, but occasionally will dominate a stand on its own. These stands covered 276 acres in alluvial fans and wide valleys of the proposed B-17 and B-20 expansion areas between 4,080 and 5,740 feet (Tables 3.10-2 and 3.10-3). Winterfat cover can be as high as 15 percent, with sticky rabbitbrush, bud sagebrush, Bailey's greasewood, and Wyoming sagebrush subordinate. Cheatgrass can occupy approximately 10 percent cover, and the understory is generally sparse.
- *Fourwing Saltbrush – Rubber Rabbitbrush Desert Wash Alliance.* Green rubber rabbitbrush (*Ericameria nauseosa* var. *oreophylla*) occupies sites with seasonal moisture in similar fashion to *E. n.* var. *hololeuca*, except the former prefers alkaline sites, while the latter tends to be found in higher elevation washes, between 3,390 and 3,450 feet, and along road bar ditches. Green rubber rabbitbrush occupies from 5 to 20 percent cover in this alliance with other shrubs subordinate. These can include Torrey's saltbush (*Atriplex torreyi*), fourwing saltbush, and intermountain greasewood. Western wildrye may also be present at up to 10 percent cover. Stands of this alliance are extremely sparse, often with only 25 percent total cover. This alliance was mapped only within the proposed DVTA expansion area and encompassed 164 acres under all alternatives (Tables 3.10-2 and 3.10-3).
- *Bud Sagebrush Shrubland.* A single 29-acre stand of bud sagebrush shrubland was mapped at the north end of the proposed B-17 expansion area at 6,460-foot elevation. It occurred on a bench between a wash bottom and hills dominated by Bailey's greasewood shrubland. This alliance is indicated by a strong dominance of bud sagebrush at approximately 25 percent cover with winterfat subordinate at approximately 5 percent cover and small contributions of Sandberg bluegrass at 2 percent cover. Additional annual species are likely present during the spring, and other perennial grass species probably co-occur in other stands (Peterson, 2008). Because only one stand was mapped, only one rapid assessment plot was completed, so the range of species and cover values may be broader if additional stands are documented. Peterson (2008) notes that "little information is available" for this alliance, although he anticipates it may prove to be more common than presently documented.

Salt Marsh Formation. Alliances within the Salt Marsh Formation generally occur on the margins of playa areas, where hydrologic conditions make conditions suitable for shrubby members of the Chenopodiaceae family and few others. These alliances are often sparse and of low diversity, and generally occur on flat areas and the washes that bisect playa margins.

- *Microphytic Playa Alliance.* The lowest-lying areas of the project are subjected to seasonal inundation and formation of shallow lakes, occurring between 3,390 and 4,120 feet within the proposed B-17, B-20, and DVTA expansion areas (Tables 3.10-2 and 3.10-3). The lack of outflow from these areas forces the water to evaporate, leaving residues of salts and other minerals that preclude colonization by most plants. These areas are sometimes classified as "barren" in vegetation mapping, but they do support microscopic communities of cryptobiotic crusts, algae, lichens, diatoms, etc. At the margins, salt-tolerant species such as intermountain greasewood

and Mojave seablight may intrude at low cover. The large playa that forms the majority of the proposed B-20 expansion area (Figure 3.10-5) makes this the second-largest alliance mapped, at over 130,000 acres, or 20 percent of the total proposed expansion areas (Tables 3.10-2 and 3.10-3).

- *Intermountain Greasewood Wet Shrubland Alliance*. Intermountain greasewood occurs between the elevations of 3,390 and 6,600 feet and occupies seasonally or intermittently mesic sites generated by alkaline seeps and springs, or accumulation of surface flow on the margins of playas. A fringe of intermountain greasewood rings the playa areas throughout the proposed FRTC expansion areas and occasional washes and seeps in the proposed DVTA expansion area. Mapped within all the proposed expansion areas, this alliance covers approximately 9 percent of the proposed expansion areas (Tables 3.10-2 and 3.10-3). The alliance is sparse, with 10-45 percent cover of intermountain greasewood, although this can be as low as 5 percent when no other shrubs are present). Cheatgrass was common in stands of this alliance, with some infested at up to 65 percent cover. Other shrubs commonly included four-part horsebrush at up to 30 percent; Mojave seablight, rubber rabbitbrush, and fourwing saltbush up to 20 percent; and Bailey's greasewood up to 10 percent, with the latter generally on the edges of stands or drier microsites. Understory is generally sparse but can include ricegrass, alkali sacaton (*Sporobolus airoides*), and desert needlegrass.
- *Mojave Seablight – Red Swampfire Alkaline Wet Scrub Alliance*. Mojave seablight interlaces with intermountain greasewood on playa edges and alkaline soils at low elevations between 3,400 and 4,080 feet (Tables 3.10-2 and 3.10-3). The alliance covers approximately 6,700 acres within all proposed expansion areas except B-16, and is characterized by very sparse cover with 3–30 percent Mojave seablite with no more than 10 percent cover of other shrubs. The most common associated shrubs are intermountain greasewood and fourwing saltbush, both generally less than 10 percent cover. Stands often occur on black cryptobiotic crust soils, with crust comprising up to 60 percent cover. Non-native Russian thistle and salt-lover can occupy up to 5 percent cover, and cheatgrass and annual wheatgrass (*Eremopyron triticeum*) up to 30 percent cover.
- *Saltgrass Alkaline Wet Meadow Alliance*. Saltgrass (*Distichlis spicata*) occupies small mesic sites on edges of playas with reliable year-round water. Heavily dominated by saltgrass (up to 90 percent cover), this alliance covers approximately 430 acres within the proposed B-17 and DVTA expansion areas at between the elevations of 3,390 and 4,140 feet (Tables 3.10-2 and 3.10-3). Associated shrubs include Mojave seablight, intermountain greasewood, rubber rabbitbrush, and Torrey's saltbrush, none of which exceed 10 percent cover.
- *Western Wildrye Alkaline Wet Meadow Alliance*. Several flat plains and washes in the dune field margins contain stands dominated by western wildrye, occurring between the elevations of 3,390 and 4,900 feet at 2–20 percent cover. Although shrubs occasionally occur intermixed with the wild rye, they never exceed 15 percent cover, and do not exceed the cover of wildrye. Associated shrubs include Basin big sagebrush, Torrey's saltbush, green rubber rabbitbrush, intermountain greasewood, and Mojave seablight. Saltgrass, cheatgrass, clasping pepperweed, and crested wheatgrass comprise the sparse understory. A total of 599 acres of this alliance was mapped within the proposed DVTA and B-20 expansion areas (Tables 3.10-2 and 3.10-3).

Cool Temperate Forest and Woodland Formation. This formation contains the two high-elevation tree alliances. Neither of these produces stands of trees at sufficient density to be considered forest, and in combination with the shrub understory, this places it into a woodland instead. The boundary between the lower-lying shrublands and woodland stands can be difficult to distinguish, and likely fluctuates to some extent over decades. In some sites, both singleleaf pinyon and Utah juniper may be invading sagebrush habitat, assisted by changes in fire regimes or overgrazing.

- *Great Basin Singleleaf Pinyon – Utah Juniper/Shrub Woodland Alliance.* Pinyon juniper woodland occurs only within the proposed DVT expansion area at elevations of 4,040–7,480 feet and encompasses approximately 30,000 acres (Tables 3.10-2 and 3.10-3). The threshold for designating a site as woodland was 5 percent relative cover of trees, with up to 95 percent absolute cover of Utah juniper. Understory shrubs included black and Wyoming sagebrush up to 40 percent cover, and Basin big sagebrush up to 20 percent. An understory of Sandberg bluegrass, Newberry's milkvetch (*Astragalus newberryi* var. *castoreus*), and carpet phlox (*Phlox hoodii*) is often accompanied by a diverse assemblage of annual and perennial forbs.
- *Utah Juniper/Shrub Woodland Alliance.* Stands with tree cover over 5 percent, with no more than 5 percent absolute cover of singleleaf pinyon, are designated as Utah Juniper Shrub Woodland, and generally occur between 5,000 and 8,280 feet. Utah juniper cover ranges up to 15 percent, with an understory of black and Wyoming sagebrush up to 30 percent. Basin big sagebrush can occur up to 15 percent, and some lower elevation sites can also contain up to 10 percent cover of Bailey's greasewood. Cheatgrass comprises up to 15 percent cover in this alliance. Understory graminoids and forbs are generally sparse but can include James' galleta and ricegrass. A total of approximately 9,300 acres was mapped within the proposed B-17 and DVT expansion areas under Alternatives 1 and 2 (Table 3.10-2) and approximately 2,500 acres under Alternative 3 (Table 3.10-3).

Warm Desert and Semi-Desert Scrub and Grassland Formation. The two alliances of this formation occur in dry washes and sand dune areas.

- *Mojave-Sonoran Burrobrush – Sweetbush Desert Wash Scrub Alliance.* Dry washes winding through Bailey's greasewood are often dominated by Mojave burrobrush at 5–50 percent cover with few other shrubs present. The washes channel runoff and only contain water during and shortly after rainfall events, which benefits burrobrush's high germination rates, short lifespan, and shallow root systems. This alliance occurs between the elevations of 3,480 and 6,960 feet (Tables 3.10-2 and 3.10-3). The regular disturbance precludes colonization by most other shrubs, although Wyoming sagebrush, intermountain and Bailey's greasewood, spiny hopsage, and bud sagebrush can occur on the margins at less than 10 percent cover. The understory is generally sparse, but cheatgrass can occur at up to 25 percent cover. Sandberg bluegrass, ricegrass, and annual forbs contribute to the understory. This alliance occurs on all proposed expansion areas except for B-16 and encompasses approximately 17,000 acres (Tables 3.10-2 and 3.10-3).
- *Fremont's Smokebush – Nevada Smokebush Desert Wash Scrub Alliance.* Nevada smokebush (*Psoralea polydenia*) is a sand-loving shrub that likely occurred over a wider range than it does presently. It occurs within the proposed B-16 and B-17 expansion areas between 4,200 and 5,800 feet and on 1,715 acres (Tables 3.10-2 and 3.10-3). Documented stands included high cover of cheatgrass and Russian thistle, which may be in the process of replacing Nevada smokebush. This alliance is characterized by up to 15 percent cover of smokebush, with only

occasional occurrences of Bailey's greasewood, Nevada joint-fir, and sticky rabbitbrush at less than 5 percent cover. Cheatgrass was ubiquitous in these stands, occupying 15–40 percent cover. Bare ground is likely occupied by ephemeral annual species, but this is a sparse and depauperate alliance in general.

Temperate Flooded and Swamp Forest. This riparian forest formation and associated alliances occur only in the proposed DVTA expansion area, particularly in the Stillwater and Louderback mountains.

- *Ruderal Tamarisk Riparian Scrub Alliance.* Tamarisk or salt cedar (*Tamarix ramosissima*) occurs in the proposed DVTA expansion area and in some of the canyons in the Stillwater Mountains. The low-elevation stands are associated with homesteads and disturbance, while the mountain canyon stands are native willow or cottonwood riparian areas that have been invaded more recently. Stands of Russian olive are also lumped into this non-native tree dominated alliance, which ranged from approximately 3,410 to 6,880 feet and covered 183 acres (Tables 3.10-2 and 3.10-3). Cover of tamarisk or Russian olive ranges from 10 to 90 percent, with a depauperate understory generally composed of non-native forb or grass species such as five-hook bassia (*Bassia hyssopifolia*) and rabbitfoot grass (*Polypogon monspeliensis*).
- *Great Basin Fremont Cottonwood Riparian Forest Alliance.* Fremont cottonwood trees create shady gallery forests along the middle slopes and bases of wet canyons on both sides of the Stillwater Mountains between 5,080 and 7,280 feet elevation (Tables 3.10-2 and 3.10-3). Understory shrub species include arroyo and red willow (*Salix laevigata*), Russian olive up to 30 percent cover, and desert snowberry (*Symphoricarpos longiflorus*) at up to 5 percent cover, with particularly wet sites harboring perennial water lovers such as narrowleaf cattail (*Typha angustifolia*) and stream orchid (*Epipactis gigantea*). These sites can be highly diverse, often including members of the rush (*Juncus*) and sedge (*Carex*) genera, or heavily disturbed by wildlife and feral ungulates. They provide water for wildlife and nesting sites for riparian bird species. Russian olive and tamarisk infestations in this alliance present an opportunity for improvement of this valuable resource. A total of 87 acres of cottonwood groves was mapped only within the proposed DVTA expansion area (Tables 3.10-2 and 3.10-3).

Shrub and Herb Wetland Formation. This formation includes one alliance.

- *Western Baltic Rush – Mexico Rush Wet Meadow Alliance.* This alliance is heavily dominated (occasionally up to 100 percent cover, and always over 50 percent) by one or more species of rush (*Juncus*), sedge (*Carex*), bulrush (*Schoenoplectus*), and/or spikerush (*Eleocharis*). A total of 228 acres was mapped only within the proposed DVTA expansion area at elevations of 3,390 and 3,440 feet (Tables 3.10-2 and 3.10-3). The majority is found near perennial water, and many areas fell below the 2-acre minimum mapping unit, so this alliance may be more common than currently mapped. Stands may be intermixed with Russian olive or tamarisk stands, and may have alkali sacaton, squirreltail, green rubber rabbitbrush, Mojave seablite, or intermountain greasewood on the margins.

Temperate to Polar Freshwater Marsh, Wet Meadow and Shrubland Formation. This formation includes one alliance.

- *Arroyo Willow Wet Shrubland Alliance.* Riparian zones dominated by arroyo willow (*Salix lasiolepis*) grow on seasonally flooded stream benches and occasionally seeps, and often form stringer communities along moist drainages with nearly year-round water, particularly in the

Stillwater Mountains. Found only within the proposed DVTA expansion area at elevations between 4,440 and 6,960 feet, this alliance totals 346 acres (Tables 3.10-2 and 3.10-3). The tall shrub layer is dominated by arroyo willow which forms a dense overstory ranging from 15 to 70 percent cover. Arroyo willow is often accompanied by silver buffaloberry (*Shepherdia argentea*) at up to 40 percent cover and an understory of Wood's rose, common dogbane (*Apocynum cannabinum*), Basin big sagebrush, rubber rabbitbrush, and desert snowberry, all representing under 5 percent cover. Rarely, emergent Fremont cottonwood trees may be present, but should not exceed 5 percent absolute cover. Willow stands provide important habitat for mammals, birds, and invertebrates, as well as a diverse assemblage of graminoids and forbs that need shade and moisture.

3.10.2.3 Wildlife

The region of influence is located in the Great Basin and specifically the Great Basin Desert. The Great Basin Desert is a high cold desert that is internally drained and characterized by north-south trending mountain ranges that are separated by broad xeric basins, valleys, and salt flats. Elevations range from 3,350 feet to more than 13,120 feet. There is a significant rain shadow effect from the Sierra Nevada Mountains to the west that creates an arid climate throughout the region. Wildlife species within the region are those adapted to dry, high desert conditions dominated by sagebrush, saltbush, and greasewood. Given the arid character of the region, areas of permanent and ephemeral water (e.g., lakes, reservoirs, wetlands, rivers, playas) are important areas for various wildlife species (Figure 3.10-9). The presence of relatively permanent water allows lakes, reservoirs, and riparian areas to support among the highest species diversity in the Great Basin Desert.

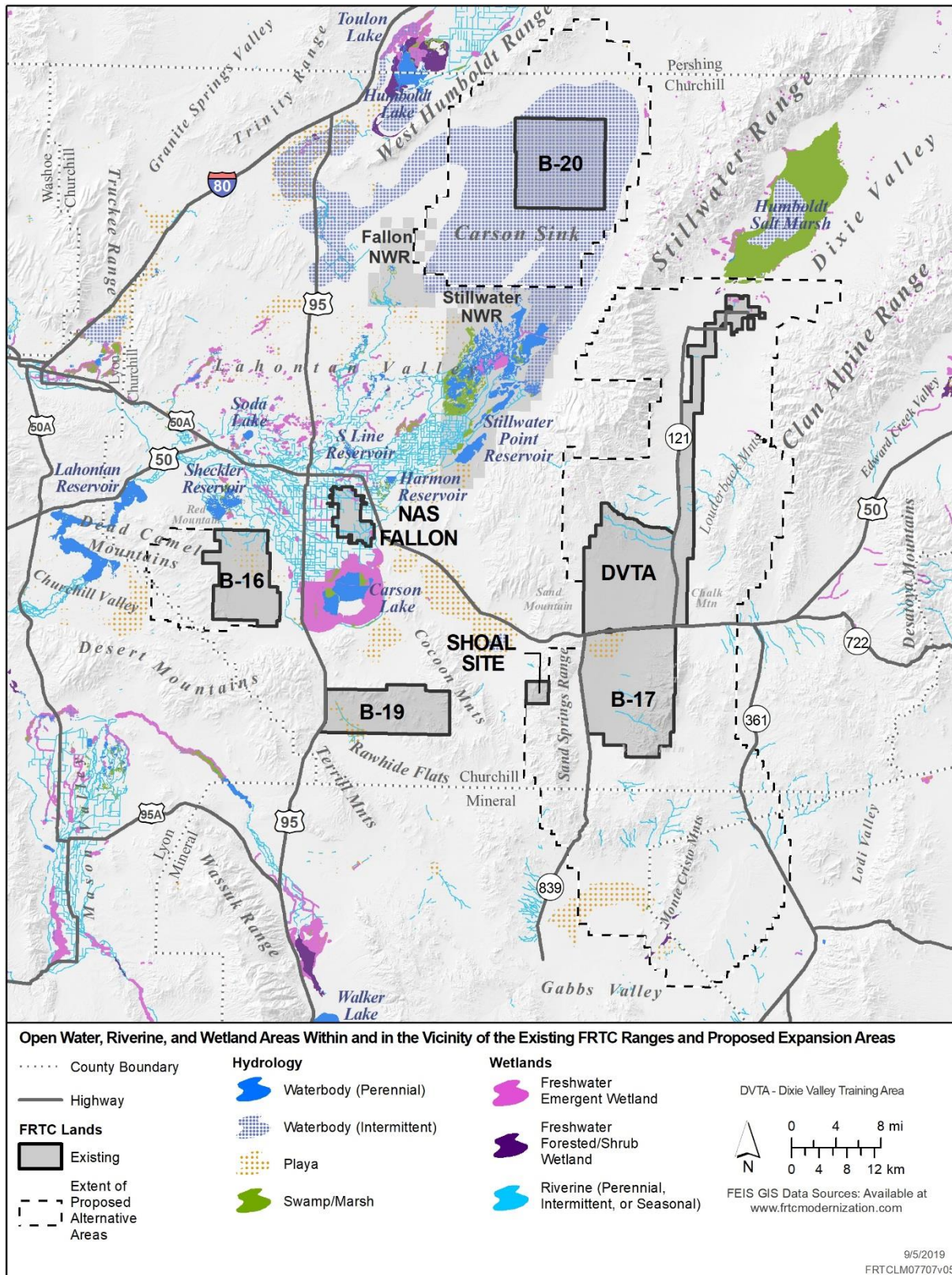


Figure 3.10-9: Open Water, Riverine, and Wetland Areas Within and in the Vicinity of the Existing FRTC Ranges and Proposed Expansion Areas

3.10.2.3.1 Amphibians and Reptiles

In support of this EIS, amphibian and reptile surveys were conducted within the proposed FRTC expansion areas in summer 2018 and 2019 (see Supporting Study: Wildlife Species Documented on Existing Navy-Administered FRTC Lands and Proposed FRTC Expansion Areas, Nevada, available at <https://www.frtcmodernization.com>). Due to the arid conditions, amphibian species diversity is low and only three species have been recorded on Navy-managed FRTC lands: American bullfrog (*Lithobates catesbeianus*), Great Basin spadefoot (*Spea intermontana*), and western toad (*Anaxyrus boreas*). The western toad is considered a special-status species and is discussed below in Section 3.10.2.4.2 (Special-status Amphibians and Reptiles). In contrast, the desert habitats within the FRTC region support a wide variety of reptile species, and 16 species have been recorded on FRTC lands.

Based on 2018 and 2019 surveys and previous surveys (Naval Air Station Fallon, 1997; Tierra Data Inc., 2008; Todd et al., 2011), common species observed within the proposed expansion areas include common sagebrush lizard (*Sceloporus graciosus*), Great Basin whiptail (*Aspidoscelis t. tigris*), Nevada side-blotched lizard (*Uta stansburiana nevadensis*), western fence lizard (*Sceloporus occidentalis*), Great Basin gophersnake (*Pituophis catenifer deserticola*), and desert striped whipsnake (*Masticophis taeniatus taeniatus*). In addition, three special-status reptile species have been recorded on FRTC lands and are discussed below in Section 3.10.2.4.2 (Special-Status Amphibians and Reptiles).

3.10.2.3.2 Birds

The western portion of the FRTC region of influence is within the Lahontan Valley, which contains a number of wetlands, lakes, reservoirs, and riparian areas that support a large diversity of breeding, migrating, and wintering birds (see Figure 3.10-9). This area is located on the Pacific Flyway, which extends from Mexico in the south to Alaska in the north and from the Pacific Ocean to the Rocky Mountains, and each year hundreds of thousands of shorebirds, waterfowl, and other birds migrate through the region utilizing these wetland areas. The irrigated agricultural lands also provide important habitat for migrating and breeding birds. A total of 195 species of birds have been recorded on Navy-managed FRTC lands (see Supporting Study: Wildlife Species Documented on Navy-Administered FRTC Lands and Proposed FRTC Expansion Areas, Nevada, available at <https://www.frtcmodernization.com>).

Based on previous surveys (Naval Air Station Fallon, 1997; Tierra Data Inc., 2008) and surveys conducted in 2017, 2018, and 2019 in support of this EIS (see Supporting Study: Final Avian Survey Report, and Supporting Study: Final Raptor Survey Report available at <https://www.frtcmodernization.com>), common species observed within the proposed expansion areas include black-throated sparrow (*Amphispiza bilineata*), savannah sparrow (*Passerculus sandwichensis*), Say's phoebe (*Sayornis saya*), song sparrow (*Melospiza melodia*), Brewer's blackbird (*Euphagus cyanocephalus*), red-winged blackbird (*Agelaius phoeniceus*), cinnamon teal (*Spatula cyanoptera*), chukar (*Alectoris chukar*), cliff swallow (*Petrochelidon pyrrhonota*), common raven (*Corvus corax*), horned lark (*Eremophila alpestris*), house finch (*Haemorhous mexicanus*), northern harrier (*Circus hudsonius*), American kestrel (*Falco sparverius*), and great-blue heron (*Ardea herodias*). In addition, 40 special-status bird species are known to or potentially occur within the FRTC region of influence and are discussed below in Section 3.10.2.4.3 (Special-Status Birds).

3.10.2.3.3 Mammals

Over 40 mammal species have been recorded on Navy-managed FRTC lands (see Supporting Study: Wildlife Species Documented on Navy-managed FRTC Lands and Proposed FRTC Expansion Areas, available at <https://www.frtcmodernization.com>). Based on previous surveys (Naval Air Station Fallon,

1997; Tierra Data Inc., 2008) and surveys conducted in 2017, 2018, and 2019 in support of this EIS (see Supporting Study: Wildlife Camera Trap Survey Report, and Supporting Study: Small Mammal Survey Report, available at <https://www.frtcmodernization.com>), common mammals observed within the proposed expansion areas include desert woodrat (*Neotoma lepida*), deer mouse (*Peromyscus maniculatus*), pocket gophers (*Thomomys* spp.), white-tailed antelope ground squirrel (*Ammospermophilus leucurus*), cottontail rabbits (*Sylvilagus* spp.), black-tailed jackrabbit (*Lepus californicus*), American badger (*Taxidea taxus*), striped skunk (*Mephitis mephitis*), and coyote (*Canis latrans*). In addition, 26 species of special-status mammals are known to or potentially occur within the FRTC region of influence and are discussed below in Section 3.10.2.4.4 (Special-Status Mammals).

Wild Free-Roaming Horses and Burros

The 53.8 million acres across the Western U.S. where wild horses or burros were found roaming at the time the 1971 Wild Free-Roaming Horses and Burros Act was passed are known as herd areas (HAs). A subset of these areas (approximately 31.6 million acres nationwide in 2012) have been determined suitable for long-term management of wild horses and burros (*Equus asinus*) and are known as herd management areas (HMAs). Wild horses and burros within HMAs are managed with the goal of maintaining sustainable ecological conditions and multiple use and sustained yield relationships on federal lands. Both HAs and HMAs can include private or state lands, but BLM has management authority only over BLM-administered lands (Bureau of Land Management, 2014).

There are 24 HAs totaling approximately 1.5 million acres and 24 HMAs totaling approximately 2.4 million acres within the FRTC region of influence, primarily underlying the airspace (Figure 3.10-10). One HMA and two HAs overlap two of the proposed FRTC expansion areas:

- The eastern portion of the proposed DVTA expansion area overlaps approximately 47,580 acres of the Clan Alpine HMA.
- The western portion of the proposed DVTA expansion area overlaps approximately 7,600 acres of the South Stillwater HA.
- The northern portion of the proposed B-20 expansion area overlaps approximately 20,400 acres of the Humboldt HA.

The 1993 Clan Alpine HMA Management Plan set management objectives for the HMA. The plan calls for a periodic census of the wild horse population and for additional monitoring to determine areas of use, seasonal movement patterns, sex ratios, and other facets of population dynamics to determine if management objectives are being met. The plan calls for maintaining the wild horses in good or excellent physical condition, maintaining the free-roaming nature of the wild horses, maintaining the wild horses within the HMA, and minimizing adverse effects on individual wild horses and on the population as a whole that could be caused by round-ups. Management objectives also include maintaining and enhancing habitat to provide forage for a specified number of horses (Bureau of Land Management, 2014).

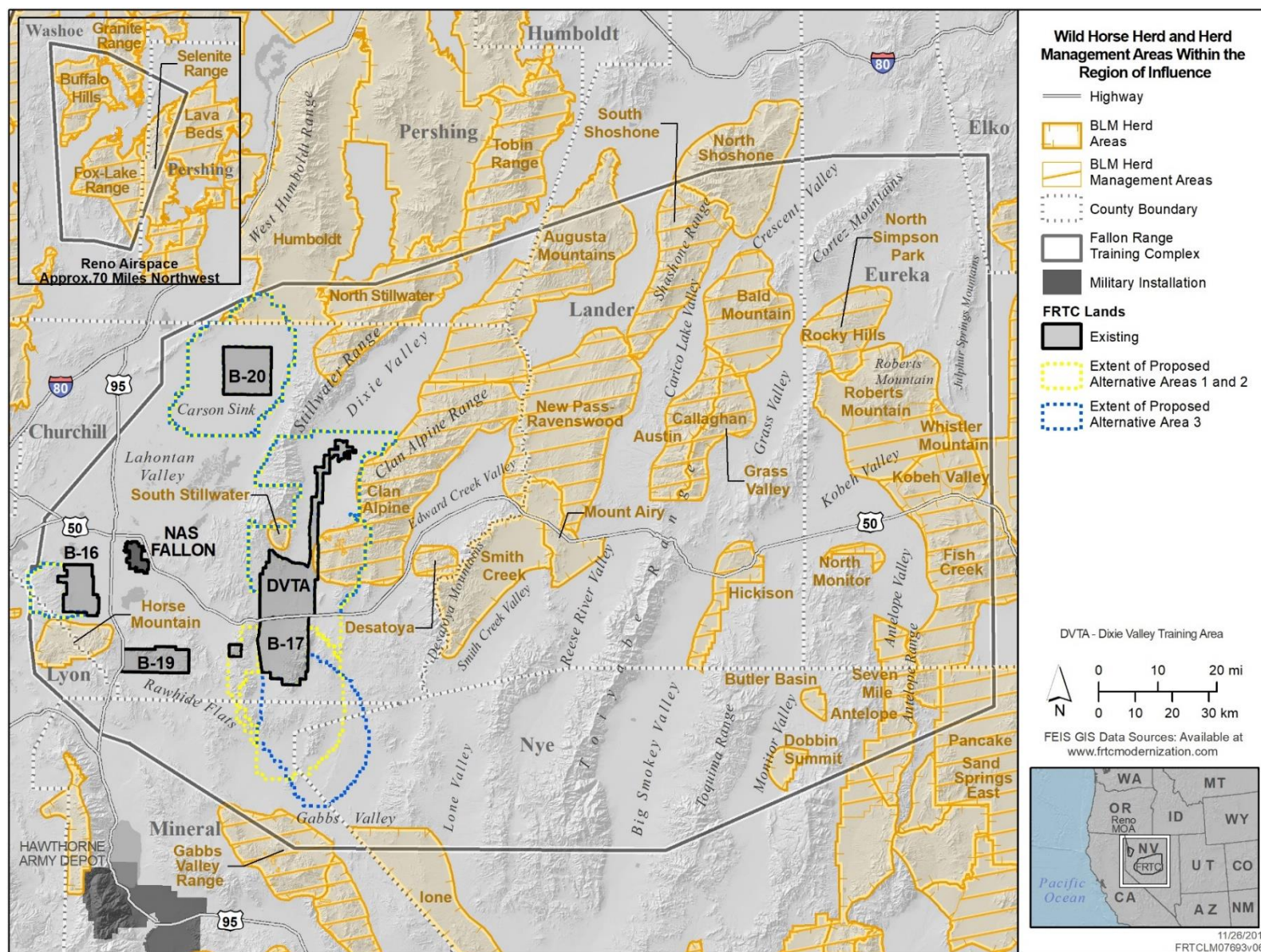


Figure 3.10-10: Wild Horse Herd and Herd Management Areas Within the Region of Influence

3.10.2.4 Special-Status Species

Based on NNHP, NDOW, BLM, and USFWS information, 94 special-status species are known to or potentially occur within the region of influence: 21 plants, 4 amphibians, 4 reptiles, 38 birds, and 27 mammals (Table 3.10-8).

- USFWS: 1 ESA-listed threatened bird species; 2 bird species that are protected by the BGEPA (bald eagle [*Haliaeetus leucocephalus*] and golden eagle [*Aquila chrysaetos*]); and 17 Birds of Conservation Concern.
- State of Nevada: 24 protected or sensitive species—1 plant, 2 amphibians, 7 birds, and 14 mammals; and 2 endangered birds and 1 threatened mammal.
- BLM (Carson City and Battle Mountain districts): 67 sensitive species—15 plants, 4 amphibians, 4 reptiles, 23 birds, and 21 mammals.

There are no records of ESA-listed or proposed for ESA listing plant, amphibian, reptile, or mammal species within the region of influence (Bureau of Land Management, 2017; Nevada Department of Wildlife, 2018a, 2018b; Nevada Natural Heritage Program, 2018a, 2018b; Nevada Wildlife Action Plan Team, 2012; U.S. Fish and Wildlife Service, 2008).

Table 3.10-8: Potential Occurrence of Special-Status Species within the FRTC Region of Influence

Common Name (Scientific Name)	Status*				Known or Potential Occurrence: Counties within the Region of Influence*
	USFWS	BLM	State	NNHP	
PLANTS (Note: Region of influence for plants only includes those counties that have proposed ground-disturbing activities under the action alternatives)					
Eastwood milkweed (<i>Asclepias eastwoodiana</i>)†	-	S	-	ARL: S2S3	Nye
Scorpion milkvetch (<i>Astragalus lentiginosus</i> var. <i>scorpionis</i>)	-	-	-	WL: S3?	Chu, Min, Nye
Sodaville milkvetch (<i>Astragalus lentiginosus</i> var. <i>sesquimetralis</i>)	-	S	-	ARL: S1	Min, Nye
Lahontan milkvetch (<i>Astragalus porrectus</i>)†	-	S	-	WL: S3?	Chu
Tonopah milkvetch (<i>Astragalus pseudiodanthus</i>)	-	S	-	ARL: S2	Chu, Min, Nye
Winged milkvetch (<i>Astragalus pterocarpus</i>)†	-	-	-	WL: S3	Chu
Nevada suncup (<i>Eremothera nevadensis</i>)†	-	S	-	WL: S3	Chu
Beatley buckwheat (<i>Eriogonum beatleyae</i>)	-	S	-	ARL: S3	Chu, Min, Nye
Lemmon buckwheat (<i>Eriogonum lemmonii</i>)†	-	S	-	WL: S3?	Chu
Lahontan Basin buckwheat (<i>Eriogonum rubricaulis</i>)†	-	S	-	WL: S3	Chu Min, Nye
Sand cholla (<i>Grusonia pulchella</i>)	-	S	PC	ARL: S2S3	Chu, Min, Nye
Dune sunflower (<i>Helianthus deserticola</i>)	-	-	-	ARL: S3	Chu, Min
Dune linanthus (<i>Linanthus arenicola</i>)	-	-	-	WL: S3	Chu, Nye
Candelaria blazing star (<i>Mentzelia candelariae</i>)†	-	S	-	WL: S3?	Chu, Min, Nye
Inyo blazing star (<i>Mentzelia inyoensis</i>)	-	S	-	ARL: S1	Chu
Oryctes (<i>Oryctes nevadensis</i>)	-	S	-	ARL: S3?	Chu, Min
Nevada dune beardtongue (<i>Penstemon arenarius</i>)†	-	S	-	ARL: S2	Chu, Min, Nye
Lahontan beardtongue (<i>Penstemon palmeri</i> var. <i>macranthus</i>)†	-	S	-	ARL: S2?	Chu, Nye
Reese River phacelia (<i>Phacelia glaberrima</i>)†	-	S	-	WL: S3?	Chu, Min
Saltmarsh allocarya (<i>Plagiobothrys salsus</i>)	-	-	-	WL: S2S3	Chu, Min
Lahontan indigobush (<i>Psoralea kingii</i>)†	-	-	-	ARL: S3	Chu
AMPHIBIANS (Note: Region of influence for amphibians only includes those counties that have proposed ground-disturbing activities under the action alternatives)					
Columbia spotted frog (<i>Rana luteiventris</i>)	-	S	PA, WAP	S2S3	Nye
Northern leopard frog (<i>Lithobates pipiens</i>)	-	S	PA, WAP	S2S3	Chu, Min, Nye
Western toad (<i>Anaxyrus boreas</i>)	-	S	WAP	S4	Chu, Min, Nye
Dixie Valley toad (<i>Anaxyrus williamsi</i>)	-	S	-	S1	Chu
REPTILES (Note: Region of influence for reptiles only includes those counties that have proposed ground-disturbing activities under the action alternatives)					
Desert horned lizard (<i>Phrynosoma platyrhinos</i>)	-	S	WAP	S4	Chu, Min, Nye
Great Basin collared lizard (<i>Crotaphytus bicinctores</i>)	-	S	WAP	S4	Chu, Min, Nye
Long-nosed leopard lizard (<i>Gambelia wislizenii</i>)	-	S	WAP	S4	Chu, Min, Nye
Northern rubber boa (<i>Charina bottae</i>)	-	S	WAP	S3S4	Chu, Min, Nye

Table 3.10-8: Potential Occurrence of Special-Status Species within the FRTC Region of Influence (continued)

Common Name (Scientific Name)	Status*				Known or Potential Occurrence: Counties within the Region of Influence*
	USFWS	BLM	State	NNHP	
BIRDS					
American avocet (<i>Recurvirostra americana</i>)	MBTA	-	WAP	S4B	Chu, Eur, Lan, Lyo, Min, Per
American white pelican (<i>Pelecanus erythrorhynchos</i>)	MBTA	-	WAP	S2B	Chu, Lyo, Min, Per
Bald eagle (<i>Haliaeetus leucocephalus</i>)	MBTA, BGEPA, BCC	S	E, WAP	S1B,S3N	Chu, Lyo, Min
Black rosy-finch (<i>Leucosticte atrata</i>)	MBTA, BCC	S	WAP	S3	Chu, Eur, Lan, Per
Black tern (<i>Chlidonias niger</i>)	MBTA	-	WAP	S2S3B	Chu, Eur, Lan, Lyo, Min, Per
Brewer's sparrow (<i>Spizella breweri</i>)	MBTA, BCC	S	S, WAP	S4B	Chu, Eur, Lan, Lyo, Min, Nye, Per
Burrowing owl (<i>Athene cunicularia</i>)	MBTA	S	WAP	S3B	Chu, Eur, Lan, Lyo, Min, Nye, Per
Canvasback (<i>Aythya valisineria</i>)	MBTA	-	WAP	S3S4	Chu, Eur, Lan, Lyo, Min, Nye, Per
Cassin's finch (<i>Carpodacus cassinii</i>)	MBTA	-	WAP	S5	Chu, Eur, Lan, Lyo, Min, Nye, Per
Common nighthawk (<i>Chordeiles minor</i>)	MBTA	-	WAP	S5B	Chu, Eur, Lan, Lyo, Min, Nye, Per
Dusky grouse (<i>Dendragapus obscurus</i>)	-	-	PB, WAP	S3	Chu, Eur, Lan, Nye
Ferruginous hawk (<i>Buteo regalis</i>)	MBTA, BCC	S	WAP	S2	Chu, Eur, Lan, Lyo, Min, Nye, Per
Flammulated owl (<i>Psiloscops flammeolus</i>)	MBTA, BCC	S	WAP	S4B	Chu, Eur, Lan, Lyo, Min, Nye, Per
Golden eagle (<i>Aquila chrysaetos</i>)	MBTA, BGEPA, BCC	S	WAP	S4	Chu, Eur, Lan, Lyo, Min, Nye, Per
Gray-crowned rosy-finch (<i>Leucosticte tephrocotis</i>)	MBTA	S	WAP	S3N	Chu, Eur, Lan, Min, Nye, Per
Great Basin willow flycatcher (<i>Empidonax traillii adastus</i>)	MBTA, BCC	S	WAP	S1S2	Chu, Eur, Lan, Lyo, Min, Nye, Per
Greater sage-grouse (<i>Centrocercus urophasianus</i>)	BCC	S	WAP	S3	Chu, Eur, Lan, Lyo, Min, Per
Western least bittern (<i>Ixobrychus exilis</i>)	MBTA	S	WAP	S2B	Chu, Eur, Lan, Lyo, Min, Nye, Per
Lewis's woodpecker (<i>Melanerpes lewis</i>)	MBTA, BCC	S	WAP	S3	Chu, Eur, Lan, Lyo, Min, Per
Loggerhead shrike (<i>Lanius ludovicianus</i>)	MBTA, BCC	S	S, WAP	S4	Chu, Eur, Lan, Lyo, Min, Nye, Per
Long-billed curlew (<i>Numenius americanus</i>)	MBTA, BCC	S	WAP	S2S3B	Chu, Eur, Lan, Lyo, Min, Nye, Per
Long-billed dowitcher (<i>Limnodromus scolopaceus</i>)	MBTA	-	WAP	S4	Chu, Eur, Lan, Lyo, Min, Nye, Per
Mountain quail (<i>Oreortyx pictus</i>)	-	S	PB, WAP	S3	Chu, Lan, Min, Nye, Per
Northern goshawk (<i>Accipiter gentilis</i>)	MBTA	S	S, WAP	S2	Chu, Eur, Lan, Lyo, Per
Northern pintail (<i>Anas acuta</i>)	MBTA	-	WAP	S5	Chu, Eur, Lan, Lyo, Min, Nye, Per
Olive-sided flycatcher (<i>Contopus cooperi</i>)	MBTA	-	WAP	S2B	Eur, Lan, Lyo, Min
Peregrine falcon (<i>Falco peregrinus</i>)	MBTA, BCC	S	E, WAP	S2	Lyo, Min
Pinyon jay (<i>Gymnorhinus cyanocephalus</i>)	MBTA, BCC	S	WAP	S3S4	Chu, Eur, Lan, Lyo, Min, Nye, Per
Prairie falcon (<i>Falco mexicanus</i>)	MBTA	-	WAP	S4	Chu, Eur, Lan, Lyo, Min, Nye, Per
Redhead (<i>Aythya americana</i>)	MBTA	-	WAP	S4B	Chu, Eur, Lan, Lyo, Min, Nye, Per
Sagebrush sparrow (<i>Artemisiospiza nevadensis</i>)	MBTA, BCC	-	WAP	-	Chu, Eur, Lan, Lyo, Min, Nye, Per

Table 3.10-8: Potential Occurrence of Special-Status Species within the FRTC Region of Influence (continued)

Common Name (Scientific Name)	Status*				Known or Potential Occurrence: Counties within the Region of Influence*
	USFWS	BLM	State	NNHP	
Sage thrasher (<i>Oreoscoptes montanus</i>)	MBTA, BCC	S	S, WAP	S5B	Chu, Eur, Lan, Lyo, Min, Nye, Per
Sandhill crane (<i>Antigone canadensis</i>)	MBTA	S	WAP	S2B,S3M	Chu, Eur, Lan, Per
Short-eared owl (<i>Asio flammeus</i>)	MBTA	S	WAP	S4	Chu, Eur, Lan, Lyo, Per
Swainson's hawk (<i>Buteo swainsoni</i>)	MBTA	S	-	S2B	Chu, Eur, Lan, Lyo, Min, Nye, Per
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	MBTA, BCC	S	WAP	S3B	Chu, Eur, Lyo, Min, Nye, Per
White-faced ibis (<i>Plegadis chihi</i>)	MBTA	-	WAP	S3B	Chu, Eur, Lan, Lyo, Min, Nye, Per
Yellow-billed cuckoo (<i>Coccyzus americanus</i>) – Western DPS	T, MBTA, BCC	S	S, WAP	S1B	Chu, Min, Nye
MAMMALS					
American pika (<i>Ochotona princeps</i>)	-	S	PM, WAP	S2	Chu, Eur, Lan, Lyo, Min, Nye, Per
Bighorn sheep (<i>Ovis canadensis</i>)	-	S	PGM, WAP	S4	Chu, Eur, Lan, Lyo, Min, Nye, Per
Elk (<i>Cervus elaphus</i>)	-	-	PGM	S5	Eur, Lan, Nye
Kit fox (<i>Vulpes macrotis</i>)	-	-	PM	S3	Chu, Lan, Lyo, Min, Nye, Per
Mule deer (<i>Odocoileus hemionus</i>)	-	-	PGM, WAP	S5	Chu, Eur, Lan, Lyo, Min, Nye, Per
Pronghorn (<i>Antilocapra americana</i>)	-	-	PGM	S5	Chu, Eur, Lan, Lyo, Min, Nye, Per
Pygmy rabbit (<i>Brachylagus idahoensis</i>)	-	S	PGM, WAP	S3	Chu, Eur, Lan, Lyo, Nye
Bats					
Big brown bat (<i>Eptesicus fuscus</i>)	-	S	-	S3S4	Chu, Eur, Lan, Lyo, Min, Nye, Per
Brazilian free-tailed bat (<i>Tadarida brasiliensis</i>)	-	S	PM, WAP	S4	Chu, Eur, Lan, Lyo, Min, Nye, Per
California myotis (<i>Myotis californicus</i>)	-	S	-	S3S4	Chu, Eur, Lan, Lyo, Min, Nye, Per
Canyon bat or western pipistrelle (<i>Pipistrellus hesperus</i>)	-	S	-	S3S4	Chu, Lan, Min, Nye
Fringed myotis (<i>Myotis thysanodes</i>)	-	S	PM, WAP	S2	Chu, Eur, Lan, Lyo, Min, Nye, Per
Hoary bat (<i>Lasiurus cinereus</i>)	-	S	WAP	S2S3	Chu, Eur, Lan, Lyo, Min, Nye, Per
Little brown bat (<i>Myotis lucifugus</i>)	-	S	WAP	S2S3	Chu, Eur, Lan, Lyo, Min, Per
Long-eared myotis (<i>Myotis evotis</i>)	-	S	WAP	S3	Chu, Eur, Lan, Lyo, Min, Nye, Per
Long-legged myotis (<i>Myotis volans</i>)	-	S	-	S3S4	Chu, Eur, Lan, Lyo, Min, Nye, Per
Pallid bat (<i>Antrozous pallidus</i>)	-	S	PM	S3	Chu, Eur, Lan, Lyo, Min, Nye, Per
Silver-haired bat (<i>Lasionycteris noctivagans</i>)	-	S	WAP	S3	Chu, Eur, Lan, Lyo, Min, Nye, Per
Spotted bat (<i>Euderma maculatum</i>)	-	S	T, WAP	S2	Chu, Eur, Lan, Lyo, Min, Nye, Per
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	-	S	S, WAP	S2	Chu, Eur, Lan, Lyo, Min, Nye, Per
Western red bat (<i>Lasiurus blossevillii</i>)	-	S	S, WAP	S2	Chu
Western small-footed myotis (<i>Myotis ciliolabrum</i>)	-	S	WAP	S3S4	Chu, Eur, Lan, Lyo, Min, Nye
Yuma myotis (<i>Myotis yumanensis</i>)	-	S	-	S3	Chu, Lyo, Min, Per
Small Mammals (region of influence includes only those counties that have proposed ground-disturbing activities under the action alternatives)					
Dark kangaroo mouse (<i>Microdipodops megacephalus</i>)	-	S	PM, WAP	S2	Nye
Desert kangaroo rat (<i>Dipodomys deserti</i>)	-	-	WAP	S2S3	Chu, Min, Nye

Table 3.10-8: Potential Occurrence of Special-Status Species Within the FRTC Region of Influence (continued)

Common Name (Scientific Name)	Status*				Known or Potential Occurrence: Counties within the Region of Influence*
	USFWS	BLM	State	NNHP	
Pale kangaroo mouse (<i>Microdipodops pallidus</i>)	-	S	PM, WAP	S2	Chu, Min, Nye
Sagebrush vole (<i>Lemmiscus curtatus</i>)	-	-	WAP	S3	Chu, Min, Nye

Notes: *BCC = Bird of Conservation Concern; † = endemic to Nevada; BGEPA = Bald and Golden Eagle Protection Act; DPS = Distinct Population Segment; E = endangered; MBTA = Migratory Bird Treaty Act; PA = Protected Amphibian; PB = Protected Bird; PC = Protected Cactus; PGM = Protected Game Mammal; PM = Protected Mammal; S = sensitive; T = threatened; WAP = Nevada Wildlife Action Plan Species of Conservation Priority.

Nevada Natural Heritage Program (NNHP) Rank Definitions:

ARL = At-Risk List, WL = Watch List.

S1 = Critically Imperiled – at very high risk of extirpation in the state due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.

S2 = Imperiled – at high risk of extirpation in the state due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.

S3 = Vulnerable – at moderate risk of extirpation in the state due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.

S4 = Apparently Secure – at fairly low risk of extirpation in the state due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

S5 = Secure – at very low or no risk of extirpation in the state due to a very extensive range, abundant populations or occurrences, with little to no concern from declines or threats.

S#S# = Range Rank – a numeric range rank (e.g., S2S3 or S1S3) is used to indicate uncertainty about the exact status of a taxon.

? = Questionable taxonomy – taxonomic distinctiveness of the entity at the current level is questionable or currently being reviewed; resolution of this uncertainty may result in change from a species to a subspecies, variety or hybrid, or the inclusion of this taxon in another taxon, with the resulting taxon having a lower-priority conservation status.

B = Breeding – conservation status refers to the breeding population of the element in the state.

N = Non-breeding – conservation status refers to the non-breeding population of the element in the state (e.g., wintering bird population).

Counties: Chu = Churchill, Eur = Eureka, Lan = Lander, Lyo = Lyon, Min = Mineral, Per = Pershing.

Sources: (Bureau of Land Management, 2017; Nevada Natural Heritage Program, 2018b; Nevada Wildlife Action Plan Team, 2012; U.S. Fish and Wildlife Service, 2008).

3.10.2.4.1 Special-Status Plants

The region of influence for special-status plant species includes only the areas within the proposed FRTC range expansion areas where ground-disturbing activities would occur under the proposed action. The Navy completed rare plant surveys in 2017, 2018, and 2019 to provide information on the occurrence of special-status plant species within the proposed range expansion areas (see Supporting Study: Rare Plant Survey Report, available at <https://www.frtcmodernization.com>). The target list of 21 special-status plant species was assembled from the NNHP species lists for Churchill, Mineral, and Nye counties (see Table 3.10-8). Of the 21 species, none are listed as threatened or endangered by the USFWS or State of Nevada. All are ranked by the NNHP as critically imperiled (2 species), imperiled (6 species), or vulnerable (13 species); 11 species are Nevada endemics; 15 are BLM Sensitive Species; and 1 species is listed by the State of Nevada as a protected cactus.

Prior to the 2017, 2018, and 2019 rare plant surveys, known locations of each species were researched to determine distributions and habitat preferences. Pre-survey resources included the recent rare plant survey of NAS Fallon (Naval Air Station Fallon, 2015) and online data from NNHP (<http://heritage.nv.gov/>) and SEINet Arizona-New Mexico Chapter (<http://swbiodiversity.org/seinet/>). SEINet is an online data portal that serves as a gateway to natural resources data such as herbarium specimens. SEINet indexes an extensive list of herbaria to leverage collections across the U.S. and Mexico. Spatial data for each rare plant species were downloaded from SEINet and integrated into the project GIS.

A total of 107 person survey days (66 days in 2017, 10 days in 2018, and 31 days in 2019), across 10 visits (5 in May, June, July, and September 2017; 1 in October 2018; and 4 in April, May, and June 2019), were spent conducting rare plant surveys within the four proposed expansion areas. A total of 628 miles were surveyed on foot, with an additional 2,030 miles surveyed by vehicle. Survey effort within each proposed expansion area was roughly proportional to the total acreage. Further details can be found in the Supporting Study: Rare Plants Survey Report (available at <https://www.frtcmodernization.com>).

Of the 21 target special-status plant species, 10 were detected during the 2017 and 2019 surveys of the proposed expansion areas (Table 3.10-9); no rare plant species were observed during October 2018 surveys within the proposed B-17 and northern DVT expansion areas (see Supporting Study: Final Rare Plants Survey Report, available at <https://www.frtcmodernization.com>). Occurrences ranged from single individuals up to estimates of thousands.

Eastwood Milkweed (*Asclepias eastwoodiana*). Listed as a BLM Sensitive Species and ranked as imperiled/vulnerable by the NNHP, Eastwood milkweed is a prostrate or ascending perennial with pale violet to reddish-violet flowers. It is restricted to fine alkaline soils in clay hills and rocky slopes with pinyon, *Artemisia*, *Atriplex*, and *Sarcobatus*. A total of 55 individuals were found in two localities in close proximity to each other in the southeastern portion of the proposed B-17 expansion area (Table 3.10-9, Figures 3.10-11 and 3.10-12).

Sodaville Milkvetch (*Astragalus lentiginosus* var. *sesquimetralis*). Sodaville milkvetch is a perennial herb of moist, alkaline flats. It is restricted to powdery clay saline soils on moist, open hummocks and drainages near cool springs. A total of 25 individuals were found in one locality near the southern portion of the proposed B-17 expansion area; SEINet records indicate historical occurrences near the 2019 locality (Table 3.10-9, Figures 3.10-11 and 3.10-12).

Table 3.10-9: 2017 Occurrences of Rare Plant Species Within the Proposed FRTC Expansion Areas

Status*		Scientific Name*	Common Name*	Occurrence in Expansion Area (Occurrences [Individuals])			
BLM	NNHP			B-16	B-17	B-20	DVTA
S		<i>Asclepias eastwoodiana</i>	Eastwood milkweed	0	2 (55)	0	0
S		<i>Astragalus lentiginosus</i> var. <i>sesquimetralis</i>	Sodaville milkvetch	0	1 (25)	0	0
S	S2	<i>Astragalus pseudiodanthus</i>	Tonopah milkvetch	0	2 (4)	0	0
S	S2S3	<i>Grusonia pulchella</i>	Sand cholla	1 (1)	0	8 (8)	16 (16)
S	S3	<i>Oryctes nevadensis</i>	Oryctes	0	4 (5)	5 (18)	0
S	S2?	<i>Penstemon palmeri</i> var. <i>macranthus</i> †	Lahontan beardtongue	0	0	1 (25)	5 (70)
S	S3	<i>Camissonia nevadensis</i> †	Nevada suncup	3 (41)	0	0	0
S	S3	<i>Eriogonum rubricaulis</i> †	Lahontan Basin buckwheat	0	2 (55)	5 (48)	38 (8,197)
S	S3?	<i>Phacelia glaberrima</i> †	Reese River phacelia	0	0	7 (573)	0
-	S2S3	<i>Plagiobothrys salsus</i>	Saltmarsh allocarya	0	0	0	2 (14)

† = Nevada endemic. Common and scientific names based on Nevada Natural Heritage Program (2018a).

Notes: *S = sensitive; see notes in Table 3.10-8 for definitions of NNHP ranks.

Sources: see Supporting Study: Final Plant Community Surveys and Mapping Report, available at <https://www.frtcmodernization.com>; (Bureau of Land Management, 2017; Nevada Natural Heritage Program, 2018b; U.S. Department of the Navy, 2018a).

Tonopah Milkvetch (*Astragalus pseudiodanthus*). Listed as a BLM Sensitive Species and ranked as imperiled by the NNHP, Tonopah milkvetch is a mat-forming, perennial herb in the Fabaceae family that flowers May to June (Cronquist et al., 1984). During the 2017 and 2019 surveys, 297 individuals were found in 15 localities in stabilized dunes and sandy flats near the south end of the proposed B-17 expansion area (Table 3.10-9, Figure 3.10-12) (see Supporting Study: Final Rare Plants Survey Report, available at <https://www.frtcmodernization.com>). Based on concurrent vegetation mapping, one occurrence was in the Rubber Rabbitbrush – Sand Buckwheat – Four-part Horsebrush Sparse Scrub vegetation alliance, and one was in the Bailey’s Greasewood Shrubland alliance (see Supporting Study: Final Plant Community Surveys and Mapping Report, available at <https://www.frtcmodernization.com>). In addition, there are two historical SEINet and one NNHP occurrences within or in the vicinity of the proposed B-17 expansion area: one near the 2017 occurrences, one south of the proposed Alternatives 1 and 2 B-17 expansion area and within the proposed Alternative 3 B-17 expansion area (Figure 3.10-11 and Figure 3.10-12), and one southeast of the proposed Alternative 3 B-17 expansion area (Figure 3.10-12) (Nevada Natural Heritage Program, 2018b).

Sand Cholla (*Grusonia pulchella*). Listed as a protected cactus by the State of Nevada (Nevada Revised Statutes 527.050 through 527.120), a BLM Sensitive Species, and ranked as imperiled/vulnerable by the NNHP, sand cholla is a diminutive cactus that grows from a large, often spiny, tuber and flowers May through July. Despite its common name, sand cholla occurs sporadically on gravelly, silty, sometimes rocky, alluvial fans, and less often along dry lake beds or in sandy areas. It is distributed from the eastern edge of California, throughout much of northern Nevada, to the western edge of Utah (Holmgren et al., 2012). During the 2017 and 2019 surveys, sand cholla was recorded in broad valleys and flats in very low densities but occasionally in small clusters of one to two individuals. It occurred most often in silty soils with a surface of rocks and gravel but also occurred in a matrix of cryptogamic crusts. The densest cluster of occurrences, eight localities with eight individuals, was in the northern portion of proposed B-20 expansion area (Figure 3.10-13 and Figure 3.10-14), while 16 occurrences with 16 individuals were recorded in the proposed DVTA expansion area (Figure 3.10-15), and only a single individual was found

in the proposed B-16 expansion area. A total of 20 occurrences of 21 individuals were recorded within the southern portion of the proposed B-17 expansion area (Figure 3.10-11 and Figure 3.10-12, Table 3.10-9) (see Supporting Study: Final Rare Plants Survey Report, available at <https://www.frtcmodernization.com>). Most occurrences were within in the Bailey's Greasewood alliance, with three in Basin Big Sagebrush - Foothill Big Sagebrush Dry Steppe & Shrubland (see Supporting Study: Final Plant Community Surveys and Mapping Report, available at <https://www.frtcmodernization.com>). Although the NNHP and SEINet had no records of sand cholla in the vicinity of the proposed FRTC range expansion areas (Nevada Natural Heritage Program, 2018b), the 2015 surveys documented a few occurrences within the existing B-17 and B-16 ranges (Figure 3.10-11 and Figure 3.10-16) (Naval Air Station Fallon, 2015).

Oryctes (*Oryctes nevadensis*). Listed as a BLM Sensitive Species and ranked as vulnerable by the NNHP, oryctes is a small, compact annual member in the Solanaceae family. Oryctes is historically known from open sandy washes and desert foothills. Populations occur from Inyo County, California to northwestern Nevada (Cronquist et al., 1984). During the 2017 and 2019 surveys, 73 individual oryctes were found in stabilized dunes or fine sand in the northern portion of the proposed B-20 expansion area (5 occurrences with 18 individuals) (Figure 3.10-13) and the southern portion of the proposed B-17 expansion area (5 occurrences with 55 individuals) (Figure 3.10-11 and Figure 3.10-12, Table 3.10-9) (see Supporting Study: Final Rare Plants Survey Report, available at <https://www.frtcmodernization.com>). Oryctes occurred in both the Intermountain Greasewood Wet Shrubland alliance and the Rubber Rabbitbrush – Sand Buckwheat – Four-part Horsebrush Sparse Scrub alliance (see Supporting Study: Final Plant Community Surveys and Mapping Report, available at <https://www.frtcmodernization.com>). SEINet records indicate two additional occurrences within the southern portion of the proposed B-17 expansion area (Figure 3.10-11 and Figure 3.10-12), as well as records north of B-20 (Figure 3.10-13). In addition, NNHP records indicate one occurrence along U.S. Route 50 to the west of the existing DVTA (Figure 3.10-15) (Nevada Natural Heritage Program, 2018b).

Lahontan Beardtongue (*Penstemon palmeri* var. *macranthus*). Endemic to Nevada and Listed as a BLM Sensitive Species and ranked as imperiled by the NNHP, Lahontan beardtongue is a fast-growing, short-lived perennial in the family Plantaginaceae. It has large flowers with expanded throats that accommodate large bumblebees. Occurrences were found on moderate to steep slopes and washes of silt, sand, gravel, and rocks in the northern portion of the proposed B-20 expansion area (1 occurrence with 25 individuals) (Figure 3.10-13) and quite commonly in the western portion of the proposed DVTA expansion area (5 occurrences with 75 individuals) (Figure 3.10-15, Table 3.10-9) (see Supporting Study: Final Rare Plants Survey Report, available at <https://www.frtcmodernization.com>). This species occurred in a greater variety of vegetation alliances than the other target species detected, ranging through Bailey's Greasewood Shrubland, Basin Big Sagebrush – Foothill Big Sagebrush Dry Steppe & Shrubland, Arroyo Willow Wet Shrubland, and Black Sagebrush Steppe & Shrubland (see Supporting Study: Final Plant Community Surveys and Mapping Report, available at <https://www.frtcmodernization.com>). SEINet records indicate one occurrence within the western proposed DVTA expansion area (Figure 3.10-11). There are two NNHP records of Lahontan beardtongue to the west and north outside of the proposed DVTA expansion area (Figure 3.10-15) (Nevada Natural Heritage Program, 2018b).

Saltmarsh Allocarya (*Plagiobothrys salsus*). Ranked as imperiled/vulnerable by the NNHP, saltmarsh allocarya is a small annual in the Boraginaceae family. Flowering from May through August, saltmarsh allocarya occurs in moist, poorly-drained silty to clay alkaline soils. It is rather widely distributed from Canada south to California, Nevada, Utah, and New Mexico (Cronquist et al., 1984). A total of

14 individuals were recorded from two alkaline seeps in the northern portion of the proposed DVTA expansion area (Table 3.10-9, Figure 3.10-15) (see Supporting Study: Final Rare Plants Survey Report, available at <https://www.frtcmodernization.com>). No SEINet or NNHP occurrences are currently recorded in the region, despite the wide range of the species.

Nevada Suncup (*Eremothera nevadensis*). Listed as a BLM Sensitive Species and ranked as vulnerable by the NNHP, Nevada suncup is a low, small annual in the Onagraceae family. Plants generally flower from April to May and occur in sparsely vegetated areas in valleys and on low hills, and in substrate that is sandy, gravelly, silty, or clayey, and often alkaline in nature (Cronquist et al., 1997). During the 2017 surveys, Nevada suncup was recorded at three locations with 41 individuals at the edge of a small dry lake bed within the proposed B-16 expansion area; one additional occurrence with two individuals was recorded along the southwest border outside of the proposed B-16 expansion area (Figure 3.10-16) (see Supporting Study: Final Rare Plants Survey Report, available at <https://www.frtcmodernization.com>). All of the occurrences were within the Bailey's Greasewood vegetation alliance (see Supporting Study: Final Plant Community Surveys and Mapping Report, available at <https://www.frtcmodernization.com>). The 2015 surveys documented the species at one location north of the proposed DVTA expansion area (Naval Air Station Fallon, 2015). NNHP data indicates a large area supporting Nevada suncup to the west of the existing DVTA and north of U.S. Route 50, and outside the proposed expansion area (Figure 3.10-15).

Lahontan Basin Buckwheat (*Eriogonum rubricaulle*). Listed as a BLM Sensitive Species and ranked as vulnerable by the NNHP, Lahontan Basin buckwheat is a small, erect annual in the family Polygonaceae. Flowering from May to October, this buckwheat grows primarily on moderate to steep, easily eroded hillsides composed of a combination of silt, fine sand, loose clay, and gravel. This species was both the most widespread and the most abundant special-status plant species found during the 2017 and 2019 surveys of the proposed FRTC expansion areas (see Supporting Study: Final Rare Plants Survey Report, available at <https://www.frtcmodernization.com>). A total of 61 occurrences of 17,300 individuals were recorded: 5 locations with 48 individuals within the proposed B-20 expansion area (Figure 3.10-13), 38 occurrences with 8,197 individuals in the southeastern and southwestern portions of the proposed DVTA expansion area (Figure 3.10-15), and 18 locations with 9,033 individuals in the proposed B-17 expansion area (Figure 3.10-11 and Figure 3.10-12, Table 3.10-9). In some areas, particularly in southeastern DVTA, the habitat was extensive, harboring large populations of up to several thousand buckwheat plants. SEINet and NNHP records also indicate that this plant is relatively widespread in the Fallon area (Figure 3.10-11, Figure 3.10-13, and Figure 3.10-15).

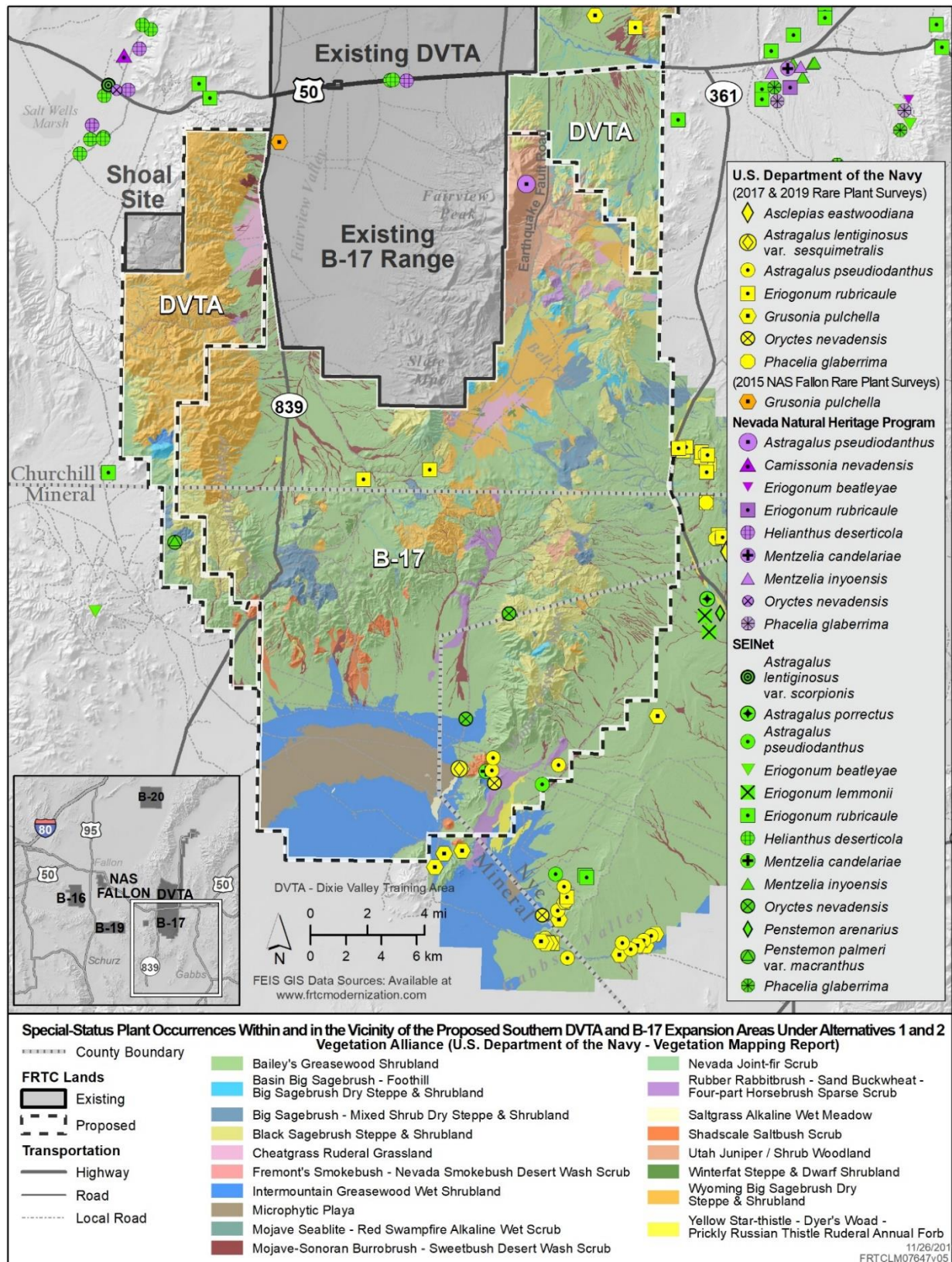


Figure 3.10-11: Special-Status Plant Occurrences Within and in the Vicinity of the Proposed Southern DVTA and B-17 Expansion Areas Under Alternatives 1 and 2

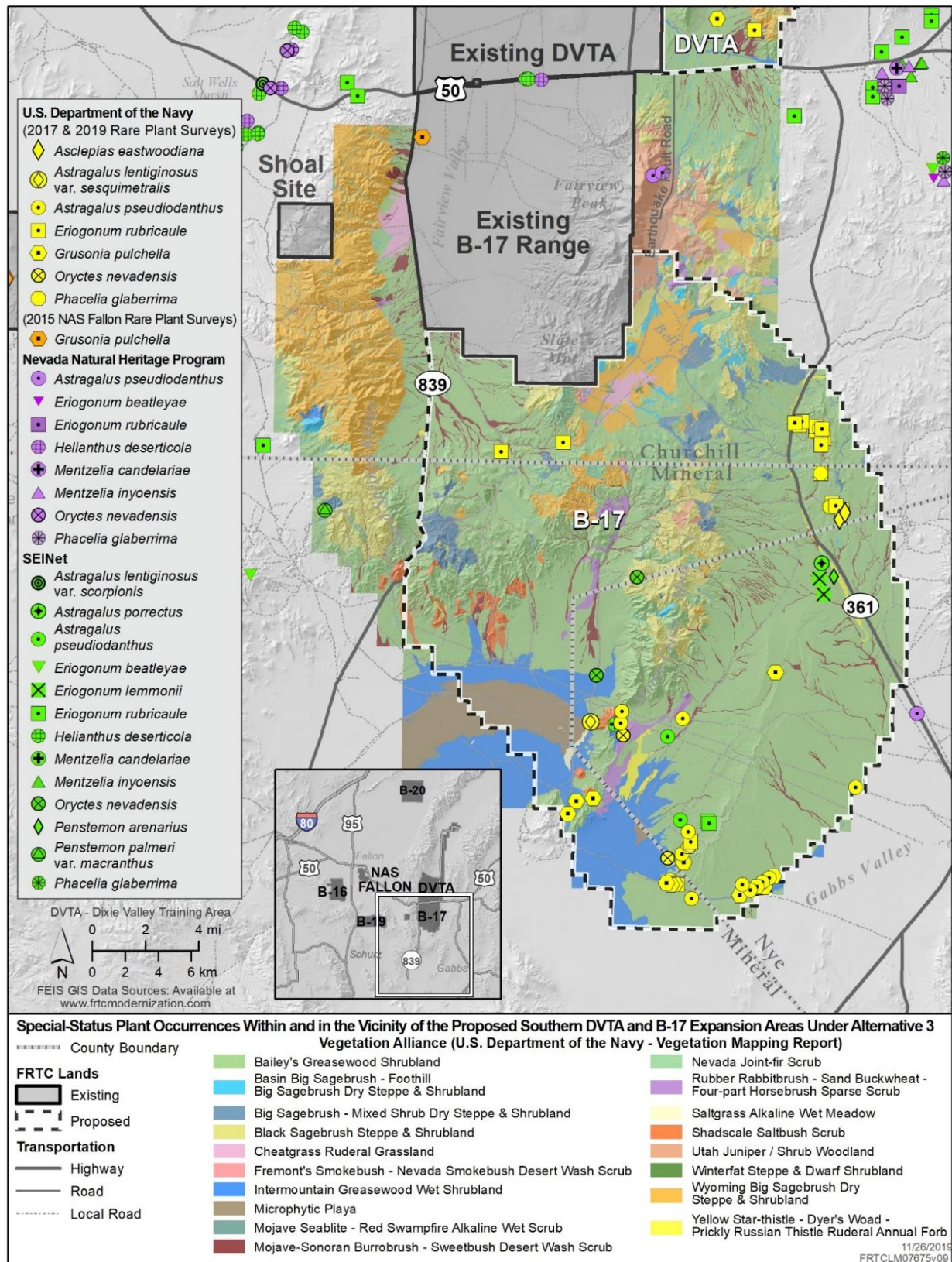


Figure 3.10-12: Special-Status Plant Occurrences Within and in the Vicinity of the Proposed Southern DVTA and B-17 Expansion Areas Under Alternatives 3

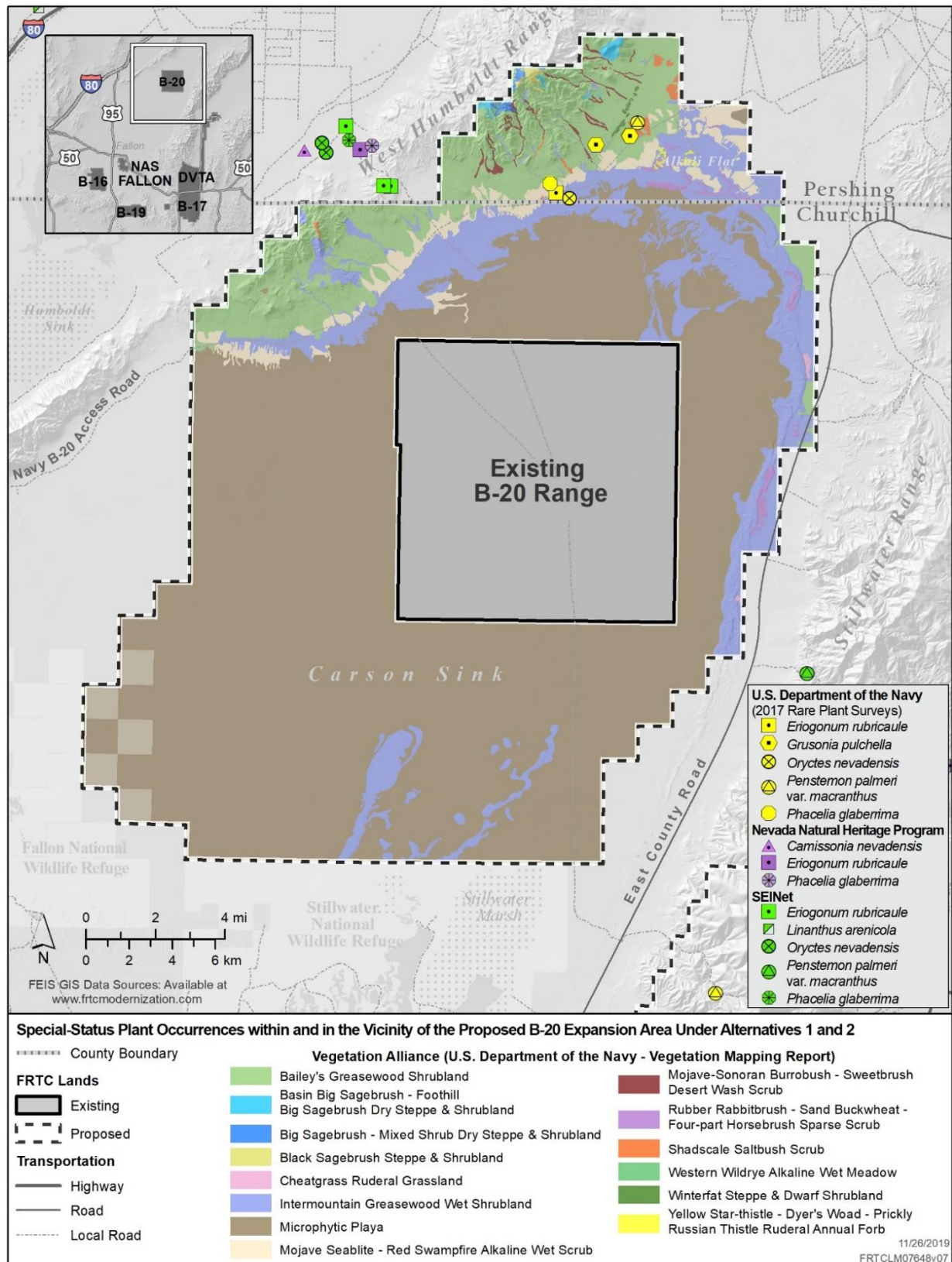


Figure 3.10-13: Special-Status Plant Occurrences Within and in the Vicinity of the Proposed B-20 Expansion Area Under Alternatives 1 and 2

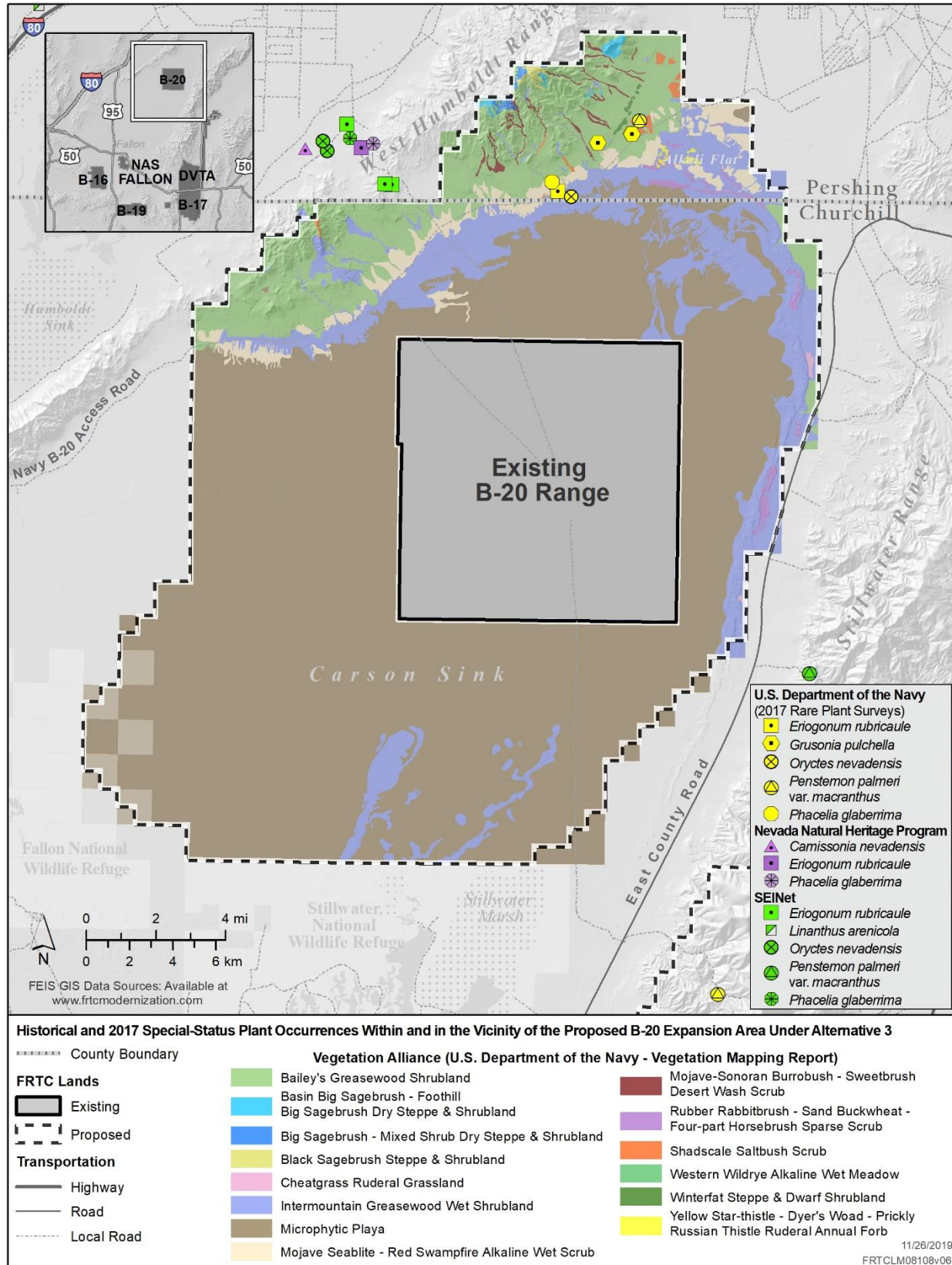


Figure 3.10-14: Historical and 2017 Special-Status Plant Occurrences Within and in the Vicinity of the Proposed B-20 Expansion Area Under Alternative 3

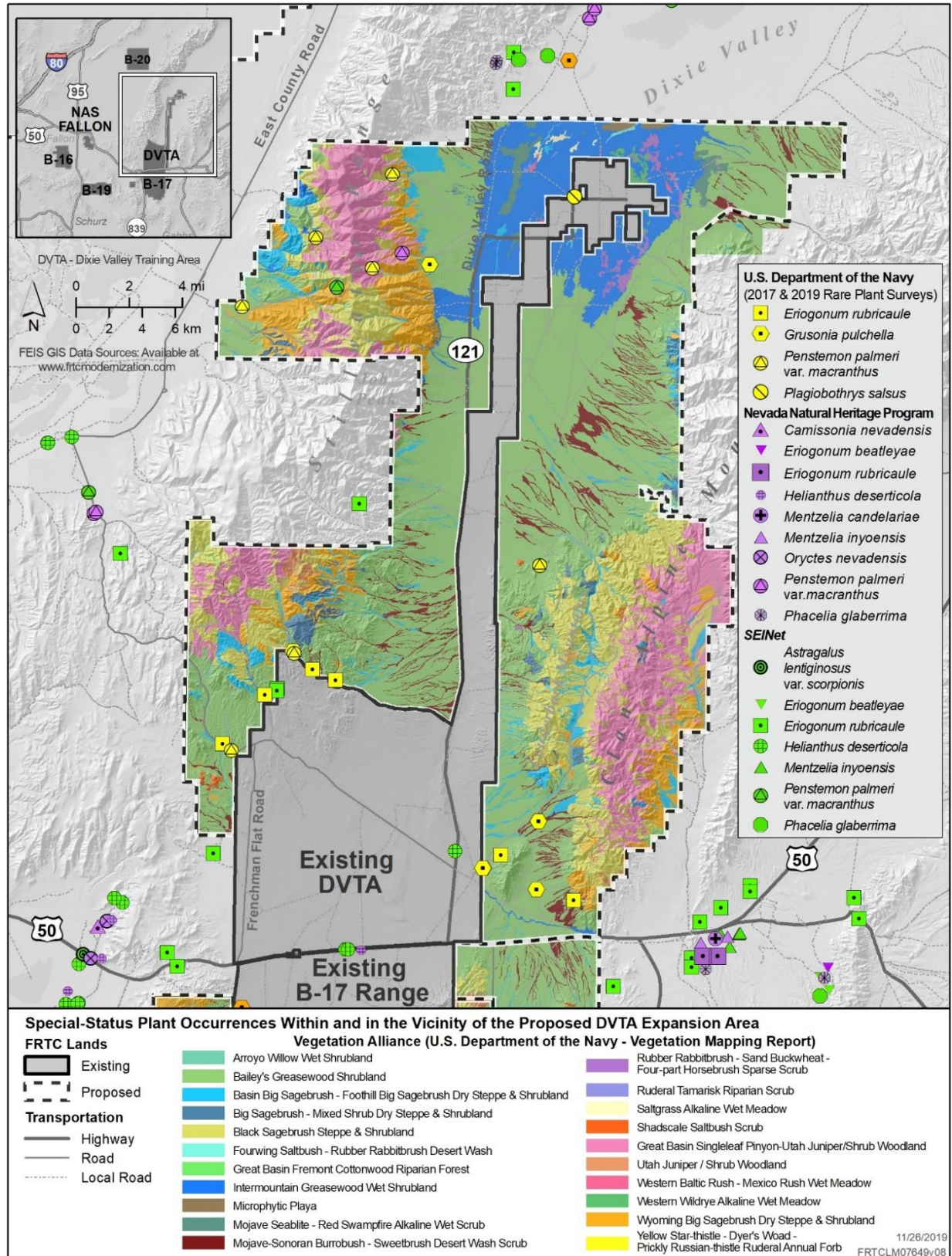


Figure 3.10-15: Special-Status Plant Occurrences Within and in the Vicinity of the Proposed DVTA Expansion Areas

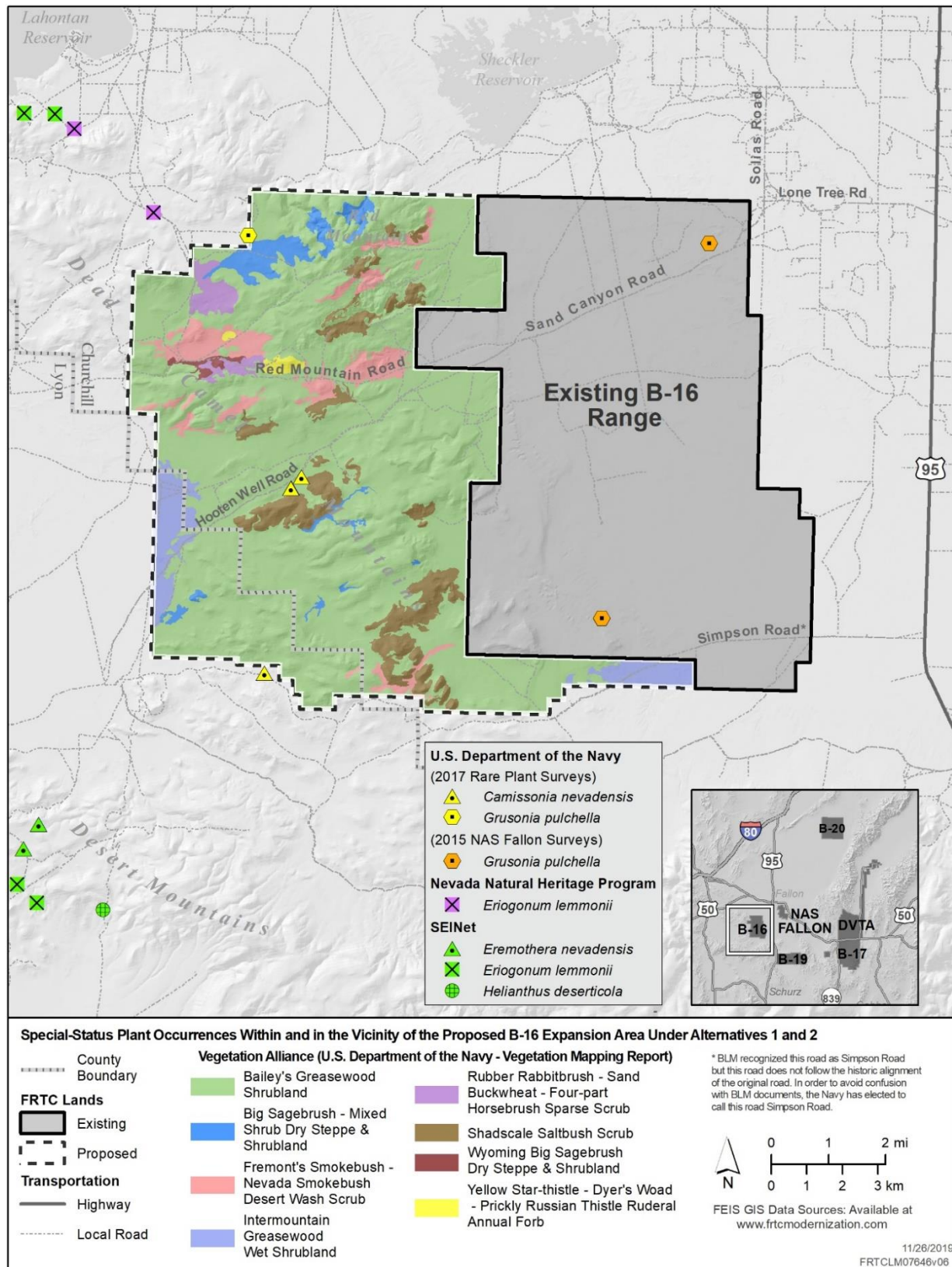


Figure 3.10-16: Special-Status Plant Occurrences Within and in the Vicinity of the Proposed B-16 Expansion Area Under Alternatives 1 and 2

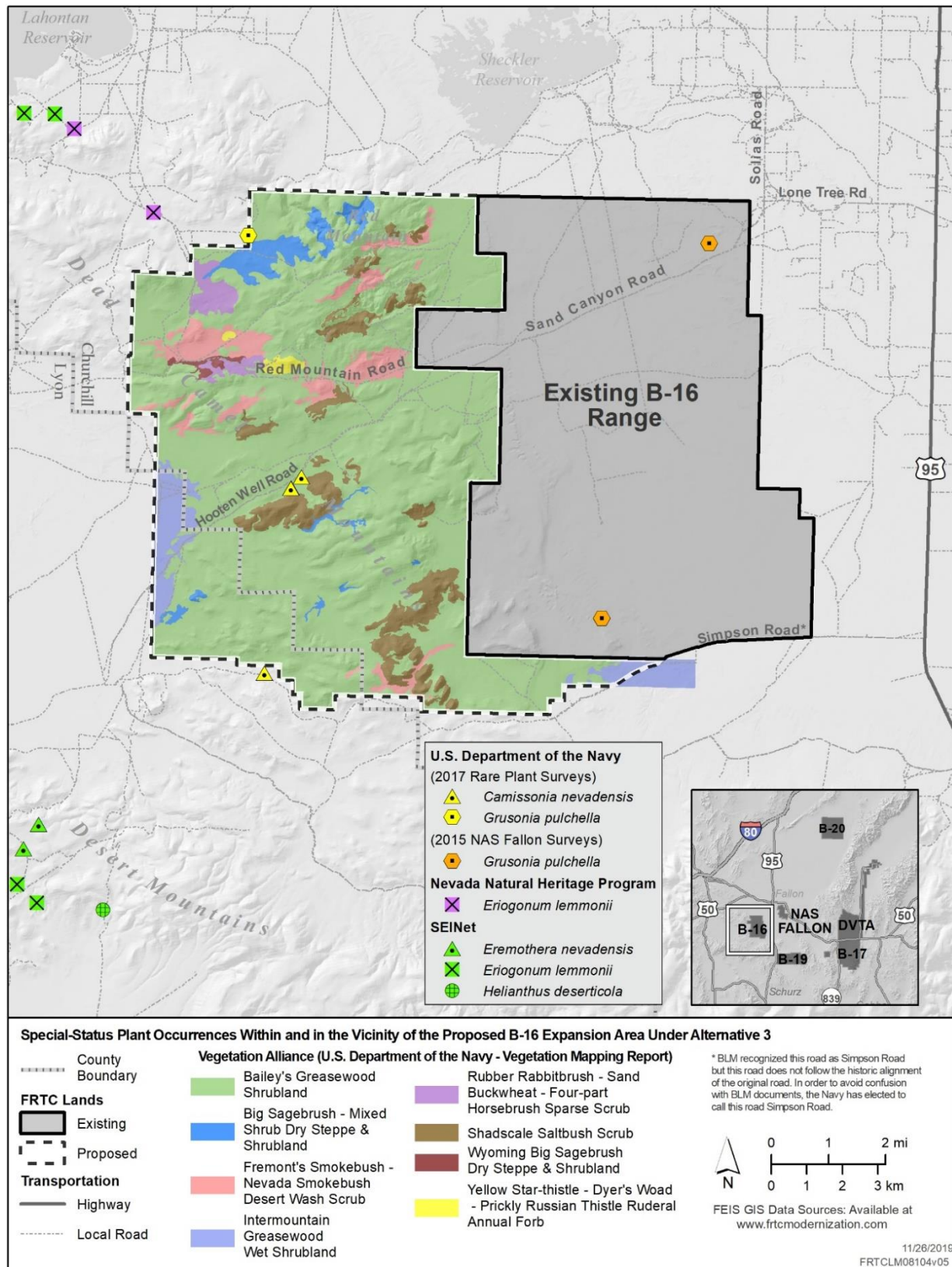


Figure 3.10-17: Special-Status Plant Occurrences Within and in the Vicinity of the Proposed B-16 Expansion Area Under Alternative 3

Reese River Phacelia (*Phacelia glaberrima*). Endemic to Nevada, and listed as a BLM Sensitive Species and ranked as vulnerable by the NNHP, Reese River phacelia is a small annual in the Boraginaceae family. Flowering in May to June, populations of Reese River phacelia occur on barren, pale alkaline hills in shrink-swell soils, often with Lahontan Basin buckwheat, from Lander County to Pershing and Churchill counties. During the 2017 surveys, 573 individuals were recorded at seven closely clustered locations in clay hills in the northern portion of the proposed B-20 expansion area where it was locally abundant, with two populations numbering approximately 200–250 individuals (Table 3.10-9, Figure 3.10-13). During 2019 surveys, 525 individuals were recorded at five locations within the southern proposed B-17 expansion area (Figure 3.10-11 and Figure 3.10-12) (see Supporting Study: Final Rare Plants Survey Report, available at <https://www.frtcmodernization.com>). SEINet and NNHP occurrences were widespread in the region surrounding the proposed expansion areas (Figure 3.10-11, Figure 3.10-12, Figure 3.10-13, and Figure 3.10-15), indicating that this species may be under-surveyed and more common (Nevada Natural Heritage Program, 2018b).

Other Special-Status Plant Species. Based upon SEINet and NNHP records, an additional 10 target special-status plant species have occurrences in the vicinity of the proposed FRTC expansion areas but were not detected within the proposed expansion areas during the 2017 and 2019 surveys (Figure 3.10-11, Figure 3.10-15, and Figure 3.10-16):

- Inyo blazing star (*Mentzelia inyoensis*)
- Lahontan milkvetch (*Astragalus porrectus*)
- Beatley buckwheat (*Eriogonum beatleyae*)
- Lemmon buckwheat (*Eriogonum lemmonii*)
- Dune sunflower (*Helianthus deserticola*)
- Scorpion milkvetch (*Astragalus lentiginosus* var. *scorpionis*)
- Candelaria blazing star (*Mentzelia candelariae*)
- Nevada dune beardtongue (*Penstemon arenarius*)
- Dune linanthus (*Linanthus arenicola*)
- Lahontan indigobush (*Psoralea kingii*)

Only one of the target species (winged milkvetch [*Astragalus pterocarpus*]) has no SEINet or NNHP records within or in the vicinity of the proposed expansion areas and was not detected during the 2015 surveys of existing FRTC lands (Naval Air Station Fallon, 2015; Nevada Natural Heritage Program, 2018b).

3.10.2.4.2 Special-Status Amphibians and Reptiles

The region of influence for special-status amphibian and reptile species includes only the areas within the proposed FRTC range expansion areas where ground-disturbing activities would occur under the proposed action. Four special-status amphibian species and four special-status reptile species are expected to occur within the region of influence (Table 3.10-10). All are listed as BLM-sensitive species and seven are Species of Conservation Priority under the Nevada WAP; NNHP rankings range from critically imperiled to apparently secure. Amphibian species occur primarily within riparian and wetland habitats where they can find a water source for breeding. Reptile species can be found throughout the region of influence in suitable species-specific habitat. In support of this EIS, amphibian and reptile surveys were conducted within the proposed FRTC expansion areas in summer 2018 and 2019 (see Supporting Study: Final Amphibian and Reptile Survey Report, available at <https://www.frtcmodernization.com>). Descriptions of special-status amphibian and reptile species are provided in the following sections.

Table 3.10-10: Known or Potential Occurrences of Special-Status Amphibian and Reptile Species within the Region of Influence

Common Name (Scientific Name)*	Status*			Habitat/Occurrence in the Region of Influence
	BLM	State	NNHP	
AMPHIBIANS				
Columbia spotted frog (<i>Rana luteiventris</i>)	S	PA, WAP	S2S3	Riparian and wetland areas/Toiyabe Mountains in eastern portion of region of influence.
Northern leopard frog (<i>Lithobates pipiens</i>)	S	PA, WAP	S2S3	Riparian and wetland areas/central portions of Pershing & Churchill counties.
Western toad (<i>Anaxyrus boreas</i>)	S	WAP	S4	Riparian and wetland areas and associated uplands/all counties.
Dixie Valley toad (<i>Anaxyrus williamsi</i>)†	S	-	S1	Spring-fed geothermal springs/north of proposed DVTA expansion area.
REPTILES				
Desert horned lizard (<i>Phrynosoma platyrhinos</i>)	S	WAP	S4	Sandy flats, alluvial fans, along washes, and at the edges of dunes; associated with sagebrush, saltbush, and greasewood/all counties.
Great Basin collared lizard (<i>Crotophytus bicinctores</i>)	S	WAP	S4	Xeric, sparsely vegetated, rocky areas on alluvial fans, lava flows, hillsides, rocky plains, and in canyons/all counties.
Long-nosed leopard lizard (<i>Gambelia wislizenii</i>)	S	WAP	S4	Sandy and gravelly desert and semi desert areas with scattered bunch grass, alkali bush, sagebrush, and creosote bush/all counties.
Northern rubber boa (<i>Charina bottae</i>)	S	WAP	S3S4	Woodlands, forest clearings, patchy chaparral, meadows, and grassy savannas, generally not far from water/Churchill, Pershing, Lander, and Nye counties.

Notes: *See notes for Table 3.10-8 for definitions of NNHP ranks. DPS = Distinct Population Segment; PA = Protected Amphibian; S = sensitive; WAP = Wildlife Action Plan Species of Conservation Priority.

†Proposed species.

Sources: (Bureau of Land Management, 2017; Nevada Natural Heritage Program, 2018b; Nevada Wildlife Action Plan Team, 2012).

Columbia Spotted Frog (*Rana luteiventris*). The Great Basin Distinct Population Segment of the Columbia spotted frog was petitioned for listing under the ESA in 1989 and added to the candidate list in 1997. In 2015, the USFWS determined that listing under the ESA was not warranted and it was removed from candidate status (80 Federal Register 60834). It is currently listed as a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, Protected Amphibian by the State of Nevada (NAC 503.075.2), and ranked as imperiled/vulnerable by the NNHP (Bureau of Land Management, 2017; Nevada Natural Heritage Program, 2018a; Nevada Wildlife Action Plan Team, 2012). The species is closely associated with clear, slow-moving or ponded surface waters, with little shade, and relatively constant water temperatures. Spotted frogs may be found in the eastern portion of the region of influence in the Toiyabe Mountains in Lander and Nye counties (Nevada Wildlife Action Plan Team, 2012). The Columbia spotted frog was not observed during the 2007 surveys of existing FRTC lands, and there are no NNHP or NDOW records of the species within or in the vicinity of the proposed FRTC expansion areas (Nevada Department of Wildlife, 2018a; Nevada Natural Heritage Program, 2018b; Tierra Data Inc., 2008).

Northern Leopard Frog (*Rana pipiens*). The northern leopard frog is listed as a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, Protected Amphibian by the State of Nevada (NAC 503.075.2), and ranked as imperiled/vulnerable by the NNHP (Bureau of Land Management, 2017; Nevada Natural Heritage Program, 2018a; Nevada Wildlife Action Plan Team, 2012). Northern leopard frogs require a variety of habitats, including aquatic overwintering and breeding habitats, as well as upland post-breeding habitats and the links between the two. Springs, slow streams, marshes, bogs, ponds, canals, flood plains, reservoirs, and lakes are used; usually permanent water with rooted aquatic vegetation. The species is found within the region of influence primarily in the central portions of Pershing and Churchill counties (Nevada Wildlife Action Plan Team, 2012). The northern leopard frog was not observed during the 2007 surveys of existing FRTC lands, and there are three NNHP records of the species within the vicinity of the proposed expansion areas (Figure 3.10-18) (Nevada Natural Heritage Program, 2018b; Tierra Data Inc., 2008). There are no NDOW records of the species within or in the vicinity of the proposed FRTC expansion areas since 2008 (Nevada Department of Wildlife, 2018a).

Western Toad (*Anaxyrus boreas*). The western toad is listed as a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked as apparently secure by the NNHP (Table 3.10-10). Although this species is common throughout the Great Basin, there are potentially distinct and isolated endemic species within the *Anaxyrus boreas* species group (refer to discussion of the Dixie Valley toad [*Anaxyrus williamsi*] below). The species is found in a wide variety of habitats ranging from desert springs to mountain wetlands, and it ranges into various uplands habitats around ponds, lakes, reservoirs, and slow-moving rivers and streams. It digs its own burrow in loose soil or uses those of small mammals, or shelters under logs or rocks (Nevada Wildlife Action Plan Team, 2012). Occurs within all counties within the region of influence. The western toad was not observed during the 2007 surveys of existing FRTC lands, and there is one NNHP record of the species east of U.S. Route 95 and south of the region of influence (Figure 3.10-18) (Nevada Natural Heritage Program, 2018b; Tierra Data Inc., 2008).

There are no NDOW records of the western toad within or in the vicinity of the proposed FRTC expansion areas (Nevada Department of Wildlife, 2018a).

Dixie Valley Toad (Proposed species - *Anaxyrus williamsi*). Based on recent genetic studies, the Dixie Valley toad has been proposed as a new species belonging to the *Anaxyrus boreas* species complex (Forrest et al., 2017; Gordon et al., 2017). The known distribution of the proposed new species is restricted to four spring-fed geothermal springs within a less than 1,500-acre area in Dixie Valley, approximately 3 miles north of the proposed DVTA expansion area (Figure 3.10-18). Based on the recent proposed species determination and the potential threats to the species from the construction and operation of a proposed geothermal plant in the immediate vicinity, as well as other threats to the species, the Center for Biological Diversity petitioned the USFWS to list the species under the ESA in September 2017 (Center for Biological Diversity, 2017). In June 2018, the USFWS issued its 90-day finding on the review of the petition and found that the petitioned action may be warranted. The USFWS is now conducting a status review of the species and will issue a 12-month finding, which will address whether or not the petitioned action is warranted under the ESA (83 Federal Register 30091). The USFWS, NDOW, BLM, and U.S. Geological Survey are currently conducting studies on the natural history and habitat requirements of the Dixie Valley toad in support of the species status assessment being prepared by the USFWS in response to the petition.

Desert Horned Lizard (*Phrynosoma platyrhinos*). The desert horned lizard is listed as a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked as apparently secure by the NNHP (Bureau of Land Management, 2017; Nevada Natural Heritage Program, 2018a; Nevada Wildlife Action Plan Team, 2012). Although relatively common in suitable habitat throughout Nevada, the desert horned lizard is considered a Species of Conservation Priority due to commercial collection pressures. The species is associated with sagebrush, saltbush, and greasewood on sandy fats, alluvial fans, along washes, and at the edges of dunes; sometimes found on hardpan or among rocks with patches of sand (Nevada Wildlife Action Plan Team, 2012). It is expected to occur within all counties within the region of influence. During previous surveys of existing FRTC lands, the desert horned lizard was observed within NAS Fallon and the existing DVTA, B-16, B-17, B-19, and Shoal Site (Naval Air Station Fallon, 1997; Tierra Data Inc., 2008; Todd et al., 2011). There are no NNHP records of the species within the vicinity of the proposed FRTC expansion areas (Nevada Natural Heritage Program, 2018b). Records from NDOW from 1986 through August 2015 list approximately 35,000 desert horned lizards that were collected within and in the vicinity of the proposed FRTC expansion areas (Nevada Department of Wildlife, 2018a).

Great Basin Collared Lizard (*Crotaphytus bicinctores*). The Great Basin collared lizard is listed as a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked as apparently secure by the NNHP (Bureau of Land Management, 2017; Nevada Natural Heritage Program, 2018a; Nevada Wildlife Action Plan Team, 2012). Although relatively common in suitable habitat throughout Nevada, as with the desert horned lizard, the Great Basin collared lizard is considered a Species of Conservation Priority due to commercial collection pressures. The species occurs from sea level to about 7,500 feet mainly in xeric, sparsely vegetated, rocky areas on alluvial fans, lava flows, hillsides, rocky plains, and in canyons and is expected to occur within all counties within the region of influence (Nevada Wildlife Action Plan Team, 2012). The Great Basin collared lizard has been observed within the existing DVTA, B-16, B-17, B-19, and Shoal Site (Tierra Data Inc., 2008; Todd et al., 2011); there are no NNHP records of the species within or in the vicinity of the proposed FRTC expansion areas (Nevada Natural Heritage Program, 2018b). Records from NDOW from 1986 through August 2015 list approximately 26,000 Great Basin collared lizards that were collected within and in the vicinity of the proposed expansion areas (Nevada Department of Wildlife, 2018a).

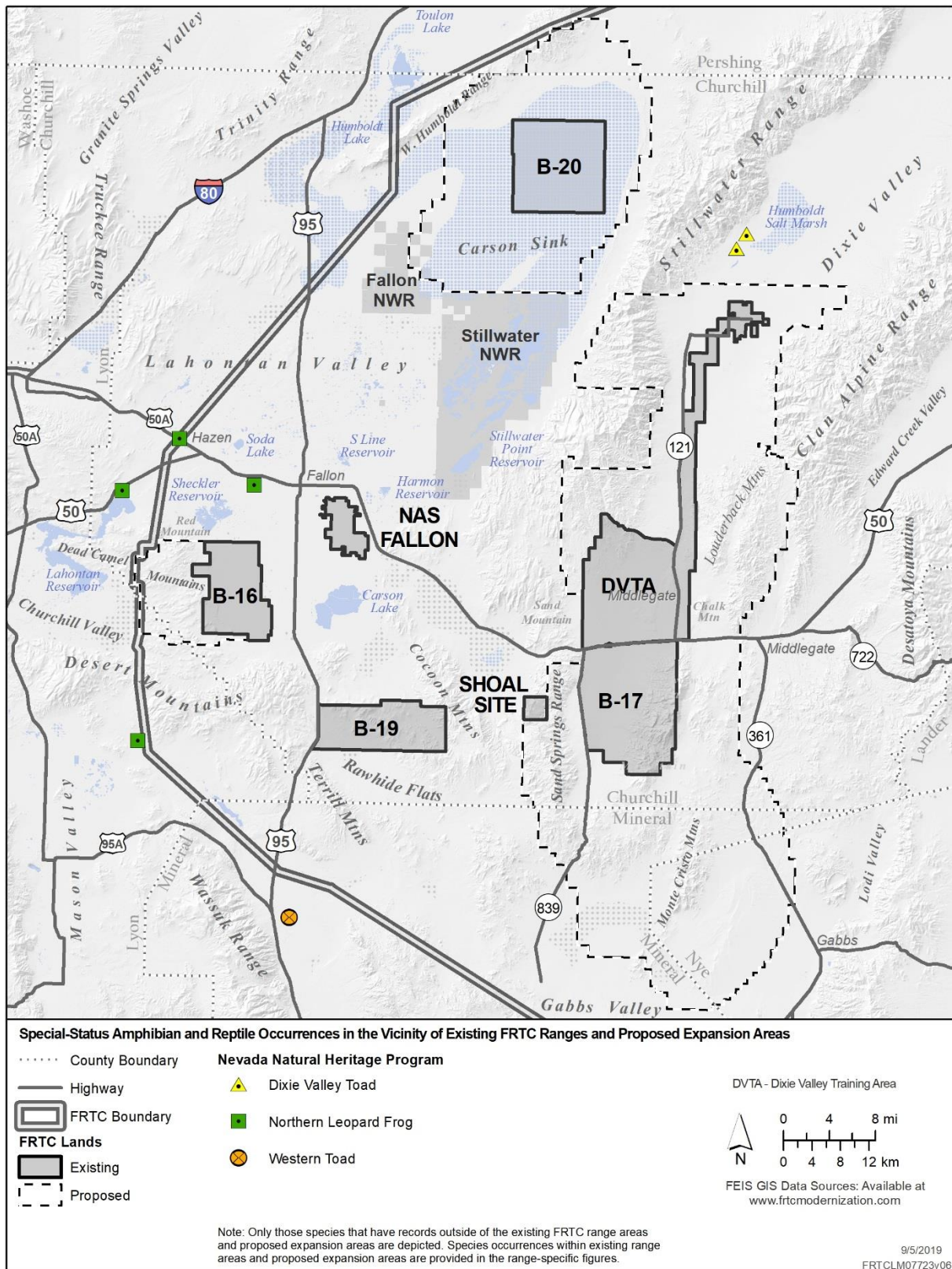


Figure 3.10-18: Special-Status Amphibian and Reptile Occurrences in the Vicinity of Existing FRTC Ranges and Proposed Expansion Areas

Long-nosed Leopard Lizard (*Gambelia wislizenii*). The long-nosed leopard lizard is listed as a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked as apparently secure by the NNHP (Bureau of Land Management, 2017; Nevada Natural Heritage Program, 2018a; Nevada Wildlife Action Plan Team, 2012). Although found throughout Nevada in suitable habitat, the long-nosed leopard lizard is considered a Species of Conservation Priority due to commercial collection pressures. This species occurs from sea level to approximately 5,900 feet in sandy and gravelly desert and semi desert areas with scattered shrubs or other low plants (e.g., bunch grass, alkali bush, sagebrush, creosote bush), especially areas with abundant rodent burrows (Nevada Wildlife Action Plan Team, 2012). It is expected to occur within all counties within the region of influence. During the 2007 surveys of existing FRTC lands, there were four observations of the long-nosed leopard lizard within the existing B-16, B-19, DVTA, and Shoal Site areas (Tierra Data Inc., 2008). The long-nosed leopard lizard has been observed within NAS Fallon; the existing DVTA, B-16, B-19, and Shoal Site; and the proposed B-17/DVTA expansion areas (see Supporting Study: Final Wildlife Remote Camera Trapping Survey Report, available at <https://www.frtcmodernization.com>) (Tierra Data Inc., 2008; Todd et al., 2011; U.S. Department of the Navy, 2018b). Records from NDOW from 1986 through August 2015 list approximately 20,000 long-nose leopard lizards that were collected within and in the vicinity of the proposed expansion areas (Nevada Department of Wildlife, 2018a).

Northern Rubber Boa (*Charina bottae*). The northern rubber boa is listed as a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked as vulnerable/apparently secure by the NNHP (Bureau of Land Management, 2017; Nevada Natural Heritage Program, 2018a; Nevada Wildlife Action Plan Team, 2012). Rubber boa habitat includes woodlands, forest clearings, patchy chaparral, meadows, and grassy savannas, generally not far from water; also riparian zones in arid canyons and sagebrush in some areas. It is found throughout Churchill, Pershing and Lander counties and the northwestern portion of Nye County. There are no Navy, NNHP, or NDOW records of the species within or in the vicinity of the proposed FRTC expansion areas (Naval Air Station Fallon, 1997; Nevada Department of Wildlife, 2018a; Nevada Natural Heritage Program, 2018b; Todd et al., 2011).

3.10.2.4.3 Special-Status Birds

The region of influence for special-status birds includes all proposed FRTC expansion areas and lands underlying the proposed FRTC SUA revision. A total of 38 special-status bird species are known or expected to occur within the region of influence (Table 3.10-11). Of these 38 species, 29 have been documented as occurring on Navy-managed FRTC lands.

- USFWS: 1 ESA-listed threatened species (yellow-billed cuckoo [*Coccyzus americanus*]), bald and golden eagles listed under BGEPA, and 17 Birds of Conservation Concern; all special-status bird species are also listed under the MBTA, except for the dusky grouse (*Dendragapus obscurus*), greater sage-grouse, and mountain quail (*Oreortyx pictus*) (U.S. Fish and Wildlife Service, 2008).
- State of Nevada: 37 Species of Conservation Priority under the Nevada WAP, which also includes 2 endangered species, 2 Protected Birds, and 5 sensitive species (Nevada Wildlife Action Plan Team, 2012).
- BLM (Carson City and Battle Mountain districts): 23 sensitive species (Bureau of Land Management, 2017).
- NNHP: 3 critically imperiled, 10 imperiled, 11 vulnerable, 9 apparently secure, 4 secure, and 1 with no ranking (Nevada Natural Heritage Program, 2018a).

Table 3.10-11: Known or Potential Occurrence of Special-Status Bird Species Within the Region of Influence

Common Name (Scientific Name)	Status*				Seasonal Presence†			
	USFWS	BLM	State	NNHP	Spr	Sum	Fal	Win
American avocet (<i>Recurvirostra americana</i>)	MBTA	-	WAP	S4B				
American white pelican (<i>Pelecanus erythrorhynchos</i>)	MBTA	-	WAP	S2B				
Bald eagle (<i>Haliaeetus leucocephalus</i>)	BCC, BGEPA, MBTA	S	E, WAP	S1B,S3N				
Black rosy-finch (<i>Leucosticte atrata</i>)	MBTA, BCC	S	WAP	S3				
Black tern (<i>Chlidonias niger</i>)	MBTA	-	WAP	S2S3B				
Brewer's sparrow (<i>Spizella breweri</i>)	MBTA, BCC	S	S, WAP	S4B				
Burrowing owl (<i>Athene cunicularia</i>)	MBTA	S	WAP	S3B				
Canvasback (<i>Aythya valisineria</i>)	MBTA	-	WAP	S3S4				
Cassin's finch (<i>Carpodacus cassinii</i>)	MBTA	-	WAP	S5				
Common nighthawk (<i>Chordeiles minor</i>)	MBTA	-	WAP	S5B				
Dusky grouse (<i>Dendragapus obscurus</i>)	-	-	PB, WAP	S3				
Ferruginous hawk (<i>Buteo regalis</i>)	MBTA, BCC	S	WAP	S2				
Flammulated owl (<i>Psiloscoops flammeolus</i>)	MBTA, BCC	S	WAP	S4B				
Golden eagle (<i>Aquila chrysaetos</i>)	BCC, BGEPA, MBTA	S	WAP	S4				
Gray-crowned rosy-finch (<i>Leucosticte tephrocotis</i>)	MBTA	S	WAP	S3N				
Great Basin willow flycatcher (<i>Empidonax traillii adastus</i>)	MBTA, BCC	S	WAP	S1S2				
Greater sage-grouse (<i>Centrocercus urophasianus</i>)	BCC	S	WAP	S3				
Least bittern (<i>Ixobrychus exilis</i>)	MBTA	S	WAP	S2B				
Lewis's woodpecker (<i>Melanerpes lewis</i>)	MBTA, BCC	S	WAP	S3				
Loggerhead shrike (<i>Lanius ludovicianus</i>)	MBTA, BCC	S	S, WAP	S4				
Long-billed curlew (<i>Numenius americanus</i>)	MBTA, BCC	-	WAP	S2S3B				
Long-billed dowitcher (<i>Limnodromus scolopaceus</i>)	MBTA	-	WAP	S4				
Mountain quail (<i>Oreortyx pictus</i>)	-	S	PB, WAP	S3				
Northern goshawk (<i>Accipiter gentilis</i>)	MBTA	S	S, WAP	S2				
Northern pintail (<i>Anas acuta</i>)	MBTA	-	WAP	S5				
Olive-sided flycatcher (<i>Contopus cooperi</i>)	MBTA	-	WAP	S2B				
Peregrine falcon (<i>Falco peregrinus</i>)	MBTA, BCC	S	E, WAP	S2				
Pinyon jay (<i>Gymnorhinus cyanocephalus</i>)	MBTA, BCC	S	WAP	S3S4				
Prairie falcon (<i>Falco mexicanus</i>)	MBTA	-	WAP	S4				
Redhead (<i>Aythya americana</i>)	MBTA	-	WAP	S4B				

Table 3.10-11: Known or Potential Occurrence of Special-status Bird Species Within the Region of Influence (continued)

Common Name (Scientific Name)	Status*				Seasonal Presence†			
	USFWS	BLM	State	NNHP	Spr	Sum	Fal	Win
Sagebrush sparrow (<i>Artemisiospiza nevadensis</i>)	MBTA, BCC	-	WAP	-				
Sage thrasher (<i>Oreoscoptes montanus</i>)	MBTA, BCC	S	S, WAP	S5B				
Sandhill crane (<i>Antigone canadensis</i>)	MBTA	S	WAP	S2B,S3M				
Short-eared owl (<i>Asio flammeus</i>)	MBTA	S	WAP	S4				
Swainson's hawk (<i>Buteo swainsoni</i>)	MBTA	S	-	S2B				
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	MBTA, BCC	S	WAP	S3B				
White-faced ibis (<i>Plegadis chihi</i>)	MBTA	-	WAP	S3B				
Yellow-billed cuckoo (<i>Coccyzus americanus</i>) – Western DPS	T, MBTA, BCC	S	S, WAP	S1B				

†Spr = spring, Sum = summer, Fal = fall, Win = winter.

Notes: *See notes for Table 3.10-8 for definitions of NNHP ranks. BCC = Bird of Conservation Concern, BGEPA = Bald and Golden Eagle Protection Act, BLM = Bureau of Land Management, DPS = Distinct Population Segment, E = endangered, PB = Protected Bird; S = sensitive, T = threatened, USFWS = U.S. Fish and Wildlife Service, WAP = Wildlife Action Plan Species of Conservation Priority.

Sources: (Bureau of Land Management, 2017; Great Basin Bird Observatory, 2010; Nevada Department of Wildlife, 2018a, 2018b; Nevada Natural Heritage Program, 2018b; Nevada Wildlife Action Plan Team, 2012; U.S. Fish and Wildlife Service, 2008)

A Bird of Conservation Concern is a species of migratory, non-game bird identified in 2008 by the USFWS that, at that time, was likely to become a candidate for listing under the ESA. Of the 28 species listed in Bird Conservation Region 9 (Great Basin), 20 have the potential to occur within the region of influence and 17 have been recorded on existing Navy-managed FRTC lands or on proposed FRTC expansion areas.

For further details on bird surveys see Supporting Studies: Final Greater Sage-Grouse Survey Report; Final Wildlife Camera Trap Survey Report; Final Avian Survey Report; Final Raptor Survey Report; and Final Burrowing Owl Survey Report (available at <https://www.frtcmodernization.com>).

The following sections provide descriptions of the special-status bird species and their known or potential occurrence within the region of influence. Unless referenced otherwise, the following descriptions are based upon the following sources: Floyd et al. (2007), Great Basin Bird Observatory (2010), Nevada Wildlife Action Plan Team (2012), Nevada Natural Heritage Program (2018a, 2018b), and Bureau of Land Management (2017).

American Avocet (*Recurvirostra americana*). Listed as a Species of Conservation Priority under the Nevada WAP and ranked as apparently secure by the NNHP, the American avocet is found in lowland marshes, mudflats, ponds, and alkaline lakes. The Lahontan Valley wetlands support breeding avocets in the spring/summer as well as thousands of birds during spring and fall migration. Avocets have been observed on NAS Fallon, within the existing DVTA and B-19 (Naval Air Station Fallon, 1997; Tierra Data Inc., 2008), and within the Stillwater NWR to the south of the proposed B-20 expansion area and west of the proposed DVTA expansion area (Nevada Department of Wildlife, 2018a) (Figure 3.10-19).

American White Pelican (*Pelecanus erythrorhynchos*). Listed as a Species of Conservation Priority under the Nevada WAP and ranked as imperiled (breeding) by the NNHP, the American white pelican is found in areas of permanent and ephemeral open water such as lakes, reservoirs, marshes, and rivers. Although pelicans are not known to breed within the region of influence, they are transient visitors to the region's wetlands and lakes during spring, summer, and fall. The NNHP has numerous records of white pelicans associated with the major open water and wetlands in the Fallon region: Lahontan Reservoir, Carson Lake, Humboldt Lake, Fallon NWR, and Stillwater NWR (Nevada Natural Heritage Program, 2018b) (Figure 3.10-19). White pelicans have also been observed on NAS Fallon (U.S. Department of the Navy, 2014).

Bald Eagle (*Haliaeetus leucocephalus*). The bald eagle is a Bird of Conservation Concern, a BLM sensitive species, listed as endangered by the State of Nevada, a Nevada Species of Conservation Priority under the Nevada WAP, and ranked as critically imperiled (breeding)/vulnerable (non-breeding) by the NNHP. In addition, the bald eagle is protected under the provisions of BGEPA. The bald eagle is associated with open water areas including lakes, reservoirs, wetlands, and rivers. Bald eagles primarily occur in Nevada during the winter with an estimated winter population of 120 birds. The Stillwater NWR supports Nevada's largest bald eagle winter population. A small breeding population of 3-5 nesting pairs occurs west of the region of influence at the Lahontan Reservoir. The 2016 NDOW winter raptor survey did not observe any bald eagles within surveyed areas within the region of influence (Jeffress, 2017). Within the region of influence, bald eagles have been observed near Fallon, at the Stillwater NWR, on NAS Fallon, and in the proposed DVTA expansion area (Figure 3.10-19 and Figure 3.10-24) (see Supporting Study, Final Raptor Survey Report, available at <https://www.frtcmodernization.com>) (Nevada Natural Heritage Program, 2018b; Nevada Wildlife Action Plan Team, 2012; U.S. Department of the Navy, 2018c).

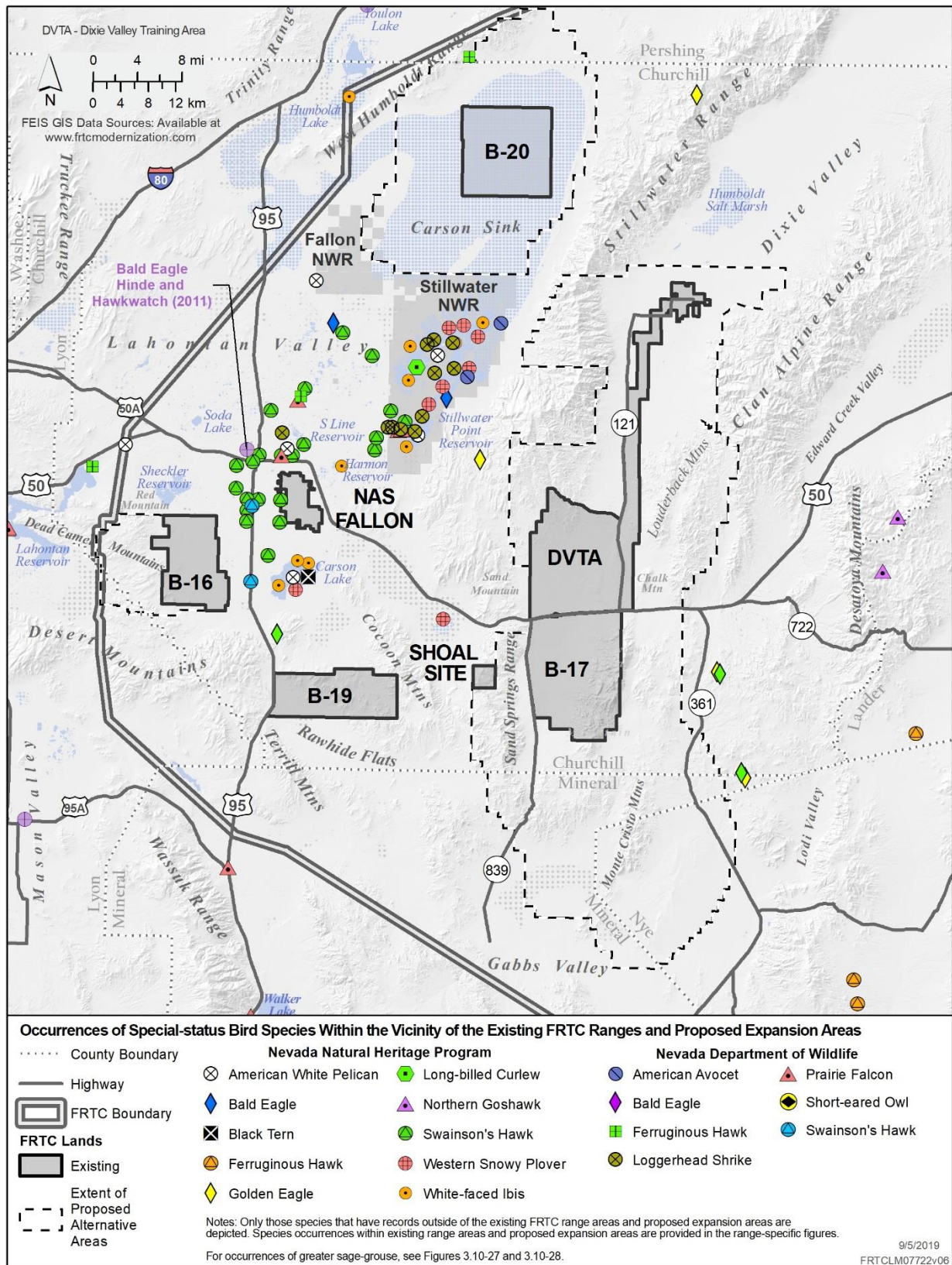


Figure 3.10-19: Occurrences of Special-Status Bird Species Within the Vicinity of the Existing FRTC Ranges and Proposed Expansion Areas

Black Rosy-finch (*Leucosticte atrata*). Listed as a Bird of Conservation Concern, BLM sensitive species, Nevada Species of Conservation Priority under the Nevada WAP, and ranked as vulnerable by the NNHP, the black rosy-finch breeds in high alpine habitats of the mountains of northeastern Nevada. Descending to lower elevations for the winter, they can be found throughout the region of influence in open fields, cultivated lands, brushy areas, and around human habitation, where they often join with gray-crowned rosy-finches in mixed foraging and roosting flocks. There are no records of the species on existing Navy-managed FRTC lands or proposed expansion areas.

Black Tern (*Chlidonias niger*). A species associated with large marsh/wetland complexes, the black tern is a Nevada Species of Conservation Priority under the Nevada WAP and ranked as imperiled/vulnerable (breeding) by the NNHP. Found primarily within the region of influence as a migrant in spring and fall, there are breeding populations west of the region of influence, within the Lahontan Valley wetlands and transient individuals can also be found in the summer at wetlands within the region of influence (Figure 3.10-19) (e.g., Carson Lake, Stillwater NWR, Lahontan Reservoir). Although the NAS Fallon INRMP lists the species as documented on Navy-managed FRTC lands, a specific location is not given (U.S. Department of the Navy, 2014).

Brewer's Sparrow (*Spizella breweri*). The Brewer's sparrow is a Bird of Conservation Concern, BLM and Nevada Sensitive Species, a Nevada Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as apparently secure (breeding). The Brewer's sparrow is a sagebrush obligate that is often the most abundant songbird in sagebrush shrub steppe habitats in some regions. It prefers to nest in large, living sagebrush and primarily forages on the ground for insects during the summer and seeds in the winter. The Brewer's sparrow breeds throughout northern Nevada from April through September, and winters in the extreme southern portion of Nevada and further south. It has been observed within the proposed DVTA and B-17 expansion areas (Figure 3.10-24 and Figure 3.10-24) (see Supporting Studies: Final Plant Community Surveys and Mapping Report, Final Wildlife Remote Camera Trapping Survey Report, available at <https://www.frtcmodernization.com>)(U.S. Department of the Navy, 2014, 2018a, 2018b).

Burrowing Owl (*Athene cunicularia*). A BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as vulnerable (breeding), burrowing owls nest in the region of influence during spring and summer and then migrate south for the winter. Burrowing owls are found in open grasslands, sagebrush, and sagebrush-steppe, sometimes in open areas such as vacant lots near human habitation (e.g., campuses, airports, golf courses, perimeter of agricultural fields, banks of irrigation canals). They nest and roost in abandoned burrows, particularly those dug by ground squirrels, American badger, fox, and tortoise. Although burrowing owls have been recorded within the existing DVTA (Tierra Data Inc., 2008) and the proposed B-16, B-17, B-20, and DVTA expansion areas (Figure 3.10-20 through Figure 3.10-26), active nesting has not been observed within the existing Navy-managed lands or proposed expansion areas (see Supporting Studies: Final Burrowing Owl Survey Report and Final Avian Survey Report, available at <https://www.frtcmodernization.com>). In support of this EIS, additional breeding burrowing owl surveys were conducted within the proposed FRTC expansion areas in spring/summer 2019.

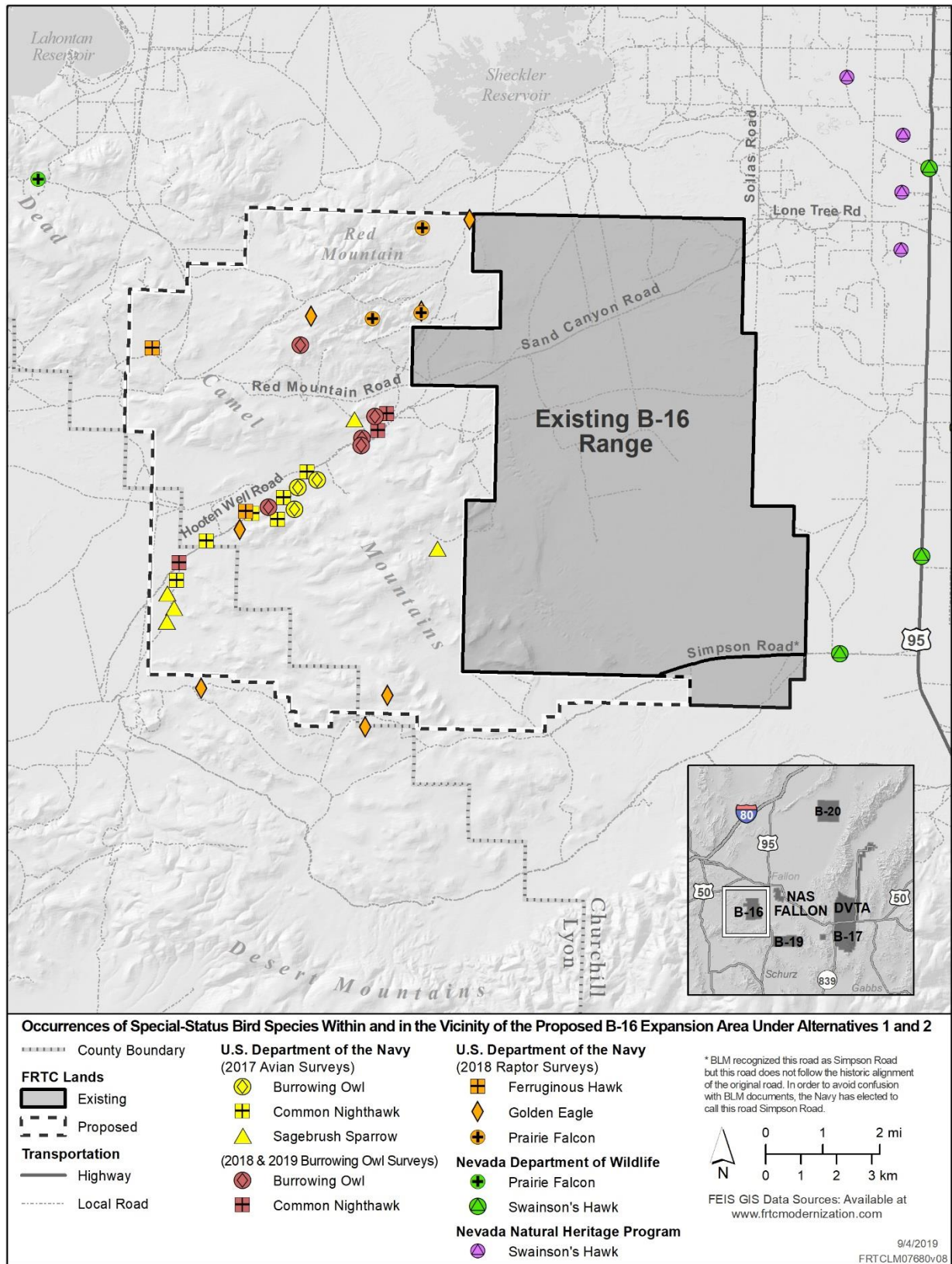


Figure 3.10-20: Occurrences of Special-Status Bird Species Within and in the Vicinity of the Proposed B-16 Expansion Area Under Alternatives 1 and 2

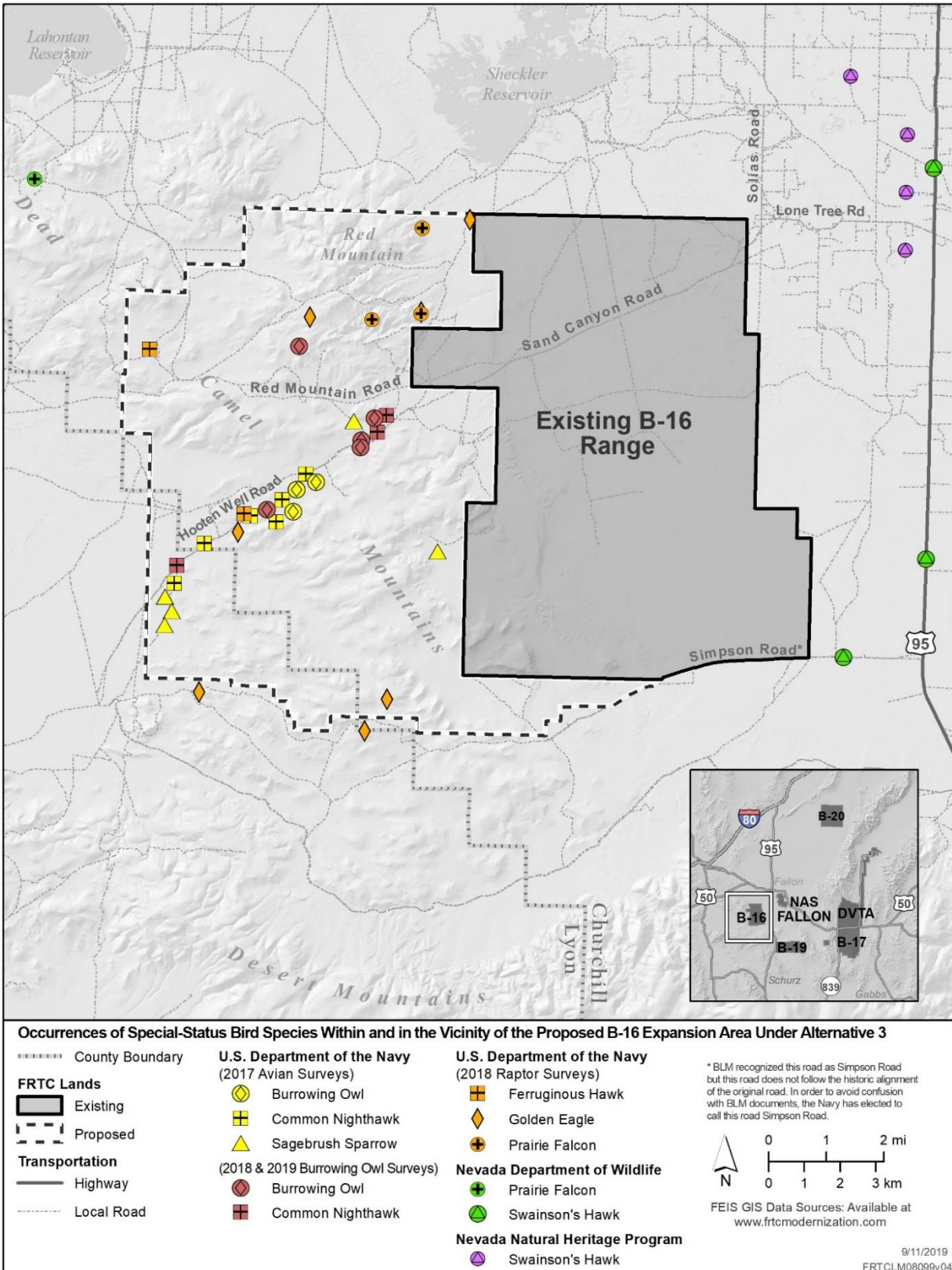


Figure 3.10-21: Occurrences of Special-Status Bird Species Within and in the Vicinity of the Proposed B-16 Expansion Area Under Alternative 3

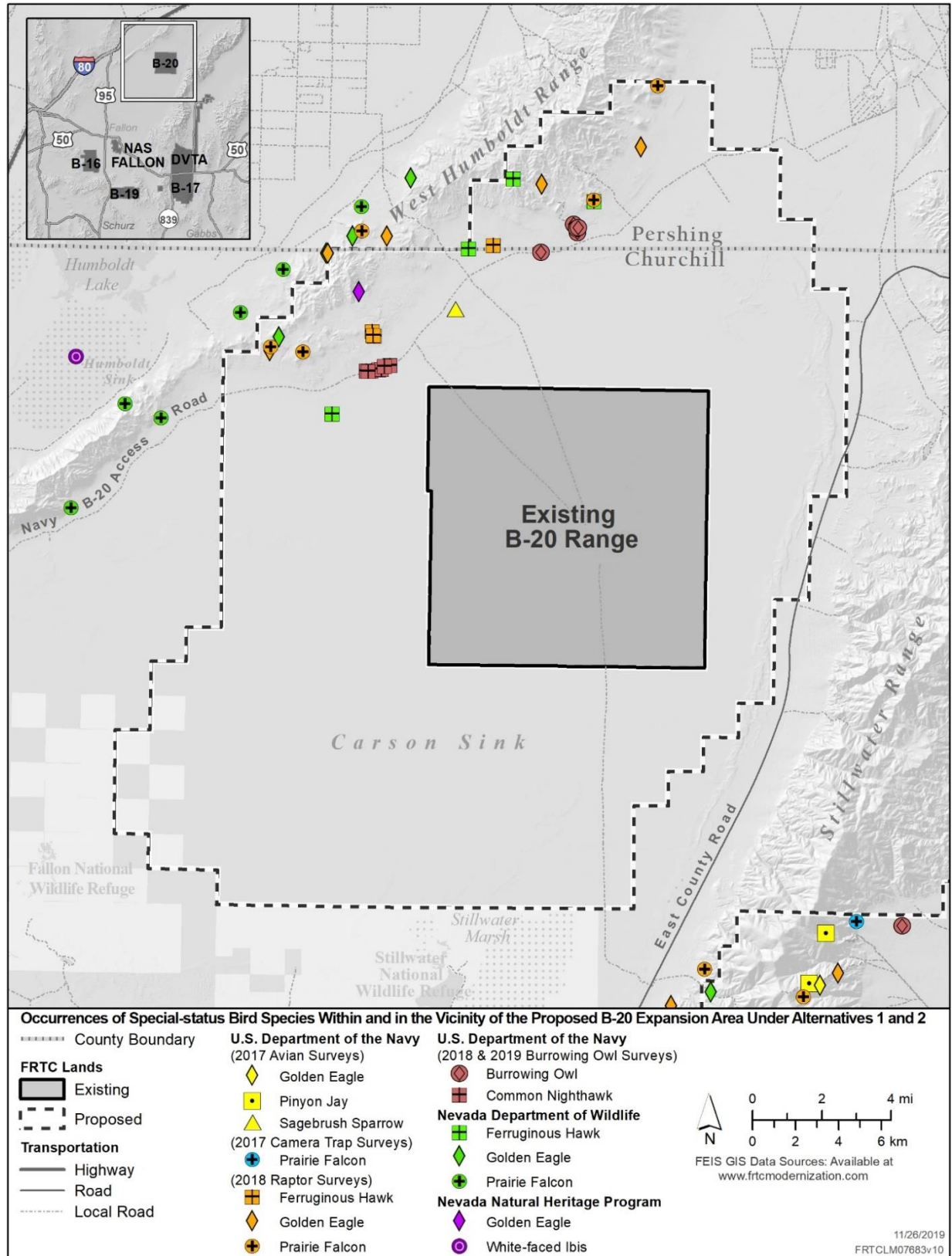


Figure 3.10-22: Occurrences of Special-Status Bird Species Within and in the Vicinity of the Proposed B-20 Expansion Area Under Alternatives 1 and 2

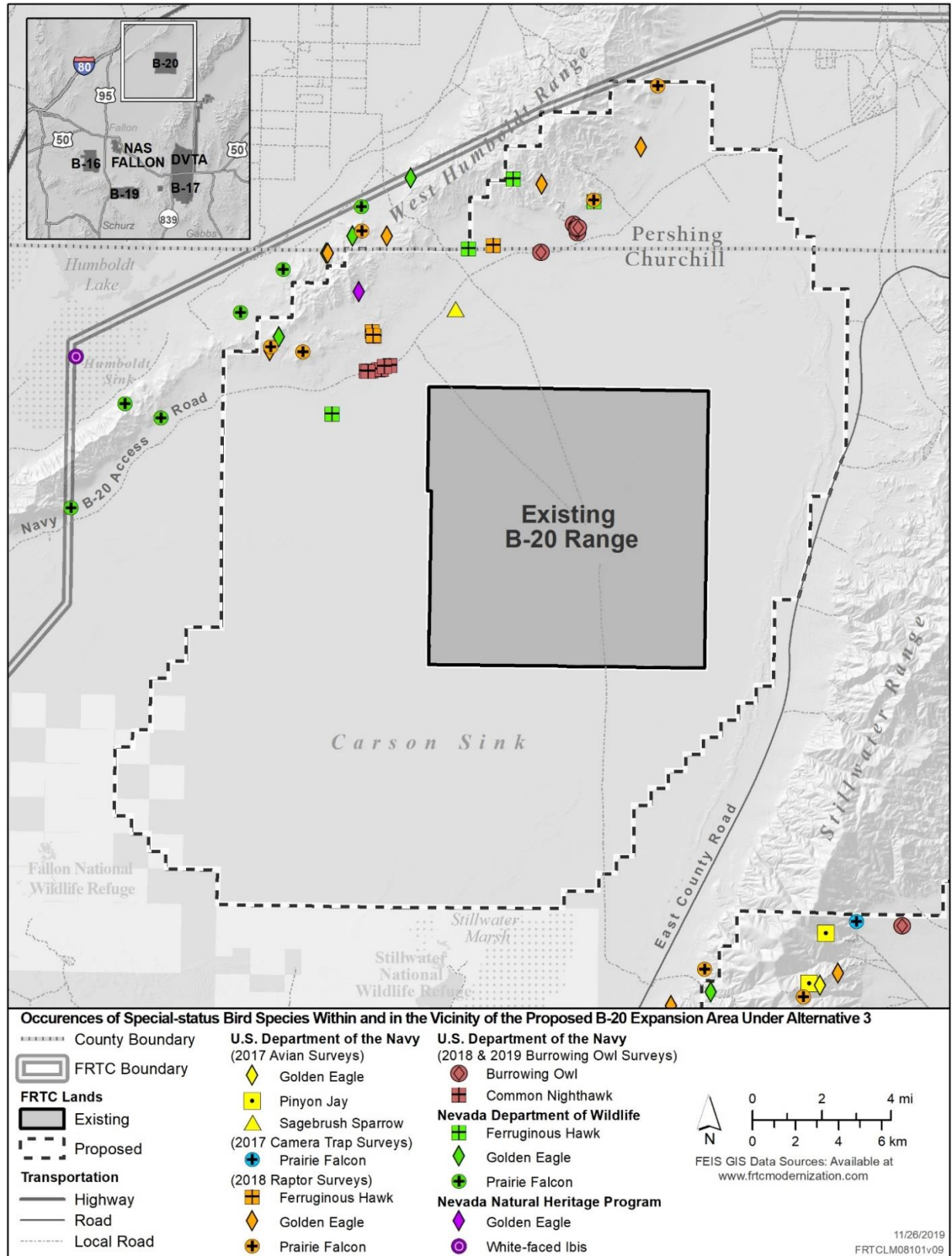


Figure 3.10-23: Occurrences of Special-Status Bird Species Within and in the Vicinity of the Proposed B-20 Expansion Area Under Alternative 3

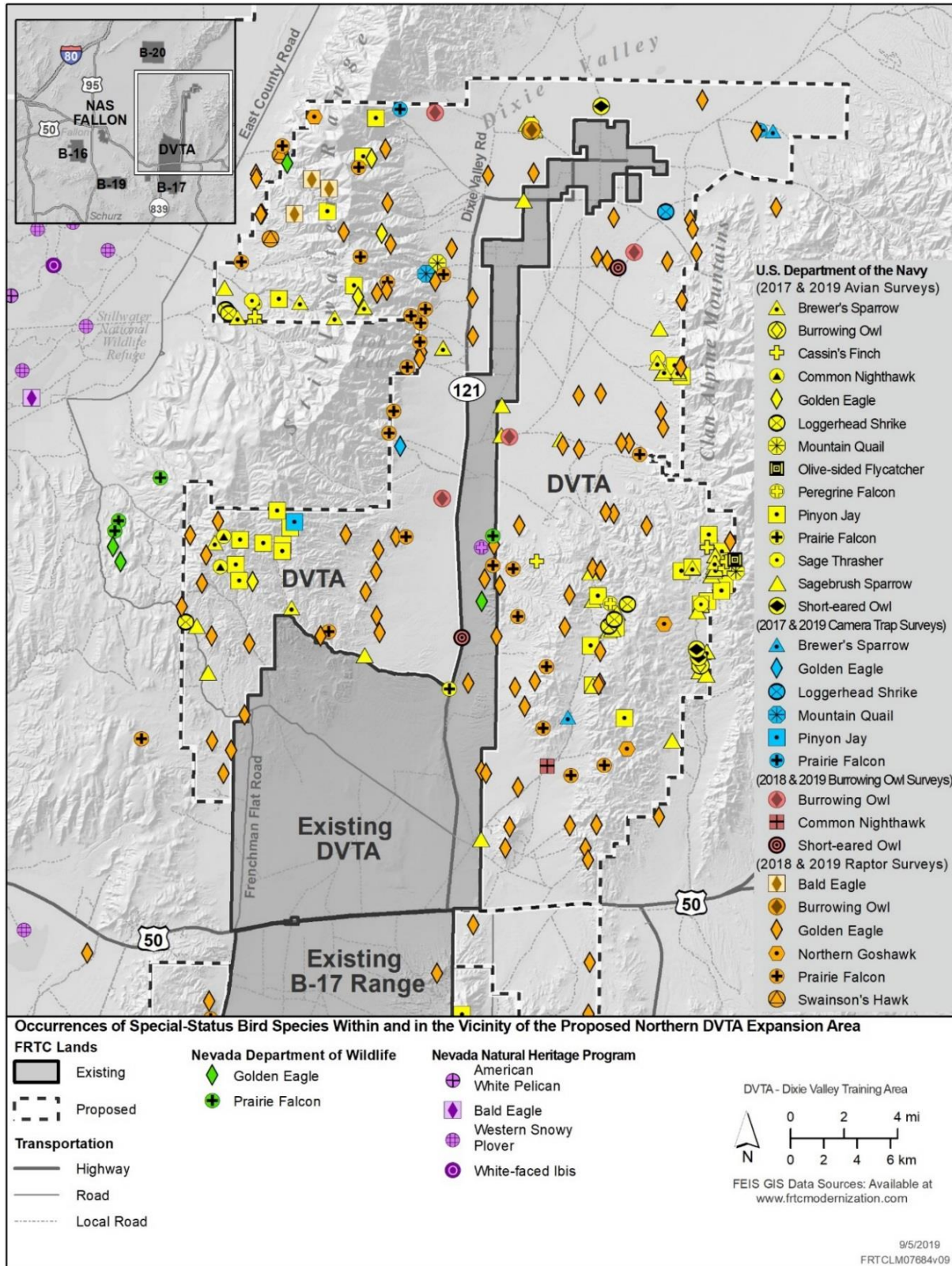


Figure 3.10-24: Occurrences of Special-Status Bird Species Within and in the Vicinity of the Proposed Northern DVTA Expansion Area

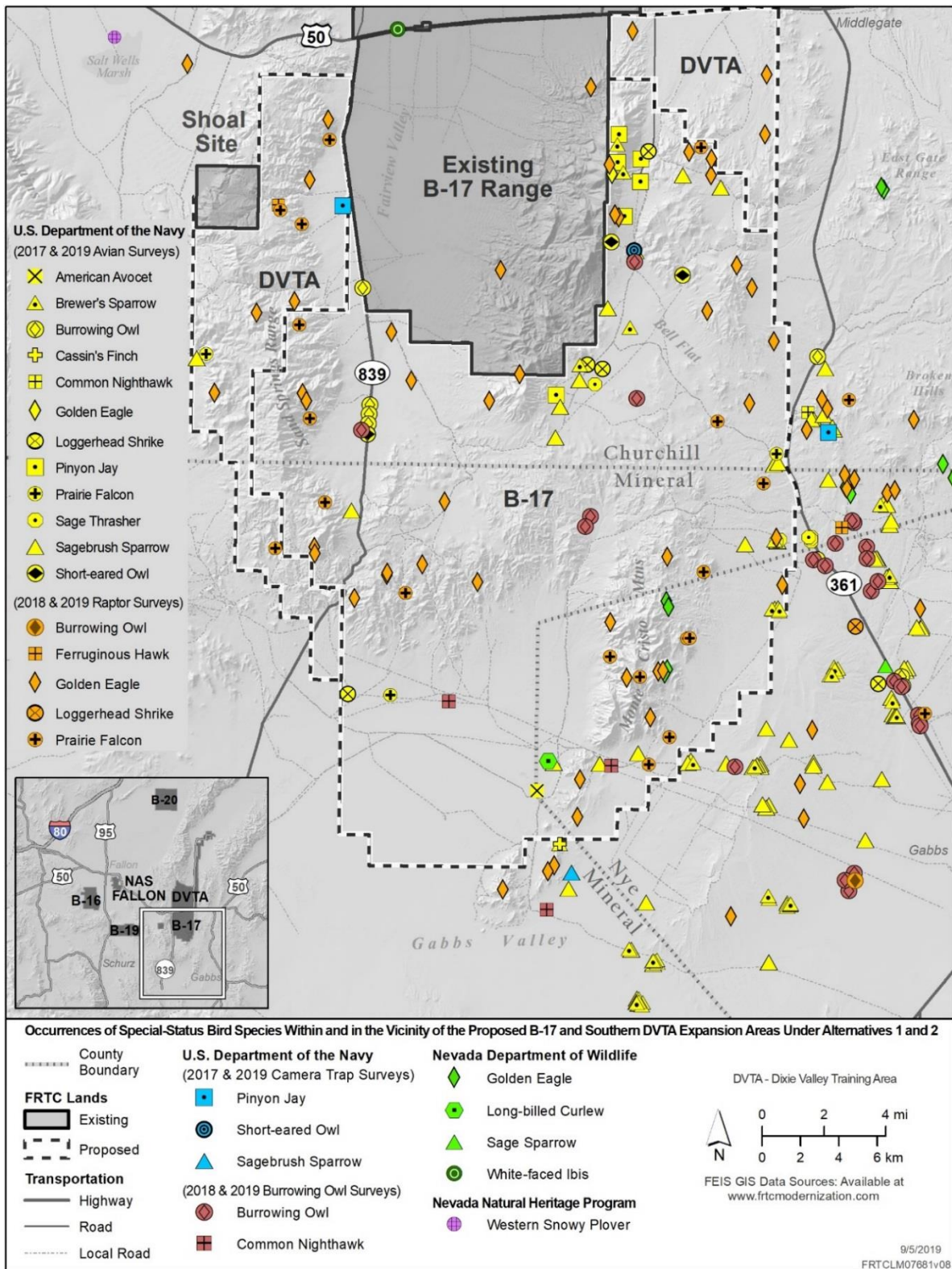


Figure 3.10-25: Occurrences of Special-Status Bird Species Within and in the Vicinity of the Proposed B-17 and Southern DVTA Expansion Areas Under Alternatives 1 and 2

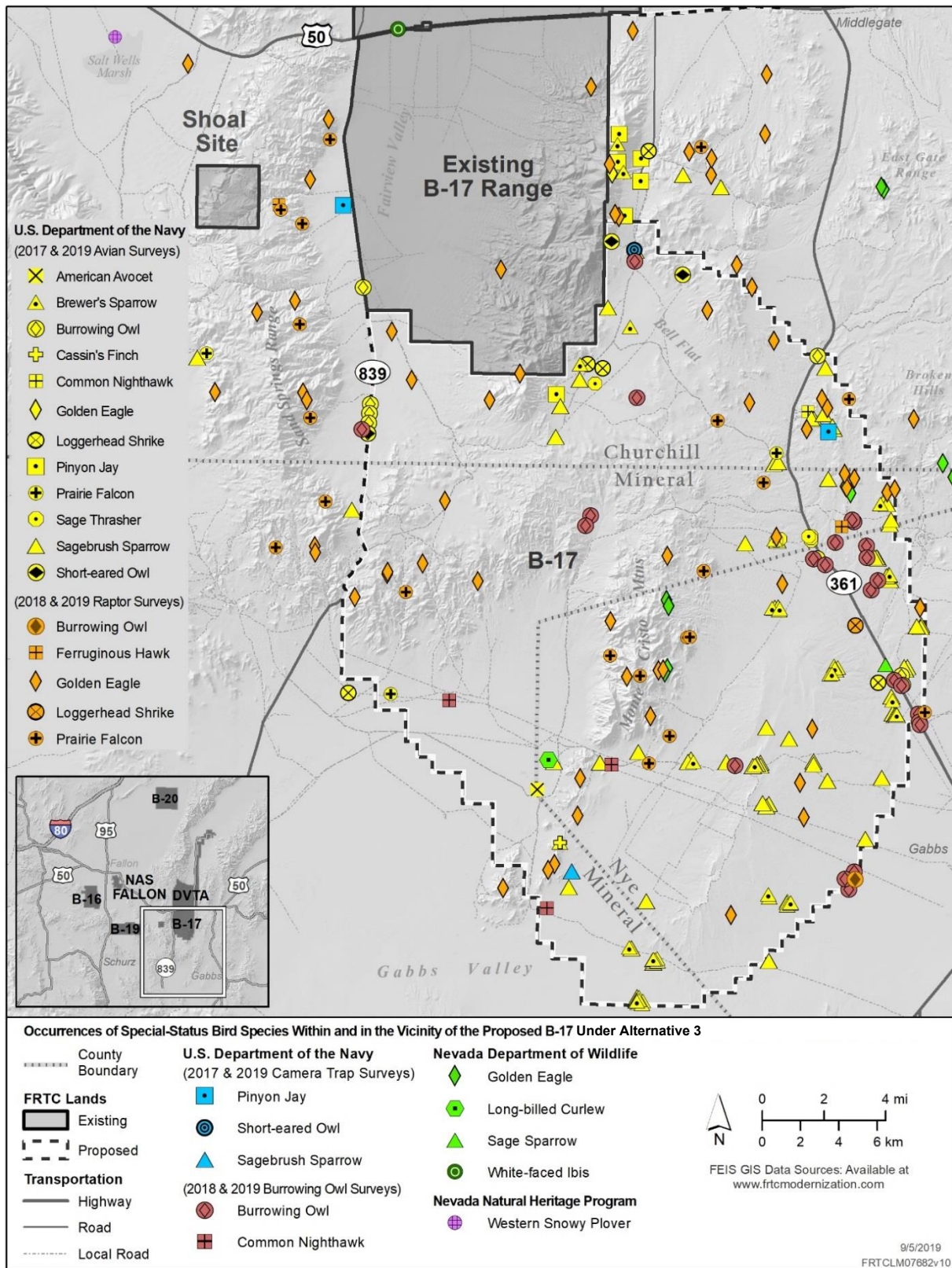


Figure 3.10-26: Occurrences of Special-Status Bird Species Within and in the Vicinity of the Proposed B-17 Under Alternative 3

Canvasback (*Aythya valisineria*). A year-round resident of open water areas within the region of influence, the canvasback is a Species of Conservation Priority under the Nevada WAP and ranked by the NNHP as vulnerable/apparently secure. It breeds and overwinters throughout central and northern Nevada on wetlands, lakes, and ponds, with the greatest numbers in the region of influence during spring and fall migration. Lahontan Valley supports the most southerly large breeding population and Stillwater NWR supports approximately half the wintering canvasback population in the Pacific Flyway. Within the region of influence, the canvasback is expected to be found primarily within the Lahontan Reservoir, Carson Lake, and Stillwater NWR, and has been observed at the Humboldt Salt Marsh, north of the proposed DVTA expansion area (Tierra Data Inc., 2008).

Cassin's Finch (*Carpodacus cassinii*). Cassin's finch is a Species of Conservation Priority under the Nevada WAP and ranked by the NNHP as secure. Found year-round in the region of influence, Cassin's finches breed in open coniferous forest and can be found during migration and winter in deciduous woodlands, scrub, brushy areas, and other partly open areas with scattered trees. The species was observed in the proposed DVTA expansion area during avian surveys in support of this EIS (Figure 3.10-24) (see Supporting Study: Final Avian Survey Report, available at <https://www.frtcmodernization.com>).

Common Nighthawk (*Chordeiles minor*). The common nighthawk is a Species of Conservation Priority under the Nevada WAP and ranked by the NNHP as secure. Found in the region of influence during the summer breeding season and during fall and spring migration, nighthawks are found in a wide diversity of open and semi-open habitats including open coniferous forests, savanna, grasslands, fields within and around cities and agricultural areas where it feeds on flying insects. The species is common within the region of influence and has been observed within the proposed B-16, B-17, B-20, and DVTA expansion areas (Figure 3.10-20 through Figure 3.10-26) (see Supporting Studies: Final Burrowing Owl Survey Report and Final Avian Survey Report, available at <https://www.frtcmodernization.com>) (Tierra Data Inc., 2008; U.S. Department of the Navy, 2018d, 2018e).

Dusky Grouse (*Dendragapus obscurus*). Listed as a Species of Conservation Priority under the Nevada WAP and ranked by the NNHP as vulnerable, the dusky grouse is also a Nevada protected game bird (NAC 503.045). Although expected to be uncommon, it can be found year-round within montane habitats in the region of influence. Dusky grouse utilize aspen and montane riparian woodlands in the spring and summer, and coniferous forests in winter. Can also be found in sagebrush, montane shrubs, and mountain mahogany, especially in late fall and early winter. Dusky grouse have not been recorded on existing Navy-managed lands or proposed FRTC expansion areas.

Ferruginous Hawk (*Buteo regalis*). The ferruginous hawk is a Bird of Conservation Concern, BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as imperiled. The ferruginous hawk occupies arid and open grassland, shrub steppe, and desert in the western half of North America. Breeding occurs across western Canada and the U.S. and east to the Dakotas, Nebraska, and Kansas. Ferruginous Hawks in Nevada reportedly prefer landscapes where the human presence is minimal, and they are generally more sensitive to nest disturbances than most other raptors. Primary wintering grounds are in the southwestern U.S. and northern Mexico. Ferruginous hawks are expected to be an uncommon year-round resident throughout the region of influence in open country, sagebrush, saltbush-greasewood shrubland, and periphery of pinyon-juniper and other woodland communities. There are nest records within and immediately north of the proposed B-20 expansion area (Figure 3.10-22) (Nevada Department of Wildlife, 2017b, 2018a, 2018b; Nevada Natural Heritage Program, 2018b). The 2016 NDOW winter raptor survey recorded an individual east of Fallon (Jeffress, 2017). During 2018 winter raptor surveys in support of this EIS, ferruginous hawks were

observed within the proposed B-16, B-17, and B-20 expansion areas (Figure 3.10-20, Figure 3.10-22, Figure 3.10-25). Breeding surveys conducted in spring 2018 detected two active ferruginous hawk nests within the northwestern portion of the proposed B-20 expansion area (Figure 3.10-22) (see Supporting Study, Final Raptor Survey Report, available at <https://www.frtcmodernization.com>). In support of this EIS, additional winter and breeding raptor surveys were conducted within the proposed FRTC expansion areas in winter/spring 2019.

Flammulated Owl (*Psiloscops flammeolus*). Listed as a Bird of Conservation Concern, BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as apparently secure (breeding), the flammulated owl is an uncommon species of montane coniferous forests within the region of influence during the summer breeding season and spring and fall migration. The flammulated owl has not been recorded on existing Navy-managed lands or proposed FRTC expansion areas.

Golden Eagle (*Aquila chrysaetos*). The golden eagle is a Bird of Conservation Concern, BLM Sensitive Species, Species of Conservation Priority, and ranked by the NNHP as apparently secure. In addition, the golden eagle is protected under the provisions of BGEPA. The golden eagle typically occupies open canyon land, desert, grassland, and shrub habitat. Nest sites are most often on cliffs or bluffs, less often in trees, and occasionally on the ground. The species is most numerous in winter in the Rocky Mountain states, Great Basin, and western edge of the Great Plains. The highest density of golden eagles in Nevada has been observed in long stretches of cliff located along river systems. Although found year-round in Nevada, golden eagles are especially abundant during winter when transients from other states overwinter in Nevada. Golden eagles are expected to occur throughout the region of influence in canyons, foothills, valley bottoms, and mountains. They have been recorded from the existing and proposed B-16, B-17, B-20, and DVTA expansion areas as well as east and west of the DVTA and B-17, including nests within the existing DVTA and the proposed B-17 expansion area (Figure 3.10-19 through Figure 3.10-26) (see Supporting Studies, Final Raptor Survey Report, Final Avian Survey Report, available at <https://www.frtcmodernization.com>) (Nevada Department of Wildlife, 2017b, 2018a, 2018b; Nevada Natural Heritage Program, 2018b; U.S. Department of the Navy, 2018c, 2018d). The golden eagle was the most frequently recorded raptor within the proposed expansion areas during spring 2018 breeding surveys with 69 adult, subadult, and unknown aged eagles observed within the proposed expansion areas. There were a total of 9 active nests (4 nests each in proposed DVTA and B-17 expansion areas and 1 nest in the proposed B-20 expansion area), with 8 of those nests supporting 12 chicks (see Supporting Study, Final Raptor Survey Report available at <https://www.frtcmodernization.com>). In support of this EIS, additional winter and breeding raptor surveys were conducted within the proposed FRTC expansion areas in winter/spring 2019.

Gray-crowned Rosy-finch (*Leucosticte tephrocotis*). The gray-crowned rosy finch is a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as vulnerable. Found within the region of influence only during winter in open country, including mountain meadows, shrublands, roadsides, towns, cultivated areas, rocky hillsides, and margins of dry ditches where they often join with black rosy-finches in mixed foraging and roosting flocks. There are no records of the species on Navy-managed lands or proposed FRTC expansion areas.

Great Basin Willow Flycatcher (*Empidonax traillii adastus*). Listed as a Bird of Conservation Concern, BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as critically imperiled/imperiled. Found throughout the region of influence in spring through fall in suitable riparian habitats and occasionally other inundated areas such as aspen stands and wet

meadows. The species has been recorded from NAS Fallon and the existing DVTA (Naval Air Station Fallon, 1997; U.S. Department of the Navy, 2014). The ESA-listed subspecies southwestern willow flycatcher (*E. t. extimus*) is only found in the southern portion of Nevada.

Greater Sage-grouse (*Centrocercus urophasianus*). Listed as a Bird of Conservation Concern, BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as critically imperiled/imperiled. Invasive plant species and wildfires are the primary threats to the bird in the Great Basin region and are a leading cause of sagebrush habitat loss. Originally proposed for listing under the ESA, the USFWS withdrew the proposed listing in 2015 as a result of a multi-state conservation initiative between federal, state, and private landowners. The greater sage-grouse is the largest North American grouse species and is widely distributed in association with sagebrush-shrub or sagebrush-grass habitats. The current range of greater sage-grouse is 173 million acres across 11 states and 2 Canadian provinces. Nevada contains approximately 37 million acres of occupied range, with 31 million acres under federal management (U.S. Department of the Interior & U.S. Department of Agriculture, 2016). The region of influence (i.e., all proposed FRTC expansion areas and lands underlying the area proposed for the FRTC SUA expansion) overlaps approximately 4.9 million acres of greater sage-grouse habitat (Figure 3.10-27). The majority of this habitat underlies the FRTC airspace, with only approximately 45,000 acres occurring within the proposed expansion areas.

Based on NDOW data for active leks from 2008 through 2017, a total of 158 leks have been recorded within the region of influence (Table 3.10-12 and Figure 3.10-28) (Nevada Department of Wildlife, 2018a). No leks have been recorded within the proposed expansion areas.

Table 3.10-12: Number of Greater Sage-Grouse Leks Beneath Existing FRTC Airspace (2008–2017)^(a)

Airspace	Current Floor–Ceiling	Leks
R-4816S	500 ft. AGL–17,999 ft. MSL	1 ^(b)
Fallon North 2 MOA	100 ft. AGL–17,999 ft. MSL	1
Fallon North 3 MOA		4
Fallon North 4 MOA	200 ft. AGL–17,999 ft. MSL	43
Fallon South 1 MOA	100 ft. AGL–17,999 ft. MSL	10 ^(b)
Fallon South 2 MOA		1
Fallon South 3 MOA		4
Fallon South 4 MOA	200 ft. AGL–17,999 ft. MSL	14
Fallon South 5 MOA		16
Reno MOA	13,000 ft. MSL–17,999 ft. MSL	5
Diamond ATCAA	18,000 ft. MSL–29,000 ft. MSL	36
Duckwater ATCAA	18,000 ft. MSL–25,000 ft. MSL	21
Smokie ATCAA		3
Total ^(c)		158
SOA B ^(c)	11,000 ft. MSL to <30,000 ft.	33
SOA A ^(c)	>30,000 ft.	93

^aOnly those airspace units that have recorded leks underlying the airspace are listed. See Figure 3.10-28.

^bThe one lek underlying R-4816S also underlies Fallon South 1 MOA and is not counted twice.

^cAs the SOAs overlie the majority of the existing FRTC airspace, leks underlying the SOAs are already accounted for in the total.

Notes: ATCAA = Air Traffic Control Assigned Airspace; ft. = feet; MOA = Military Operations Area; MSL = above mean sea level; SOA = Supersonic Operating Area.

Source: Supporting Study: Final Burrowing Owl Survey Report, available at <https://www.frtcmodernization.com>)

Sage-grouse are well known for their breeding behavior. Males congregate on traditional display sites, called leks, to display to and breed with females. Leks are often located in openings or clearings of sagebrush or in areas where the sagebrush is low and scattered, so passing females can best evaluate the condition of prospective mates. Occasionally, other denuded areas such as grassy swales, natural and irrigated meadows, burned areas, cultivated fields adjacent to sagebrush-grass rangelands, and cleared roadsides will also support leks. However, these areas must be in the vicinity of quality sagebrush for females to disperse to for nesting. The same males attend the same lekking grounds year after year, and these leks can be utilized for decades. Located adjacent to sagebrush habitats; the quality, proximity, configuration and abundance of sagebrush are key factors influencing lek selection and location. Leks are indicative of nesting habitat underlying the close relationship with and importance of sagebrush habitats (Natural Resources Conservation Service, 2010).

The BLM and the U.S. Forest Service have amended land use plans in California and Nevada to address threats to the greater sage-grouse. The BLM-U.S. Forest Service plans provide a layered management approach that focus protections on the areas of highest importance to the species (U.S. Department of the Interior & U.S. Department of Agriculture, 2016):

- Priority Habitat Management Area (PHMA) is an area that has been identified as having the highest conservation value to maintaining sustainable greater sage-grouse populations; it includes breeding, late brood-rearing, and winter concentration areas (Bureau of Land Management, 2015). PHMAs are managed to avoid and minimize further disturbance. Surface energy and mineral development is limited in these areas. Development is capped with limits on the amount and density of disturbance allowed (U.S. Department of the Interior & U.S. Department of Agriculture, 2016). There are approximately 1.9 million acres of PHMAs underlying the proposed FRTC airspace (Figure 3.10-27).
- General Habitat Management Area (GHMA) is an area of seasonal or year-round greater sage-grouse habitat outside of PHMAs (Bureau of Land Management, 2015). GHMAs provide greater flexibility for land use activities. Mitigation and required design features ensure that impacts from development are avoided, minimized and mitigated in GHMAs (U.S. Department of the Interior & U.S. Department of Agriculture, 2016). There are approximately 1.1 million acres of GHMA underlying the proposed FRTC airspace (Figure 3.10-27).
- Other Habitat Management Areas help preserve and restore seasonal and connectivity areas (Bureau of Land Management, 2015). There are approximately 1.6 million acres of Other Habitat Management Areas underlying the proposed FRTC airspace (Figure 3.10-27).
- The only proposed FRTC expansion area that contains sage-grouse habitat is the DVTA, which contains approximately 45,000 acres of habitat. This includes 3,235 acres of Other Habitat Management Areas along the western foot of the Clan Alpine Mountains. There are no Priority or General Habitat Management Areas within the proposed DVTA expansion area. The closest record of a lek to the proposed DVTA expansion area is approximately 5 miles east of the DVTA boundary (Figure 3.10-29).

In support of this EIS, greater sage-grouse surveys were conducted in April 2017 and April 2019 within suitable sage-grouse habitat of the proposed DVTA and B-17 expansion areas (see Supporting Study: Greater Sage-Grouse Lek Aerial Survey Report, available at <https://www.frtcmodernization.com>). During the five-day survey effort in 2017, helicopter surveys were conducted along 10 transects totaling 246 miles and covering 52,228 acres. During the four-day survey effort in 2019, four transects totaling 261

miles (421 kilometers) and 44,184 acres (17,881 hectares) were flown. No greater sage-grouse leks were detected and no individual birds were observed or flushed during the aerial survey effort. However, in support of general avian surveys in 2017, two individuals were observed on different occasions just outside the proposed DVTA expansion area, one in January and one in April, and greater sage-grouse scat was also found in April 2017 (Figure 3.10-29). During general avian surveys in April 2019, one male sage-grouse was flushed along the western boundary of the proposed DVTA expansion area (Figure 3.10-29) (see Supporting Studies: Final Avian Survey Report, available at <https://www.frtcmodernization.com>).

Although no leks were identified within the proposed FRTC expansion areas during the survey effort, the incidental greater sage-grouse observations and the presence of scat indicates that birds are present during portions of the year. Without evidence of a nearby lek, this suggests that these birds may use the proposed DVTA expansion area for wintering, or they are young, dispersing birds, that have not yet joined a lek (see Supporting Study, Final Survey Report: Greater Sage-Grouse Lek Aerial Surveys, available at <https://www.frtcmodernization.com>).

Least Bittern (*Ixobrychus exilis*). Listed as a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as imperiled (breeding), the least bittern is a secretive marshbird found within appropriate wetland habitat within the region of influence. The larger lakes and wetlands of the region support least bitterns, particularly the Lahontan Valley wetlands and Stillwater NWR. The species would be expected within the region of influence primarily during migration. There are no records of least bitterns on Navy-managed lands or proposed FRTC expansion areas.

Lewis's Woodpecker (*Melanerpes lewis*). Lewis's woodpecker is a Bird of Conservation Concern, BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as vulnerable. In Nevada, Lewis's woodpeckers are most strongly associated with deciduous riparian woodlands dominated by aspen or cottonwood including the presence of large, partly decayed snags, an open forest for aerial foraging, and a well-developed shrub or native herbaceous layer that promotes populations of flying insects. Although the woodpecker no longer breeds in the valley-bottom riparian woodlands within the vicinity of the existing Navy-managed lands and proposed expansion areas, such as the Lahontan Valley, it is expected to breed within the region of influence in suitable riparian woodlands. Lewis's woodpecker has been recorded from the existing DVTA (Tierra Data Inc., 2008).

Loggerhead Shrike (*Lanius ludovicianus*). The loggerhead shrike is a Bird of Conservation Concern, BLM and Nevada Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as apparently secure. It occurs in desert shrubland, juniper, or pinyon-juniper woodland, mountain mahogany stand, and around the outskirts of ranches and towns. The loggerhead shrike is a common summer resident within the region of influence, and is present, though less common, in the winter. The species has been observed within the Stillwater NWR (Figure 3.10-19) (Nevada Department of Wildlife, 2018a) and the proposed DVTA and B-17 expansion areas (Figure 3.10-24 through Figure 3.10-26) (see Supporting Studies: Final Wildlife Remote Camera Trapping Survey Report, Final Avian Survey Report, available at <https://www.frtcmodernization.com>).

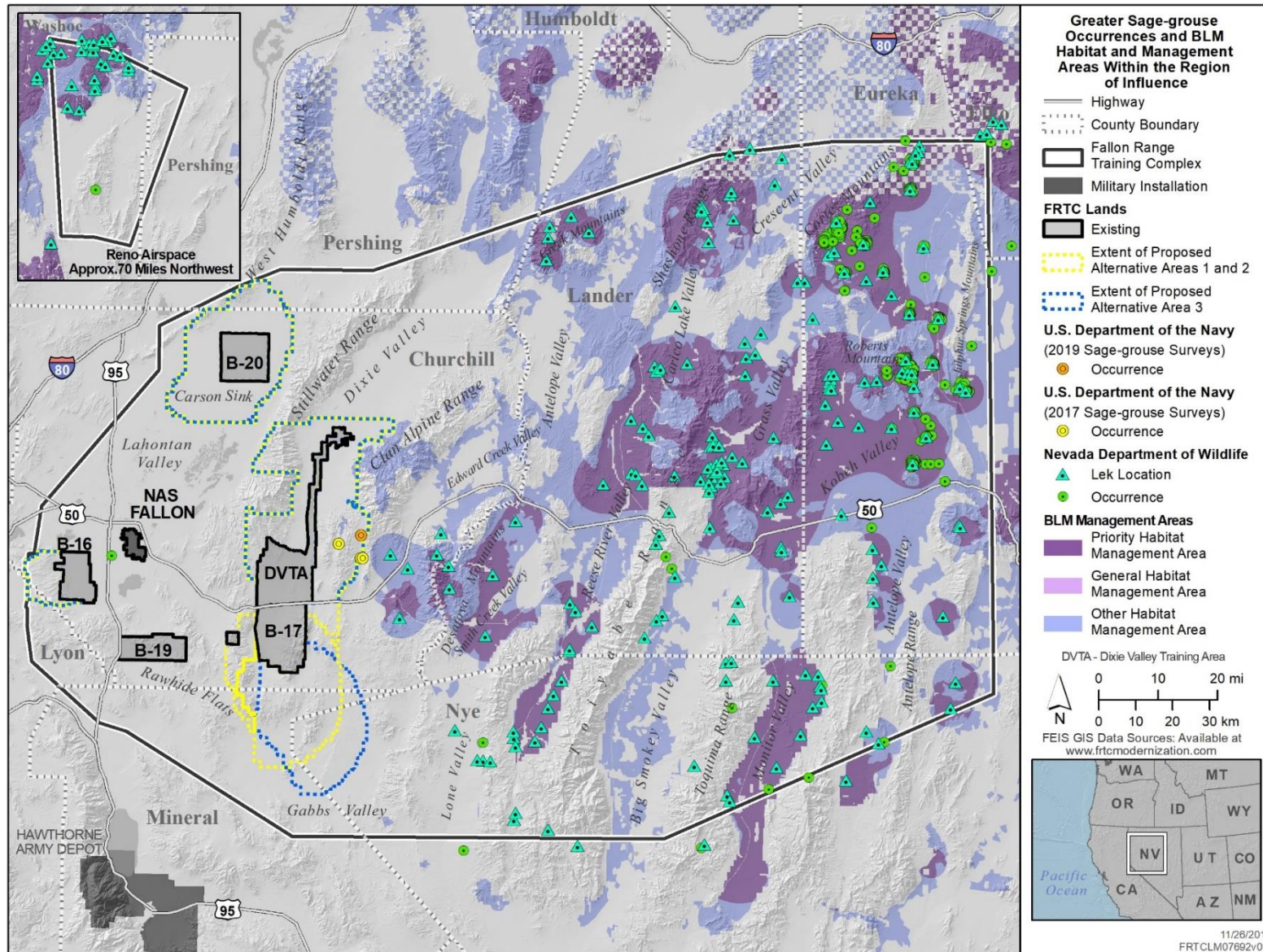


Figure 3.10-27: Greater Sage-Grouse Occurrences and BLM Habitat and Management Areas Within the Region of Influence

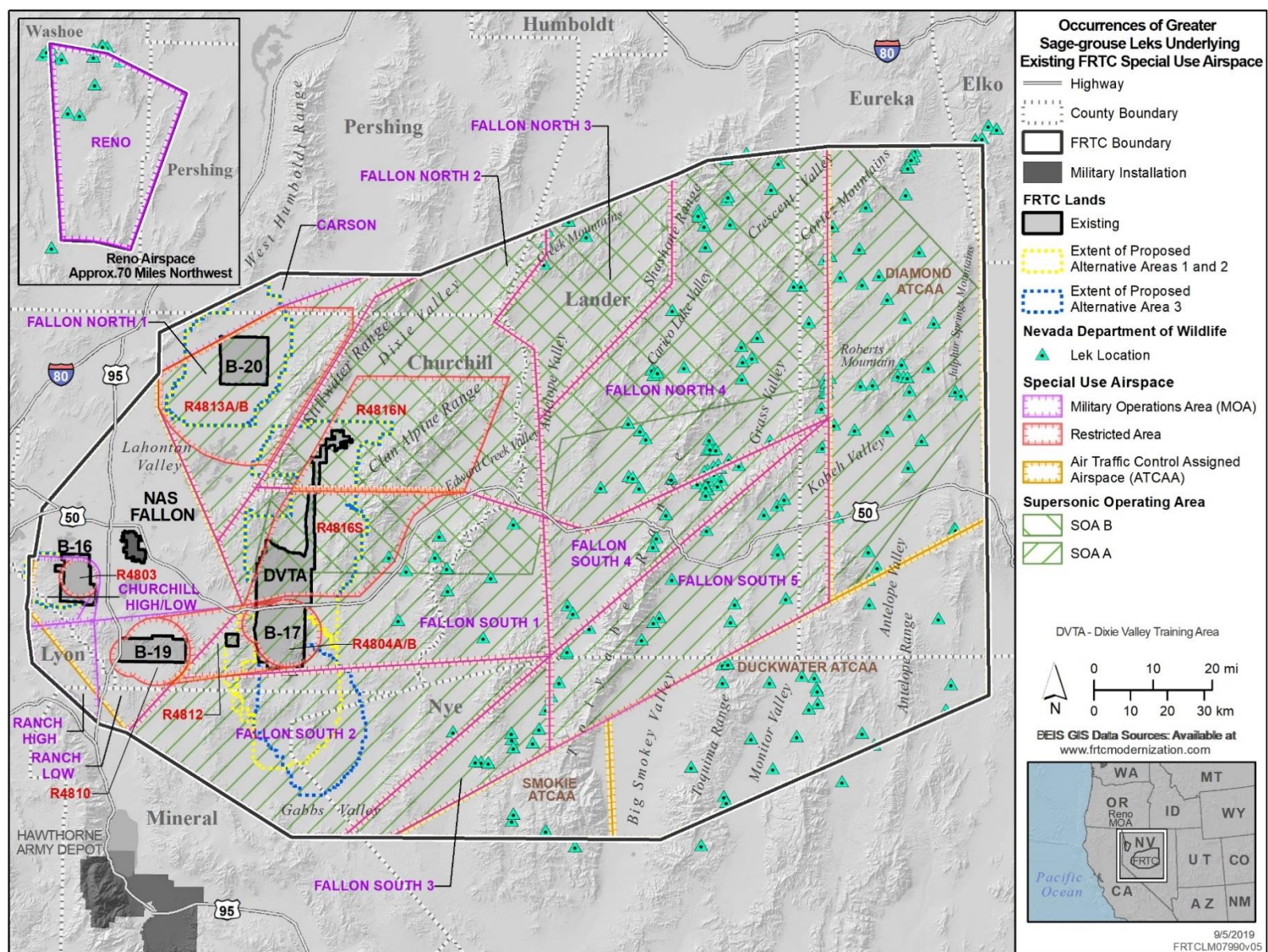


Figure 3.10-28: Occurrences of Greater Sage-Grouse Leaks Underlying Existing FRTC Special Use Airspace

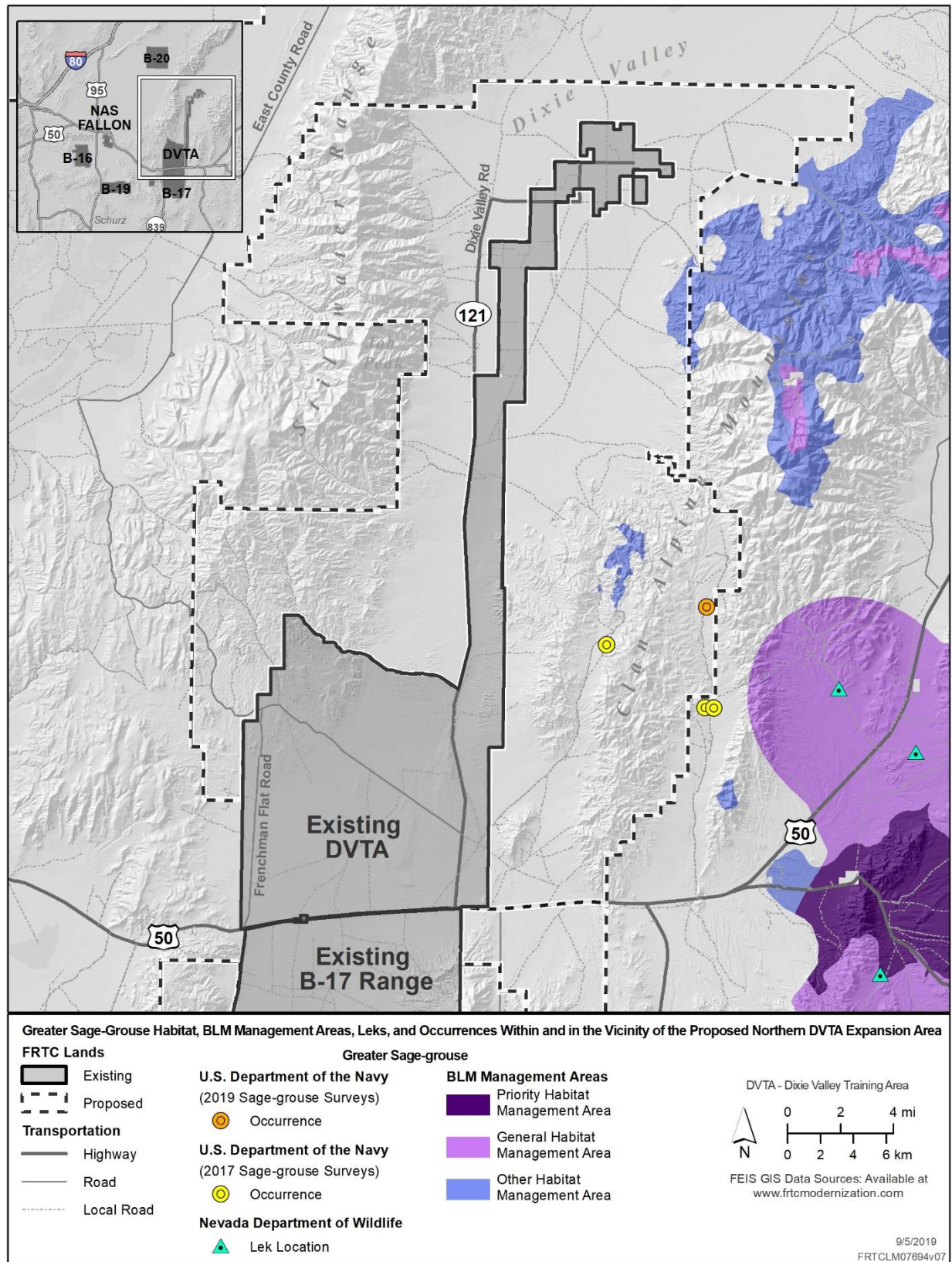


Figure 3.10-29: Greater Sage-Grouse Habitat, BLM Management Areas, Leks, and Occurrences Within and in the Vicinity of the Proposed Northern DVTA Expansion Area

Long-billed Curlew (*Numenius americanus*). The long-billed curlew is a Bird of Conservation Concern, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as imperiled/vulnerable (breeding). Curlews are found in wetlands, grasslands, and agricultural areas, avoiding areas with trees, high shrub densities, and tall dense grass. Expected to nest in major wetlands, pastures, and agricultural areas within the region, particularly the Lahontan Valley wetlands and Stillwater NWR (Figure 3.10-19) (Nevada Natural Heritage Program, 2018b). There is a record from the western side of the Monte Cristo Mountains within the proposed B-17 expansion area (Figure 3.10-25) (Nevada Department of Wildlife, 2018a). It was also observed on Navy-managed lands during 2007 surveys, but the location was not identified (Tierra Data Inc., 2008).

Long-billed Dowitcher (*Limnodromus scolopaceus*). Listed as a Species of Conservation Priority under the Nevada WAP and ranked by the NNHP as apparently secure, the Great Basin provides critical migration stopover habitat for long-billed dowitchers in both fall and spring. This species is one of the most numerous migrant shorebirds in the big wetland complexes of western Nevada (e.g., Lahontan Valley, Stillwater NWR, Carson Lake).

Mountain Quail (*Oreortyx pictus*). The mountain quail is a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, state protected game bird (NAC 503.045), and ranked by the NNHP as vulnerable. As the name implies, mountain quail occur in montane areas of coniferous forest, forest and meadow edges, dense undergrowth, and chaparral, favoring areas with tall dense shrubs that are close to water. A year-round resident within the region of influence in eastern Churchill County, northeastern Nye County, and western Lander County. Mountain quail have been recorded in the Stillwater Mountains of the western portion of the proposed DVTA expansion area (Figure 3.10-24) (see Supporting Study: Final Wildlife Remote Camera Trapping Survey Report, available at <https://www.frtcmodernization.com>).

Northern Goshawk (*Accipiter gentilis*). The northern goshawk is a BLM and Nevada Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as imperiled. Goshawks in Nevada usually nest in mature aspen stands (or less commonly, coniferous stands) with trees large enough to support their substantial stick nest. This association with aspen in Nevada is somewhat unique, for in most other parts of the western U.S., goshawks more typically nest in coniferous forest. The goshawk is a year-round resident within the region of influence and is expected to be found primarily within montane areas supporting aspen and coniferous woodlands. Within the region of influence, goshawks have been recorded nesting within the Desatoya Mountains west of the proposed DVTA expansion area (Figure 3.10-19) (Nevada Department of Wildlife, 2018a; Nevada Natural Heritage Program, 2018b). During 2018 raptor surveys in support of this EIS, two individuals were observed within the proposed DVTA expansion area during winter, and one individual was observed within the proposed DVTA expansion area during spring (Figure 3.10-24) (see Supporting Study, Final Raptor Survey Report, available at <https://www.frtcmodernization.com>). In support of this EIS, breeding raptor surveys were also be conducted within the proposed FRTC expansion areas in winter and spring 2019, and the results have been incorporated into this EIS.

Northern Pintail (*Anas acuta*). A year-round resident of open water areas and seasonal wetlands within the region of influence, the northern pintail is a Species of Conservation Priority under the Nevada WAP and ranked by the NNHP as secure. It breeds and overwinters throughout central and northern Nevada on wetlands, lakes, and ponds, with the greatest numbers in the region of influence during spring and fall migration. Although pintails are expected to be found primarily at the Lahontan Reservoir, Carson

Lake, and Stillwater NWR, northern pintails have been observed at the existing DVTA (Tierra Data Inc., 2008).

Olive-sided Flycatcher (*Contopus cooperi*). Listed as a Species of Conservation Priority under the Nevada WAP and ranked as imperiled (breeding) by the NNHP, the olive-sided flycatcher is found within the region of influence primarily during spring and fall migration. However, as they nest in coniferous forest, they may occasionally be found within scattered coniferous forests, but the majority of confirmed breeding is only known from northeastern and western Nevada. The olive-sided flycatcher has been recorded within the existing DVTA (Naval Air Station Fallon, 1997).

Peregrine Falcon (*Falco peregrinus*). The peregrine falcon is a Bird of Conservation Concern, BLM sensitive species, listed as endangered by the State of Nevada, Species of Conservation Priority under the Nevada WAP, and ranked as imperiled by the NNHP. Although known to historically breed throughout Nevada, the significant population declines across North America due to Dichlorodiphenyltrichloroethane (DDT) and associated eggshell thinning in the 1950s throughout the 1970s included the loss of a breeding population in Nevada. Ongoing natural recolonization is taking place and breeding peregrines are found in southern Nevada and some of the species former breeding range could eventually be reoccupied. Within the region of influence, peregrine falcons are expected to be uncommon year-round visitors in areas where prey concentrate, including marshes, lake shores, rivers, and river valleys. There is an NDOW record of a peregrine falcon at the Stillwater NWR (Figure 3.10-19) (Nevada Department of Wildlife, 2018a). Although peregrine falcon was not detected during 2018 raptor surveys of the proposed expansion areas (see Supporting Study, Final Raptor Survey Report, available at <https://www.frtcmodernization.com>), a peregrine falcon was observed within the proposed DVTA expansion area during 2017 avian surveys conducted in support of this EIS (Figure 3.10-24) (see Supporting Study: Final Avian Survey Report, available at <https://www.frtcmodernization.com>).

Pinyon Jay (*Gymnorhinus cyanocephalus*). The pinyon jay is a Bird of Conservation Concern, BLM Sensitive Species, and Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as vulnerable/apparently secure. The pinyon jay is considered a permanent resident within the region of influence, where it is found in pinyon-juniper woodland, and less frequently pine; in the non-breeding season, also occurs in scrub oak and sagebrush. Pinyon jays have been recorded within the proposed DVTA and B-17 expansion areas (Figure 3.10-17 through Figure 3.10-19) (see Supporting Study: Final Wildlife Remote Camera Trapping Survey Report, available at <https://www.frtcmodernization.com>).

Prairie Falcon (*Falco mexicanus*). A year-round resident in the region of influence, the prairie falcon is a Species of Conservation Priority under the Nevada WAP and ranked by the NNHP as apparently secure. A cliff-nesting raptor typically found adjacent to arid valleys with low vegetation such as sagebrush, salt desert, and Mojave scrub shrublands; also occur in agricultural lands, especially during the winter months. Within the region of influence, prairie falcons are known to winter at Stillwater NWR and have been observed at NAS Fallon, within the existing B-16 and B-17 ranges, and the proposed DVTA expansion area (Figure 3.10-19 through Figure 3.10-26) (see Supporting Studies: Final Raptor Survey Report, Final Wildlife Remote Camera Trapping Survey Report, available at <https://www.frtcmodernization.com>) (Tierra Data Inc., 2008; U.S. Department of the Navy, 2014, 2018b, 2018c). A total of 39 individual prairie falcons were observed during spring 2018 surveys and the prairie falcon was the most frequently recorded nesting raptor during spring surveys of the proposed expansion areas with 15 active nests (8 nests in the proposed B-17 expansion area, 5 nests in the proposed DVTA area, and 1 nest each in the proposed B-16 and B-20 expansion areas), with 7 of those nests containing eggs (see Supporting Study, Final Raptor Survey Report, available at

<https://www.frtcmodernization.com>). In addition, 11 prairie falcons were observed during winter 2018 surveys of the proposed expansion areas (1 in B-16, 3 in B-17, and 7 in DVTA). In support of this EIS, additional winter and breeding raptor surveys were conducted within the proposed FRTC expansion areas in winter/spring 2019.

Redhead (*Aythya americana*). Similar to the northern pintail, a year-round resident of open water areas and seasonal wetlands within the region of influence, the redhead is a Species of Conservation Priority under the Nevada WAP and ranked by the NNHP as apparently secure (breeding). Breeds and overwinters throughout central and northern Nevada on wetlands, lakes, and ponds, with the greatest numbers in the region of influence during spring and fall migration. Within the region of influence, redheads are expected to be found primarily at the Lahontan Reservoir, Carson Lake, and Stillwater NWR. The NAS Fallon INRMP lists the species as being observed on existing DVTA lands (U.S. Department of the Navy, 2014).

Sagebrush Sparrow (*Artemisiospiza nevadensis*). Previously called the sage sparrow (*Amphispiza belli*), in 2013 the sage sparrow was split into two species: sagebrush sparrow and Bell's sparrow (*Artemisiospiza belli*), which occurs in coastal and southern California, extreme southern Nevada, and northern Baja California. The sagebrush sparrow is a Bird of Conservation Concern, Species of Conservation Priority under the Nevada WAP, and is currently not ranked by the NNHP. Sagebrush sparrows avoid highly fragmented landscapes and are most abundant in large expanses of unbroken shrublands, including sagebrush and salt desert scrub; greasewood may also be used. Nevada has one of the highest-known breeding densities for the sagebrush sparrow and approximately one-half of the species' global breeding population. The sagebrush sparrow is expected to be a common summer resident and an uncommon winter resident in the region of influence. It has been recorded from the Shoal Site and existing ranges and proposed expansion areas of the DVTA, B-16, B-17, and B-20 (Figure 3.10-20 through Figure 3.10-26) (see Supporting Study: Final Avian Survey Report, available at <https://www.frtcmodernization.com>) (Nevada Department of Wildlife, 2018a; Tierra Data Inc., 2008; U.S. Department of the Navy, 2018d).

Sage Thrasher (*Oreoscoptes montanus*). The sage thrasher is a Bird of Conservation Concern, BLM and Nevada Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as secure. They primarily inhabit sagebrush valleys, where uninterrupted sagebrush cover is present over large spatial expanses; can also be found breeding in salt desert, especially where it intergrades with sagebrush or where greasewood predominates, and montane shrubland. The species is expected to be common in the region of influence in sagebrush habitat and has been recorded in the proposed DVTA and B-17 expansion areas (Figure 3.10-24 through Figure 3.10-26) (see Supporting Study: Final Avian Survey Report, available at <https://www.frtcmodernization.com>) (Tierra Data Inc., 2008; U.S. Department of the Navy, 2018d).

Sandhill Crane (*Antigone canadensis*). The sandhill crane is a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as imperiled (breeding)/vulnerable (migration). Sandhill cranes occupy flat river valleys and basins, often where the landscape offers a mix of marsh, riparian, wet meadow, and agricultural habitats. They nest on or near water, preferentially using small islands or peninsulas where available. Foraging takes place in adjacent wet terrestrial habitats. They are expected to occur within the western portion of the region of influence during migration, particularly in the Lahontan Reservoir, Carson Lake, and Stillwater NWR, but does breed in the eastern portion of the region of influence in Lander and Eureka counties. There are no records of the species on Navy-managed lands.

Short-eared Owl (*Asio flammeus*). A year-round resident in the region of influence, the short-eared owl is a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as apparently secure. Considered a bird of dense grasslands, the short-eared owl is relatively uncommon in Nevada, but it can also be found in diverse types of open country where small mammal populations, particularly voles, are sufficiently dense (e.g., wet meadows, grasslands, or crop fields). Short-eared owls have been recorded at the Stillwater NWR, the proposed DVTA and B-17 expansion areas (Figure 3.10-19, Figure 3.10-24, Figure 3.10-25, and Figure 3.10-26) (see Supporting Studies, Final Raptor Survey Report, Final Wildlife Remote Camera Trapping Survey Report, Final Avian Survey Report, available at <https://www.frtcmodernization.com>)(Nevada Natural Heritage Program, 2018b; U.S. Department of the Navy, 2018b, 2018c, 2018d).

Swainson's Hawk (*Buteo swainsoni*). Found only in the region of influence in the spring and summer, the Swainson's hawk is a BLM Sensitive Species and ranked by the NNHP as imperiled (breeding). Swainson's hawks are typically found in areas with large riparian nesting trees, and agricultural fields and open shrublands within relatively close proximity that provide small mammal prey. There are numerous records of Swainson's hawks around NAS Fallon and Stillwater NWR (Figure 3.10-19) and they have been observed on NAS Fallon and within the existing DVTA (Tierra Data Inc., 2008; U.S. Department of the Navy, 2014). Although Swainson's hawks were not observed nesting within the proposed expansion areas during spring 2018 raptor surveys, two adults were observed within the proposed DVTA expansion area (Figure 3.10-24) (see Supporting Study, Final Raptor Survey Report, available at <https://www.frtcmodernization.com>). In support of this EIS, additional raptor surveys were conducted within the proposed FRTC expansion areas in winter/spring 2019.

Western Snowy Plover (*Charadrius alexandrinus nivosus*). The western snowy plover is a Bird of Conservation Concern, BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as vulnerable (breeding). Nevada breeders are part of the species' interior population, and they are not part of the ESA-listed threatened Pacific coast population of western snowy plover. Distribution within the region of influence is limited to suitable nesting areas along the shorelines of alkaline playa lakes. The snowy plover is known to breed at Stillwater NWR, Humboldt Lake, and Lahontan Valley; breeding may also occur at Carson Lake and Salt Wells Marsh, northwest of the Shoal Site (Figure 3.10-19 and Figure 3.10-24) (Nevada Natural Heritage Program, 2018b). Snowy plovers have not been recorded on Navy-managed lands.

White-faced Ibis (*Plegadis chihi*). The white-faced ibis is a Species of Conservation Priority under the Nevada WAP and ranked by the NNHP as vulnerable (breeding). Found in marshes, swamps, ponds and rivers, the Lahontan Valley supports the largest breeding population in Nevada. A common summer resident at Stillwater NWR, Carson Lake, and Humboldt Lake (Figure 3.10-19, and Figure 3.10-22 through Figure 3.10-26) (Nevada Department of Wildlife, 2018a; Nevada Natural Heritage Program, 2018b), and the white-faced ibis has been recorded within the existing DVTA (Tierra Data Inc., 2008).

Yellow-billed Cuckoo (*Coccyzus americanus*) – Western Distinct Population Segment. A riparian-obligate species, the yellow-billed cuckoo is a Bird of Conservation Concern, BLM and Nevada Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as critically imperiled (breeding). The only ESA-listed species potentially occurring within the region of influence, the Western Distinct Population Segment was listed as threatened under the ESA in 2014 (79 Federal Register 59992). In addition, critical habitat was proposed in 2014 along the Carson River approximately 5 miles west of the region of influence (Figure 3.10-30) (79 Federal Register 48548). Although historically found within riparian areas throughout Nevada, the species is now found only in southern Nevada along the

Virgin and Muddy rivers. The last documented occurrences of the yellow-billed cuckoo within the region of influence were west of Fallon and at Carson Lake in 1977 and 1986, respectively (Figure 3.10-30). There is an additional NNHP record from July 2013 approximately 24 miles southeast of the proposed B-16 expansion area, east of the intersection of U.S. Routes 95A and 95 (Nevada Natural Heritage Program, 2018b).

In June 2018, the USFWS issued its 90-day finding on the review of a petition to remove the yellow-billed cuckoo as a threatened Distinct Population Segment under the ESA. They found that delisting the western Distinct Population Segment of the yellow-billed cuckoo may be warranted due to information on additional habitat being used by the species. The USFWS is now conducting a status review of the species and will issue a 12-month finding, which will address whether or not the petitioned action is warranted under the ESA (83 Federal Register 30091).

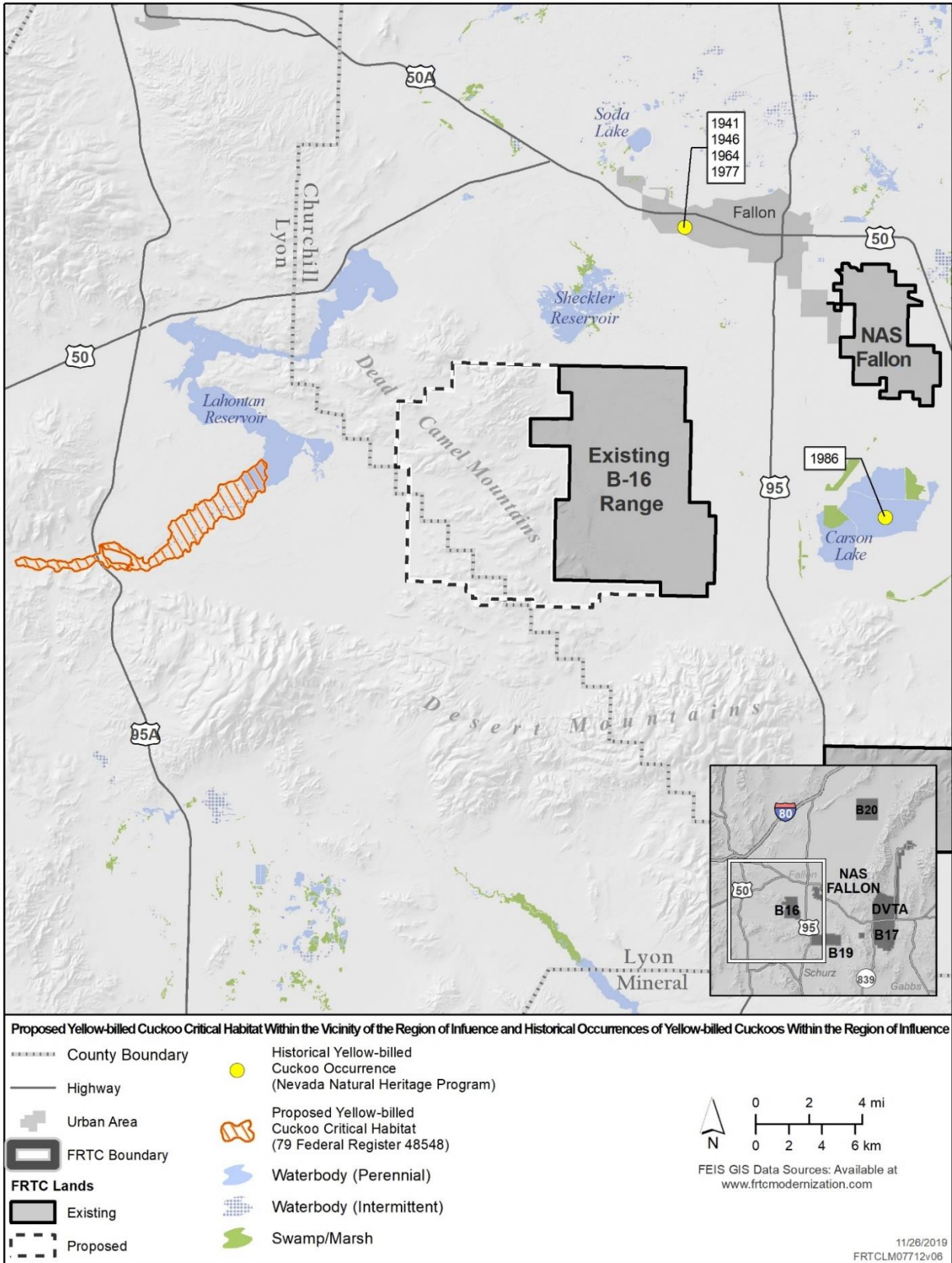


Figure 3.10-30: Proposed Yellow-billed Cuckoo Critical Habitat Within the Vicinity of the Region of Influence and Historical Occurrences of Yellow-billed Cuckoos Within the Region of Influence

3.10.2.4.4 Special-Status Mammals

The region of influence for special-status mammals includes all proposed FRTC expansion areas and lands underlying the proposed FRTC SUA revision. A total of 27 special-status mammal species are known or expected to occur within the region of influence (Table 3.10-13). Of these 27 species, 20 have been documented as occurring on Navy-managed FRTC lands, and 16 are bats.

- State of Nevada: 18 Species of Conservation Priority under the Nevada WAP, 2 endangered species, 1 threatened species, and 13 protected species (Nevada Wildlife Action Plan Team, 2012).
- BLM (Carson City and Battle Mountain districts): 21 sensitive species (Bureau of Land Management, 2017).
- NNHP: 10 imperiled, 12 vulnerable, 2 apparently secure, and 3 secure (Nevada Natural Heritage Program, 2018b).

Table 3.10-13: Known or Potential Occurrence of Special-Status Mammals Species Within the Region of Influence

Common Name (Scientific Name)	Status*		
	BLM	State	NNHP
American pika (<i>Ochotona princeps</i>)	S	PM, WAP	S2
Desert bighorn sheep (<i>Ovis canadensis nelsoni</i>)	S	PGM, WAP	S4
Elk (<i>Cervus elaphus</i>)	-	PGM	S5
Kit fox (<i>Vulpes macrotis</i>)	-	PM	S3
Mule deer (<i>Odocoileus hemionus</i>)	-	PGM, WAP	S5
Pronghorn (<i>Antilocapra americana</i>)	-	PGM	S5
Pygmy rabbit (<i>Brachylagus idahoensis</i>)	S	PGM, WAP	S3
Bats			
Big brown bat (<i>Eptesicus fuscus</i>)	S	-	S3S4
Brazilian free-tailed bat (<i>Tadarida brasiliensis</i>)	S	PM, WAP	S4
California myotis (<i>Myotis californicus</i>)	S	-	S3S4
Canyon bat or western pipistrelle (<i>Pipistrellus hesperus</i>)	S	-	S3S4
Fringed myotis (<i>Myotis thysanodes</i>)	S	PM, WAP	S2
Hoary bat (<i>Lasiurus cinereus</i>)	S	WAP	S2S3
Little brown bat (<i>Myotis lucifugus</i>)	S	WAP	S2S3
Long-eared myotis (<i>Myotis evotis</i>)	S	WAP	S3
Long-legged myotis (<i>Myotis volans</i>)	S	-	S3S4
Pallid bat (<i>Antrozous pallidus</i>)	S	PM	S3
Silver-haired bat (<i>Lasionycteris noctivagans</i>)	S	WAP	S3
Spotted bat (<i>Euderma maculatum</i>)	S	T, WAP	S2
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	S	S, WAP	S2
Western red bat (<i>Lasiurus blossevillii</i>)	S	S, WAP	S2
Western small-footed myotis (<i>Myotis ciliolabrum</i>)	S	WAP	S3S4
Yuma myotis (<i>Myotis yumanensis</i>)	S	-	S3
Small Mammals			
Dark kangaroo mouse (<i>Microdipodops megacephalus</i>)	S	PM, WAP	S2
Desert kangaroo rat (<i>Dipodomys deserti</i>)	-	WAP	S2S3
Pale kangaroo mouse (<i>Microdipodops pallidus</i>)	S	PM, WAP	S2
Sagebrush vole (<i>Lemmyscus curtatus</i>)	-	WAP	S3

Notes: *See notes for Table 3.10-8 for definitions of NNHP ranks. E = endangered, PGM = Protected Game Mammal, PM = Protected Mammal, S = sensitive, T = threatened, WAP = Wildlife Action Plan Species of Conservation Priority.

Sources: (Nevada Department of Wildlife, 2018a, 2018b; Nevada Wildlife Action Plan Team, 2012).

Unless referenced otherwise, the following descriptions are based upon the following sources: Nevada Wildlife Action Plan Team (2012), Bureau of Land Management (2017), and Nevada Natural Heritage Program (2018a, 2018b).

American Pika (*Ochotona princeps*). The American pika is a BLM Sensitive Species, Nevada Protected Mammal (NAC 503.030.1), Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as imperiled. The pika is a montane species restricted to rocky talus slopes, or rimrocks with deep fissures and crevices, primarily the talus-meadow interface. Pikas also occupy areas above the treeline up to limit of vegetation and lower elevations in rocky areas within forests or near lakes. Range in central Nevada is southeastern Churchill County within the Desatoya Mountains and extending southeast into northern Nye County and the Shoshone Mountains, Toiyabe Range, and Monitor Range. Although there is the potential for occurrence within the portions of the Stillwater and Clan Alpine ranges in the proposed DVTA expansion area. There are no records of pikas on Navy-managed lands (Tierra Data Inc., 2008; U.S. Department of the Navy, 2014). There are NNHP records from the Desatoya Mountains east of the DVTA (Figure 3.10-31) (Nevada Natural Heritage Program, 2018b).

Kit Fox (*Vulpes macrotis*). The kit fox is a Nevada Protected Fur-bearing Mammal (NAC 503.025) and ranked by the NNHP as vulnerable. A species of shrublands and shrub-grass habitats in desert and semiarid climates, kit fox are found throughout the lower elevations of the Great Basin dominated by creosote bush, sagebrush, shadscale, and greasewood as well as grassland plant communities. Prefer areas with soft alluvial soils, sand dunes, or easily diggable clay soils where they can dig their dens (McGrew, 1979). During wildlife surveys in support of this EIS, kit foxes were commonly recorded on camera traps within the proposed DVTA, B-16, B-17, and B-20 expansion areas (Figure 3.10-32 through Figure 3.10-36) (see Supporting Study: Final Wildlife Remote Camera Trapping Survey Report, available at <https://www.frtcmodernization.com>).

Pygmy Rabbit (*Brachylagus idahoensis*). The pygmy rabbit is a BLM Sensitive Species, Species of Conservation Concern under the Nevada WAP, Nevada Protected Game Mammal (NAC 503.020), and NNHP ranked vulnerable. It is found primarily on big sagebrush dominated plains, and alluvial fans where plants occur in tall, dense clumps. The only native rabbit to dig its own burrows, pygmy rabbits require deep, friable, loamy-type soils for burrow excavation. However, they occasionally use burrows excavated by other species (e.g., yellow-bellied marmot) and therefore may occur in areas that support shallower, more compact soils as long as sufficient shrub cover is available. Big sagebrush comprises up to 99 percent and 51 percent of forage in winter and summer, respectively; wheatgrass and bluegrass are highly preferred summer foods. The species is expected to occur within the region of influence in eastern Churchill County, northern Nye County, and throughout Lander and Eureka counties. There are no records of pygmy rabbits on Navy-managed lands (Tierra Data Inc., 2008; U.S. Department of the Navy, 2014). The NNHP includes occurrences east of the DVTA in Edward Creek Valley and Smith Creek Valley (Figure 3.10-31) (Nevada Natural Heritage Program, 2018b).

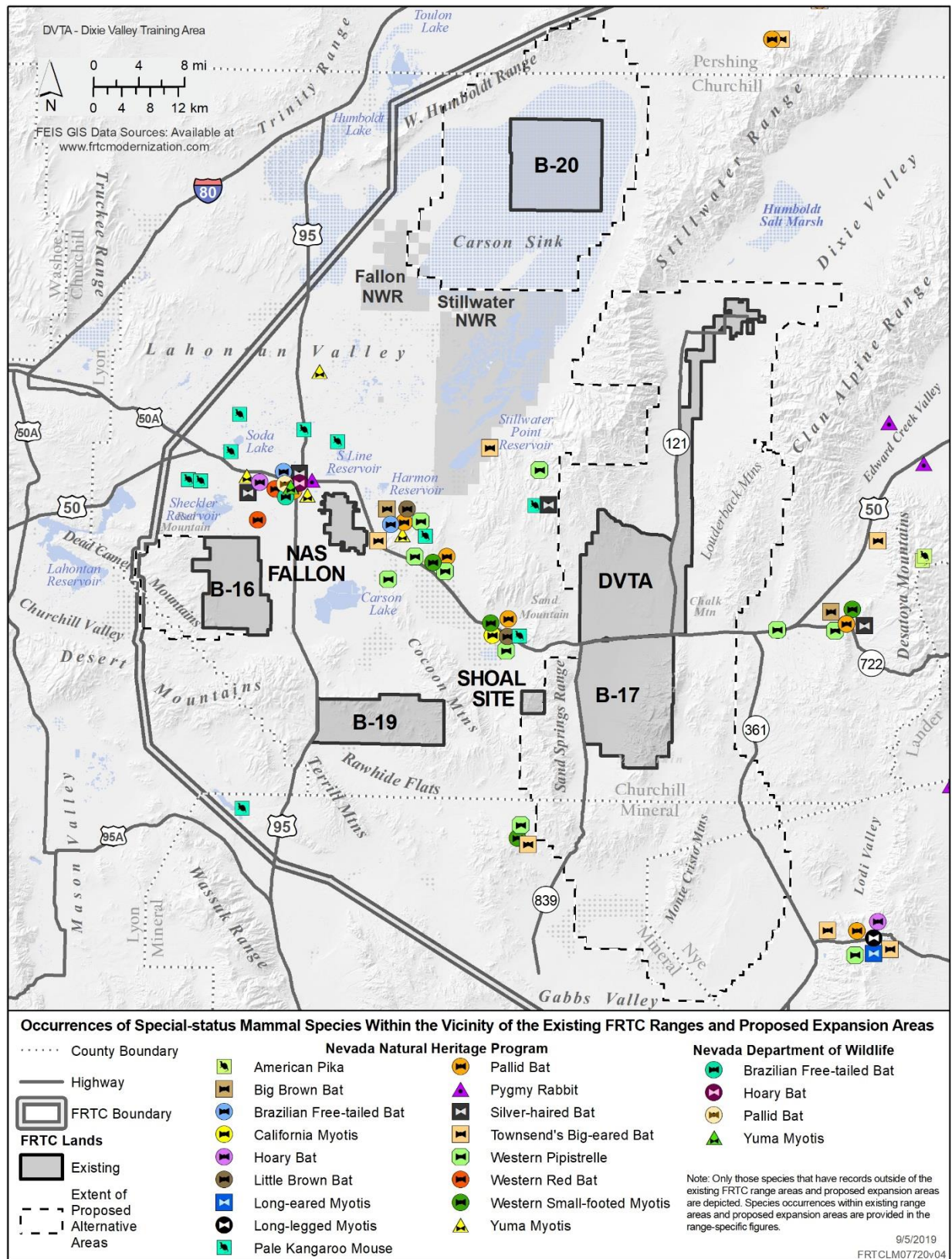


Figure 3.10-31: Occurrences of Special-Status Mammal Species Within the Vicinity of the Existing FRTC Ranges and Proposed Expansion Areas

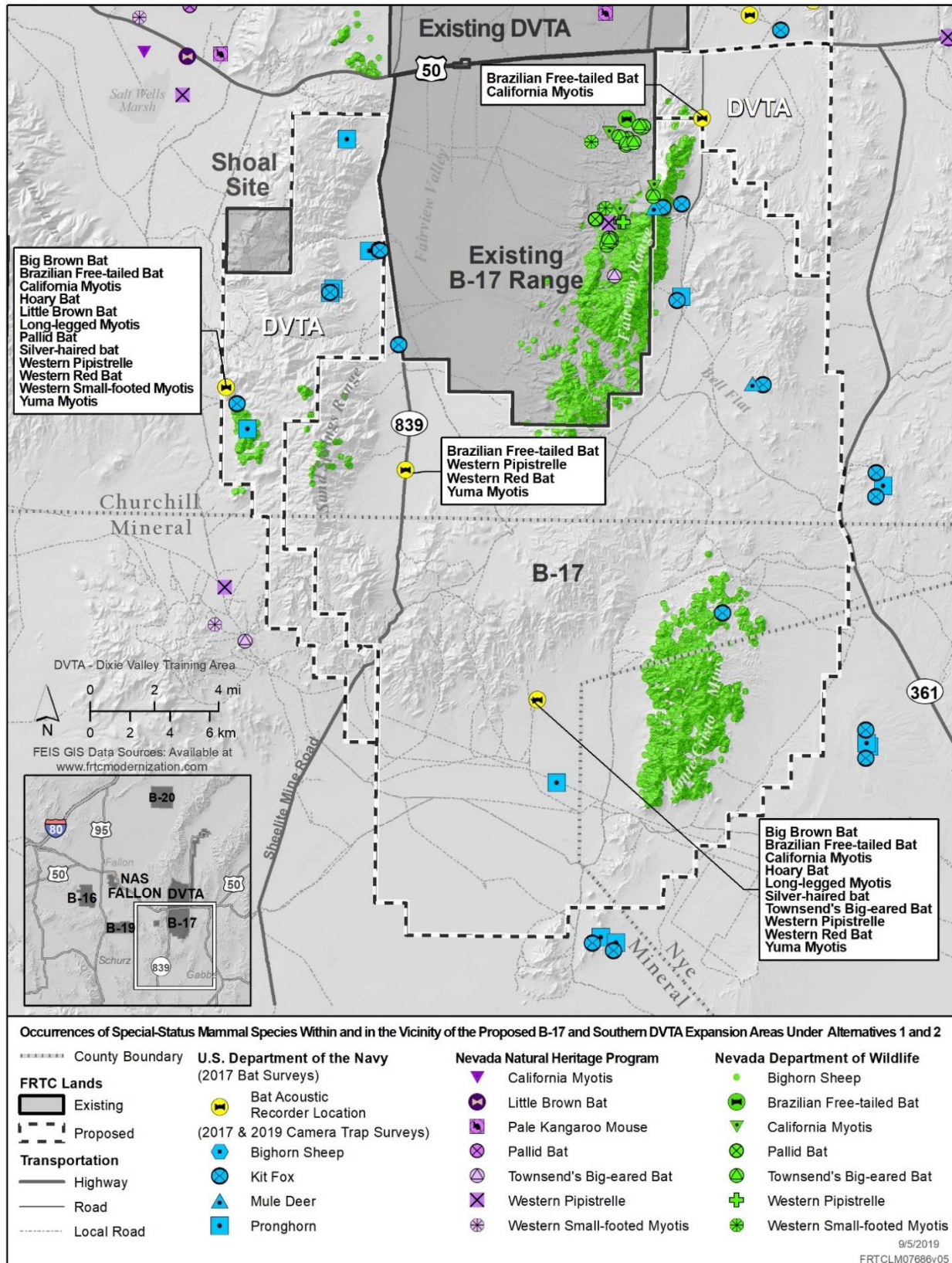


Figure 3.10-32: Occurrences of Special-Status Mammal Species Within and in the Vicinity of the Proposed DVTA and B-17 Expansion Areas Under Alternatives 1 and 2

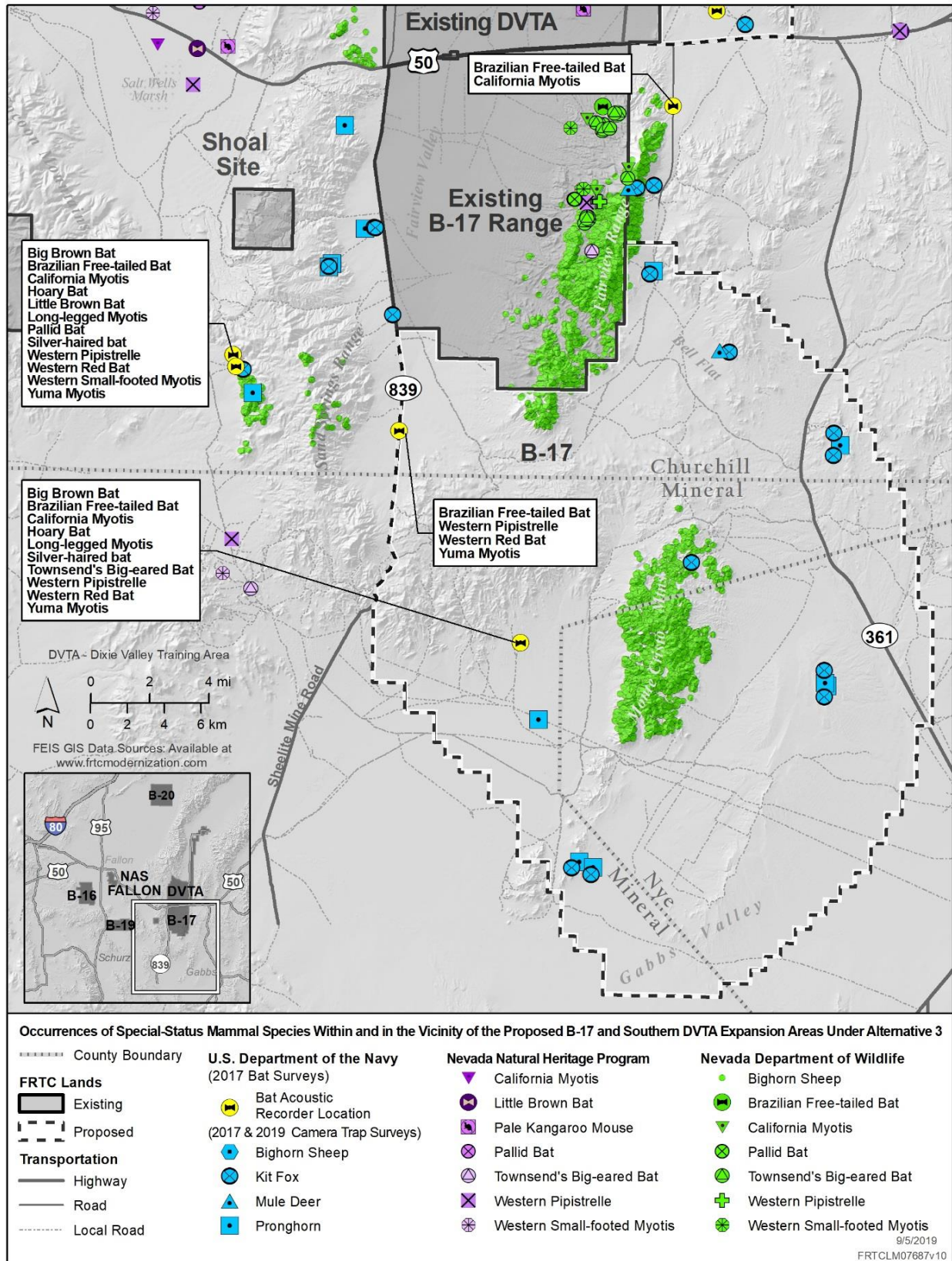


Figure 3.10-33: Occurrences of Special-Status Mammal Species Within and in the Vicinity of the Proposed B-17 Expansion Area Under Alternative 3

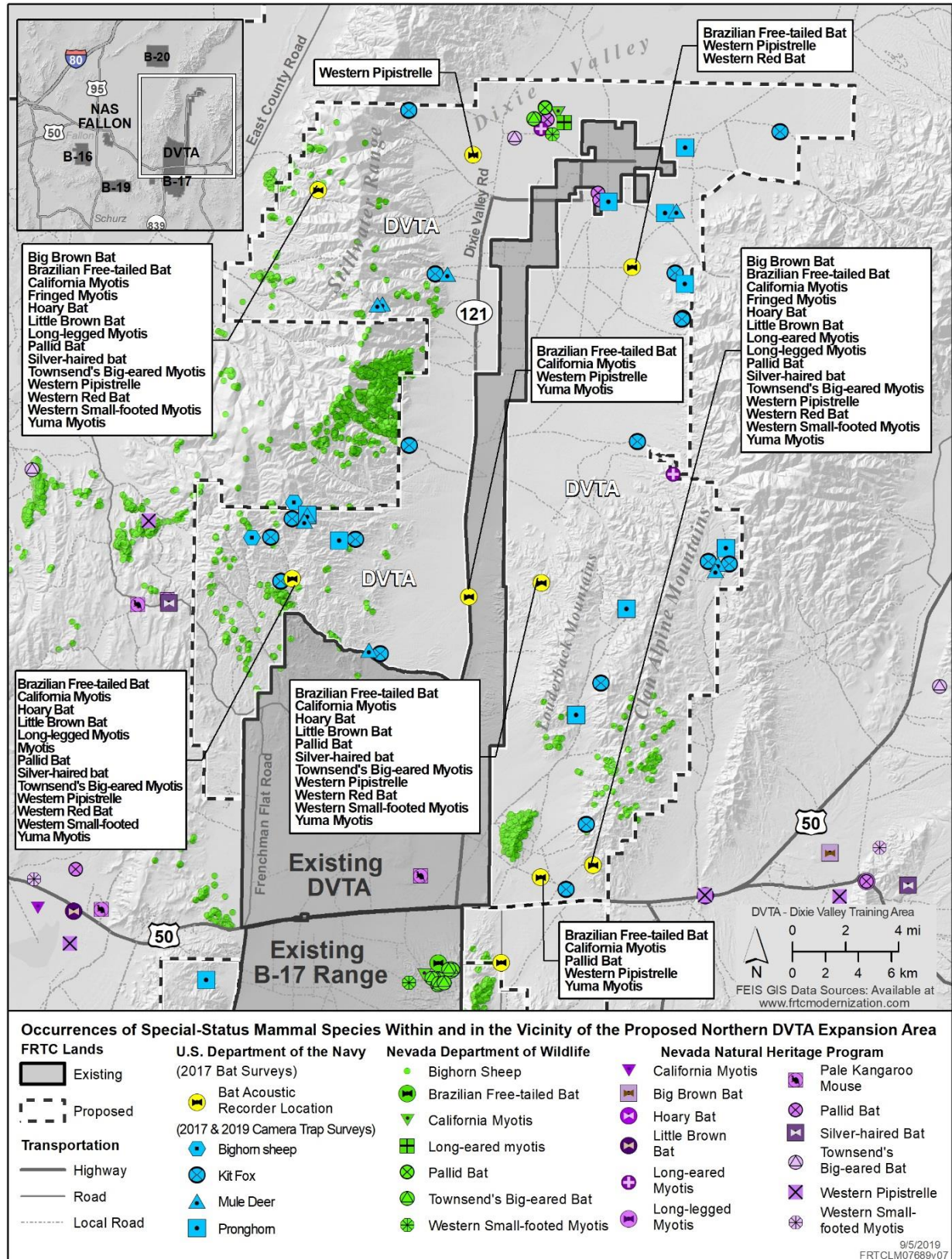


Figure 3.10-34: Occurrences of Special-Status Mammal Species Within and in the Vicinity of the Proposed Northern DVTA Expansion Area

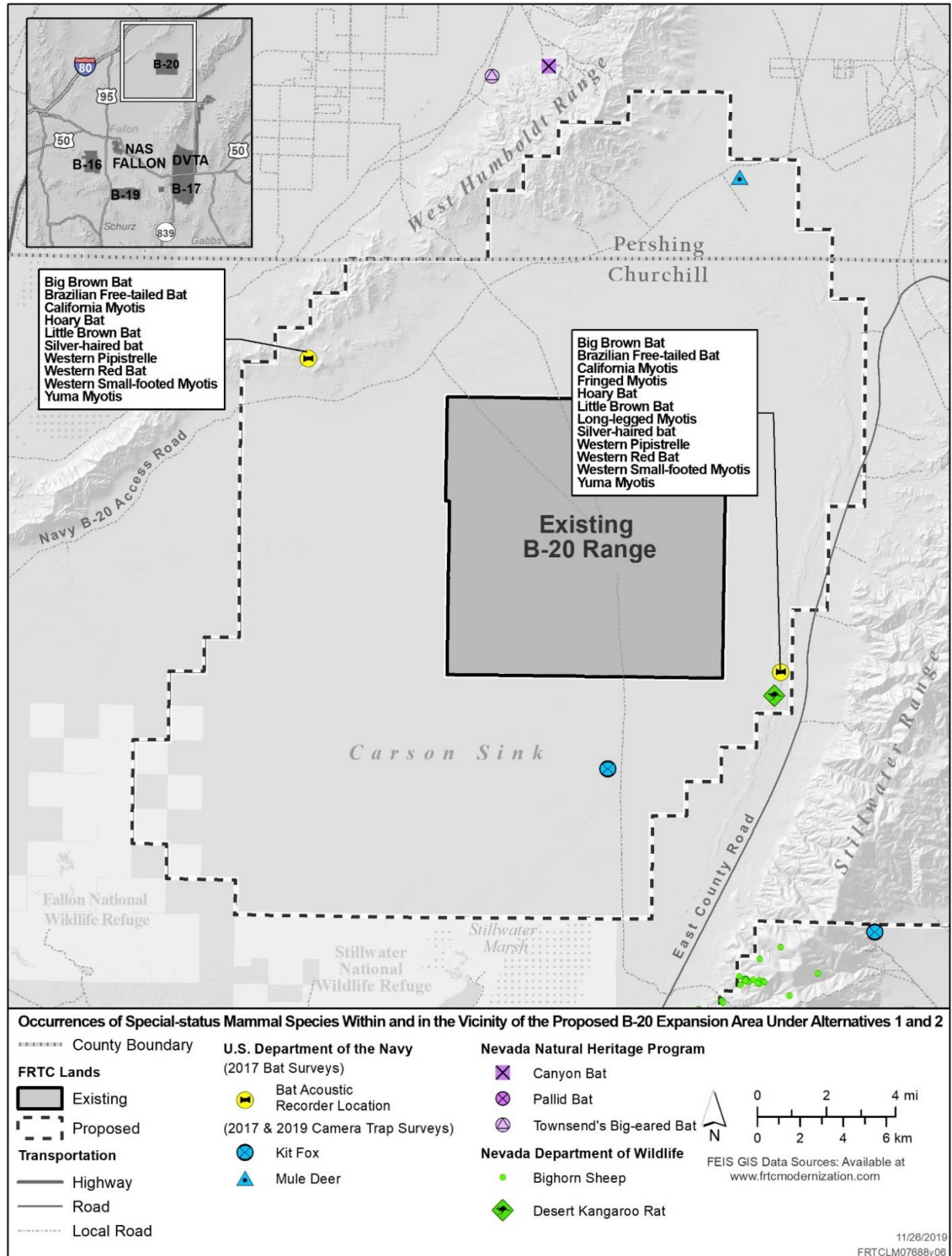


Figure 3.10-35: Occurrences of Special-Status Mammal Species Within and in the Vicinity of the Proposed B-20 Expansion Area Under Alternatives 1 and 2

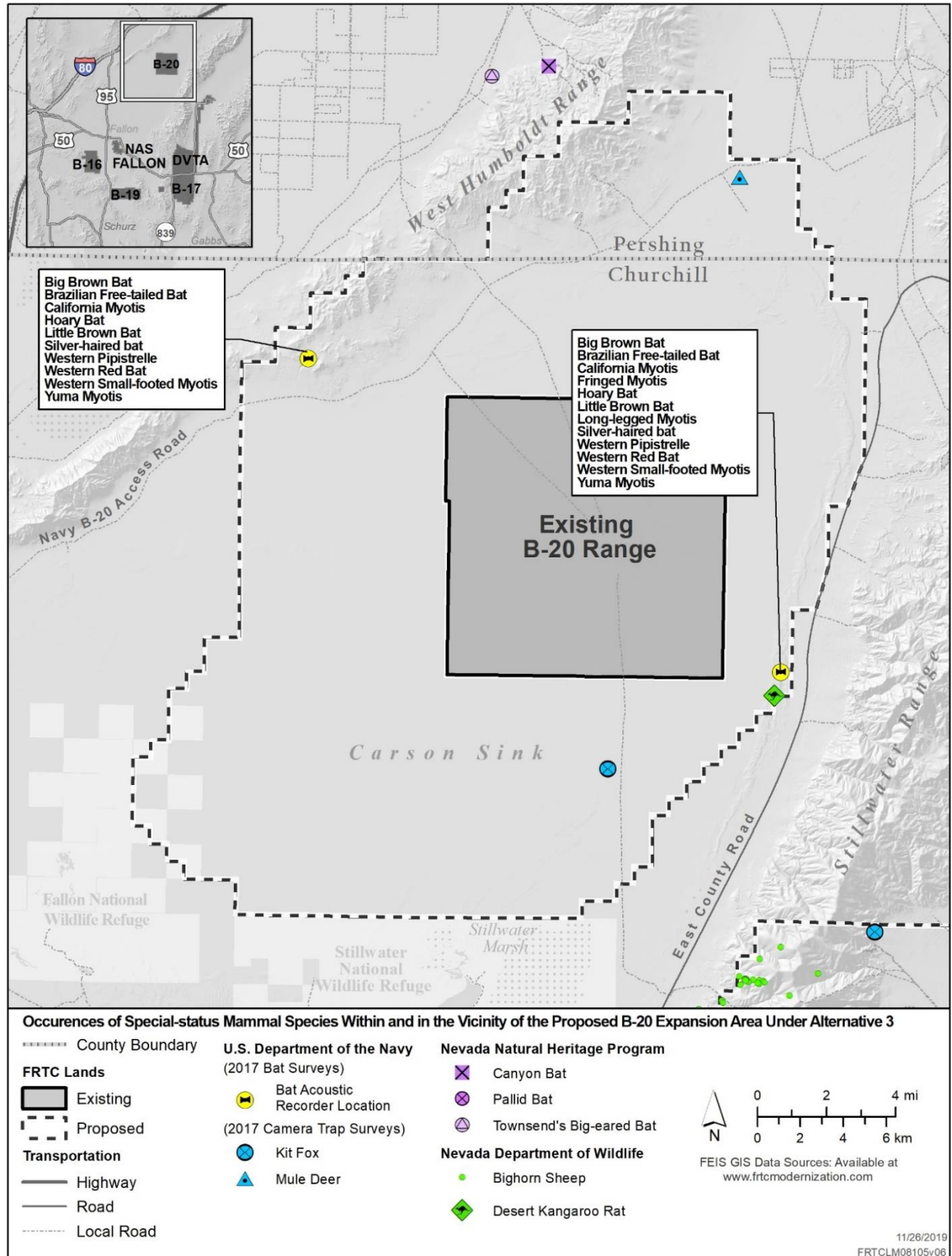


Figure 3.10-36: Occurrences of Special-Status Mammal Species Within and in the Vicinity of the Proposed B-20 Expansion Area Under Alternative 3

3.10.2.5 Ungulates

In 2017, NDOW completed a summary of their ungulate survey program to provide data on the distribution of desert bighorn sheep, mule deer, and pronghorn within the proposed FRTC region of influence, particularly the proposed expansion areas (Nevada Department of Wildlife, 2017a). Using a mixed model approach, the NDOW used GPS collar data, aerial surveys, population model results (sex ratios and survival rates to estimate springtime post-lambing/fawning populations), and known and predicted species distributions based on habitat. Unless otherwise referenced, the following information for bighorn sheep, mule deer, and pronghorn is from that 2017 summary and the Nevada Wildlife Action Plan (Nevada Wildlife Action Plan Team, 2012). Additional information on wildlife water developments can be found in Section 3.9 (Water Resources).

For all ungulate/big game species, NDOW has defined the following seasonal distributions and range definitions or classifications (Nevada Wildlife Action Plan Team, 2012):

- *Summer Range*: That part of the overall distribution where the majority of animals are typically located beginning in the late spring for the primary purpose of fawning/lambing/calving until movement to other seasonal ranges (typically late fall), influenced by eventual snow depth and/or forage availability. Summer range is not necessarily exclusive of other seasonal ranges.
- *Crucial Summer Range*: That part of summer range that is vital or crucial to the continued existence and propagation of the population. In some cases, all Summer Range is crucial. In most instances, crucial summer range will be a subset of all summer range, but in other instances, all summer range will be crucial depending on species, habitat conditions, and herd behavior/strategies. Crucial summer range can be delineated as a subset relative to its greater importance to adjacent summer range, or all summer range is identified as crucial because of its limited distribution and quality relative to availability in other seasonal ranges.
- *Lambing Range*: That part of the overall distribution that is crucial for providing birthing sites and raising young; typically located in remote areas so ewes are undisturbed. Desert bighorn ewes typically lamb from February through March. Very few birthing sites are known or identified.
- *Fawning/Calving Range*: That part of the overall distribution that is crucial for providing birthing sites and raising young; typically, though not always, located in remote areas. Pronghorn does typically fawn in May, elk cows typically calve from mid-May to mid-June and mule deer does typically fawn late May through mid-June. Very few birthing sites are known or identified.
- *Winter Range*: That part of the overall distribution where the majority of the animals are located during the typical winter season (generally January through April), influenced by snow depth and forage availability. Winter range is not necessarily exclusive of other seasonal ranges.
- *Crucial Winter Range*: Winter ranges that are vital or crucial to the continued existence of the population. Crucial winter range can be delineated as a subset relative to its greater importance and/or quality to adjacent winter range, or all winter range is identified as crucial because of its limited distribution and quality relative to availability in other seasonal ranges.
- *Year-round Range*: An area where animals are likely to inhabit all months of the year. It cannot be subdivided into seasonal ranges. It is important to note that year-round range can support species during all months of the year and thus, in many cases, includes all seasonal ranges by default. Certain seasonal ranges may be mapped within year-round habitat, but in some cases, this does not mean that it is the only area used during that season. Year-round range is exclusive of all other seasonal ranges.

- *Transition Range*: Areas that animals consistently utilize between seasonal ranges. These areas can be crucial for building fat reserves to survive winters or build body condition to increase fawning success.
- *Limited Use Range*: Areas that are occasionally inhabited and/or contain small and/or low-density populations because they have limited or missing habitat components necessary for a particular species survival. Limited Use Range is exclusive of all other seasonal ranges.

Desert Bighorn Sheep (*Ovis canadensis nelsoni*). The desert bighorn sheep is a BLM Sensitive Species, Species of Conservation Concern under the Nevada WAP, Nevada Protected Game Mammal (NAC 503.020), and NNHP ranked as apparently secure. Bighorn sheep inhabit remote mountain and desert regions where they are restricted to semi-open, steep terrain with rocky slopes, ridges, and cliffs or rugged canyons. Forage, water, and escape terrain are the most important components of bighorn sheep habitat. Based on NDOW mapping of bighorn sheep habitat, a total of approximately 1.3 million acres of six range types were delineated within the region of influence: year-round, summer, crucial summer, winter & lambing, lambing, and winter (Table 3.10-14 and Figure 3.10-37). A seventh range type, limited use, only occurs within a small area along the southern boundary of the FRTC region of influence and is not discussed further (Figure 3.10-37).

- *Year-round Range* – As the name implies, these are areas that are used by bighorn sheep throughout the year. Currently, approximately 1.1 million acres are mapped as occurring within the FRTC region of influence, and 15,820 and 4,566 acres are mapped as occurring within the existing B-17 and DVTA range areas, respectively. Under Alternatives 1 and 2, an additional 176,571 acres would be within the proposed B-17 and DVTA expansion areas. Under Alternative 3, an additional 145,651 acres would be within the proposed B-17 and DVTA expansion areas (Table 3.10-14).
- *Winter Range* – Generally, bighorn sheep have two distinct, separate summer and winter ranges. Most of the year is spent on the winter range, where the elevation is typically below 10,800 feet. The aspect is usually south or southwest. Rams often venture onto the more open slopes, although rugged terrain is always nearby. Desert bighorn sheep rarely stray far from the base of a mountain and usually are found on eastern aspects, where they use dry gullies. During severe weather, if snow becomes unusually deep or crusted, bighorn sheep move to slightly higher elevations where wind and sunshine have cleared the more exposed slopes and ridges. The spring range is generally characterized by the same parameters as the winter range. However, bighorn sheep begin to respond to local greenups along streambanks and valleys. Bighorn sheep use areas around saltlicks heavily in the spring. Currently, approximately 30,700 acres are mapped as occurring within the FRTC region of influence.
- *Summer Range* – In the summer, bighorn sheep are mostly found grazing on grassland meadows and plateaus above timber. In early summer, south and southwestern exposures are most frequently utilized; however, in the case of the desert bighorn sheep the eastern aspect is preferred. By late summer, the more northerly exposures are preferred. Snow accumulation seems to be the principal factor that triggers bighorn sheep to move from summer to winter ranges. Currently, approximately 72,100 acres are mapped as occurring within the FRTC region of influence.

Table 3.10-14: Acreage of Mapped Ungulate Habitat/Range within the Region of Influence, Existing Ranges, and Proposed FRTC Expansion Areas

Habitat/Range*	Region of Influence	B-16			B-17			B-20			DVTA		
		Existing Alts 1/2	Existing Alt 3	Prop. EA (Alts 1-3)	Existing	Prop. EA (Alts 1&2)	Prop. EA (Alt 3)	Existing	Prop. EA (Alts 1/2)	Prop. EA (Alt 3)	Existing	Prop. EA (Alts 1/2)	Prop. EA (Alt 3)
Bighorn Sheep													
Year-round	1,113,860	-	-	-	15,820	36,388	26,790	-	-	-	4,566	140,183	118,861
Summer	72,109	-	-	-	-	-	-	-	-	-	-	-	-
Crucial Summer	22,406	-	-	-	-	-	-	-	-	-	-	-	-
Winter & Lambing	51,267	-	-	-	3,493	2,252	1,934	-	-	-	-	13,551	8,799
Lambing	3,298	-	-	-	-	-	-	-	-	-	-	-	-
Winter	30,733	-	-	-	-	-	-	-	-	-	-	-	-
Limited Use	554	-	-	-	-	-	-	-	-	-	-	-	-
Total	1,294,227	-	-	-	19,313	38,640	28,724	-	-	-	4,566	153,734	127,660
Mule Deer													
Year-round	1,222,923	-	-	-	7,398	15,008	2,002	-	-	-	653	53,360	33,691
Summer	737,569	-	-	-	-	-	-	-	-	-	-	-	-
Crucial Summer	309,659	-	-	-	-	-	-	-	-	-	-	14,650	14,650
Transition	104,978	-	-	-	-	-	-	-	-	-	-	-	-
Winter	1,031,548	-	-	-	-	-	297	-	-	-	-	-	-
Crucial Winter	733,496	-	-	-	-	-	-	-	-	-	-	24,717	24,717
Limited Use	42,292	-	-	-	-	-	-	-	-	-	-	-	-
Total	4,182,465	-	-	-	7,398	15,008	2,299	-	-	-	653	92,727	73,058
Pronghorn													
Year-round	5,577,775	646	40	-	54,704	164,289	205,912	2,337	63,762	63,408	76,743	285,584	241,712
Summer	351,902	-	-	-	-	-	-	-	-	-	-	-	-
Crucial Summer	51,670	-	-	-	-	13,632	5,461	-	-	-	-	1,673	-
Winter	246,031	-	-	-	-	-	-	-	-	-	-	-	-
Crucial Winter	152,546	-	-	-	-	-	-	-	-	-	-	-	-
Limited Use	8,910	-	-	-	-	-	-	-	-	-	-	-	-
Total	6,388,834	646	40	-	54,704	177,921	211,373	2,337	63,762	63,408	76,743	287,257	241,712

Table 3.10-14: Acreage of Mapped Ungulate Habitat/Range within the Region of Influence, Existing Ranges, and Proposed FRTC Expansion Areas (continued)

Habitat/Range*	Region of Influence	B-16			B-17			B-20			DVTA		
		Existing Alts 1/2	Existing Alt 3	Prop. EA (Alts 1-3)	Existing	Prop. EA (Alts 1&2)	Prop. EA (Alt 3)	Existing	Prop. EA (Alts 1/2)	Prop. EA (Alt 3)	Existing	Prop. EA (Alts 1/2)	Prop. EA (Alt 3)
Elk													
Year-round	491,274	-	-	-	-	-	-	-	-	-	-	-	-
Summer	178,997	-	-	-	-	-	-	-	-	-	-	-	-
Transition	109,242	-	-	-	-	-	-	-	-	-	-	-	-
Winter	148,480	-	-	-	-	-	-	-	-	-	-	-	-
Limited Use	35,345	-	-	-	-	-	-	-	-	-	-	-	-
Total	963,338	-	-	-	-	-	-	-	-	-	-	-	-

Notes: *In most cases, NDOW has not mapped seasonal habitat/range delineations (e.g., summer, winter, crucial summer, etc.) and instead represents the distributions as year-round habitat/range.

A “-” within a cell for a particular habitat/range does not mean that that habitat/range is not found within the subject area.

Source: (Nevada Department of Wildlife, 2017b).

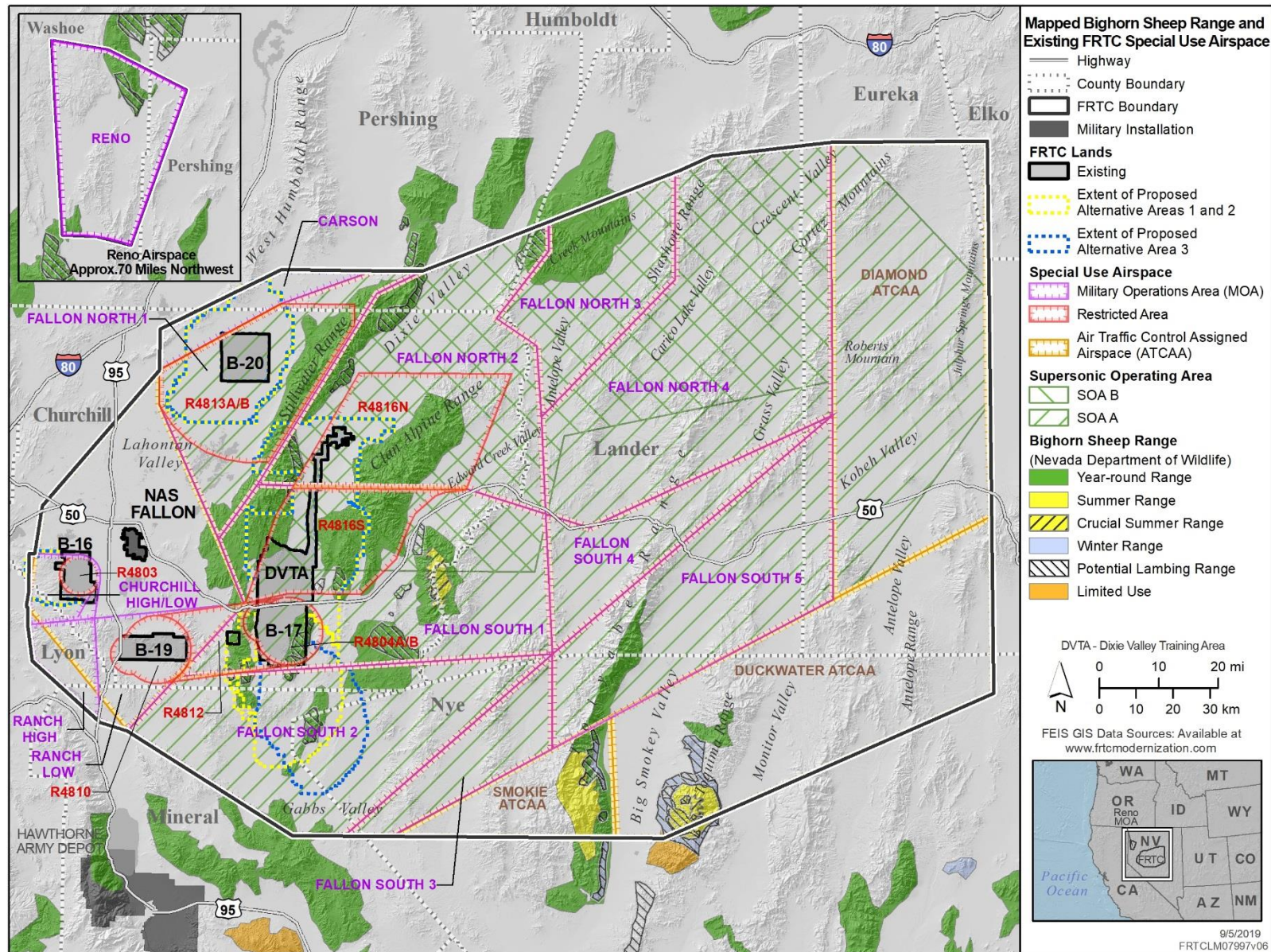


Figure 3.10-37: Mapped Bighorn Sheep Range and Existing FRTC Special Use Airspace

- *Crucial Summer Range* – Currently, approximately 22,400 acres are mapped as occurring within the FRTC region of influence.
- *Lambing Range* – Occurs in the most steep, inaccessible cliffs near forage, and generally has a dry, southern exposure. Such terrain provides pregnant ewes security and isolation for the lambing period, which includes the time lambs need to become strong enough to follow the ewes. Large cliffs and rock outcroppings with sparse cover of trees or shrubs, such as mountain mahogany, afford both thermal and hiding cover to ewes and lambs. Currently, approximately 3,300 acres mapped as lambing range and 51,270 acres mapped as winter/lambing range underlie the FRTC region of influence (Table 3.10-14). There are four areas of mapped lambing range within the existing and proposed FRTC ranges areas: two along the west side of the Clan Alpine Range and two along the southern and eastern boundary of the existing B-17 range south of U.S. Route 50 (Figure 3.10-37). These areas are also mapped as winter range. Currently, approximately 3,500 acres of mapped winter-lambing range occurs within the existing B-17 range (Figure 3.10-37 and Table 3.10-14). Under Alternatives 1 and 2, an additional 15,800 acres of mapped winter-lambing range would be within the proposed B-17 and DVTA expansion areas. Under Alternative 3, an additional 10,733 acres of mapped winter-lambing range would be within the proposed B-17 and DVTA expansion areas.

Table 3.10-15 and Figure 3.10-37 provide a summary of mapped bighorn sheep range underlying existing FRTC airspace.

Table 3.10-15: Area of Bighorn Sheep Range underlying Existing FRTC Special Use Airspace*

Airspace	Current Floor – Ceiling	Mapped Bighorn Sheep Range (acres)					
		YR	Sum	C-Sum	Win	Lamb	Win-Lamb
R-4804A	Surface – 17,999 ft. MSL	22,465	-	-	-	-	2,011
R-4812		21,949	-	-	-	-	3,795
R-4813A		78,920					
R-4816N	1,500 ft. AGL – 17,999 ft. MSL	113,024	-	-	-	-	-
R-4816S	500 ft. AGL – 17,999 ft. MSL	135,611	-	-	-	-	8,799
Ranch Low/High	500 ft. AGL – 9,000 ft. MSL	1,269	-	-	-	-	-
Reno MOA	13,000 ft. MSL – 17,999 ft. MSL	79,406	-	-	-	-	-
Fallon North 1 MOA	100 ft. AGL – 17,999 ft. MSL	122,368	-	-	-	-	-
Fallon North 2 MOA		225,414	-	-	-	-	-
Fallon North 3 MOA		100,084	-	-	-	-	-
Fallon North 4 MOA	200 ft. AGL – 17,999 ft. MSL	0	0	0	0	0	0
Fallon South 1 MOA	100 ft. AGL – 17,999 ft. MSL	353,664	-	17,371	-	-	43,774
Fallon South 2 MOA		88,036	-	-	-	-	7,494
Fallon South 3 MOA		0	0	0	0	0	0
Fallon South 4 MOA	200 ft. AGL – 17,999 ft. MSL	0	0	0	0	0	0
Fallon South 5 MOA		41,255	-	-	-	-	-

Table 3.10-15: Area of Bighorn Sheep Range underlying Existing FRTC Special Use Airspace* (continued)

Airspace	Current Floor – Ceiling	Mapped Bighorn Sheep Range (acres)					
		YR	Sum	C-Sum	Win	Lamb	Win-Lamb
Duckwater ATCAA	18,000 ft. MSL – 25,000 ft. MSL	16,443	27,809	5,035	26,585	3,298	-
Smokie ATCAA		37,667	44,382	-	4,167	-	-

Notes: *Only those airspace units that have mapped bighorn sheep range underlying the airspace and are proposed for revision under the proposed action are listed. See Figure 3.10-37. As the MOAs overlap the restricted areas (R-), the acreage listed within all restricted areas is already accounted for under the MOAs. In most cases, NDOW has not mapped seasonal habitat/range delineations (e.g., summer, winter, lambing, crucial summer, etc.) and instead represents the distributions as year-round habitat/range. A - within a cell for a particular habitat/range does not mean that that habitat/range is not found within the subject area.

AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; C-Sum = crucial summer; ft. = feet; Lamb = lambing; MOA = Military Operations Area; MSL = above mean sea level; R - = Restricted Area; Sum = summer; Win = winter; Win-Lamb = winter and lambing; YR = year-round.

Source: (Nevada Department of Wildlife, 2017b).

Based on 2017 NDOW data, six bighorn sheep populations occur within the existing B-17 and DVTA ranges and proposed B-17 and DVTA expansion areas: Stillwater Mountains, Sand Springs Range, Monte Cristo Mountains, Fairview Range, Slate Mountain, and Clan Alpine Range (Figure 3.10-32 and Figure 3.10-34). These six herds are managed based on three Hunt Units/Herd Areas: (1) Stillwater Mountains, (2) Sand Springs Range/Fairview Range/Monte Cristo Mountains, and (3) Clan Alpine Range. All herds were reintroduced into these areas in the 1980s and 1990s and have increased from lows of 34-38 animals in each herd area to all-time high population estimates in 2017 of 430 animals in the Stillwater Mountains, 425 in the Sand Springs Range/Fairview Range/Monte Cristo Mountains, and 440 in the Clan Alpine Range (Nevada Department of Wildlife, 2017a).

Mule Deer (*Odocoileus hemionus*). The mule deer is a Species of Conservation Concern under the Nevada WAP, Nevada Protected Game Mammal (NAC 503.020), and NNHP ranked as secure. Mule deer occur in a diversity of habitat types throughout Nevada but occur in highest densities in montane shrub dominated communities often associated with successional vegetation. During recent wildlife surveys in support of this EIS, mule deer were commonly recorded on camera traps within the proposed DVTA, B-17, and B-20 expansion areas (Figure 3.10-32 through Figure 3.10-36) (see Supporting Study: Final Wildlife Remote Camera Trapping Survey Report, available at <https://www.frtcmodernization.com>). Based on NDOW mapping of mule deer habitat, a total of approximately 4.2 million acres of six habitat or range types were delineated within the region of influence: year-round, summer, crucial summer, transition, winter, crucial winter, and limited use (Table 3.10-14 and Figure 3.10-38). Limited use habitat only occurs in the northeastern corner of the region of influence and is not discussed further.

- *Year-round Range* – Areas where animals are likely to inhabit all months of the year; year-round range is exclusive of all other seasonal ranges. Currently, approximately 1.2 million acres are mapped as occurring within the FRTC region of influence, and 653 and 7,398 acres are within the existing DVTA and B-17 range areas, respectively. Under Alternatives 1 and 2, 68,368 acres would be within the proposed B-17 and DVTA expansion areas. Under Alternative 3, 35,693 acres would be within the proposed B-17 and DVTA expansion areas (Table 3.10-14).
- *Summer Range* – Currently, approximately 737,570 acres underlie the FRTC region of influence (Table 3.10-14). There is no mapped summer range within the proposed FRTC expansion areas, as most mule deer habitat in these areas is considered year-round habitat.

- *Crucial Summer Range* – Part of the summer range that is vital or critical to the continued existence and propagation of the herd population; crucial summer range is exclusive of other summer seasonal ranges. Currently, approximately 309,700 acres are mapped as occurring within the FRTC region of influence. There is no mapped crucial summer range within the proposed FRTC expansion areas, as most mule deer habitat in these areas is considered year-round habitat. Under Alternatives 1, 2, and 3, 14,650 acres would occur within the proposed DVTA expansion area (Table 3.10-14).
- *Transition Range* – Areas that animals consistently utilize between seasonal ranges but are not used for extended seasonal use. These areas are inhabited longer than movement corridors and can be crucial for building fat reserves to survive winters or build body condition to increase birthing success. Currently, approximately 105,000 acres are mapped as occurring within the FRTC region of influence (Table 3.10-14). There is no mapped transition range within the proposed FRTC expansion areas, as most mule deer habitat in these areas is considered year-round habitat.
- *Winter Range* – Part of the overall distribution range where animals typically occur during winter (January through April) and are influenced by snow depth and forage availability (late fall). Winter range is not necessarily exclusive of other seasonal uses. Currently, approximately 1.0 million acres are mapped as occurring within the FRTC region of influence. There is no mapped winter range within the proposed FRTC expansion areas, as most mule deer habitat in these areas is considered year-round habitat. Under Alternative 3, there would be approximately 300 acres of mapped winter range within the proposed B-17 expansion area (Table 3.10-14).
- *Crucial Winter Range* – Part of the winter range that is vital or critical to the continued existence and propagation of the herd population; crucial winter range is exclusive of other winter seasonal ranges. Currently, approximately 733,500 acres are mapped as occurring within the FRTC region of influence. There is no mapped crucial winter range within the proposed FRTC expansion areas, as most mule deer habitat in these areas is considered year-round habitat. Under Alternatives 1, 2, and 3, 24,717 acres would occur within the proposed DVTA expansion area (Table 3.10-14).

Table 3.10-16 and Figure 3.10-38 provide a summary of mapped mule deer range underlying existing FRTC airspace.

Table 3.10-16: Area of Mule Deer Range underlying Existing FRTC Airspace*

Airspace	Current Floor–Ceiling	Mapped Mule Deer Range (acres)					
		YR	Sum	C-Sum	Win	C-Win	Trans
R-4804A	Surface– 17,999 ft. MSL	11,842	-	-	-	-	-
R-4812		20,664	-	-	-	-	-
R-4813A							
R-4816N	1,500 ft. AGL– 17,999 ft. MSL	58,758	-	23,677	-	31,129	-
R-4816S	500 ft. AGL– 17,999 ft. MSL	9,715	-	21,901	-	53,972	-
Reno MOA	13,000 ft. MSL– 17,999 ft. MSL	88,346	13,904	95,462	29,156	126,303	-
Fallon North 1 MOA	100 ft. AGL– 17,999 ft. MSL	72,241	-	-	-	-	-
Fallon North 2 MOA		190,207	3,894	33,038	13,396	34,242	-
Fallon North 3 MOA		9,634	33,681	-	74,637	0	-
Fallon North 4 MOA	200 ft. AGL– 17,999 ft. MSL	132,158	166,707	-	201,011	193,340	-
Fallon South 1 MOA	100 ft. AGL– 17,999 ft. MSL	135,716	265	91,027	28,537	142,733	-
Fallon South 2 MOA		75,683	11,284	-	17,882	35,410	-
Fallon South 3 MOA		38,057	3,643	-	29,573	9,173	-
Fallon South 4 MOA	200 ft. AGL– 17,999 ft. MSL	22,364	50,048	-	81,786	9,106	-
Fallon South 5 MOA		57,092	102,404	-	185,202	1,477	-
Diamond ATCAA	18,000 ft. MSL– 29,000 ft. MSL	118,587	166,535	89,529	69,777	108,090	104,978
Duckwater ATCAA	18,000 ft. MSL–	200,481	107,408	-	242,654	58,946	-
Smokie ATCAA	25,000 ft. MSL	66,747	75,306	-	52,862	8,535	-

Notes: (1) *Only those airspace units that have mapped mule deer range underlying the airspace and are proposed for revision under the proposed action are listed. See Figure 3.10-38.

In most cases, NDOW has not mapped seasonal habitat/range delineations (e.g., summer, winter, crucial summer, etc.) and instead represents the distributions as year-round habitat/range. A - within a cell for a particular habitat/range does not mean that that habitat/range is not found within the subject area.

(2) AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; C-Sum = crucial summer; C-Win = crucial winter; ft. = feet; MOA = Military Operations Area; MSL = above mean sea level; R - = Restricted Area; Sum = summer; Trans = transition; Win = winter; YR = year-round.

Source: (Nevada Department of Wildlife, 2017b)

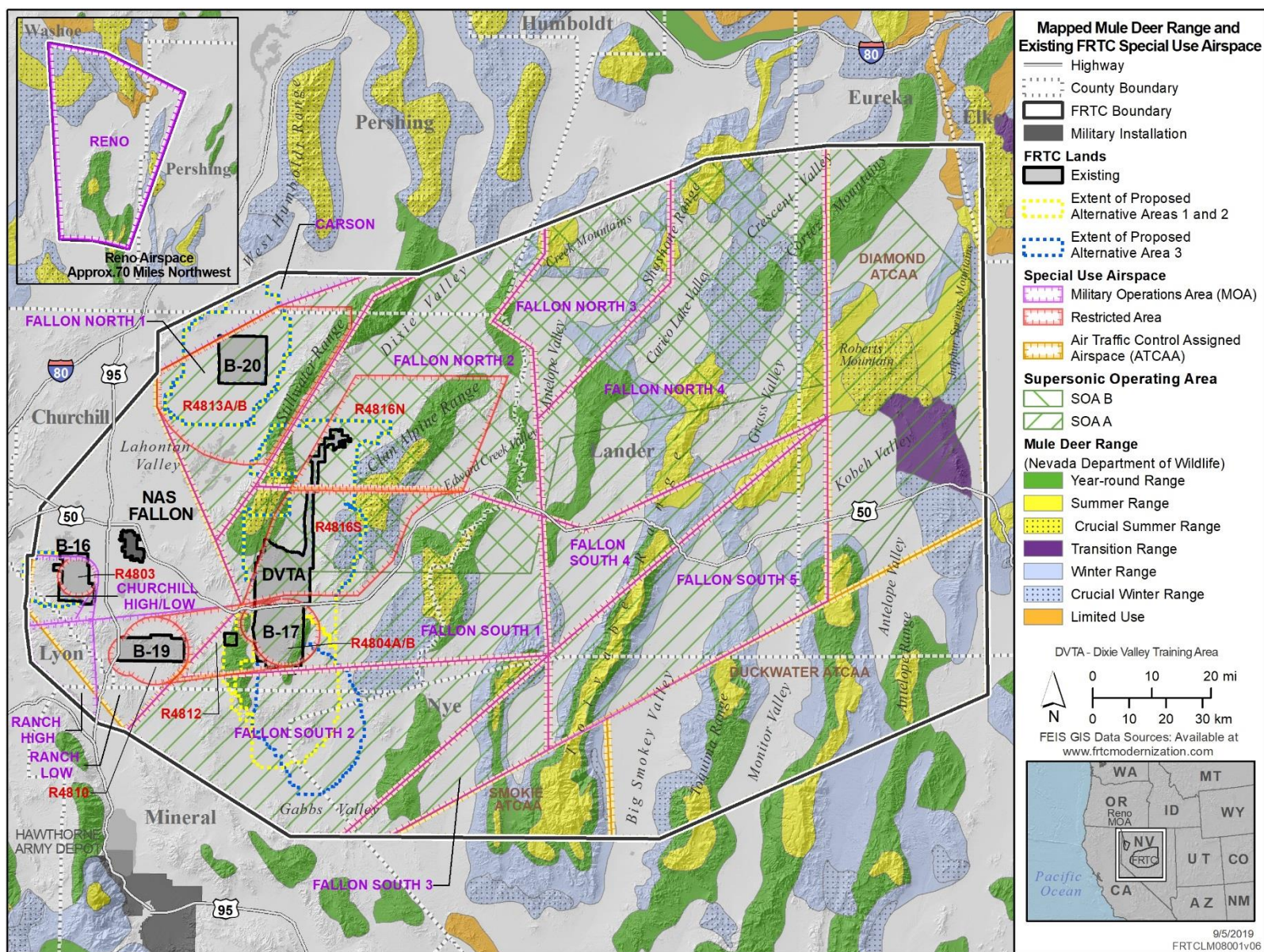


Figure 3.10-38: Mapped Mule Deer Range and Existing FRTC Special Use Airspace

Pronghorn (Antilocapra americana). The pronghorn is a Nevada Protected Game Mammal (NAC 503.020) and ranked by the NNHP as secure. Pronghorn are found primarily in gentle rolling to flat, wide-open topography in valleys between mountain ranges in northern and central Nevada dominated by low sagebrush and northern desert shrubs. Over 150 different species of grasses, forbs, and browse plants are eaten by pronghorn, which allows them to occupy a variety of habitat types. Some of the main components of pronghorn diet include sagebrush, antelope bitterbrush, saltbrush, rabbitbrush, cheatgrass, Indian rice grass, crested wheat grass, lambsquarter, and shadscale. During recent wildlife surveys in support of this EIS, pronghorn were commonly recorded on camera traps within the proposed DVTA and B-17 expansion areas (Figure 3.10-32 through Figure 3.10-34) (see Supporting Study: Final Wildlife Remote Camera Trapping Survey Report, available at <https://www.frtcmodernization.com>). Based on NDOW mapping of pronghorn habitat, a total of approximately 6.4 million acres of five range types were delineated within the region of influence: year-round, summer, crucial summer, winter, and crucial winter. Limited use habitat only occurs in the northern portion of the Reno MOA and is not discussed further (Figure 3.10-39). Only mapped year-round range and crucial summer range are found within existing FRTC ranges or proposed expansion areas.

- *Year-round Range* – Areas where animals are likely to inhabit all months of the year; year-round range is exclusive of all other seasonal ranges. Currently, approximately 5.6 million acres are mapped as occurring within the FRTC region of influence, and the following are within the existing FRTC lands: B-16 (646 acres), B-17 (54,700 acres), B-20 (2,337 acres), and DVTA (76,743 acres). Under Alternatives 1 and 2, approximately 513,600 acres would be within the proposed B-16, B-17, B-20, and DVTA expansion areas. Under Alternative 3, approximately 511,000 acres would be within the proposed B-16, B-17, B-20, and DVTA expansion areas (Table 3.10-14).
- *Summer Range* – Currently, approximately 351,900 acres are mapped as occurring within the FRTC region of influence (Table 3.10-14). There is no mapped summer range within the proposed FRTC expansion areas, as most pronghorn habitat in these areas is considered year-round habitat.
- *Crucial Summer Range* – Part of the summer range that is vital or critical to the continued existence and propagation of the herd population; crucial summer range is exclusive of other summer seasonal ranges. Currently, approximately 51,670 acres are mapped as occurring within the FRTC region of influence. There is no mapped crucial summer range within the existing FRTC ranges, as most pronghorn habitat in these areas is considered year-round habitat. Under Alternatives 1 and 2, approximately 15,300 acres would be within the proposed B-17 and DVTA expansion areas. Under Alternative 3, approximately 5,500 acres would be within the proposed DVTA expansion area (Table 3.10-14).
- *Winter Range* – Currently, approximately 246,000 acres are mapped as occurring within the FRTC region of influence (Table 3.10-14). There is no mapped winter range within the proposed FRTC expansion areas, as most pronghorn habitat in these areas is considered year-round habitat.
- *Crucial Winter Range* – Part of the winter range that is vital or critical to the continued existence and propagation of the herd population; crucial winter range is exclusive of other winter seasonal ranges. Currently, approximately 152,500 acres are mapped as occurring within the FRTC region of influence (Table 3.10-14). There is no mapped crucial winter range within the proposed FRTC expansion areas, as most pronghorn habitat in these areas is considered year-round habitat.



Table 3.10-17 and Figure 3.10-39 provide a summary of mapped pronghorn range underlying existing FRTC airspace.

Table 3.10-17: Area of Pronghorn Range Underlying Existing FRTC Airspace*

Airspace	Current Floor–Ceiling	Mapped Pronghorn Range (acres)				
		YR	Sum	C-Sum	Win	C-Win
R-4804A	Surface– 17,999 ft. MSL	66,707	-	7,532	-	-
R-4812		90,414	-	-	-	-
R-4810	Surface– 17,000 ft. MSL	73,748	-	-	-	-
R-4816N	1,500 ft. AGL– 17,999 ft. MSL	208,288	-	-	-	-
R-4816S	500 ft. AGL– 17,999 ft. MSL	239,299	-	-	-	-
Ranch High/Low MOA	500 ft. AGL– 13,000 ft. MSL	170,742	-	-	-	-
Reno MOA	13,000 ft. MSL– 17,999 ft. MSL	195,513	123,271	32,278	-	121,863
Fallon North 1 MOA	100 ft. AGL– 17,999 ft. MSL	249,769	-	1,055	-	-
Fallon North 2 MOA		640,390	293	-	-	-
Fallon North 3 MOA		93,847	171,691	-	-	-
Fallon North 4 MOA	200 ft. AGL– 17,999 ft. MSL	533,560	8,857	-	98,041	-
Fallon South 1 MOA	100 ft. AGL– 17,999 ft. MSL	807,359	-	18,337	-	-
Fallon South 2 MOA		689,167	-	-	-	-
Fallon South 3 MOA		134,115	-	-	-	-
Fallon South 4 MOA	200 ft. AGL– 17,999 ft. MSL	171,874	-	-	-	-
Fallon South 5 MOA		350,980	-	-	67,783	-
Diamond ATCAA	18,000 ft. MSL– 29,000 ft. MSL	656,913	47,794	-	80,180	10,647
Duckwater ATCAA	18,000 ft. MSL–	604,806	-	-	-	19,913
Smokie ATCAA	25,000 ft. MSL	56,651	-	-	-	-

Notes: *Only those airspace units that have mapped pronghorn range underlying the airspace and are proposed for revision under the proposed action are listed. See Figure 3.10-39.

In most cases, NDOW has not mapped seasonal habitat/range delineations (e.g., summer, winter, crucial summer, etc.) and instead represents the distributions as year-round habitat/range. Therefore, a - within a cell for a particular habitat/range does not mean that that habitat/range is not found within the subject area. AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; C-Sum = crucial summer; C-Win = crucial winter; ft. = feet; MOA = Military Operations Area; MSL = above mean sea level; R- = Restricted Area; Sum = summer; Win = winter; YR = year-round.

Source: (Nevada Department of Wildlife, 2017b)

Elk (*Cervus elaphus*). The elk is a Nevada Protected Game Mammal (NAC 503.020) and NNHP ranked as secure. Elk are found in two areas within the south-central and southeastern portions of the FRTC region of influence and are not found within the existing ranges or proposed FRTC expansion areas (Figure 3.10-40). Elk are probably the most adaptable of North American ungulates and inhabit a wide variety of habitats. Across the elk's range in North America, important elk habitats include open grasslands, shrublands, and open- and closed-canopy conifer, hardwood, and mixed hardwood-conifer forests from valley bottoms up mountain slopes to alpine areas. In addition, elk can adapt to a wide range of ecological disturbances, including fire, and occur in early-successional habitats such as logged areas,

burns, and subalpine shrublands. On the landscape scale, elk are generally associated with a mosaic of open areas used for foraging and forested area used for cover. Habitat use depends upon season, weather (e.g., snow conditions), calving, presence of salt lick sites and water, presence of predators and human disturbance, and individual age and gender (Hall, 1995; Kays & Wilson, 2009).

- *Year-round Range* – Areas where animals are likely to inhabit all months of the year; year-round range is exclusive of all other seasonal ranges. Currently, approximately 493,000 acres are mapped as occurring within the southeastern portion of the FRTC region of influence (Table 3.10-14 and Figure 3.10-40).
- *Summer Range* – Currently, approximately 180,000 acres are mapped as occurring within the southcentral and southeastern portions of the FRTC region of influence (Table 3.10-14 and Figure 3.10-40).
- *Transition Range* – Areas that animals consistently utilize between seasonal ranges but are not used for extended seasonal use. These areas are inhabited longer than movement corridors and can be crucial for building fat reserves to survive winters or build body condition to increase birthing success. There are approximately 109,000 acres of mapped elk transition range within the south-central portion of the FRTC region of influence (Table 3.10-14 and Figure 3.10-40).
- *Winter Range* – Currently, approximately 148,000 acres are mapped as occurring within the southcentral and southeastern portions of the FRTC region of influence (Table 3.10-14 and Figure 3.10-40).

Table 3.10-18 and Figure 3.10-40 provide a summary of mapped elk range underlying existing FRTC airspace.

Table 3.10-18: Area of Elk Range underlying Existing FRTC Airspace*

Airspace	Current Floor–Ceiling	Mapped Elk Range (acres)			
		YR	Sum	Win	Trans
Fallon South 1 MOA	100 ft. AGL–17,999 ft. MSL	0	0	24,599	4,463
Fallon South 2 MOA		0	0	54,310	49,579
Fallon South 3 MOA		0	496	1,624	47,928
Fallon South 5 MOA	200 ft. AGL–17,999 ft. MSL	121,608	11,444	-	-
Diamond ATCAA	18,000 ft. MSL–29,000 ft. MSL	26,268	16,036	-	-
Duckwater ATCAA	18,000 ft. MSL–25,000 ft. MSL	344,706	72,191	67,946	-
Smokie ATCAA		0	79,598	0	7,963

Notes: *Only those airspace units that have mapped elk range underlying the airspace and are proposed for revision under the proposed action are listed. See Figure 3.10-40.

In most cases, NDOW has not mapped seasonal habitat/range delineations (e.g., summer, winter, etc.) and instead represents the distributions as year-round habitat/range. Therefore, a - within a cell for a particular habitat/range does not mean that that habitat/range is not found within the subject area.

AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; ft. = feet; MOA = Military Operations Area; MSL = above mean sea level; R- = Restricted Area; Sum = summer; Trans = transition; Win = winter; YR = year-round.

Source: Nevada Department of Wildlife (2017a).

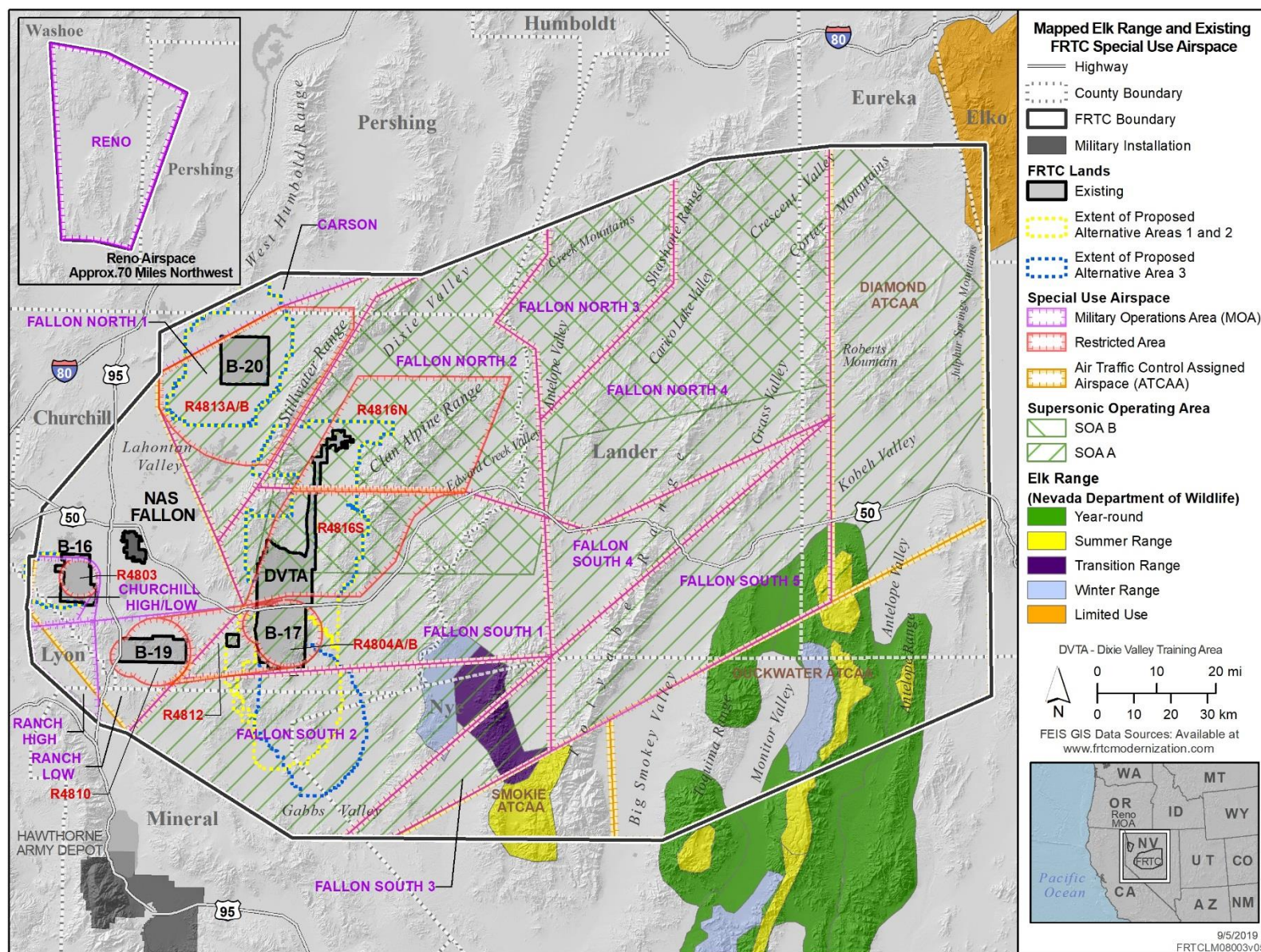


Figure 3.10-40: Mapped Elk Range and Existing FRTC Special Use Airspace

3.10.2.6 Bats

In September–December 2017 and April–June 2019, the Navy completed acoustic surveys for bat species within the proposed FRTC expansion areas. Two survey methods were used: driving transects and stationary acoustic stations. During September 2017 and May 2019, 6 and 12 driving transects, respectively, were conducted within the proposed DVTA and B-17 expansion areas over the course of 7 nights using an acoustic recorder and ultrasonic microphone. During 2017 surveys, nine stationary ultrasonic acoustic bat detectors were placed within the proposed B-16, B-17, B-20, and DVTA expansion areas from September through early December. During 2019 surveys, six stationary ultrasonic acoustic bat detectors were placed within the proposed B-17 and DVTA expansion areas from April through June. Detectors were placed so as to include a variety of potential bat foraging and roosting habitats (e.g., in the vicinity of mine shafts, ephemeral draws, small water sources, and canyons where bat activity might be focused along a corridor). Further details regarding survey methodologies can be found in the Supporting Study: Final Bat Survey Report (available at <https://www.frtcmodernization.com>). Based on the passive acoustic surveys, 14,909 acoustic files were collected (6,533 in 2017 and 8,376 in 2019) and 15 bat species were identifiable within the proposed FRTC expansion areas (Table 3.10-19). All of these species are considered special-status species and are discussed below. Unless referenced otherwise, the following information is taken from the *Revised Nevada Bat Conservation Plan* (Bradley et al., 2006) and the Nevada WAP (Nevada Wildlife Action Plan Team, 2012).

Table 3.10-19: Occurrence of Special-Status Bat Species within the Proposed FRTC Expansion Areas

Common Name (Scientific Name)	Proposed Expansion Area*			
	B-16	B-17	B-20	DVTA
Big brown bat (<i>Eptesicus fuscus</i>)	x	x	x	x
Brazilian free-tailed bat (<i>Tadarida brasiliensis</i>)	x	x	x	x
California myotis (<i>Myotis californicus</i>)	x	x	x	x
Canyon bat or western pipistrelle (<i>Pipistrellus hesperus</i>)	x	x	x	x
Fringed myotis (<i>Myotis thysanodes</i>)			x	x
Hoary bat (<i>Lasiurus cinereus</i>)	x	x	x	x
Little brown bat (<i>Myotis lucifugus</i>)	x	x	x	x
Long-eared myotis (<i>Myotis evotis</i>)				x
Long-legged myotis (<i>Myotis volans</i>)	x	x	x	x
Pallid bat (<i>Antrozous pallidus</i>)	x	x		x
Silver-haired bat (<i>Lasionycteris noctivagans</i>)	x	x	x	x
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	x	x		x
Western red bat (<i>Lasiurus blossevillei</i>)	x	x	x	x
Western small-footed myotis (<i>Myotis ciliolabrum</i>)	x		x	x
Yuma myotis (<i>Myotis yumanensis</i>)	x	x	x	x

Source: Supporting Study: Passive Acoustic Bat Survey Report (available at <https://www.frtcmodernization.com>)

Big Brown Bat (*Eptesicus fuscus*). The big brown bat is a BLM Sensitive Species and ranked by the NNHP as vulnerable/apparently secure. A year-round resident, big brown bats hibernate in Nevada but periodically arouse to actively forage and drink in the winter. Characteristics and locations of winter hibernacula in Nevada are completely unknown, and poorly understood throughout this species range. Big brown bats select a variety of day roosts including caves, trees, mines, buildings, and bridges. It often roosts at night in more open settings in buildings, mines and bridges, and may roost in groups up to several hundred individuals. The big brown bat was detected in all proposed FRTC expansion areas (see Supporting Study, Final Survey Report: Passive Acoustic Bat Surveys, available at

<https://www.frtcmodernization.com>), was previously detected within the northern portion of the existing DVTA (Tierra Data Inc., 2008), and the NNHP includes records of the species in the vicinity of the proposed expansion areas (Nevada Natural Heritage Program, 2018b) (Figure 3.10-31 through Figure 3.10-36, Figure 3.10-41, and Figure 3.10-42).

Brazilian Free-tailed Bat (*Tadarida brasiliensis*). The Brazilian free-tailed bat is a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, Nevada Protected Mammal (NAC 503.030.1), and ranked by the NNHP as apparently secure. Although Brazilian free-tails are one of the most common species in much of the west, their numbers may be well below what they were historically. This species is thought to be a summer resident, although they may hibernate in southern Nevada. They use a variety of day roosts including cliff faces, mines, caves, buildings, bridges, and hollow trees. Although colonies number in the millions in some areas, colonies in Nevada are generally several hundred to several thousand (largest known colonies have been estimated at approximately 70,000–100,000). The Brazilian free-tailed bat was detected in all proposed expansion areas (see Supporting Study, Final Survey Report: Passive Acoustic Bat Surveys, available at <https://www.frtcmodernization.com>); was previously detected in Dixie Meadows, north of the existing DVTA (Tierra Data Inc., 2008); and the NNHP and NDOW include records of the species within and in the vicinity of the proposed expansion areas (Nevada Department of Wildlife, 2018a; Nevada Natural Heritage Program, 2018b) (Figure 3.10-31 through Figure 3.10-36, Figure 3.10-41, and Figure 3.10-42).

California Myotis (*Myotis californicus*). The California myotis is a BLM Sensitive Species and ranked by the NNHP as vulnerable/apparently secure. Although more common in the southern half of the state, this species is found throughout Nevada, primarily at the low and middle elevations to 5,900 feet (1,800 m), although occasionally found at higher elevations. It is thought to roost primarily in crevices, although other day roosts may include mines, caves, buildings, hollow trees, and under exfoliating bark, and night roost sites may occur in a wider variety of structures. California myotis generally roost singly or in small groups, although some mines in the Mojave Desert shelter colonies of over 100 in both the summer and winter. Foraging occurs in the open, but some individuals have been observed entering mines at dusk presumably to feed on resident insects. The California myotis was detected in all proposed expansion areas (see Supporting Study, Final Survey Report: Passive Acoustic Bat Surveys, available at <https://www.frtcmodernization.com>); was previously detected in the existing DVTA, NAS Fallon, and B-19 (Tierra Data Inc., 2008); and the NNHP and NDOW include records of the species within and in the vicinity of the proposed expansion areas (Nevada Department of Wildlife, 2018a; Nevada Natural Heritage Program, 2018b) (Figure 3.10-31 through Figure 3.10-36, Figure 3.10-41, and Figure 3.10-42).

Canyon Bat or Western Pipistrelle (*Pipistrellus hesperus*). The western pipistrelle is a BLM Sensitive Species and ranked by the NNHP as vulnerable/apparently secure. It is found throughout most of the state, primarily in the southern and western portions. These bats are most common in low and middle elevations (5,900 feet), although occasionally at higher elevations, and is thought to be a year-round resident. This species hibernates in winter, but periodically arouse to actively forage and drink. Day roosts are primarily associated with rock crevices but may include mines, caves, or occasional buildings and vegetation. The western pipistrelle was detected in all proposed expansion areas (see Supporting Study, Final Survey Report: Passive Acoustic Bat Surveys, available at <https://www.frtcmodernization.com>), was previously detected within the northern portion of the existing DVTA (Tierra Data Inc., 2008), and the NNHP and NDOW include records of the species within and in the vicinity of the proposed expansion areas (Nevada Department of Wildlife, 2018a; Nevada

Natural Heritage Program, 2018b) (Figure 3.10-31 through Figure 3.10-36, Figure 3.10-41, and Figure 3.10-42).

Fringed myotis (*Myotis thysanodes*). The fringed myotis is a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, Nevada Protected Mammal (NAC 503.030.1), and ranked by the NNHP as imperiled. Fringed myotis are widely distributed but rare in Nevada. Caves and mines are not only used as roost sites but also may be used for foraging sites. Little is known about the cliff and crevice roosting behavior of this species in Nevada. Foraging occurs in and among vegetation, with some gleaning activity. They are found in a wide range of habitats from low desert scrub habitats to high elevation coniferous forests, and from upper elevation creosote bush desert to pinyon-juniper and white fir. Only four recordings were logged for the fringed myotis within the proposed DVTA and B-20 expansion areas, which may indicate transient individuals moving through the study area during the 2017 survey period (Figure 3.10-34 and Figure 3.10-35) (see Supporting Study, Final Survey Report: Passive Acoustic Bat Surveys, available at <https://www.frtcmodernization.com>). Fringed myotis were not detected during 2007 bat surveys on existing Navy-managed FRTC lands (Tierra Data Inc., 2008), and the NNHP and NDOW do not include any records of the species in the vicinity of the proposed expansion areas (Nevada Department of Wildlife, 2018a; Nevada Natural Heritage Program, 2018b).

Hoary bat (*Lasiurus cinereus*). Considered an extremely rare species in Nevada, the hoary bat is a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as imperiled/vulnerable. Hoary bats have been documented in Nevada primarily in wooded habitats, including mesquite bosque and cottonwood/willow riparian areas. Current Nevada records indicate this species is distributed at elevations of 1,380-6,595 feet. Hoary bats are thought to be migrants but may be a summer resident in the Fallon area. A solitary rooster, the hoary bat day roosts in trees, within the foliage and presumably in leaf litter on the ground. Foraging is generally at high altitude over the tree canopy. The hoary bat was detected in all proposed expansion areas (see Supporting Study, Final Survey Report: Passive Acoustic Bat Surveys, available at <https://www.frtcmodernization.com>), was previously detected within the northern portion of the existing DVTA (Tierra Data Inc., 2008), and the NNHP and NDOW include records of the species in the vicinity of the proposed expansion areas (Nevada Natural Heritage Program, 2018b) (Figure 3.10-31 through Figure 3.10-36, Figure 3.10-41, and Figure 3.10-42).

Little brown bat (*Myotis lucifugus*). The little brown bat is a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as imperiled/vulnerable. Found primarily at higher elevations and higher latitudes and often associated with coniferous forest, little brown bats require water sources near day roosts. Day roosts include hollow trees, rock outcrops, buildings, and occasionally mines and caves, and are often roost with Yuma myotis. Foraging occurs in open areas among vegetation, along water margins, and sometimes about 3 feet above the water surface. The little brown bat was detected in all proposed FRTC expansion areas (see Supporting Study, Final Survey Report: Passive Acoustic Bat Surveys, available at <https://www.frtcmodernization.com>), was previously detected within the northern portion of the existing DVTA (Tierra Data Inc., 2008), and the NNHP includes records of the species in the vicinity of the proposed expansion areas (Nevada Natural Heritage Program, 2018b) (Figure 3.10-31 through Figure 3.10-36, Figure 3.10-41, and Figure 3.10-42).

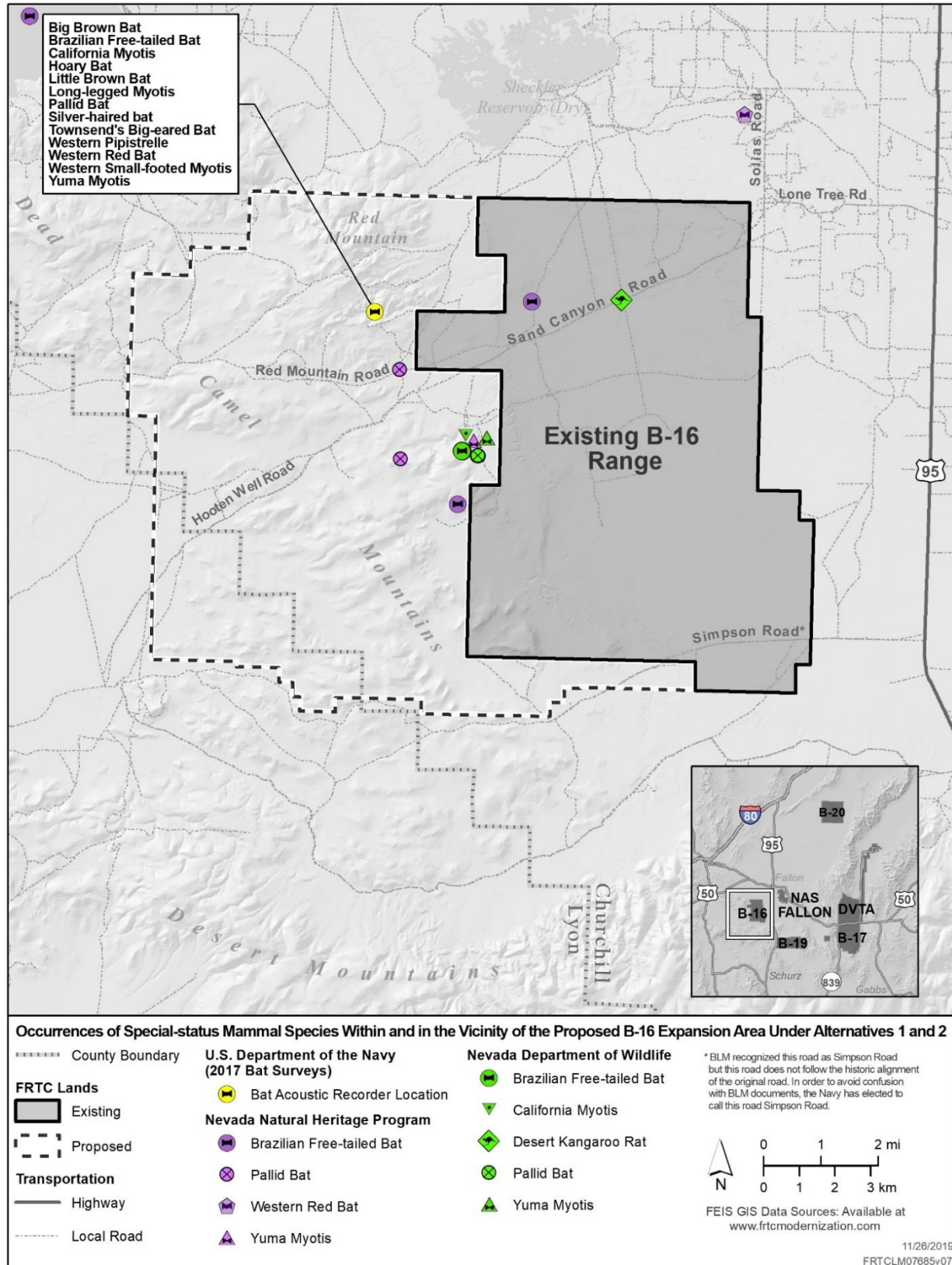


Figure 3.10-41: Occurrences of Special-Status Mammal Species Within and in the Vicinity of the Proposed B-16 Expansion Area Under Alternatives 1 and 2

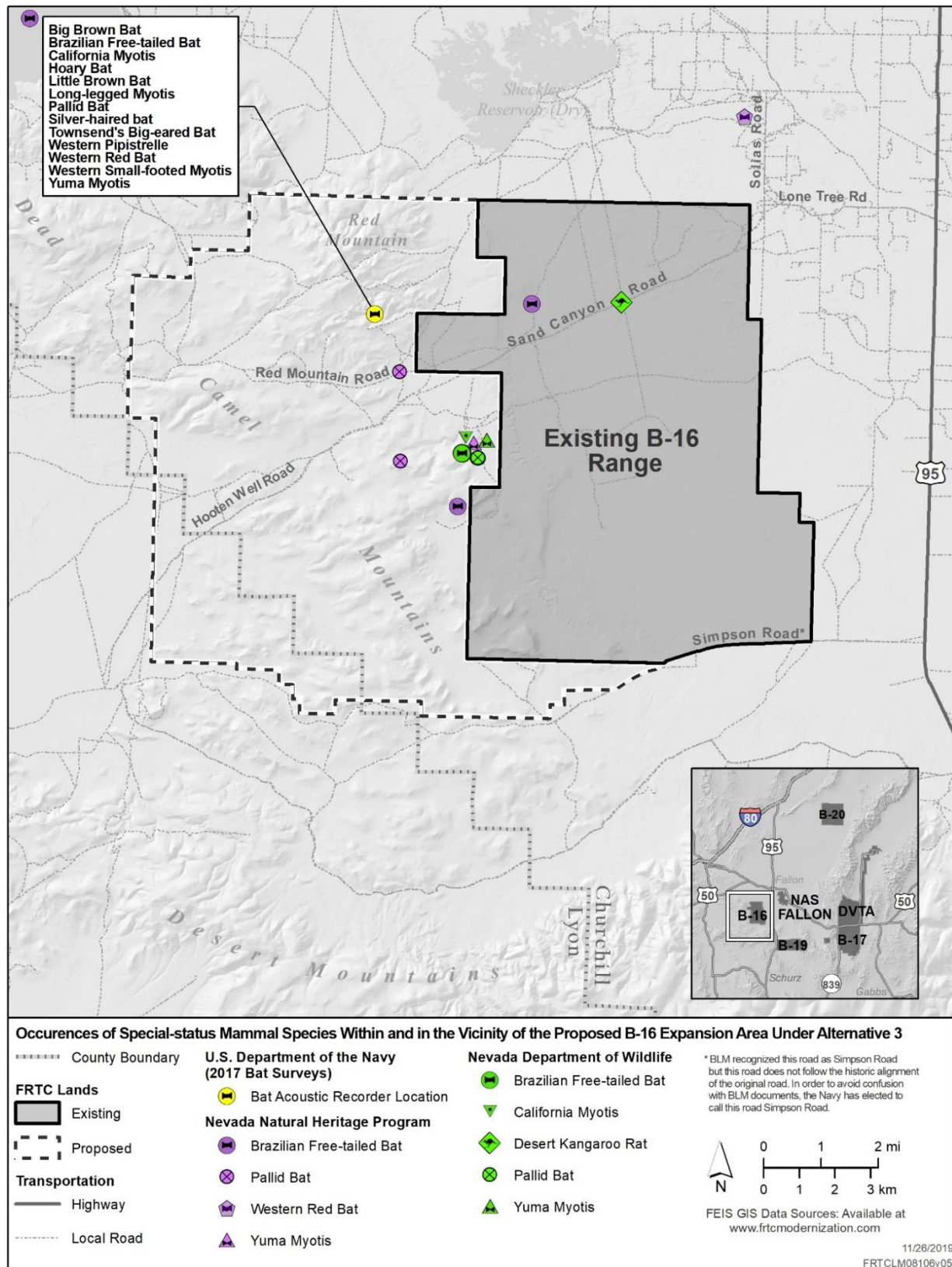


Figure 3.10-42: Occurrences of Special-Status Mammal Species Within and in the Vicinity of the Proposed B-16 Expansion Area Under Alternative 3

Long-eared myotis (*Myotis evotis*). The long-eared myotis is a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as vulnerable. They are widespread throughout Nevada in upper elevation woodlands and forests. However, they tend not to be abundant anywhere with the possible exception of pinyon-juniper woodlands in limestone mountains. They do not appear to form large roosts and seem to alternate roosts frequently. Foraging occurs near vegetation and the ground along rivers and streams, over ponds, and within cluttered forest environment. Night roost use of caves and mines may involve feeding within the structure, gleaning moths from the rock walls. Only one recording of long-eared myotis was logged within the proposed DVTA expansion area, which may indicate transient individuals moving through the area during the survey period (see Supporting Study, Final Survey Report: Passive Acoustic Bat Surveys, available at <https://www.frtcmodernization.com>). It was previously detected within the northern portion of the existing DVTA (Tierra Data Inc., 2008), and the NNHP and NDOW include records of the species in the vicinity of the proposed expansion areas (Nevada Department of Wildlife, 2018a; Nevada Natural Heritage Program, 2018b) (Figure 3.10-31 and Figure 3.10-34).

Long-legged myotis (*Myotis volans*). The long-legged myotis is a BLM Sensitive Species and ranked by the NNHP as vulnerable/apparently secure. This species is typically found throughout Nevada but more widespread and common in the northern half of the state, occurring from mid to high elevations. Long-legged myotis are found in pinyon-juniper, Joshua tree woodland, and montane coniferous forest habitats. This species is occasionally found in Mojave and salt desert scrub, and blackbrush, mountain shrub, and sagebrush. Day roosts primarily in hollow trees, particularly large diameter snags or live trees with lightning scars, and may also use rock crevices, caves, mines, and buildings when available. Caves and mines may be used for night roosts. Foraging occurs in open areas, often at canopy height. The long-legged myotis was detected in all proposed FRTC expansion areas (see Supporting Study, Final Survey Report: Passive Acoustic Bat Surveys, available at <https://www.frtcmodernization.com>), was previously detected within the northern portion of the existing DVTA (Tierra Data Inc., 2008), and the NNHP includes numerous records of the species in the vicinity of the proposed expansion areas (Nevada Natural Heritage Program, 2018b) (Figure 3.10-31 through Figure 3.10-36, Figure 3.10-41, and Figure 3.10-42).

Pallid bat (*Antrozous pallidus*). The pallid bat is a BLM Sensitive Species, Nevada Protected Mammal (NAC 503.030.1), and is ranked by the NNHP as vulnerable. It is found year-round throughout the state, primarily in the low and middle elevations (5,900 feet), although it has been found at over 10,170 feet. It occurs in a variety of habitats, such as low desert, brushy terrain, pinyon-juniper, blackbrush, creosote, sagebrush, salt desert scrub habitats, coniferous forest, and non-coniferous woodlands. The pallid bat hibernates during the winter but periodically rouses to forage and drink water. The species was detected in the proposed B-16, B-17, and DVTA expansion areas (see Supporting Study, Final Survey Report: Passive Acoustic Bat Surveys, available at <https://www.frtcmodernization.com>), was previously detected within the northern portion of the existing DVTA (Tierra Data Inc., 2008), and the NNHP and NDOW includes records of the species in the vicinity of the proposed expansion areas (Nevada Department of Wildlife, 2018a; Nevada Natural Heritage Program, 2018b) (Figure 3.10-31 through Figure 3.10-36, Figure 3.10-41, and Figure 3.10-42).

Silver-haired bat (*Lasionycteris noctivagans*). The silver-haired bat is a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as vulnerable. Silvered-haired bats are widely distributed in Nevada in mature forested habitats especially coniferous and mixed deciduous/coniferous forests of pinyon-juniper, subalpine fir, white fir, limber pine, aspen, cottonwood,

and willow. Current Nevada records indicate this species occurs at 1,575–8,270 feet. Roosting occurs almost exclusively in trees in summer. Maternity roosts are generally in woodpecker hollows and under the loose bark of large diameter snags. Small groups and single animals will roost under exfoliating bark; it has also been found roosting under leaf litter. Winter roosts include hollow trees, rock crevices, mines, caves, and houses. Foraging is generally above the canopy layer in or near wooded areas and along edges of roads, streams or water bodies. Foraging areas may be far from roost sites (up to 9 miles). The silver-haired bat was detected in all proposed expansion areas (see Supporting Study, Final Survey Report: Passive Acoustic Bat Surveys, available at <https://www.frtcmodernization.com>), was previously detected within the northern portion of the existing DVTA (Tierra Data Inc., 2008), and the NNHP and NDOW include records of the species in the vicinity of the proposed expansion areas (Nevada Department of Wildlife, 2018a; Nevada Natural Heritage Program, 2018b) (Figure 3.10-31 through Figure 3.10-36, Figure 3.10-41, and Figure 3.10-42).

Spotted bat (*Euderma maculatum*). The spotted bat is a BLM Sensitive Species, Nevada-listed threatened mammal, Species of Conservation Priority under the Nevada WAP, and is ranked by the NNHP as imperiled. Its habitats include low-elevation desert scrub to high-elevation coniferous forests, including pinyon-juniper, sagebrush, riparian, and urban high-rises. The spotted bat is patchily distributed across Nevada, which is linked to the availability of cliff-roosting habitat. This is the only special-status bat species not detected during 2017 surveys, was not detected during 2007 surveys, and the NNHP and NDOW have no records for spotted bats in the vicinity of the proposed FRTC expansion areas (see Supporting Study, Final Survey Report: Passive Acoustic Bat Surveys, available at <https://www.frtcmodernization.com>) (Nevada Department of Wildlife, 2018a; Nevada Natural Heritage Program, 2018b; Tierra Data Inc., 2008; U.S. Department of the Navy, 2018f).

Townsend's big-eared bat (*Corynorhinus townsendii*). Townsend's big-eared bat is a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, Nevada Sensitive Mammal (NAC 503.030.3), and ranked by the NNHP as imperiled. It is found throughout the state, from low desert to high mountain habitats. Distribution is strongly correlated with the availability of caves and abandoned mines, and is considered one of the species most dependent on mines and caves. Trees and buildings must offer "cave-like" spaces in order to be suitable, and will night roost in more open settings, including under bridges. Townsend's big-eared bat was detected in the proposed B-16, B-17, and DVTA expansion areas (see Supporting Study, Final Survey Report: Passive Acoustic Bat Surveys, available at <https://www.frtcmodernization.com>), was previously detected within the northern portion of the existing DVTA (Tierra Data Inc., 2008), and the NNHP and NDOW include records of the species in the vicinity of the proposed expansion areas (Nevada Department of Wildlife, 2018a; Nevada Natural Heritage Program, 2018b) (Figure 3.10-31 through Figure 3.10-36, Figure 3.10-41, and Figure 3.10-42).

Western red bat (*Lasiurus blossevillei*). The western red bat is a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, Nevada Sensitive Mammal (NAC 503.030.3), and ranked by the NNHP as imperiled. This species is thought to be extremely rare in Nevada, and is historically known from only two locations (one of which is in the Fallon area). The western red bat is found primarily in wooded habitats, including mesquite bosque and cottonwood/willow riparian areas. A solitary rooster, western red bats roosts in trees during the day, within the foliage and presumably in leaf litter on the ground. Foraging is generally high over the tree canopy. Although considered rare in Nevada, the western red bat was detected in all proposed expansion areas (see Supporting Study, Final Survey Report: Passive Acoustic Bat Surveys, available at <https://www.frtcmodernization.com>), was previously detected on NAS Fallon (Tierra Data Inc., 2008), and the NNHP includes records of the species

in the vicinity of the proposed expansion areas (Nevada Natural Heritage Program, 2018b) (Figure 3.10-31 through Figure 3.10-36, Figure 3.10-41, and Figure 3.10-42).

Western small-footed myotis (*Myotis ciliolabrum*). The western small-footed myotis is a BLM Sensitive Species, Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as vulnerable/ apparently secure. The species is found throughout the state, and in central and northern Nevada is more common at valley bottoms (3,445–5,900 feet). This bat typically inhabits a variety of habitats including desert scrub, grasslands, sagebrush steppe, blackbrush, greasewood, pinyon-juniper woodlands, pine-fir forests, agriculture, and urban areas. Roosts have been found in caves, mines, and trees. Roosting preferences expected to be similar to those for California myotis. In winter, western small-footed myotis hibernate individually or in large colonies. The western small-footed myotis was detected in the proposed B-16, B-20, and DVTA expansion areas (see Supporting Study, Final Survey Report: Passive Acoustic Bat Surveys, available at <https://www.frtcmodernization.com>), was previously detected within the northern portion of the existing DVTA (Tierra Data Inc., 2008), and the NNHP and NDOW includes records of the species in the vicinity of the proposed expansion areas (Nevada Department of Wildlife, 2018a; Nevada Natural Heritage Program, 2018b) (Figure 3.10-31 through Figure 3.10-36, Figure 3.10-41, Figure 3.10-42).

Yuma myotis (*Myotis yumanensis*). The Yuma myotis is a BLM Sensitive Species and ranked by the NNHP as vulnerable. It is found at least in the southern and western half of the state, primarily at low to middle elevations, and uses a wide variety of habitats including sagebrush, salt desert scrub, agriculture, playa, and riparian. The Yuma myotis appears to be tolerant of human disturbance relative to other bat species, and is one of the few bat species that thrives in a relatively urbanized environment. Although often considered to be a “building” bat, it is also found in heavily forested settings. This species day roosts in buildings, trees, mines, caves, bridges, and rock crevices. Night roosts are usually associated with buildings, bridges, or other man-made structures. Foraging occurs directly over the surface of open water and above vegetation. Yuma myotis was detected in all proposed expansion areas (see Supporting Study, Final Survey Report: Passive Acoustic Bat Surveys, available at <https://www.frtcmodernization.com>), was previously detected within the northern portion of the existing DVTA (Tierra Data Inc., 2008), and the NNHP includes numerous records of the species in the vicinity of the proposed expansion areas (Nevada Natural Heritage Program, 2018b) (Figure 3.10-31 through Figure 3.10-36, Figure 3.10-41, and Figure 3.10-42).

3.10.2.7 Small Mammals

The region of influence for small mammals includes only those areas potentially subject to ground-disturbing activities within the proposed FRTC expansion areas. The following information regarding special-status rodent species is based upon previous survey efforts within the existing Navy-managed FRTC lands (Tierra Data Inc., 2008), as well as NNHP occurrence records within the vicinity of proposed expansion areas (Nevada Natural Heritage Program, 2018b). In support of this EIS, small mammal surveys were conducted within the proposed FRTC expansion areas in summer-fall 2018, and the results have been incorporated into this EIS. Unless referenced otherwise, the following information is taken from the Nevada WAP (Nevada Wildlife Action Plan Team, 2012) and the Nevada Natural Heritage Program (2018a).

Dark Kangaroo Mouse (*Microdipodops megacephalus*). The dark kangaroo mouse is a BLM Sensitive Species, Nevada Protected Mammal (NAC 503.030.1), Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as imperiled. The dark kangaroo mouse moves around by hopping along

on its hind legs, much like a kangaroo. It is restricted to the Great Basin Desert, with distribution centered in Nevada, although populations extend into California, Oregon, and Utah. The dark kangaroo mouse inhabits stabilized dunes, sandy soils, and fine gravelly soils in valley bottoms and alluvial fans that are dominated by big sagebrush, rabbitbrush, and horsebrush. It is expected to occur within the region of influence west of Churchill County in Nye, Lander, and Eureka counties. There are no records of the species on or in the vicinity of Navy-managed FRTC lands (Nevada Department of Wildlife, 2018a; Nevada Natural Heritage Program, 2018b; Tierra Data Inc., 2008; U.S. Department of the Navy, 2014).

Desert Kangaroo Rat (*Dipodomys deserti*). The desert kangaroo rat is a Species of Conservation Priority under the Nevada WAP and ranked by the NNHP as imperiled/vulnerable. Desert kangaroo rats are found in low deserts, in sandy soil with sparse vegetation or in alkali sinks. They are mostly restricted to deposits of deep wind-blown sand (sometimes including deposits formed as result of human activity) in shadscale scrub and creosote bush scrub. NDOW has records of the species within the proposed B-20 expansion area (Figure 3.10-35) and within the existing B-16 range (Figure 3.10-41) (Nevada Department of Wildlife, 2018a). The species was also observed within the existing B-16 range during 2007 surveys (Tierra Data Inc., 2008). There are no NNHP occurrence records within or in the vicinity of the proposed FRTC expansion areas (Nevada Natural Heritage Program, 2018b).

Pale Kangaroo Mouse (*Microdipodops pallidus*). The pale kangaroo mouse is a BLM Sensitive Species, Nevada Protected Mammal (NAC 503.030.1), Species of Conservation Priority under the Nevada WAP, and ranked by the NNHP as imperiled. It is generally found west of the range of dark kangaroo mouse, in the west-central portion of the state. This species is a highly specialized sand-obligate and is typically restricted to fine, loose, sandy soils in valley bottoms dominated by saltbush and greasewood; it may also be found near sagebrush at its higher elevation range (6,000 feet). It is expected to occur within the region of influence in Churchill and Mineral counties and northeastern Nye County. There are numerous NNHP occurrence records in the Fallon area (Figure 3.10-31), and records within and in the vicinity of the existing DVTA and proposed expansion area (Figure 3.10-32 and Figure 3.10-34) (Nevada Natural Heritage Program, 2018b).

Sagebrush Vole (*Lemmiscus curtatus*). The sagebrush vole is a Species of Conservation Priority under the Nevada WAP and ranked by the NNHP as vulnerable. It occurs in colonies in semiarid habitats on well-drained or rock-covered soils with vegetation usually dominated by sagebrush or rabbitbrush mixed with bunchgrass. Sagebrush voles are active throughout day, year round. Although they are expected to occur throughout the region of influence and within proposed FRTC expansion areas, there are currently no records of the species on or in the vicinity of Navy-managed FRTC lands (Nevada Department of Wildlife, 2018a; Nevada Natural Heritage Program, 2018b; Tierra Data Inc., 2008; U.S. Department of the Navy, 2014).

3.10.3 Environmental Consequences

This section evaluates how and to what degree the activities described in Chapter 2 (Description of Proposed Action and Alternatives) could impact biological resources (vegetation and wildlife) within the region of influence. The analysis focuses on potential impacts on biological resources, particularly special-status species, and overall changes associated with implementation of the three action alternatives, including proposed military readiness activities and range enhancements at the FRTC. 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 (see Section 3.10.3.7, Summary of Effects and Conclusions).

The stressors on biological resources from the proposed action vary in intensity, frequency, duration, and location within the region of influence. The following primary stressors are applicable to biological resources within the region of influence:

- noise (i.e., from aircraft operations, including sonic booms, weapons firing, and munitions explosion/impact)
- energy (electromagnetic radiation, lasers)
- physical disturbance (i.e., potential strikes from aircraft, aerial targets, and military expended materials; increased potential for wildfire; other ground-disturbing activities such as training and construction activities and prevention of migration/movement of wildlife species)
- The following provides an analysis of environmental effects of the No Action Alternative and Alternatives 1 through 3 against the environmental baseline as described in Section 2.4 (Environmental Baseline [Current Training Activities]).

3.10.3.1 Potential Stressors

The following sections provide an overview of potential stressors of the action alternatives.

3.10.3.1.1 Noise

Section 3.7 (Noise) describes baseline noise conditions for the Study Area; provides a general introduction to sound and noise, including the various noise descriptors (noise metrics) and methods used to predict noise levels in this EIS; presents noise levels associated with proposed training and testing activities; and addresses the potential effects of noise on human receptors. This section analyzes the potential effects of noise on wildlife on lands proposed for expansion or that would be potentially impacted by aircraft noise within the proposed SUA.

Proposed FRTC expansion areas would be exposed to noise associated with proposed Navy activities, including from the following sources:

- construction noise associated with range enhancements and road construction
- fixed-wing, helicopter, and unmanned aircraft system overflights
- small and large arms firing
- live and non-explosive practice munitions
- vehicle and equipment operations
- occasional explosions from unexploded ordnance disposal

Overview of Wildlife Responses to Noise

Numerous studies have documented that wild animals respond to human-made noise (Bowles et al., 1995; Goldstein et al., 2005; Larkin et al., 1996; National Park Service, 1994). The manner in which animals respond to noise depends on several factors, including life history characteristics of the species, characteristics of the noise source, loudness, how suddenly the sound occurs (onset rate), distance from the noise source, presence/absence of associated visual stimuli, and previous exposure to the sound. Noise may cause physiological or behavioral responses that reduce the animals' fitness or ability to grow, survive, and reproduce successfully. The potential effects of noise on wildlife can take many forms, including changing habitat use and activity patterns, increasing stress response, decreasing immune response, reducing reproductive success, increasing predation risk, degrading communication, and damaging hearing if the sound is sufficiently loud and/or prolonged (Larkin et al., 1996).

Studies on the effects of aircraft noise on wildlife have been predominantly conducted on mammals and birds. Some studies have shown that the responses of large mammals to aircraft noise are transient and of short duration and suggest that animals acclimate to the sounds (Krausman et al., 1993; Krausman et al., 1998; Weisenberger et al., 1996; Workman et al., 1992). Similarly, the effect on raptors and other birds (e.g., waterfowl, grebes) from aircraft low-level flights were found to be brief and not detrimental to reproductive success (Ellis et al., 1991; Grubb & Bowerman, 1997; Lamp, 1989; Smith et al., 1988). Golden eagles have shown little effects due to aircraft flights. In their guidelines for aerial surveys, (Pagel et al., 2010) summarized past studies by stating that most golden eagles respond to survey aircraft (fixed-wing and helicopters) by remaining on their nests and continuing to incubate or roost. Surveys took place as close as 10–20 meters from cliffs and no farther than 200 meters from cliffs, depending on safety.

While the effects of noise on wildlife have been addressed in numerous studies, research is hampered by a preponderance of small, disconnected, anecdotal or correlational studies as opposed to coherent programs of controlled experiments (Larkin et al., 1996). These factors, coupled with differences between species, individuals of the same species, and other factors such as habitat, make it difficult to definitively predict how wildlife populations will respond to noise under a specific exposure scenario.

Behavioral responses are the most commonly used endpoints when studying the effects of noise on wildlife. This is largely based on practical considerations and the difficulty in measuring animal fitness or physiological and ecological endpoints. Researchers have documented a range of behavioral responses to noise, ranging from indifference to extreme panic. Common behavioral responses include alert behavior, startle response, flying or running away, and increased vocalizations (Bowles et al., 1995; Larkin et al., 1996; National Park Service, 1994). In some instances, behavioral responses could interfere with breeding, raising young, foraging, habitat use, and physiological energy budgets, particularly when an animal continues to respond to repeated exposures.

While difficult to measure in the field, some form of physiological response, such as increased heart rate or a startle response, accompanies all behavioral responses. A startle is a rapid, primitive reflex characterized by rapid increase in heart rate, shutdown of nonessential functions, and mobilization of glucose reserves. Animals can learn to control the behavioral reactions associated with a startle response and often become habituated to noise (Bowles et al., 1995; Larkin et al., 1996; National Park Service, 1994). Habituation keeps animals from expending energy and attention on harmless stimuli, but the physiological component might not habituate completely (Bowles et al., 1995). Therefore, animal fitness could still be affected when an animal has habituated to noise (Barber et al., 2010). Gill et al. (2001) described theoretical circumstances when habituation to or tolerance of a stressor could be more detrimental to a population than a strong avoidance reaction. Nonetheless, what appears to be habituation has been observed in many studies and is well demonstrated in studies evaluating bird control devices (e.g., noise cannons, pyrotechnics, and recorded sounds), which are used to scare birds away from airfields and agricultural areas (Larkin et al., 1996). Larkin et al. (1996) describe one example where red-winged blackbirds began resting on the noise cannon intended to scare them away. The birds learned to fly a short distance away when they heard the click of the mechanism that released the gas and signaled an impending explosion.

Likewise, a strong and consistent behavioral or physiological response is not necessarily indicative of negative consequences to individuals or to populations (Bowles et al., 1995; Larkin et al., 1996; National Park Service, 1994). For example, many of the reported behavioral and physiological responses to noise are within the range of normal adaptive responses to external stimuli, such as predation, that wild

animals face on a regular basis. In many cases, individuals would return to homeostasis or a stable equilibrium almost immediately after exposure. The individual's overall metabolism and energy budgets would not be affected, assuming it had time to recover before being exposed again. If the individual does not recover before another exposure, physiological responses could be cumulative and lead to reduced fitness. However, it is also possible that an individual would have an avoidance reaction (i.e., move away from the noise source) to repeated exposure or habituate to the noise when repeatedly exposed.

Chronic stress can compromise the general health of animals, but stress is not necessarily indicative of negative consequences to individuals or to populations (Larkin et al., 1996; National Park Service, 1994). Unless repeatedly exposed to loud noises or simultaneously exposed to synergistic stressors, it is possible that individuals would return to homeostasis almost immediately after exposure, and the individual's overall metabolism and energy budgets would not be affected. Aircraft noise is generally thought to be most detrimental during periods of stress such as winter, gestation, and nesting (DeForge, 1981; Pepper et al., 2003).

For instance, a 3-year study by Bowles et al. (1995) focused on military aircraft exposure to small mammal populations. The study took place in a region in south-central Arizona characterized by creosote and mixed Sonoran Desert scrub. The sites were exposed to low-altitude flights of more than 20,000 sound events in excess of 80 decibels (dB), with 115.5 dB being the highest A-weighted single event level recorded. The control sites received noise levels at least an order of magnitude lower, with an average of 51.3 dB and none over 100 dB. The control area event rate was approximately one flight per day. Numerous kangaroo rat (*Dipodomys* spp.) and pocket mouse (*Chaetodipus* spp.) species and the white-throated wood rat (*Neotoma albigula*) were included in the study. The study measured populations' densities, body weight, reproductive activity, recruitment by immigration and reproduction, and survival rate month to month. Overall, the outcome of the study suggested the effects of lifetime exposure to intermittent aircraft noise on animal demography are likely to be small and difficult to detect, if they exist at all.

Relatively little is known about the responses of reptiles to noise. Sound perception appears to be subordinate in importance to vision or chemoreception in the activities of most reptiles (Manci et al., 1988). Some reptiles have sound-producing mechanisms, but they are absent in the majority of species. Sensitive hearing acuity is essential to the survival of some desert reptiles because critical environmental sounds are often of relatively low intensity movement of insect prey and predators (Manci et al., 1988). Noise may elicit physiological and behavioral responses, though exposed individuals would be expected to quickly recover from these responses, and exposure would be intermittent and infrequent.

Based on information presented above and literature summarized for the other species (Bowles et al., 1995; Larkin et al., 1996; National Park Service, 1994), wildlife in the FRTC region of influence could exhibit a range of behavioral and physiological responses to noise depending on distance from the noise source (strength or intensity of behavioral or physiological response decreases with increasing distance from noise source). It is also likely that wildlife would habituate to some sound levels. Several studies indicate that there is a strong tendency for species to acclimate to noise disturbances (Grubb & King, 2012) (Black et al., 1984; Ellis et al., 1991; Manci et al., 1988). Both field and laboratory data indicate that in mammals (e.g., pronghorn, bighorn sheep, elk, and mule deer) effects are transient and of short duration and suggest that the animals appear to habituate to noise through repeated exposure without long-term discernible negative effects (Krausman et al., 1998; Weisenberger et al., 1996).

High sound levels and any associated visual or other cues (e.g., vehicle and equipment movement, other human activity, vibration, or projectile impacting the ground nearby) would likely be perceived as a threat, and species may exhibit defense behavior. With repeated exposure over a short time frame, such responses have the potential to reduce an animal's fitness by limiting foraging time, increasing energy expenditure, inducing a stress response, and interfering with breeding. Various studies have indicated that some animals respond to repeated loud noises by temporarily or permanently abandoning habitat. However, the majority of studies have reported short-term or negligible impacts on wildlife.

In addition to noise level, the frequency and regularity of the noise also affect species sensitivity. That is, different types of noise sources produce varied effects on different species. Noise from aircraft overflights may not produce the same response from a wildlife species as noise from a land-based source such as a vehicle, chainsaw, or gunshot. Wildlife species often do not react to a noise source when unaccompanied by a visual cue, but often do react to the visual component associated with that noise source. For example, birds may not react to just the sound of a chainsaw, but when that sound is coupled with a human walking near the bird, the bird will flush. This is also shown in reactions by various species to aircraft overflights (airplanes and helicopters). An overflight with just a sound component does not elicit a strong response, but if an animal hears and then sees the aircraft, it will more likely flush and move away (Manci et al. 1988; U.S. Forest Service 1992; Krausman et al. 1993; Bowles 1995).

A primary concern with implementation of the proposed action is that low-altitude overflights may cause physiological or behavioral responses that reduce the animals' fitness or ability to survive. High-noise events (like a low-altitude aircraft overflight or sudden sonic boom) may cause animals to startle or engage in escape or avoidance behaviors, such as flushing or running away. These activities impose an energy cost that, over the long term, may affect survival or growth. In addition, the animals may spend less time engaged in necessary activities like feeding, foraging, or caring for their young because they spend time in noise-avoidance activity. However, most of the effects of noise are mild enough that they may never be detectable as changes in population size or population growth against the background of normal variation (Bowles et al., 1995). Many other environmental variables (e.g., predators, weather, changing prey base, ground-based human disturbance) may influence reproductive success and confound the ability to identify the ultimate factor in limiting productivity of a certain nest, area, or region.

Supersonic Noise

Current and proposed aircraft operations within the FRTC region of influence would generate sonic booms, an impulsive sound similar to thunder. A sonic boom is the sound associated with the shock waves created by a vehicle traveling through air faster than the speed of sound. The duration of a sonic boom is brief (less than a second), and the intensity is greatest directly under the flight path and weakens as distance from the flight track increases. The change in air pressure associated with a sonic boom is only a few pounds per square foot greater than normal atmospheric pressure. This is about the same pressure change experienced by a change in elevation of 20–30 feet, or riding an elevator down two or three floors. This additional pressure above normal atmospheric pressure is called *overpressure*. It is the sudden onset of the pressure change that makes the sonic boom audible.

Effects of Sonic Booms on Wildlife

Many scientific studies have investigated the effects of aircraft noise and sonic booms on wildlife, and some have focused on wildlife "flight" due to noise. Natural factors that affect reaction include season, group size, age and sex composition, on-going activity, motivational state, reproductive condition,

terrain, weather, and temperament (Bowles et al., 1995). Individual animal response to a given noise event or series of events also can vary widely due to a variety of factors, including time of day, physical condition of the animal, physical environment, the experience of the individual animal with noises, and whether or not other physical stressors (e.g., drought) are present (Manci et al., 1988). Consequently, it is difficult to generalize animal responses to noise disturbances across species.

The following discussion presents a summary of some of the more relevant studies addressing the potential impacts on wildlife from sonic booms. Teer (1973) tested quail eggs subjected to sonic booms and found no adverse effects. Heinemann and LeBrocq Jr. (1965) exposed chicken eggs to sonic booms and found no adverse effects. In a mathematical analysis of the response of avian eggs to sonic boom overpressures, Ting et al. (2002) determined that it would take a sonic boom of 250 pounds per square foot to crack an egg. Bowles et al. (1995) states that it is physically impossible for a sonic boom to crack an egg because one cannot generate sufficient sound pressure in air to crack eggs.

Teer (1973) examined reproductive success in mourning doves, mockingbirds, northern cardinals, and lark sparrows when exposed to sonic booms of 1 pound per square foot or greater and found no adverse effects. Awbrey and Bowles (1990) in a review of the literature on the effects of aircraft noise and sonic booms on raptors found that the available evidence shows very marginal effects on reproductive success. Ellis et al. (1991) examined the effects of sonic booms (actual and simulated) on nesting peregrine falcons, prairie falcons, and six other raptor species. While some individuals did respond by leaving the nest, the response was temporary and overall there were no adverse effects on nesting. Lynch and Speake (1978) studied the effects of both real and simulated sonic booms on the nesting and brooding of eastern wild turkey (*Meleagris gallopavo silvestris*) in Alabama. Hens at four nest sites were subjected to between 8 and 11 combined real and simulated sonic booms. Turkey hens exhibited only a few seconds of head alert behavior at the sound of the sonic boom. No hens were flushed off the nests, and productivity estimates revealed no effect from the booms. Twenty brood groups were also subjected to simulated sonic booms. In no instance did the hens desert any poults (young birds), nor did the poults scatter or desert the rest of the brood group. In every observation, the brood group returned to normal activity within 30 seconds after a simulated sonic boom. Similarly, researchers cited in Manci et al. (1988) observed no difference in hatching success of bobwhite quail (*Colinus virginianus*) exposed to simulated sonic booms.

Animal species exhibit a wide variety of responses to noise. It is therefore difficult to generalize animal responses to noise disturbances or to draw inferences across species, as reactions to jet aircraft noise and sonic booms appear to be species-specific. Consequently, some animal species may be more sensitive than other species and may exhibit different forms or intensities of behavioral responses.

The literature does suggest that common responses include the “startle” or “fright” response and, ultimately, habituation. It has been reported that the intensities and durations of the startle response decrease with the numbers and frequencies of exposures, suggesting no long-term adverse effects. The majority of the literature suggests that domestic animal species (e.g., cows, horses, chickens) and wildlife species may exhibit adaptation, acclimation, or habituation after repeated exposure to jet aircraft overflights and associated noise, including sonic booms (see Overview of Wildlife Responses to Noise in this subsection).

3.10.3.1.2 Energy Stressors within the Proposed Expansion Areas

Electromagnetic Radiation

Under the proposed action, wildlife would be exposed to various forms of sources of electromagnetic radiation including radar, threat transmitters, communications equipment, and electronic detection equipment, primarily during electronic combat training events. Electromagnetic radiation may impact wildlife in various ways depending on type of radiation, duration of exposure, and the species of the receiving animal. Effects on birds may include reduced nesting success (Balmori, 2009; Fernie & Reynolds, 2005) and various behavioral and physiological responses to electromagnetic fields (Fernie & Bird, 2001), such as disruption of normal sleep-wake cycles through interference with pineal gland and hormonal imbalance.

Continual and long-duration exposure form the basis of the experiments and field observations in these studies. For instance, (Balmori, 2009) reported reduced bird activity (breeding and foraging) followed by extirpation within areas saturated with high microwave radiation (greater than 2 volts/meter). The same study reported anomalies in magpies (*Pica pica*), such as plumage deterioration, limps and deformities in limbs, and partial albinism. In another study by (Balmori & Hallberg, 2007), significant declines of house sparrow densities were observed in areas of high electromagnetic field strength. The study predicted that no sparrows would be expected in an electromagnetic field of greater than 4 volts per meter of long-term constant exposure.

In a review of magnetoreception in animals, animals from a wide range of taxa have been shown to possess magnetic sense and use magnetic compasses to orient. Such taxa include mollusks, crustaceans, insects, fishes, birds, amphibians, lizards, sea turtles, and mammals (Wiltschko & Wiltschko, 2006). Non-migratory animals such as mice (Mather & Baker, 1981) and rats (Burda et al., 1990) also reportedly have magnetic sense. (Salford et al., 2003) and (Marks et al., 1995) report various effects on mammals from electromagnetic exposure, including changes in alarm and aversion behavior, deterioration of health, reproductive problems, and changes in normal sleep wake patterns.

Lasers

Military uses of lasers include applications such as target designation and ranging, defensive countermeasures, communications, and directed energy weapons. Targeting and ranging lasers are the only laser applications used during training on the ground at the FRTC and within the airspace. Chapter 2 (Description of Proposed Action and Alternatives) describes these platforms and devices. Target designation and ranging laser types are relatively low-power lasers (compared to directed-energy lasers or lasers used for defensive countermeasures). A targeting laser is a low-power laser pointer used to indicate a target for a precision-guided munition, typically launched from an aircraft. The guided munition adjusts its flight-path to home into the laser light reflected by the target, enabling great precision in aiming. The laser designator can be shone onto the target by aircraft or ground-based personnel. Lasers used for this purpose are usually infrared lasers so the enemy cannot easily detect the guiding laser light. The potential for vision damage from the use of lasers at the FRTC is the primary concern for wildlife species, although the likelihood that a laser aimed at target would ever accidentally strike the eye of an animal is highly unlikely. Most studies of the effects of lasers on terrestrial animals involve birds because of the interest in developing deterrents to minimize bird-aircraft strike hazards at airports and wind developments (Baxter, 2007). Fewer studies are available for other species groups, such as terrestrial mammals and reptiles, but the same range of responses (none to avoidance behavior) is expected. In summary, no physiological damage is expected to occur from the use of lasers, and there

is an extremely low likelihood of vision damage or behavioral responses if a laser was to ever accidentally strike the eye of an animal.

(Lustick, 1973) conducted an experiment using pulsing light, which indicated that starlings and gulls were able to look directly into the laser beam and not change their behavior. A later study conducted through the National Wildlife Research Center's Mississippi Field Station demonstrated that there was no eye damage to double-crested cormorants (*Phalacrocorax auritus*) that had been exposed to a moderate-power red laser as close as 3 feet (Glahn et al., 2000). Furthermore, the bird eye is protected from thermal damage to retinal tissue associated with concentrated laser radiation by eye tissue (U.S. Department of Agriculture, 2001a). Most targeting lasers used during training activities are low to moderate power, so these studies are relevant to species that occur within the region of interest.

For several decades, pulsing light has been used on aircraft, aircraft hangars, and high towers as a means of avian management or bird control. In 2001, the U.S. Department of Agriculture's National Wildlife Research Center conducted research on low- to moderate-power, long-wavelength lasers (630–650 nanometers) as an effective, environmentally safe means of dispersing specific bird species under low-light (sunset to dusk) conditions (Blackwell et al., 2002). Results of the U.S. Department of Agriculture research concluded that waterfowl species, wading birds, gulls, vultures, and American crows (*Corvus brachyrhynchos*) have all exhibited avoidance of laser beams during field trials (Blackwell et al., 2002; U.S. Department of Agriculture, 2001a). However, avoidance reaction times and duration are dependent upon context and species (Blackwell et al., 2002). In general, diurnal birds (active during the day and resting during the night) are not sensitive to extremely intense laser light and elicit a slow avoidance response to lasers. In contrast, nocturnal birds (active during the night and resting during the day) are more sensitive to light and react more quickly to avoid intense light (Blackwell et al., 2002). Blackwell and Bernhardt (2004) found that the avoidance response to pulsed white and wavelength-specific aircraft-mounted light was inconsistent across experiments with cowbirds (*Molothrus* spp.), and there was little or no avoidance behavior in experiments with other species. Also, some studies on the use of lasers for bird control have shown that birds may become habituated to light quickly, and there is a loss of effect as the distance increases from the bird and the laser (U.S. Department of Agriculture, 2001b).

3.10.3.1.3 Physical Disturbance

Aircraft Strikes

Wildlife-aircraft strikes are a major concern for the Navy because they can cause harm to aircrews, damage to equipment, and mortality to wildlife. The number of Navy-wide recorded wildlife-aircraft strikes from 1999 through 2009 ranged from 48 to 827 per year (mostly birds) (Naval Safety Center, 2009). The number of U.S. Air Force recorded wildlife-aircraft strikes between 1999 and 2013 ranged from 1,960 to 5,107. The majority of these strikes were birds, but approximately 5 percent of the reported strikes were bats. Bird and bat strikes may occur during any phase of flight, but are most likely during the take-off, initial climb, approach, and landing phases because of the greater numbers of animals in flight at lower levels. While the Navy considers all aircraft strikes serious and dangerous events, the number of related mortalities is small considering Navy-wide aircraft activities. Although strikes can occur anywhere aircraft are operated, Navy and Air Force data indicate they occur more often over land (Naval Safety Center, 2009; U.S. Department of Defense, 2010). Potential for wildlife strike is greatest in foraging or resting areas, in migration corridors, and at low altitudes. For example,

animals can be attracted to airports because they often provide foraging and nesting resources (U.S. Department of Defense, 2010).

Approximately 95 percent of bird flight during migration occurs below 10,000 feet, with the majority below 3,000 feet (Naval Safety Center, 2009; U.S. Department of Defense, 2010). In a study that examined 38,961 bird and aircraft collisions, Dolbeer (2006) found that the majority (74 percent) of wildlife collisions occurred below 500 feet. Therefore, low-altitude, fixed-wing aircraft overflights likely present the greatest risk of aircraft strikes in the proposed revised SUA. High-speed flight in a low-altitude environment places aircraft in airspace that may contain animals in flight. Further, animals may flush in response to approaching aircraft noise. Helicopter training also presents aircraft strike hazards, as the vast majority of training activities (approximately 97 percent of aircraft flights) occur below 3,000 feet above ground level.

Fixed-wing aircraft and helicopter overflights would take place at various altitudes and airspeeds throughout the proposed SUA, with most occurring during the daytime. Part of aviation safety during training activities is the implementation of the Bird/Animal Aircraft-Strike Hazard (BASH) program. The BASH program manages risk by addressing specific aviation safety hazards associated with wildlife near airfields through coordination among all the entities supporting the aviation mission (U.S. Department of Defense, 2010). The BASH program includes identifying the bird/animal species involved and the location of any strikes to understand why the species is attracted to a particular area of the airfield or training area (Naval Air Station Fallon, 2012).

In addition, pilots can use the Avian Hazard Advisory System (AHAS) to monitor bird activity in near real-time to increase flight crew awareness and planning capabilities (<http://www.usahas.com>). The Avian Hazard Advisory System uses Next Generation Radar weather radars to track the movements of birds and represents the most comprehensive methods of remote sensing of birds today. Next Generation Radar weather radars were originally built to track storm cells and chart precipitation returns. The system removes weather and aircraft from radar returns in order to extract and display only biological targets. Avian Hazard Advisory System relies on the U.S. Air Force Bird Avoidance Model that uses GIS technology as a key tool for analysis and correlation of bird habitat, migration, and breeding characteristics, combined with key environmental and man-made geospatial data. Pilots can select a specific area (e.g., airfield, MOA, range, military training route), specific date, and time and obtain the current or 12-hour Avian Hazard Advisory System risk for that area. The system also provides Google Map or Google Earth aerial imagery of the area that provides a color-coded live, real-time Avian Hazard Advisory System risk based on the current conditions using Next Generation Radar data and the Bird Avoidance Model.

3.10.3.2 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. If Congress were to not renew the 1999 Public Law 106-65 land withdrawal, air-to-surface training would likely become non-existent or severely reduced due to the lack of available lands for the bombing ranges. Therefore, with the likely cessation of military training activities within current FRTC ranges, there would be a potential net beneficial impact on biological resources. Refer to Section 2.3.1 (No Action Alternative) for further details on the No-Action Alternative.

3.10.3.3 Alternative 1: Modernization of the Fallon Range Training Complex

Under Alternative 1, the Navy's current public land withdrawal would be renewed, and additional public and non-federally owned lands would be withdrawn or acquired for military training. As described in

Chapter 2 (Description of Proposed Action and Alternatives), Alternative 1 would expand the FRTC to approximately 916,168 acres of land for military uses. This includes renewing the current withdrawal of 202,864 acres as well as requesting the withdrawal of an additional 618,727 acres of public land, and proposing to acquire 65,159 acres of private land. Under Alternative 1, new construction would be required for supporting infrastructure (e.g., new roads, administrative buildings, utility and communication infrastructure, and perimeter fencing).

3.10.3.3.1 Training Activities

Under Alternative 1, the amount of training within the proposed FRTC expansion areas and proposed revised SUA relative to baseline conditions analyzed in the 2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement (U.S. Department of the Navy, 2015) would remain the same but be dispersed within a larger area (i.e., throughout the existing FRTC ranges and SUA plus the proposed FRTC expansion areas and revised SUA). Training activities would use existing target locations within the existing FRTC ranges and include new targets and training areas within the proposed expansion areas. This would increase the area where stressors (e.g., noise, strikes) would potentially impact wildlife resources.

Vegetation and Special-Status Plants

Wildland Fire

The potential for wildfires from current training activities within the proposed range expansion areas is the primary concern with respect to potential impacts on vegetation. Although the vegetation communities within the region of influence are resistant to the environmental extremes of the Great Basin Desert, changes in the fire regime can affect regional vegetation communities and take decades if not centuries to reestablish. In addition, non-native invasive species such as cheatgrass can alter the structure and distribution of wildlife habitat. Native plants within the region, such as sagebrush, are not adapted to frequent fire and cannot recover quickly, particularly when fire frequency exceeds the pre-historical norm. Cheatgrass, in contrast, recovers from fire very rapidly and takes advantage of the low-competition, high-nutrient, and ample light in post-fire conditions to rebound in even greater numbers, thereby further increasing the likelihood of future fires (U.S. Fish and Wildlife Service, 2014; Young & Tipton, 1990).

Training activities on the ranges would not change in type or quantity under Alternative 1; they would change in target location. In addition, currently implemented fire management measures within FRTC lands would continue to be implemented as discussed below, and a fire management plan would be developed for the proposed expansion lands. Therefore, there would be no significant impacts to vegetation communities and special-status plant populations from potential wildfires within the proposed range expansion areas.

An unintended effect of training activities is the inadvertent ignition of wildfires. Because wildfires are so destructive to the environment, the Navy has implemented and would continue to implement operational and administrative controls to avoid and minimize the occurrence of wildfires. Within range boundaries within the proposed expansion areas, the Navy would prevent fires by establishing fire breaks and green stripping around targets; conducting weed abatement programs; and removing dry vegetative fuel sources near targets that prevent fires and assist in reducing the growth of a fire, if one were to occur. Outside of range boundaries, the Navy implements control measures to ensure that airborne training activities do not start fires. For example, regarding the use of airborne flares, the Navy has established minimum flare release heights to prevent wildfire occurrence. When it is not fire season,

flares are authorized for deployment below 2,000 feet above ground level on the Bravo ranges. During standard fire season restrictions, the minimum safe altitude for deploying decoy flares outside of and inside of the boundaries of the FRTC bombing ranges is 2,000 feet above ground level to further reduce a flare ignition source. During the severe fire season (typically between May and October), the Navy ceases use of airborne flares. In addition, during the possibility of severe drought, the Navy eliminates the use of flares.

A Wildland Fire Management Plan is being developed for the existing FRTC lands. The Wildland Fire Management Plan would address integrated fire prevention, fire suppression, and post-fire rehabilitation/restoration processes for the FRTC in cooperation with regional stakeholders (e.g., NDOW, BLM, affected counties). The effectiveness of the Wildland Fire Management Plan would continue to be reviewed on an ongoing basis in accordance with adaptive fire management procedures that would be contained in the Wildland Fire Management Plan. The measures would be refined as necessary to ensure they remain effective to sustain the Installation's mission, and protect and conserve natural resources. This Wildland Fire Management Plan would be revised as necessary and appropriate to address the proposed FRTC expansion areas. Refer to Section 3.14 (Public Health and Safety) for further details regarding fire management on existing and proposed Navy-managed lands.

Wildlife and Special-Status Wildlife Species

Noise

Under Alternative 1, changes in the location of aircraft targets and land-based munitions and live-fire training areas within the proposed range expansion areas may result in potential noise impacts on wildlife populations. The following provides a brief summary of the proposed changes in noise levels within each proposed range expansion area and the revised SUA.

- *Proposed B-16 Expansion Area.* Under Alternative 1, the expansion of the B-16 range would increase the area subject to noise exposures during aircraft and land-based training activities, primarily to the west of the existing B-16 range. In general, under Alternative 1, estimated aircraft noise levels within the proposed B-16 expansion area (see Figure 3.7-15) would not change from existing levels (see Figure 3.7-3). The primary change is the increase in the 50–55 day-night sound level (DNL) A-weighted decibel (dBA) noise contour to the west from proposed aircraft operations. In addition, due to the proposed munitions activities within the proposed expansion area, the estimated 57–70 DNL C-weighted decibel (dBC) noise contours would shift to the west along the border of the existing B-16 range but remain primarily within the existing range boundary (see Figure 3.7-16).
- *Proposed B-17 Expansion Area.* Under Alternative 1, the expansion of the B-17 range to the south would increase the area subject to noise exposures during aircraft and land-based training activities. Aircraft targets and land-based training facilities would be installed south of the existing B-17 range thereby causing associated aircraft and munitions activities to also shift to the south. Currently, DNL dBA noise contours from aircraft operations are confined within the existing B-17 range (see Figure 3.7-6). Under Alternative 1, the 56-64 DNL dBA noise contours from proposed aircraft operations would overlie the majority of the proposed B-17 expansion area (see Figure 3.7-18). Similarly, estimated DNL dBC noise contours from proposed munitions activities would shift from occurring completely within the existing B-17 range (see Figure 3.7-7) to overlying the proposed expansion area (see Figure 3.7-19).

- *Proposed B-20 Expansion Area.* Under Alternative 1, the aircraft targets and land-based training facilities would be installed west of the existing B-20 range thereby causing associated aircraft and munitions activities to also shift to the west. Currently, DNL dBA noise contours from aircraft operations overlie the existing B-20 range and also some areas to the west, south, and east (see Figure 3.7-9). Estimated 61-65 DNL dBA noise contours from proposed aircraft operations under Alternative 1 would increase within the existing B-20 range and to the west, south, and east within the proposed expansion area (see Figure 3.7-22). Similarly, the estimated 57-70 DNL dBA noise contours from proposed munitions activities would shift to the northwest corner of the existing B-20 range and within the proposed expansion area (see Figure 3.7-23).
- *Proposed DVTA Expansion Area.* As aircraft and munitions activities are not proposed within the proposed DVTA expansion area, and existing training activities (e.g., convoy training and Combat Search and Rescue training) would continue within the proposed expanded training area, there would be no change in the noise environment within the proposed DVTA expansion area.
- *Proposed Revision of SUA.* Under Alternative 1, proposed changes to SUA would include new airspace associated with proposed B-16, B-17, and B-20 range expansion areas, lowering of floor within some existing Restricted Areas and MOAs, and establishment of new MOAs (see Figures 2-7, 2-8, and 2-9). Estimated noise levels associated with aircraft operations within the majority of the proposed SUA would not change from existing noise levels (see Figure 3.7-12). The primary changes would occur within restricted airspace associated with the proposed range expansion areas (discussed above) and the proposed new MOAs within the southern and eastern portions of the proposed revised FRTC SUA (i.e., Zircon, Diamond, Duckwater, and Smokie MOAs) (see Figures 3.7-25 and 3.7-26).

Estimated noise levels under Alternative 1 within proposed range expansion areas and revised SUA would likely elicit physiological and behavioral responses in avian and mammal species. As described previously under the general discussion on noise stressors, noise exposures on wildlife would be anticipated to be less than significant for the following reasons: (1) individual animals would be expected to recover quickly from these responses, (2) exposures would be intermittent and infrequent as training activities consist of non-continuous events, and (3) short-term behavioral responses would not be expected to affect individual animal fitness or have population-level effects. In addition, as estimated noise levels within the proposed range expansion areas would occur within the same habitats as found within the current range areas, the proposed expansion areas would be expected to contain the same wildlife species. As current training operations within the existing ranges have not significantly impacted wildlife populations (U.S. Department of the Navy, 2015), it is expected that the same training activities would also not have significant impacts on the same wildlife populations within an immediately adjacent area (i.e., proposed range expansion areas).

The proposed B-16 and B-20 expansion areas are outside of the current mapped range of bighorn sheep and mule deer, and only the eastern portion of the proposed B-20 expansion area overlaps with year-round pronghorn range (Nevada Department of Wildlife (2017a)). However, mule deer were observed within the proposed B-20 expansion area during camera trap surveys conducted in support of this EIS (see Supporting Study: Final Wildlife Remote Camera Trapping Survey Report, available at <https://www.frtcmodernization.com>). In addition, the estimated 60-65 DNL dBA aircraft noise contours within the proposed B-17 expansion area overlies a portion of currently mapped bighorn sheep winter-lambing range (i.e., the flats at the southern end of the Fairview Range) and year-round range within the central Monte Cristo Mountains and southern Sand Springs Range. The estimated 70-75 DNL dBA

contours would not appreciably change from existing conditions (see Figures 3.7-9 and 3.7-22). Given the estimated number of bighorn sheep within the vicinity of the existing B-17 and DVTA range areas are at an all-time high (Nevada Department of Wildlife, 2017a), existing training operations are not having an effect on regional bighorn sheep populations. Therefore, it is expected that proposed training operations conducted within the proposed restricted areas (R-4805A and R4816S Low) and associated expansion areas at the same level as current training operations would not have a significant impact on regional bighorn sheep populations.

As stated above in the summary of estimated changes in the noise environment within the revised SUA under Alternative 1, the majority of changes would occur within the within the southern and eastern portions of the FRTC SUA (i.e., establishment of the Ruby, Zircon, Diamond, Duckwater, and Smokie MOAs and extension of the Supersonic Operating Areas to the east), lowering of the floor of the existing Reno MOA, and establishing Reno MOA as supersonic capable (see Figure 2-7).

Based on agency and public concern, five special-status species warrant further consideration regarding the potential for impacts from proposed aircraft operations, particularly at lower altitudes within the revised SUA: great sage-grouse, bighorn sheep, mule deer, pronghorn, and elk.

Greater Sage-grouse. The primary threats to greater sage-grouse populations are the loss, fragmentation, and degradation of sagebrush habitat due to a variety of causes. In the Great Basin Desert, the primary threats are the expansion of invasive grasses such as cheatgrass (which results in more frequent and intense wildfires) and conifer encroachment. Both eliminate the sagebrush that greater sage-grouse need. Additional stressors, such as improper grazing, predation, mining, and infrastructure development can contribute to localized population declines (U.S. Fish and Wildlife Service, 2015).

Data are lacking on the effects of aircraft overflights or sonic booms on galliformes (e.g., grouse, quail), particularly on greater sage-grouse lekking attendance and behavior. Greater sage-grouse, like most bird species, rely on auditory signals as part of mating. Sage-grouse are known to select their leks based on acoustic properties and depend on auditory communication for mating behavior (Blickley & Patricelli, 2012). Although little specific research has been completed to determine what, if any, effects aircraft overflight and sonic booms would have on the breeding behavior of this species, factors that may be important include season and time of day, altitude, frequency and duration of overflights, and frequency and loudness of sonic booms. Based on the available information regarding sage-grouse and similar species (e.g., prairie chickens) response to noise, aerial-based noise may have no impact or may impact lekking sage-grouse by (1) causing a decrease in lek attendance, (2) increasing stress hormone concentrations, or (3) masking lek communication (within and among leks).

Booth et al. (2009) found, while attempting to count greater sage-grouse at leks in Elko County, Nevada using light sport aircraft at 500–650 feet AGL, that sage-grouse flushed from leks on 12 of 14 approaches when the airplane was within 656–984 feet of the lek. In the other two instances, male grouse stopped exhibiting breeding behavior and crouched but stayed on the lek. The time to resumption of normal behavior after disturbance was not provided in this study. Strutting ceased around the time when observers on the ground heard the aircraft.

To better understand the response of lesser prairie-chicken (*Tympanuchus pallidicinctus*) leks to survey aircraft, aerial transect surveys were conducted on 49 lesser prairie-chicken leks in Texas and New Mexico using two types of helicopters and a single-engine fixed-wing aircraft (McRoberts, 2009; McRoberts et al., 2011). Helicopter transects were flown at an altitude of 49 feet AGL and fixed-wing

transects were flown at 164 feet AGL; transects were separated by 1,312 feet. Distance from the transect was found to be the most important flush response predictor. Although flush responses were observed in 38–50 percent of helicopter surveys depending on helicopter type, lesser prairie-chickens returned to the lek and resumed pre-disturbance behavior in an average of seven minutes. Flushing was not observed during any transects conducted by fixed-wing aircraft. During aerial surveys by helicopter, they did not observe a single instance of lesser prairie-chickens permanently abandoning a lek. In addition, they found that flushing decreased through the lekking season during the period when surveys were conducted (McRoberts, 2009; McRoberts et al., 2011).

It is unclear how the response to the slow-flying light sport aircraft and helicopters used in the above studies would compare to overflight by military jets. It is possible that response of the birds was related to the slow speed of the light sport aircraft and helicopters and their long-term presence above the lek, causing them to resemble an aerial predator. A military aircraft overflight would be significantly shorter in duration (seconds) but with a more acute onset of louder noise, depending on altitude.

Other studies have found disturbance from energy operations, nearby developments, and other ground-based activities have adversely affected breeding behavior of prairie grouse (e.g., greater sage-grouse, lesser prairie-chicken, sharp-tailed grouse) (Harju et al., 2010; Holloran, 2005; Walker et al., 2007). These studies do not specifically address aircraft overflights and do not isolate noise disturbance from other types (e.g., visual, human presence), nor do they generally provide noise levels or qualification of the noise source (e.g., continuous or intermittent, frequency, duration). Evidence from Wyoming suggests greater sage-grouse avoided leks with anthropogenic noise associated with oil and gas development, and intermittent noise had a greater effect on lek attendance than continuous noise (Blickley et al., 2012a). In addition to effecting lek attendance, ground-based anthropogenic noise also increased stress hormone concentrations in male greater sage-grouse (Blickley et al., 2012b) as well as masked vocalizations of males on leks (Blickley & Patricelli, 2012). Likewise, Zeiler and Grunschachner-Berger (2009) postulated lek signaling was disrupted among multiple black grouse (*Lyrurus tetrix*) leks in Scandinavia due to the presence of a large wind facility and associated noise.

Based on the most current data from 2008 to 2017 regarding active greater sage-grouse leks within the region of influence, 158 leks occur beneath existing FRTC SUA (Table 3.10-20 and Figure 3.10-28). Although there would be no change in the number of leks potentially overflown under Alternative 1 with the proposed SUA revision (Figure 3.10-43), 65 leks would experience overflights at a lower altitude or floor:

- 5 leks under the Reno MOA: current floor = 13,000 feet MSL; proposed floor = 1,200 feet AGL.
- 36 leks under the Diamond ATCAA: current floor = 18,000 feet MSL; proposed floor within the new Ruby, Zircon, and Diamond MOAs = 1,200 feet AGL.
- 24 leks under the Duckwater and Smokie ATCAAs: current floor = 18,000 feet MSL; proposed floor within the new Duckwater and Smokie MOAs = 200 feet AGL.

Table 3.10-20: Number of Greater Sage-Grouse Leks Beneath Existing and Proposed FRTC SUA *

Existing			Proposed		
Airspace	Floor–Ceiling	Leks	Airspace	Floor–Ceiling	Leks
R-4816S	500 ft. AGL– 17,999 ft. MSL	1	R-4816S	No change	1
Reno MOA	13,000 ft. MSL– 17,999 ft. MSL	5	Reno MOA (supersonic capable)	1,200 ft. AGL– 17,999 ft. MSL	5
Fallon N 2 MOA	100 ft. AGL–	1	Fallon N 2 MOA	No change	1
Fallon N 3 MOA	17,999 ft. MSL	4	Fallon N 3 MOA	No change	4
Fallon N 4 MOA	200 ft. AGL– 17,999 ft. MSL	43	Fallon N 4 MOA	No change	43
Fallon S 1 MOA	100 ft. AGL– 17,999 ft. MSL	10	Fallon S 1 MOA	No change	10
Fallon S 2 MOA		1	Fallon S 2 MOA	No change	5
Fallon S 3 MOA		4			
Fallon S 4 MOA	200 ft. AGL– 17,999 ft. MSL	14	Fallon S 3 MOA	No change	30
Fallon S 5 MOA		16			
Diamond ATCAA	18,000 ft. MSL– 29,000 ft. MSL	36	Ruby MOA	1,200 ft. AGL– 17,999 ft. MSL	6
			Zircon MOA		26
			Diamond MOA		4
Duckwater ATCAA	18,000 ft. MSL–	21	Duckwater MOA	200 ft. AGL– 17,999 ft. MSL	17
Smokie ATCAA	25,000 ft. MSL	3	Smokie MOA		7
SOA B	11,000 ft. MSL– <30,000 ft.	33	SOA B	No change	51
SOA A	≥30,000 ft.	119	SOA A	No change	140

Notes: *Only those airspace units that have recorded leks underlying the airspace are listed. As the SOAs overlie the majority of the existing FRTC airspace, leks underlying the SOAs are already accounted for under the MOAs. The one lek underlying R-4816S also underlies Fallon South 1 MOA. See Figure 3.10-43.

Bold cells = proposed lower minimum altitude (floor). AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; ft. = feet; MOA = Military Operations Area; MSL = above mean sea level; N = north; R- = Restricted Area; S = south; SOA = Supersonic Operating Area.

Source: (Nevada Department of Wildlife, 2018b)

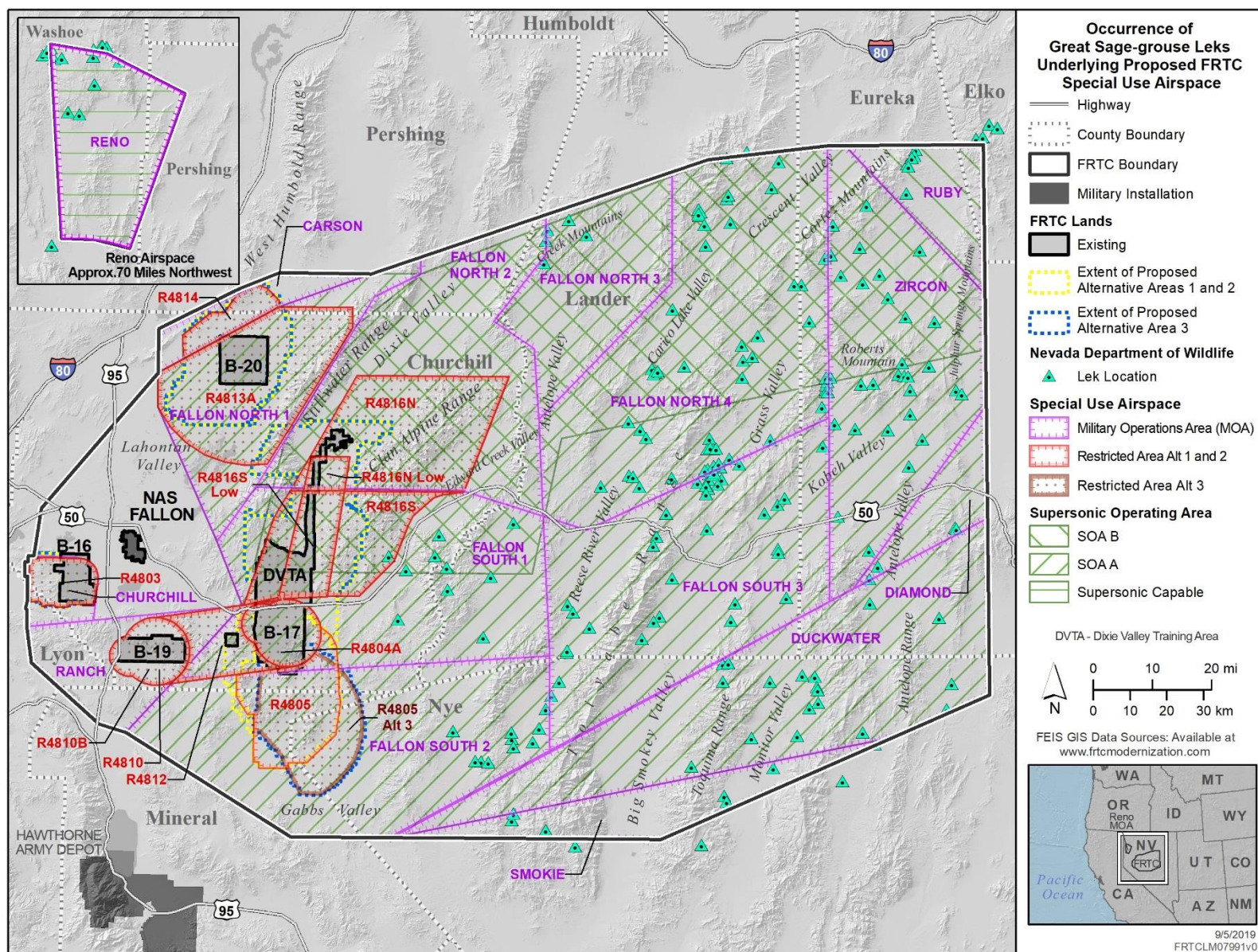


Figure 3.10-43: Occurrence of Greater Sage-Grouse Leks Underlying Proposed FRTC Special Use Airspace

Although greater-sage-grouse leks and populations underlying the proposed airspace revisions of the Reno MOA and Diamond, Duckwater, and Smokie ATCAAs would experience aircraft overflights at a lower altitude (i.e., 200 feet and 1,200 feet AGL) than they currently experience, the majority (93 of 158 leks, or 60 percent) of the leks within the region of influence currently experience overflights of 200 feet or less: 20 leks occur under airspace with a floor of 100 feet AGL, and 73 leks occur under airspace with a floor of 200 feet AGL (Table 3.10-20). The change in noise contours (dB DNL) underlying the proposed FRTC airspace, as related to the baseline or existing noise levels within the FRTC airspace under Alternatives 1 and 2, is shown in Figure 3.10-44. The existing airspace associated with the current low-level aircraft operations (Fallon North MOAs and Fallon South MOAs) has been in use for over 20 years. As stated above, the primary threats to greater sage-grouse are habitat loss and fragmentation. Military aircraft overflights have not been identified as a threat to greater-sage-grouse lekking attendance and behavior or populations (U.S. Fish and Wildlife Service, 2015).

Although the proposed expansion of the Supersonic Operating Areas to the east and south within the FRTC region of influence, and also establishing the Reno MOA as supersonic capable, would result in 196 greater sage-grouse leks potentially receiving sonic booms, currently 152 greater sage-grouse leks receive sonic booms under the existing Supersonic Operating Areas. Under Alternative 1, the sonic booms generated from proposed aircraft operations within the proposed revised Supersonic Operating Area A (above 31,000 feet MSL), Supersonic Operating Area B (11,000—30,000 feet MSL), and the Reno MOA within the FRTC would be similar in nature to a clap of thunder. As summarized in Section 3.7 (Noise), when employing noise sources that are impulsive in nature, less than 1 second in duration, but are not small arms related (e.g., sonic booms), the C-weighted DNL is used. As presented in the 2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement (U.S. Department of the Navy, 2015), the C-weighted DNL contours do not reach or exceed 57 dB due to insufficient activity for the size of the flight area. The maximum C-weighted DNL of 52 dB occurs near the center of the Supersonic Operating Areas. While individual sonic booms may provide a brief, impulsive noise, the contribution to C-weighted DNLs would not represent a significant degradation of the noise environment.

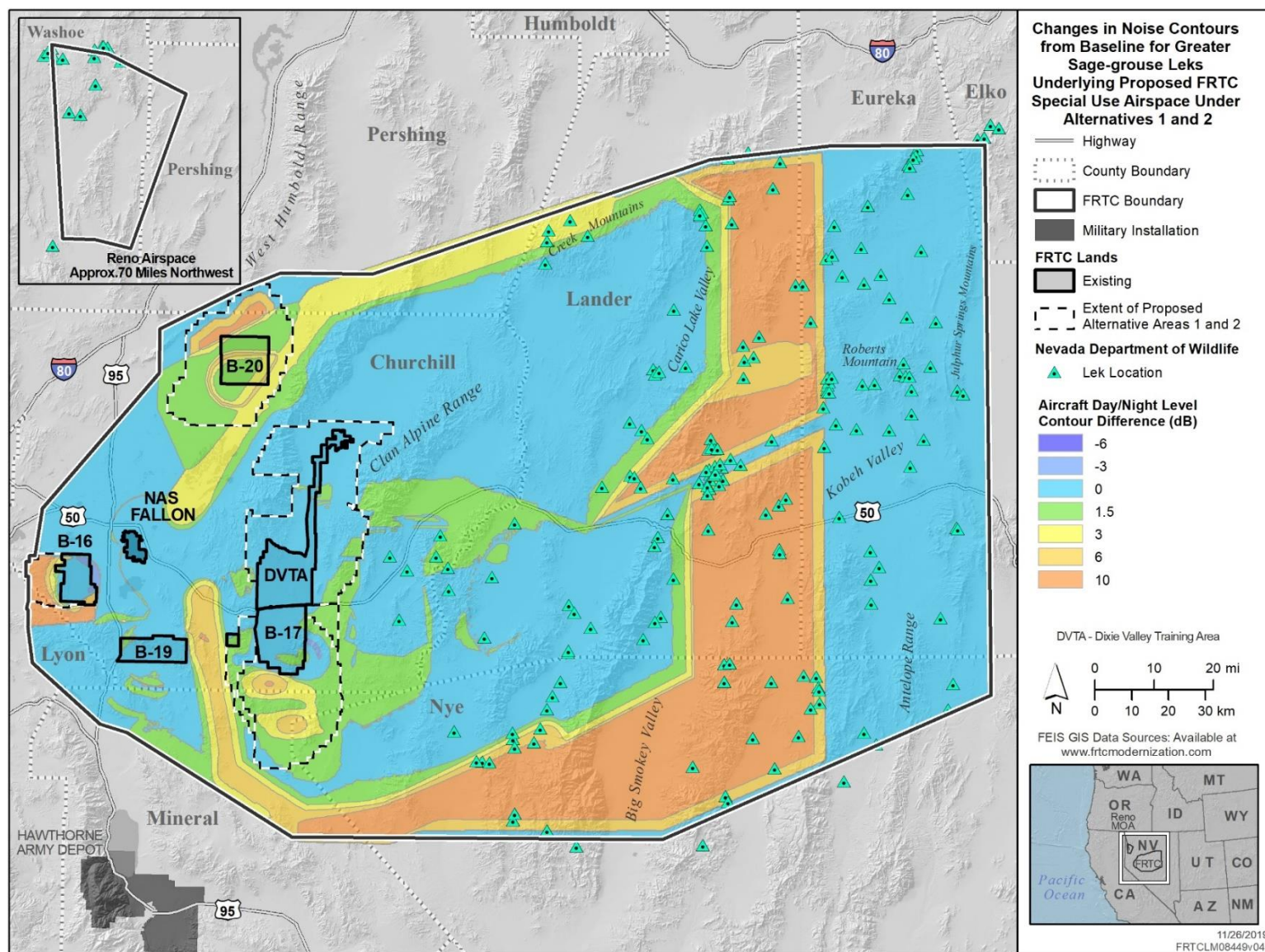


Figure 3.10-44: Changes in Noise Contours from Baseline for Greater Sage-Grouse Leks Underlying Proposed FRTC Special Use Airspace Under Alternatives 1 and 2

Therefore, proposed low-level aircraft operations within the Reno, Ruby, Diamond, Duckwater, and Smokie MOAs and supersonic operations within the revised Supersonic Operating Areas are not anticipated to result in significant impacts on greater sage-grouse leks or sage-grouse populations in general for the following reasons:

1. The probability of an animal, nest, or lek experiencing overflights more than once per day would be low due to the random nature of flight within the MOAs and the large area of land overflown.
2. The majority of greater sage-grouse leks within the region of influence are currently experiencing aircraft overflights at altitudes of less than 200 feet AGL.
3. The majority of aircraft operations within the MOAs would occur at altitudes greater than the minimum altitude (floor).
4. Averaged noise levels within the proposed MOAs would be 55 dBA DNL and within the Reno MOA would be less than 50 dBA DNL.
5. Noise levels from sonic booms within the Supersonic Operating Areas would only reach a maximum 52 dB C-weighted DNL.
6. The majority of the literature suggests that wildlife species may exhibit adaptation, acclimation, or habituation after repeated exposure to jet aircraft overflights and associated noise, including sonic booms, and that there are no adverse impacts on wildlife populations from aircraft overflights (see Section 3.10.3.1.1, Noise).

The Navy used all available information to assess the potential impacts on populations of greater sage-grouse. However, the Navy is proposing to fund a study that would be conducted by NDOW (in cooperation with the Navy) to monitor behavior of sage grouse on leks during aircraft overflights. The Navy would work with NDOW on developing the goals and design of the Study.

Ungulates: Bighorn Sheep, Mule Deer, Pronghorn, and Elk. Under Alternative 1, seven new airspace units would be established with a floor at the surface, at 200 feet AGL, or at 1,200 feet AGL (Tables 3.10-21 through 3.10-24):

- Two new restricted areas (R-4805A and R-4816S Low) with floors at the surface would be established and overlie mapped bighorn sheep, mule deer, and pronghorn range (Figure 3.10-45 through Figure 3.10-47).
- Reno MOA would be revised from a floor of 13,000 feet MSL to 1,200 feet AGL and overlies mapped bighorn sheep, mule deer, and pronghorn range (Figure 3.10-45 through Figure 3.10-47).
- Diamond ATCAA, with an existing floor of 18,000 feet MSL, would be revised to establish the Diamond, Ruby, and Zircon MOAs with floors of 1,200 feet AGL and would overlie mapped mule deer, pronghorn, and elk range (Figure 3.10-46 through Figure 3.10-48).
- Duckwater and Smokie ATCAAs, with existing floors of 18,000 feet MSL, would be revised to establish the Duckwater and Smokie MOAs with floors of 200 feet AGL and would overlie mapped bighorn sheep, mule deer, pronghorn, and elk range (Figure 3.10-45 through Figure 3.10-48).

In addition, Supersonic Operating Areas would be expanded to the east over the proposed Duckwater, Ruby, Zircon, and Diamond MOAs, including establishing Reno MOA as supersonic capable, and would overlie mapped bighorn sheep, mule deer, pronghorn, and elk range (Figure 3.10-45 through Figure 3.10-48).

Although populations of ungulates beneath these proposed airspace revisions would now experience aircraft operations at a lower altitude, all of the ungulate populations underlying the FRTC region of influence airspace currently experience aircraft overflights at similar altitudes. For example, hundreds of thousands of mapped bighorn sheep, mule deer, pronghorn, and elk range currently experience overflights at altitudes ranging from the surface to 500 feet AGL (Tables 3.10-21 through 3.10-24). These existing airspace units have been used for over 20 years, and current ungulate populations underlying the FRTC region of influence are either healthy and stable or increasing (Cox et al., 2017; Nevada Department of Wildlife, 2017a). For example, as summarized in Section 3.10.2.4.4 (Special-Status Mammals – Ungulates), all bighorn sheep herds underlying R-4804A, R-4812, R-4816S, and Fallon South 2 MOA, which include airspace floors at surface and 100 feet AGL, are at all-time-high population estimates in 2017 (Nevada Department of Wildlife, 2017a).

Therefore, proposed low-level aircraft operations within the Reno, Duckwater, Ruby, and Diamond MOAs and supersonic operations within the revised Supersonic Operating Areas would not result in significant impacts on ungulate populations for the following reasons:

1. The probability of an animal experiencing overflights more than once per day would be low due to the random nature of flight within the airspace and the large area of land overflown.
2. The majority of mapped ungulate range within the region of influence is currently experiencing aircraft overflights at altitudes of less than 500 feet AGL.
3. The majority of aircraft operations within the airspace would occur at altitudes greater than the minimum altitude (floor).
4. Averaged noise levels within the proposed MOAs would be 55 dBA onset-rate adjusted day-night average sound level (L_{dnmr}) and within the Reno MOA would be less than 50 dBA (L_{dnmr}) (refer to the Supporting Study: Noise Study, available at <https://www.frtcmodernization.com>).
5. Noise levels from sonic booms within the Supersonic Operating Areas would only reach a maximum 52 dB C-weighted DNL (refer to the Supporting Study: Noise Study, available at <https://www.frtcmodernization.com>).
6. The majority of the literature suggests that wildlife species may exhibit adaptation, acclimation, or habituation after repeated exposure to jet aircraft overflights and associated noise, including sonic booms, and that there are no adverse impacts on wildlife populations from aircraft overflights (see Overview of Wildlife Responses to Noise in Section 3.10.3.1.1, Noise).

Table 3.10-21: Mapped Bighorn Sheep Range Beneath Existing and Proposed FRTC SUA*

Existing			Proposed		
Airspace	Floor–Ceiling	Total Range (acres)	Airspace	Floor–Ceiling	Total Range (acres)
R-4804A	Surface– 17,999 ft. MSL	24,476	R-4804A	No change	24,476
			R-4805A	Surface– 17,999 ft. MSL	36,343
R-4812	Surface– 17,999 ft. MSL	25,744	R-4812	No change	25,744
R-4813A		78,920	R-4813A		78,920
R-4816N	1,500 ft. AGL– 17,999 ft. MSL	113,024	R-4816N	No change	113,024
R-4816S	500 ft. AGL– 17,999 ft. MSL	144,410	R-4816S	No change	144,410
			R-4816S Low	Surface– 499 ft. AGL	28,149
Ranch Low/High MOA	500 ft. AGL– 13,000 ft. MSL	1,269	Ranch MOA	No change	1,269
Reno MOA	13,000 ft. MSL– 17,999 ft. MSL	79,406	Reno MOA (supersonic capable)	1,200 ft. AGL– 17,999 ft. MSL	79,406
Fallon N 1 MOA	100 ft. AGL– 17,999 ft. MSL	122,368	Fallon N 1 MOA	No change	122,368
Fallon N 2 MOA		225,414	Fallon N 2 MOA		225,414
Fallon N 3 MOA		100,084	Fallon N 3 MOA		100,084
Fallon S 1 MOA	100 ft. AGL– 17,999 ft. MSL	414,809	Fallon S 1 MOA	No change	414,809
Fallon S 2 MOA		95,530	Fallon S 2 MOA	No change	95,530
Fallon S 3 MOA		0			
Fallon S 4 MOA	200 ft. AGL– 17,999 ft. MSL	0	Fallon S 3 MOA	No change	41,255
Fallon S 5 MOA		41,255			
Duckwater & Smokie ATCAAs	18,000 ft. MSL– 25,000 ft. MSL	165,386	Duckwater & Smokie MOAs	200 ft. AGL– 17,999 ft. MSL	165,386
SOA B	11,000 ft. MSL– <30,000 ft.	477,366	SOA B	No change	477,366
SOA A	≥30,000 ft.	939,565	SOA A	No change	1,021,397

Notes: *Only those airspace units that have mapped bighorn sheep range underlying the airspace are listed. As the SOAs overlie the majority of the existing FRTC airspace, mapped bighorn sheep range underlying the SOAs are already accounted for under the MOAs and is not double counted. As the MOAs overlap the restricted areas (R-), the acreage listed within all restricted areas is already accounted for under the MOAs. See Figure 3.10-45.

Bold cells = proposed change in airspace configuration = lower minimum altitude (floor).

AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; ft. = feet; MOA = Military Operations Area; MSL = above mean sea level; N = north; R- = Restricted Area; S = south; SOA = Supersonic Operating Area.

Source: (Nevada Department of Wildlife, 2018b)

Table 3.10-22: Mapped Mule Deer Range Beneath Existing and Proposed FRTC SUA*

Existing			Proposed		
Airspace	Floor–Ceiling	Total Range (acres)	Airspace	Floor–Ceiling	Total Range (acres)
R-4804A	Surface– 17,999 ft. MSL	11,842	R-4804A	No change	11,842
			R-4805A	Surface– 17,999 ft. MSL	3,206
R-4812	Surface– 17,999 ft. MSL	20,664	R-4812	No change	20,664
R-4813A		47,930	R-4813A		47,930
R-4816N	1,500 ft. AGL– 17,999 ft. MSL	113,564	R-4816N	No change	113,564
R-4816S	500 ft. AGL– 17,999 ft. MSL	85,588	R-4816S	No change	85,588
			R-4816S Low	Surface– 499 ft. AGL	919
Reno MOA	13,000 ft. MSL– 17,999 ft. MSL	353,171	Reno MOA (supersonic capable)	1,200 ft. AGL– 17,999 ft. MSL	353,171
Fallon N 1 MOA	100 ft. AGL– 17,999 ft. MSL	72,241	Fallon N 1 MOA	No change	72,241
Fallon N 2 MOA		274,777	Fallon N 2 MOA		274,777
Fallon N 3 MOA		117,952	Fallon N 3 MOA		117,952
Fallon N 4 MOA	200 ft. AGL– 17,999 ft. MSL	693,216	Fallon N 4 MOA	No change	693,216
Fallon S 1 MOA	100 ft. AGL– 17,999 ft. MSL	398,278	Fallon S 1 MOA	No change	398,278
Fallon S 2 MOA		140,259	Fallon S 2 MOA	No change	220,705
Fallon S 3 MOA		80,446			
Fallon S 4 MOA	200 ft. AGL– 17,999 ft. MSL	163,304	Fallon S 3 MOA	No change	509,479
Fallon S 5 MOA		346,175			
Diamond ATCAA	18,000 ft. MSL– 29,000 ft. MSL	657,496	Diamond MOA	1,200 ft. AGL– 17,999 ft. MSL	79,954
			Ruby MOA		98,824
			Zircon MOA		478,718
Duckwater & Smokie ATCAAs	18,000 ft. MSL– 25,000 ft. MSL	812,939	Duckwater & Smokie MOAs	200 ft. AGL– 17,999 ft. MSL	812,939
SOA B	11,000 ft. MSL– <30,000 ft.	1,136,833	SOA B	No change	1,514,802
SOA A	≥30,000 ft.	2,934,985	SOA A	No change	3,687,119

Notes: *Only those airspace units that have mapped mule deer range underlying the airspace are listed. As the SOAs overlie the majority of the existing FRTC airspace, mapped mule deer range underlying the SOAs are already accounted for under the MOAs and is not double counted. As the MOAs overlap the restricted areas (R-), the acreage listed within all restricted areas is already accounted for under the MOAs. See Figure 3.10-46.

Bold cells = proposed change in airspace configuration = lower minimum altitude (floor).

AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; ft. = feet; MOA = Military Operations Area; MSL = above mean sea level; N = north; R- = Restricted Area; S = south; SOA = Supersonic Operating Area.

Source: (Nevada Department of Wildlife, 2018b)

Table 3.10-23: Mapped Pronghorn Range Beneath Existing and Proposed FRTC SUA*

Existing			Proposed		
Airspace	Floor–Ceiling	Total Range (acres)	Airspace	Floor–Ceiling	Total Range (acres)
R-4804A	Surface– 17,999 ft. MSL	74,240	R-4804A	No change	74,240
			R-4805A	Surface– 17,999 ft. MSL	200,450
R-4812	Surface– 17,999 ft. MSL	90,414	R-4812	No change	90,414
R-4813A		175,474	R-4813A		175,474
R-4816N	1,500 ft. AGL– 17,999 ft. MSL	208,288	R-4816N	No change	208,288
R-4816S	500 ft. AGL– 17,999 ft. MSL	239,299	R-4816S	No change	239,299
			R-4816S Low	Surface– 499 ft. AGL	87,954
Ranch Low/High MOA	500 ft. AGL– 13,000 ft. MSL	170,742	Ranch MOA	No change	170,742
Reno MOA	13,000 ft. MSL– 17,999 ft. MSL	481,835	Reno MOA (supersonic capable)	1,200 ft. AGL– 17,999 ft. MSL	481,835
Fallon N 1 MOA	100 ft. AGL– 17,999 ft. MSL	250,824	Fallon N 1 MOA	No change	250,824
Fallon N 2 MOA		640,683	Fallon N 2 MOA		640,683
Fallon N 3 MOA		265,538	Fallon N 3 MOA		265,538
Fallon N 4 MOA	200 ft. AGL– 17,999 ft. MSL	640,458	Fallon N 4 MOA	No change	640,458
Fallon S 1 MOA	100 ft. AGL– 17,999 ft. MSL	825,696	Fallon S 1 MOA	No change	825,696
Fallon S 2 MOA		689,167	Fallon S 2 MOA	No change	823,282
Fallon S 3 MOA		134,115	Fallon S 3 MOA	No change	590,637
Fallon S 4 MOA	200 ft. AGL– 17,999 ft. MSL	171,874			
Fallon S 5 MOA		418,763			
Diamond ATCAA	18,000 ft. MSL– 29,000 ft. MSL	786,758	Diamond MOA	1,200 ft. AGL– 17,999 ft. MSL	78,746
			Ruby MOA		144,958
			Zircon MOA		563,054
Duckwater & Smokie ATCAAs	18,000 ft. MSL– 25,000 ft. MSL	681,370	Duckwater & Smokie MOAs	200 ft. AGL– 17,999 ft. MSL	681,370
SOA B	11,000 ft. MSL– <30,000 ft.	1,677,590	SOA B	No change	2,093,572
SOA A	≥30,000 ft.	4,604,317	SOA A	No change	5,240,976

Notes: *Only those airspace units that have mapped pronghorn range underlying the airspace are listed. As the SOAs overlie the majority of the existing FRTC airspace, mapped pronghorn range underlying the SOAs are already accounted for under the MOAs and is not double counted. As the MOAs overlap the restricted areas (R-), the acreage listed within all restricted areas is already accounted for under the MOAs. See Figure 3.10-47.

Bold cells = proposed change in airspace configuration = lower minimum altitude (floor). AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; ft. = feet; MOA = Military Operations Area; MSL = above mean sea level; N = north; R- = Restricted Area; S = south; SOA = Supersonic Operating Area.

Source: (Nevada Department of Wildlife, 2018b)

Table 3.10-24: Mapped Elk Range Beneath Existing and Proposed FRTC SUA*

Existing			Proposed		
Airspace	Floor–Ceiling	Total Range (acres)	Airspace	Floor–Ceiling	Total Range (acres)
Fallon S 1 MOA	100 ft. AGL– 17,999 ft. MSL	29,062	Fallon S 1 MOA	No change	29,062
Fallon S 2 MOA		103,889	Fallon S 2 MOA	No change	153,937
Fallon S 3 MOA		50,048			
Fallon S 4 MOA	200 ft. AGL– 17,999 ft. MSL	0	Fallon S 3 MOA	No change	133,052
Fallon S 5 MOA		133,052			
Diamond ATCAA	18,000 ft. MSL– 29,000 ft. MSL	76,046	Diamond MOA	1,200 ft. AGL– 17,999 ft. MSL	1,368
			Ruby MOA		33,884
			Zircon MOA		40,794
Duckwater & Smokie ATCAAs	18,000 ft. MSL– 25,000 ft. MSL	572,404	Duckwater & Smokie MOAs	200 ft. AGL– 17,999 ft. MSL	572,404
SOA B	11,000 ft. MSL– <30,000 ft.	0	SOA B	No change	34,288
SOA A	≥30,000 ft.	356,845	SOA A	No change	810,916

Notes: *Only those airspace units that have mapped elk range underlying the airspace are listed. As the SOAs overlie the majority of the existing FRTC airspace, mapped elk range underlying the SOAs are already accounted for under the MOAs and is not double counted. See Figure 3.10-48.

Bold cells = proposed change in airspace configuration = lower minimum altitude (floor).

AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; ft. = feet; MOA = Military Operations Area; MSL = above mean sea level; S = south; SOA = Supersonic Operating Area.

Source: (Nevada Department of Wildlife, 2018b)

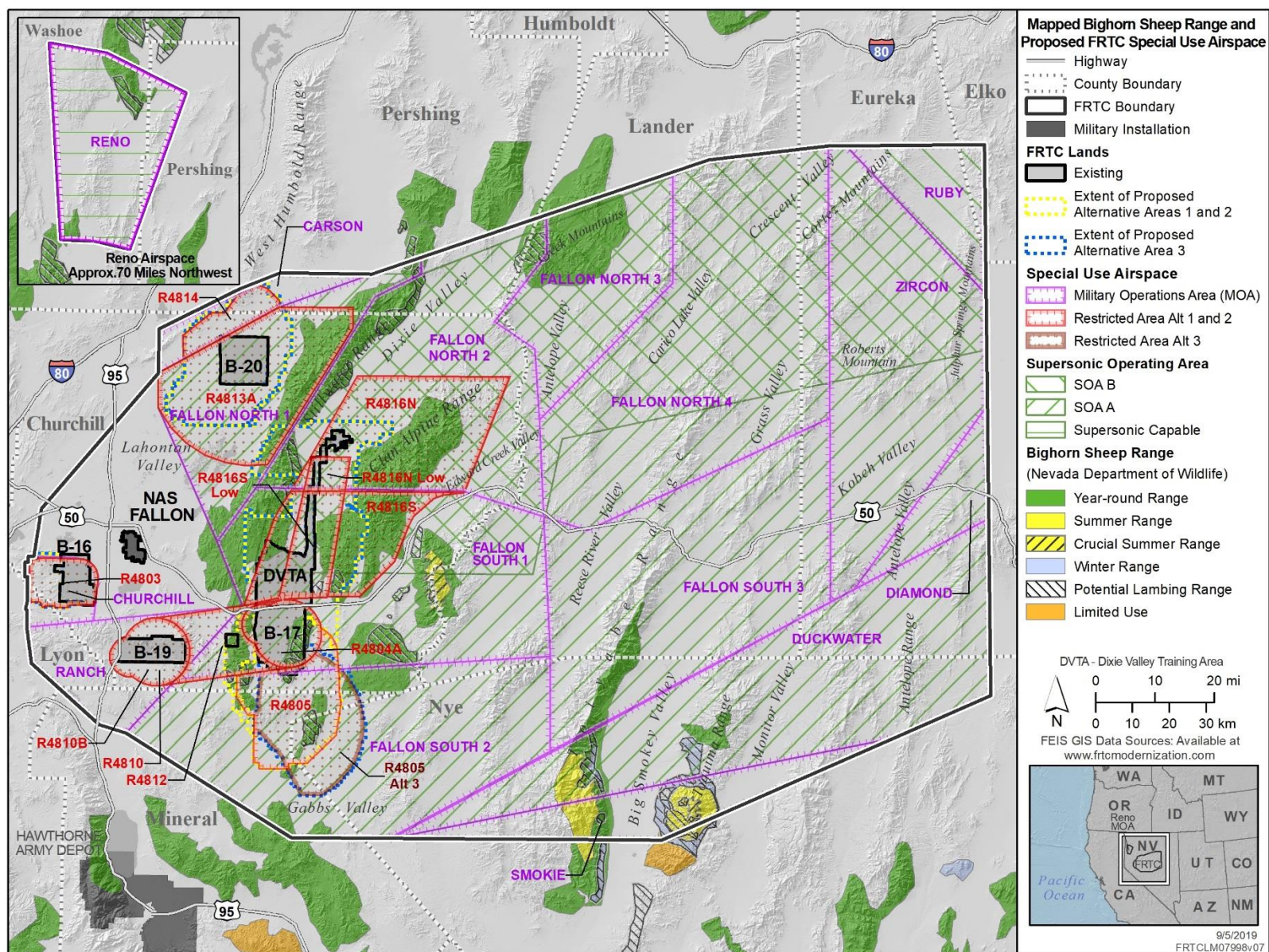


Figure 3.10-45: Mapped Bighorn Sheep Range and Proposed FRTC Special Use Airspace



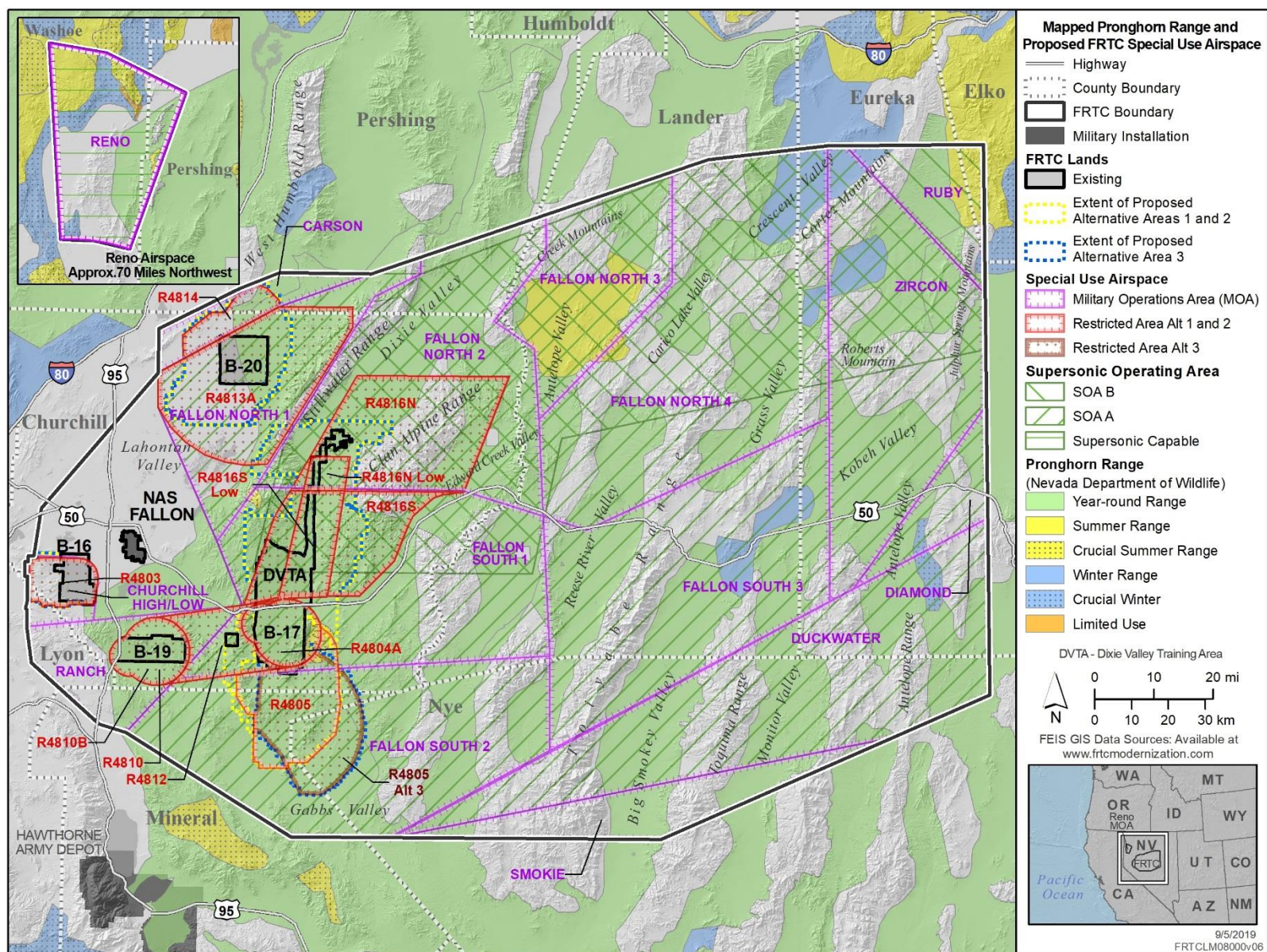


Figure 3.10-47: Mapped Pronghorn Range and Proposed FRTC Special Use Airspace



Electromagnetic Fields. Wildlife within the proposed FRTC expansion areas would be exposed to various forms of electromagnetic sources including radar, threat transmitters, communications equipment, and electronic detection equipment, primarily during electronic combat training events. Typically, the maximum magnetic field generated would be approximately 0.0023 Tesla (T). This level of electromagnetic density is very low when compared to magnetic fields generated by other everyday items. The magnetic field generated is between the levels of a refrigerator magnet (0.015–0.02 T) and a standard household can opener (up to 0.004 measured at 4 inches away). The strength of the electromagnetic field decreases quickly away from the source. The magnetic field generated at a distance of 13.12 feet from the source is comparable to the earth's magnetic field, which is approximately 0.00005 T. The strength of the field at just under 26 feet is only 40 percent of the earth's field, and only 10 percent at 79 feet. At a radius of 656 feet, the magnetic field would be approximately 0.002 G.

Under Alternative 1, the amount of training over baseline conditions analyzed in the 2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement (U.S. Department of the Navy, 2015) would remain the same but be dispersed throughout the existing and proposed FRTC expansion areas. Although the potential effects of this radiation on wildlife within the proposed expansion areas cannot be quantified, the effects would be expected to be minor for the following reasons:

1. Animals within the proposed expansion areas would not be exposed to constant radiation as electromagnetic fields would not be constantly generated, training activities would vary by location, and because of the variable duration of training activities that generate magnetic fields.
2. The strength of the electromagnetic fields is similar or less than the electromagnetic fields generated by the earth.
3. The beam of electromagnetic radiation (e.g., from radars) could expose animals to increased levels of radiation; however, animals would typically be moving through the area (e.g., bird flight) and potentially out of the path of the main beam (U.S. Department of the Navy, 2015).

Animals within the proposed expansion areas may experience a detectable behavioral response to an electromagnetic field but would quickly recover after the exposure. The general characteristics of electromagnetic fields and their potential to impact wildlife were discussed previously under the general overview of stressors. The fitness (physiological health and normal behavior) of individuals or populations would not be affected by electromagnetic fields generated from sources included under Alternative 1.

Lasers. Under Alternative 1, the amount of training over baseline conditions analyzed in the 2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement (U.S. Department of the Navy, 2015) would remain the same but would be dispersed throughout the existing and proposed FRTC expansion areas. Although this would increase the area where stressors would potentially impact wildlife resources, the intensity of each stressor would decrease because of the wider area where military training activities would expose animals to lasers. Lasers would only be employed between the device and a target, greatly reducing the chance of wildlife being exposed to the beam. Based on the low likelihood of a laser beam directly reaching an animal (or an animal's eye), how close an animal would need to be in order to experience effects, the dispersion of training activities would potentially benefit wildlife resources throughout the existing B-16 range because the numbers of exposures in any one location would decrease.

Under Alternative 1, laser-guided munitions would be used in B-16. Lasers used in the FRTC Study Area would be similar to the moderate-powered lasers from the studies cited above, and therefore no damaging effects on vision would be anticipated. Further, because laser-guided munitions would only be used within the Bravo training ranges, only wildlife species within this area would be potentially affected. Impacts associated with lasers are anticipated to be less than significant because: (1) it is unlikely an animal would detect a laser beam; (2) if detected, the animal would be expected to recover quickly (within a few seconds); and (3) the fitness (physiological health and normal behavior) of individual animals would not be affected by this temporary effect (the length of time a laser beam might accidentally be sighted directly on an animal's eyes).

Chaff. Chaff consists of very small (about an inch long and one thousandth of an inch in diameter) fibers that are released from chaff dispensers. The principal components of chaff (i.e., aluminum, silica glass fibers, and stearic acid) are biodegradable, including the dispenser's end cap, and pose no known risk to wildlife (Spargo, 1999; U.S. Department of the Air Force, 1997; U.S. Government Accountability Office, 1998). Therefore, there would be no significant impacts on biological resources with the use of chaff during proposed training activities.

Physical Disturbance. The resources within the withdrawal areas associated with the proposed range expansion areas would be subject to physical disturbance from ordnance expenditures and construction activities. Impacts associated with construction activities and military training activities would not be significant because: (1) although individual animals may be impacted by disturbance or strikes from ordnance, it is not anticipated that population-level effects would occur; and BLM-certified fencing would be installed in accordance with specifications outlined in BLM Handbook H-1741-1 (Fencing), therefore minimizing impacts on animals and animal movements (e.g., bighorn sheep, pronghorn).

Aircraft strikes of birds, and infrequently bats, may occur during any phase of flight, but are most likely during the take-off, initial climb, approach, and landing phases because of the greater numbers of animals in flight at lower levels. While all aircraft strikes are considered serious and dangerous events, the number of related mortalities is small considering Navy-wide aircraft activities. Most would be expected to occur during take-off and landings, but would have a potential to occur if low-altitude flights occurred over areas with wildlife aggregating features, such as water (e.g., lakes, wetlands), riparian corridors, and ridge lines.

U.S. Navy policy requires NAS Fallon to manage their operations to minimize flight-related and aviation ground mishaps. As part of this policy, hazards to aircraft and ground operations must be identified and eliminated or minimized. The daily and seasonal movement of resident and migratory birds in the vicinity of NAS Fallon and associated existing and proposed revised airspace create various hazardous conditions to aviation. NAS Fallon has prepared a BASH Plan to identify potential areas of concern and to establish procedures to mitigate the threat of bird and other animal strikes to aircrews and aircraft at NAS Fallon and the associated SUA. On average, from 2010 through August 2019, there have been approximately 20 BASH incidents per year at NAS Fallon (Naval Air Station Fallon, 2019).

The BASH program is an ongoing process including an aircrew notification and warning system. This system establishes procedures for the immediate exchange of information between ground agencies and aircrews concerning the existence and location of birds that pose a hazard to flight safety, both within the NAS Fallon airfield environment and within SUA, including range areas. The BASH plan provides detailed procedures to monitor and react to heightened risk of bird/animal strikes. When risk increases, limits would be placed on low-altitude flight and some types of training. Special briefings

would be provided to pilots whenever the potential exists for increased bird/animal strikes within the airspace. When conducting low-level flight operations within the SUA, pilots are informed of areas or route segments that are under a Bird Hazard Condition Red (Severe), which is generally based on migration patterns, radar reports, or current conditions from pilots within the airspace. In addition, pilots would continue to use the Avian Hazard Advisory System to monitor bird activity in near real-time to increase flight crew awareness and planning capabilities, particularly in areas of known concentrations of migratory birds (e.g., wetlands associated with Fallon and Stillwater NWRs within the proposed B-20 expansion area) and during known migratory periods. Currently three SUA units overlap the Stillwater and Fallon NWRs: Fallon North 1 MOA, R-4813A, and R-4813B. Under Alternative 1, there are no proposed changes to the operating altitudes of the SUAs that overlap the Stillwater NWR, no changes in number of aircraft operations, and no changes in the approach and departure tracks of aircraft utilizing targets in B-20. The proposed B-20 expansion area that overlaps the NWRs is for a ground-based safety zone and not due to an increase or change in aircraft operations over the NWRs. Stillwater NWR would continue to be considered a noise-sensitive area, and flight operations would be restricted to above 3,000 feet AGL and to a distance of 5 nautical miles from the center of the NWR.

Therefore, there would be no change in the BASH potential with implementation of the proposed action. The following are some general operational changes that are implemented during aircraft operations to reduce threats from bird strikes, mission permitting:

- When practical, reduce low-level flight time.
- Reduce formation flying.
- Reduce airspeeds to allow birds to be seen sooner and lessen damage in event of a strike.
- Avoid areas with known raptor concentrations during summer, especially during 10 a.m. to 5 p.m. due to increased thermals (Naval Air Station Fallon, 2012).

With adherence to the NAS Fallon BASH Plan and use of the Avian Hazard Advisory System, there would be no significant impacts on bat or migratory bird populations as no population-level effects to bats or birds would be expected.

3.10.3.3.2 Public Access

Under Alternative 1, the proposed B-16, B-17, and B-20 expansion areas would be fenced to control access. To minimize impacts on animals and animal movements (e.g., bighorn sheep, pronghorn), fencing would be installed in accordance with specifications outlined in BLM Handbook H-1741-1 (Fencing). The Navy would install perimeter fencing to enclose the proposed expansion areas and connect with existing range perimeter fencing. The Navy would close and restrict public access to the proposed range expansion areas and existing ranges except for Navy-authorized activities (e.g., ceremonial or cultural site visits, research/academic pursuits, or regulatory or management activities such as BLM, USFWS, NDOW activities). Under Alternative 1, allowable public uses of the lands within the existing DVTA and proposed DVTA expansion area would not change from current conditions. For further details regarding public access refer to Sections 3.2 (Land Use), 3.11 (Cultural Resources), and 3.12 (Recreation).

3.10.3.3.3 Construction Activities

Based on the information presented below, there would be no significant impacts on vegetation and special-status plant species with implementation of proposed construction activities under Alternative 1 because (1) ground-disturbing activities would primarily impact a common and dominant vegetation

type within the region, (2) no special-status plant species would be directly impacted, and (3) Stormwater Pollution Prevention Plans (SWPPPs) would be prepared and implemented to avoid and minimize potential direct and indirect impacts on soil and vegetation.

Vegetation and Special-Status Plants

Under Alternative 1, approximately 4,644 acres of 17 vegetation types would be impacted from construction activities associated with the proposed B-16, B-17, B-20, and DVTA expansion areas (Table 3.10-25). Two vegetation types comprise 83 percent of the total vegetation that would be impacted: Bailey's greasewood shrubland (2,481 acres or 53 percent) and microphytic playa (1,404 acres or 30 percent). Specific vegetation impacts within each proposed expansion area are discussed below.

Table 3.10-25: Acreage of Direct Vegetation Impacts from Proposed Construction Activities Within the Proposed B-16, B-17, B-20, and DVTA Expansion Areas Under Alternative 1

Vegetation Type	Range				Total
	B-16	B-17	B-20	DVTA	
Bailey's Greasewood Shrubland	68.0	2,391.9	21.1	0	2,481.0
Big Sagebrush - Mixed Shrub Dry Steppe & Shrubland	0.2	4.4	0.8	0	5.4
Black Sagebrush Steppe & Shrubland	0	25.1	0.1	6.0	31.2
Cheatgrass Ruderal Grassland	0	10.5	0.5	0	11.0
Basin Big Sagebrush - Foothill Big Sagebrush Dry Steppe & Shrubland	0	25.5	0.7	0	26.2
Intermountain Greasewood Wet Shrubland	3.3	9.2	19.8	0	32.3
Fremont's Smokebush - Nevada Smokebush Desert Wash Scrub	0.4	0	0	0	0.4
Great Basin Singleleaf Pinyon-Utah Juniper/Shrub Woodland	0	0	0	4.0	4.0
Microphytic Playa	0	0.2	1,403.7	0	1,403.9
Mojave-Sonoran Burrobush - Sweetbush Desert Wash Scrub	0	200.8	0.1	0	200.9
Rubber Rabbitbrush - Sand Buckwheat - Four-part Horsebrush Sparse Scrub	0	135.9	0	0	135.9
Shadscale Saltbush Scrub	35.8	4.6	0.7	0	41.1
Utah Juniper/Shrub Woodland	0	6.7	0	5.0	11.7
Nevada Joint-fir Scrub	0	0.3	0	0	0.3
Mojave Seablite – Red Swampfire Alkaline Wet Scrub	0	0	2.5	0	2.5
Yellow Star-thistle – Dyer's Woad – Prickly Russian-thistle Ruderal Annual Forb	0	7.3	0	0	7.3
Wyoming Big Sagebrush Dry Steppe & Shrubland	0	248.5	0	0	248.5
Total	107.7	3,070.9	1,450.0	15.0	4,643.6

- Proposed B-16 Expansion Area.** Proposed ground-disturbing construction activities (e.g., excavating, grading, grubbing, compacting, and clearing soil) associated with the proposed B-16 expansion area would directly impact 108 acres of vegetation (Table 3.10-25 and Figure 3.10-49). These construction activities are associated with the proposed combat village that would contain 35–45 conex boxes and the installation of 31 miles of security fencing with five access gates. Approximately 104 acres (96 percent) of the impacted vegetation is the regionally common and dominant Bailey's greasewood shrubland (68 acres or 63 percent) and shadscale saltbush scrub (36 acres or 33 percent). Based on special-status plant surveys conducted in 2017 in support of this EIS, one special-status plant species (sand cholla [*Camissonia nevadensis*], a Nevada protected cactus) potentially occurs in the vicinity of the northwestern corner of the proposed perimeter fence of the proposed B-16 expansion area (Figure 3.10-49). Any sand cholla identified within the route of the perimeter fence would be avoided during construction

depending on the proposed final routing of the perimeter fence. No other special-status plant species are known to occur within the areas of proposed ground-disturbing activities within the proposed B-16 expansion area.

- *Proposed B-17 Expansion Area.* Proposed ground-disturbing construction activities (e.g., excavating, grading, grubbing, compacting, and clearing soil) associated with the proposed B-17 expansion area would directly impact 3,071 acres of vegetation (Table 3.10-25 and Figure 3.10-50). These ground-disturbing activities are associated with the proposed construction of two communication towers, convoy routes, military vehicle training routes, ground target areas, and 75 miles of security fencing with eight gates. The majority (2,392 acres or 78 percent) of the impacted vegetation is the regionally common and dominant Bailey's greasewood shrubland. Based on special-status plant surveys conducted in 2017 in support of this EIS, no special-status plant species occur in the vicinity of the proposed ground-disturbing activities within the proposed B-17 expansion area (Figure 3.10-50).
- *Proposed B-20 Expansion Area.* Proposed ground-disturbing construction activities (e.g., excavating, grading, grubbing, compacting, and clearing soil) associated with the proposed B-20 expansion area would directly impact 1,450 acres of vegetation, 78 percent of which is the regionally common Bailey's greasewood shrubland (Table 3.10-25 and Figure 3.10-51). These ground-disturbing activities are associated with the proposed target maintenance building, associated vehicle parking and staging, target areas, and 89 miles of security fencing with five gates. Based on special-status plant surveys conducted in 2017 in support of this EIS, no special-status plant species occur in the vicinity of the proposed ground-disturbing activities within the proposed B-20 expansion area (Figure 3.10-51).
- *Proposed DVTA Expansion Area.* Proposed ground-disturbing construction activities (e.g., excavating, grading, grubbing, compacting, and clearing soil) associated with the proposed DVTA expansion area would directly impact 15 acres: 6 acres of black sagebrush steppe and shrubland, 4 acres of Great Basin singleleaf pinyon-Utah juniper/shrub woodland, and 5 acres of Utah juniper/shrub woodland (Table 3.10-25). These ground-disturbing activities are associated with the proposed 5-acre fenced electronic warfare sites at North Job Peak, 11 Mile Canyon, and Fairview Low (Figure 3.10-50 and Figure 3.10-52). Based on special-status plant surveys conducted in 2017 in support of this EIS, no special-status plant species occur in the vicinity of the proposed ground-disturbing activities within the proposed DVTA expansion area (Figure 3.10-52).

SWPPPs would be prepared for proposed construction activities at all proposed expansion areas when such activities would disturb 1 or more acres or be part of a common plan that disturbs 1 or more acres. In accordance with Nevada's Stormwater Construction General Permit, all project-related SWPPPs would include erosion and sediment control measures (e.g., wattles, silt fences) and best management practices that would minimize or avoid direct and indirect impacts on soil, vegetation, and surface waters (Nevada Division of Environmental Protection, 2015). SWPPP(s) would remain in effect until the construction sites have stabilized.

Therefore, there would be no significant impacts on vegetation and populations of special-status plants with implementation of proposed construction activities under Alternative 1 because (1) ground-disturbing activities would primarily impact a common and dominant vegetation type within the region, (2) no special-status plant species would be directly impacted, and (3) SWPPPs would be prepared and implemented to avoid and minimize potential direct and indirect impacts on soil and vegetation.

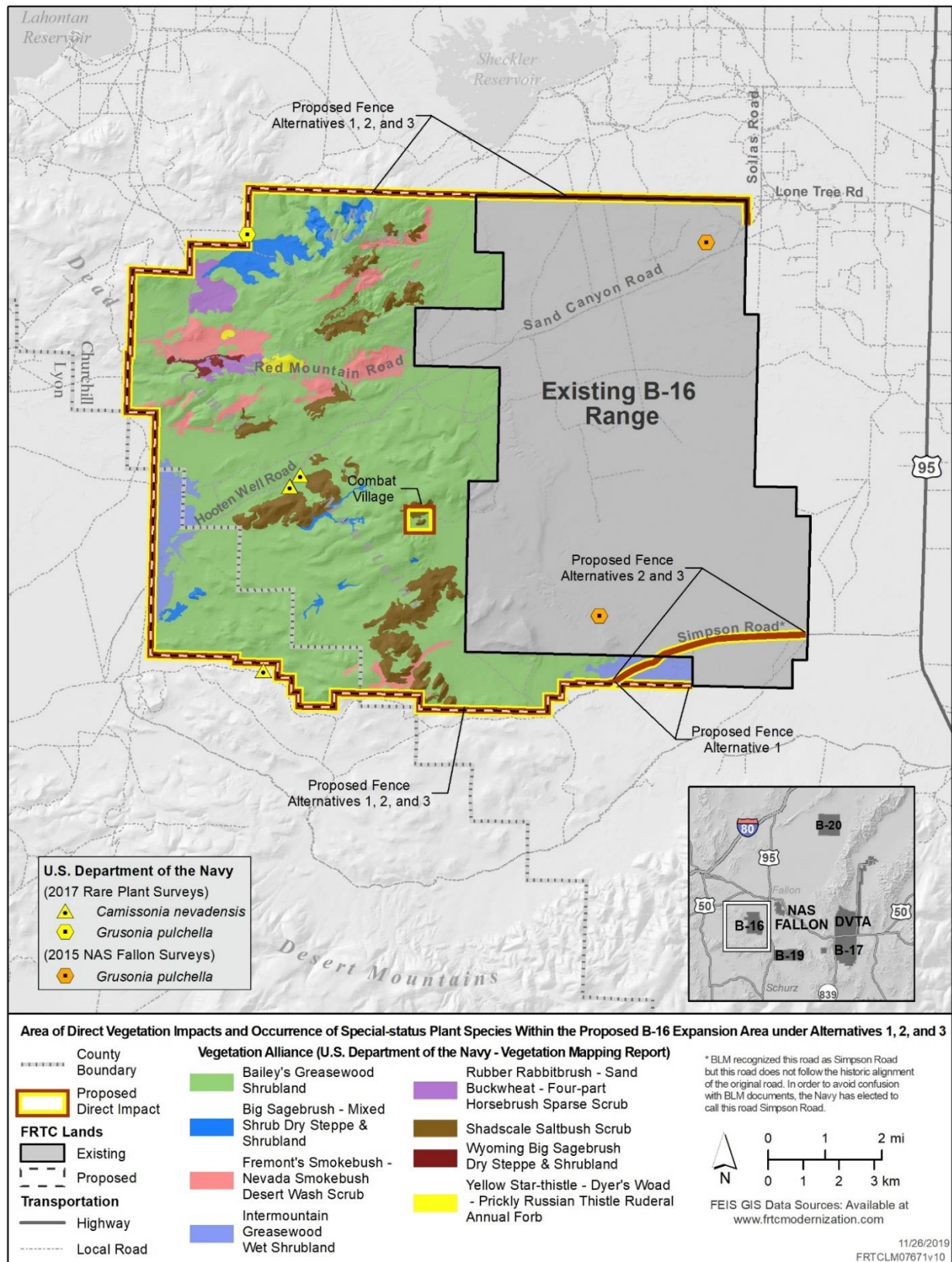


Figure 3.10-49: Area of Direct Vegetation Impacts and Occurrence of Special-Status Plant Species Within the Proposed B-16 Expansion Area Under Alternatives 1, 2, and 3

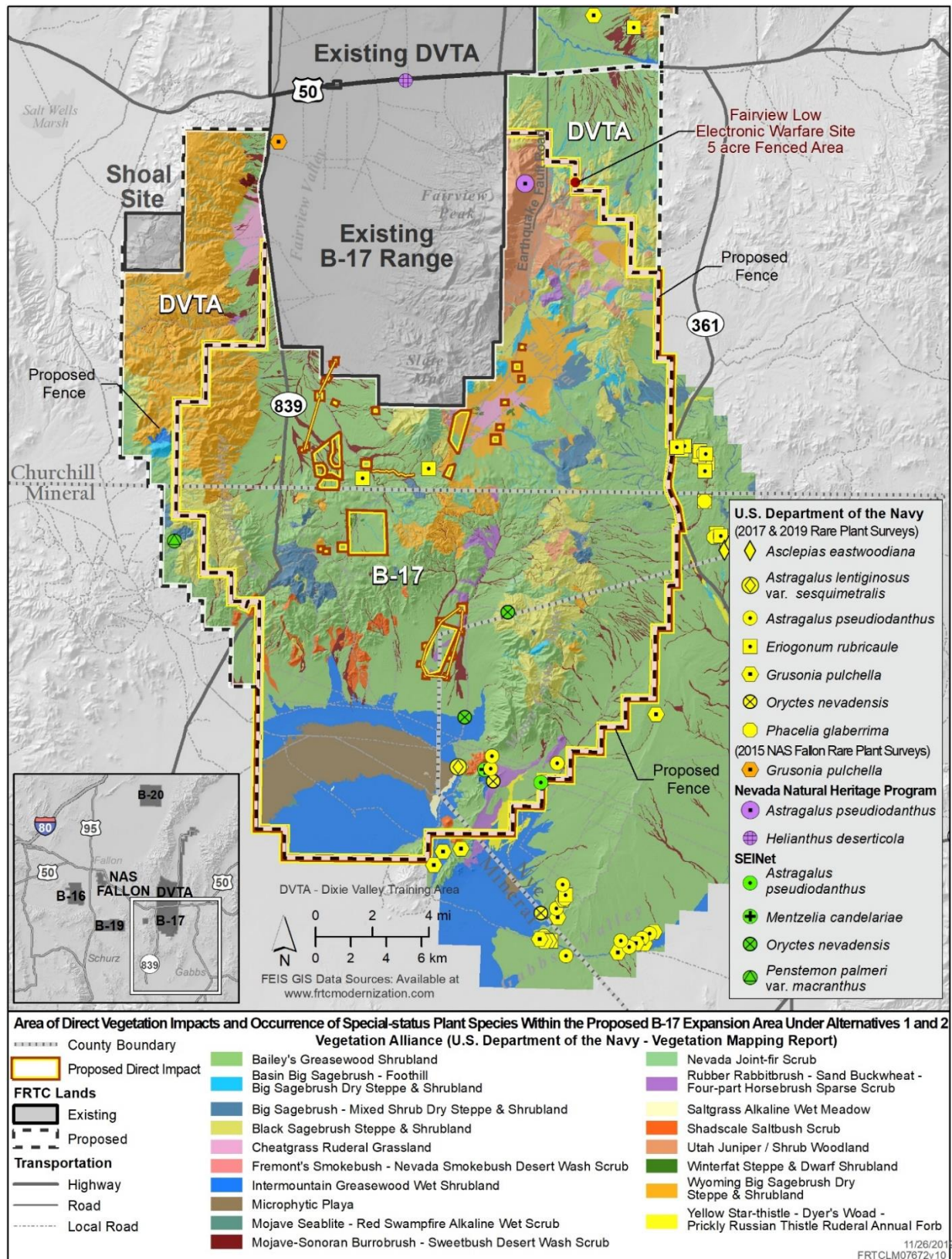


Figure 3.10-50: Area of Direct Vegetation Impacts and Occurrence of Special-Status Plant Species Within the Proposed B-17 Expansion Area Under Alternatives 1 and 2

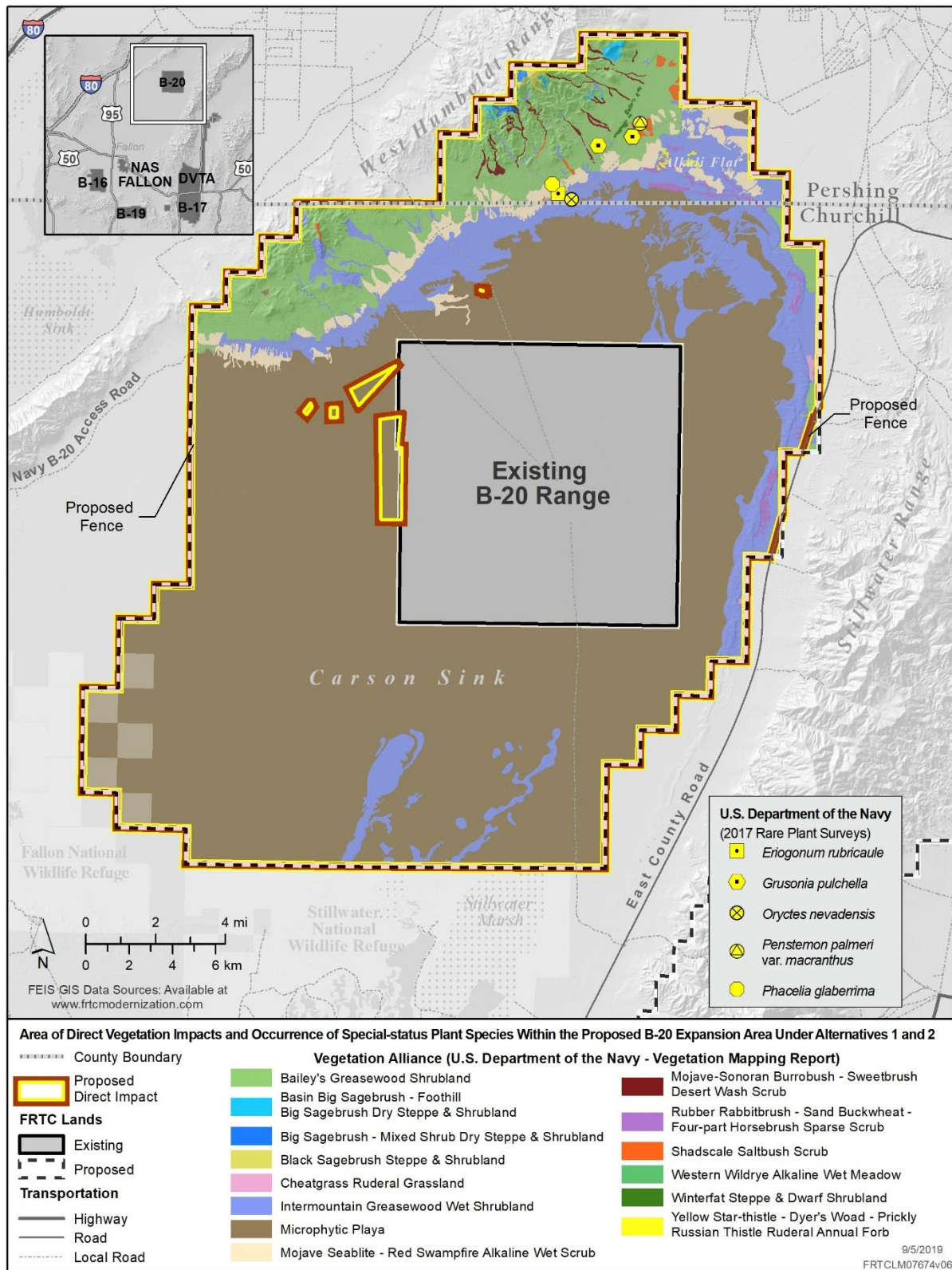


Figure 3.10-51: Area of Direct Vegetation Impacts and Occurrence of Special-Status Plant Species Within the Proposed B-20 Expansion Area Under Alternatives 1 and 2

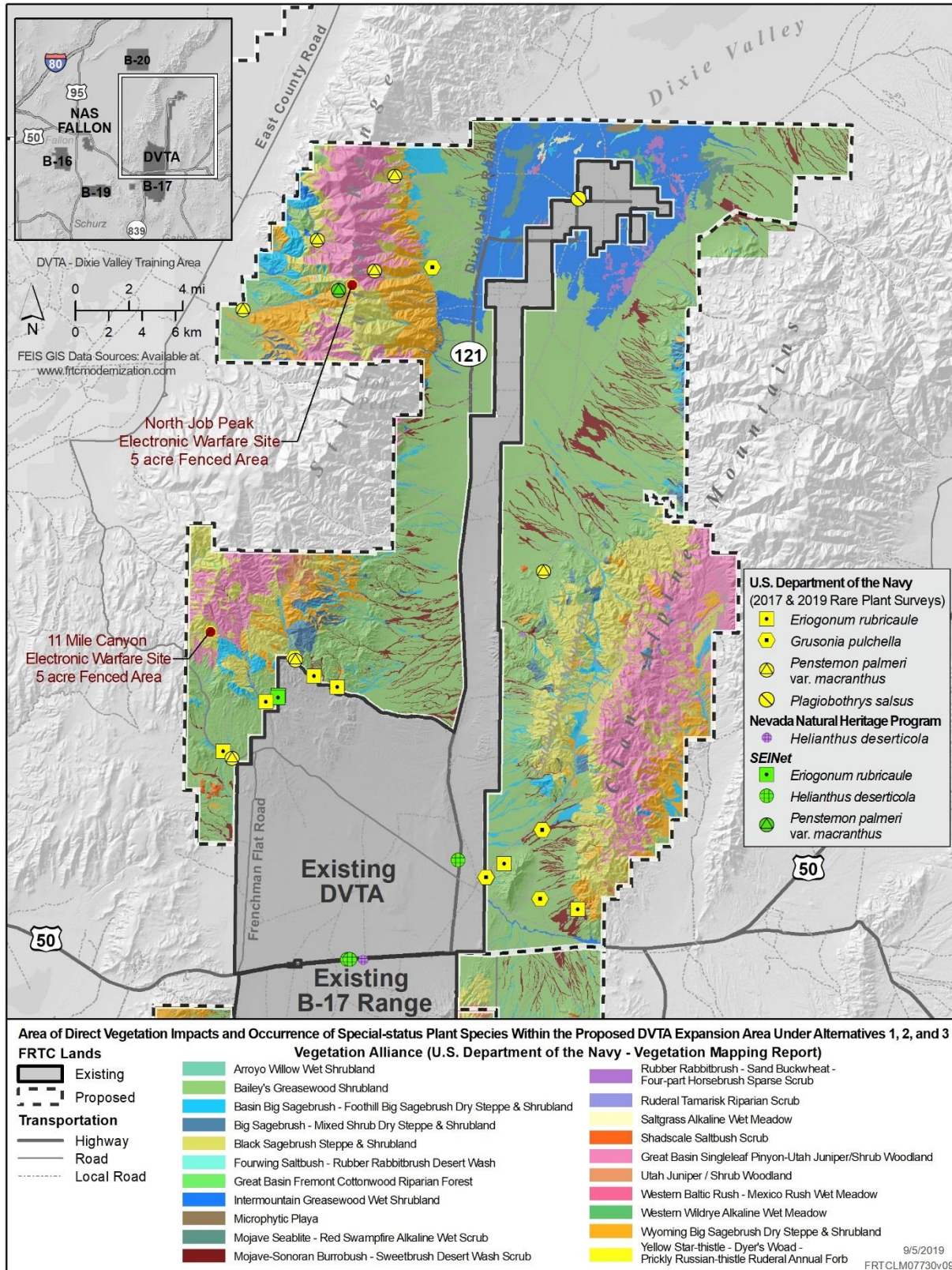


Figure 3.10-52: Area of Direct Vegetation Impacts and Occurrence of Special-Status Plant Species Within the Proposed DVTA Expansion Area Under Alternatives 1, 2, and 3

Wildlife and Special-Status Wildlife Species

For the purposes of this EIS, training activities within the proposed expansion areas are considered military readiness activities and the construction of the proposed targets and associated infrastructure within the proposed expansion areas is considered a non-military readiness activity. The DoD must confer and cooperate with the USFWS on developing and implementing conservation measures to minimize or mitigate adverse effects of a military readiness activity if that activity has a significant adverse effect on a population of a migratory bird species. Migratory bird conservation relative to non-military readiness activities is addressed separately in a Memorandum of Understanding developed in accordance with EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*.

As stated above under Vegetation, proposed construction activities associated with Alternative 1 would remove approximately 4,644 acres of vegetation from within the proposed B-16, B-17, B-20, and DVTA expansion areas. The removal of 2,481 acres of Bailey's greasewood shrubland would result in the loss of nesting, foraging, and resting areas for wildlife species. In addition, there would be impacts on 1,404 acres of microphytic playa, which does not support plants and therefore wildlife species during the majority of the year. During periods of sufficient rainfall, the playa would contain water and could support various wildlife species, particularly waterbirds and shorebirds that feed on invertebrates. However, proposed construction activities would impact 2 percent of the total 130,000 acres of microphytic playa that has been mapped only within the proposed FRTC expansion areas, and does not include other areas of microphytic playa within the region of influence.

Approximately 56 acres of mapped bighorn sheep year-round range, 36 acres of mapped bighorn sheep winter & lambing range, 3,192 acres of mapped pronghorn year-round range, and 21 acres of mapped pronghorn crucial summer range would be directly impacted by proposed construction activities within the proposed B-16, B-17, B-20, and DVTA expansion areas (Table 3.10-26, Figure 3.10-53, and Figure 3.10-54); mule deer range would not be impacted. The majority of the 36 acres of mapped bighorn sheep winter & lambing range would actually be only winter range as the area impacted is associated with the flats at the foot of the southern point of the Fairview Range. However, within the FRTC region of influence, there are over 1 million acres of mapped bighorn sheep year-round range, over 51,000 acres of mapped bighorn sheep winter/lambing range, 5.6 million acres of mapped year-round pronghorn range, and 52,000 acres of mapped pronghorn crucial summer range. Therefore, impacts to these ungulate ranges would not have a significant or measurable impact on bighorn sheep or pronghorn populations.

Table 3.10-26: Acreage of Direct Impacts on Bighorn Sheep and Pronghorn Range from Proposed Construction Activities within the Proposed B-16, B-17, B-20, and DVTA Expansion Areas Under Alternatives 1 and 2

Species – Habitat/Range	Proposed Expansion Area				Total
	B-16	B-17	B-20	DVTA	
Bighorn Sheep – Year-round Range	0	46	0	10	56
Bighorn Sheep – Winter & Lambing Range	0	36	0	0	36
Pronghorn – Year-round Range	0	3,103	79	10	3,192
Pronghorn – Crucial Summer Range	0	18	0	3	21

Noise and the presence of construction equipment and human activity may cause wildlife to temporarily avoid areas in the immediate vicinity of construction activities. Nesting or breeding adults of various wildlife species may be disturbed by noise and construction activities, which may result in abandonment or depredation of eggs or young. These activities may also temporarily displace wildlife from breeding

habitat, resulting in reduced breeding success. However, noise impacts associated with construction activities would be short-term and minor.

Direct mortality from construction equipment is unlikely because noise associated with pre-construction activities and human presence is likely to disperse wildlife prior to any equipment use, although vehicle traffic would increase the potential for wildlife collisions. Smaller, less mobile species and those seeking refuge in burrows could inadvertently be killed during construction activities; however, long-term impacts on populations of such species would not result. To avoid and minimize impacts on migratory birds, construction would occur outside the breeding season to the maximum extent practicable, and pre-construction surveys would be conducted for MBTA-listed nesting birds. Construction would be delayed if nests were found within the ground disturbance footprint.

Perimeter fencing would be installed to exclude public access and dissuade trespass. To minimize impacts on animals and animal movements (e.g., bighorn sheep, pronghorn), BLM-certified fencing would be installed in accordance with specifications outlined in BLM Handbook H-1741-1 (Fencing). Perimeter fencing, although encompassing a larger area than what currently exists, would not impede seasonal migrations and general wildlife movement. Further, the addition of perimeter fencing would provide additional predator perches (i.e., raptors), which may adversely impact bird and mammal populations. As appropriate, predator proofing of a proportion of or all fence posts would be determined based upon the location of the fencing and associated habitat.

Therefore, these temporary direct impacts on wildlife populations, including special-status species, from construction noise and human activities associated with the implementation of Alternative 1 would not be significant.

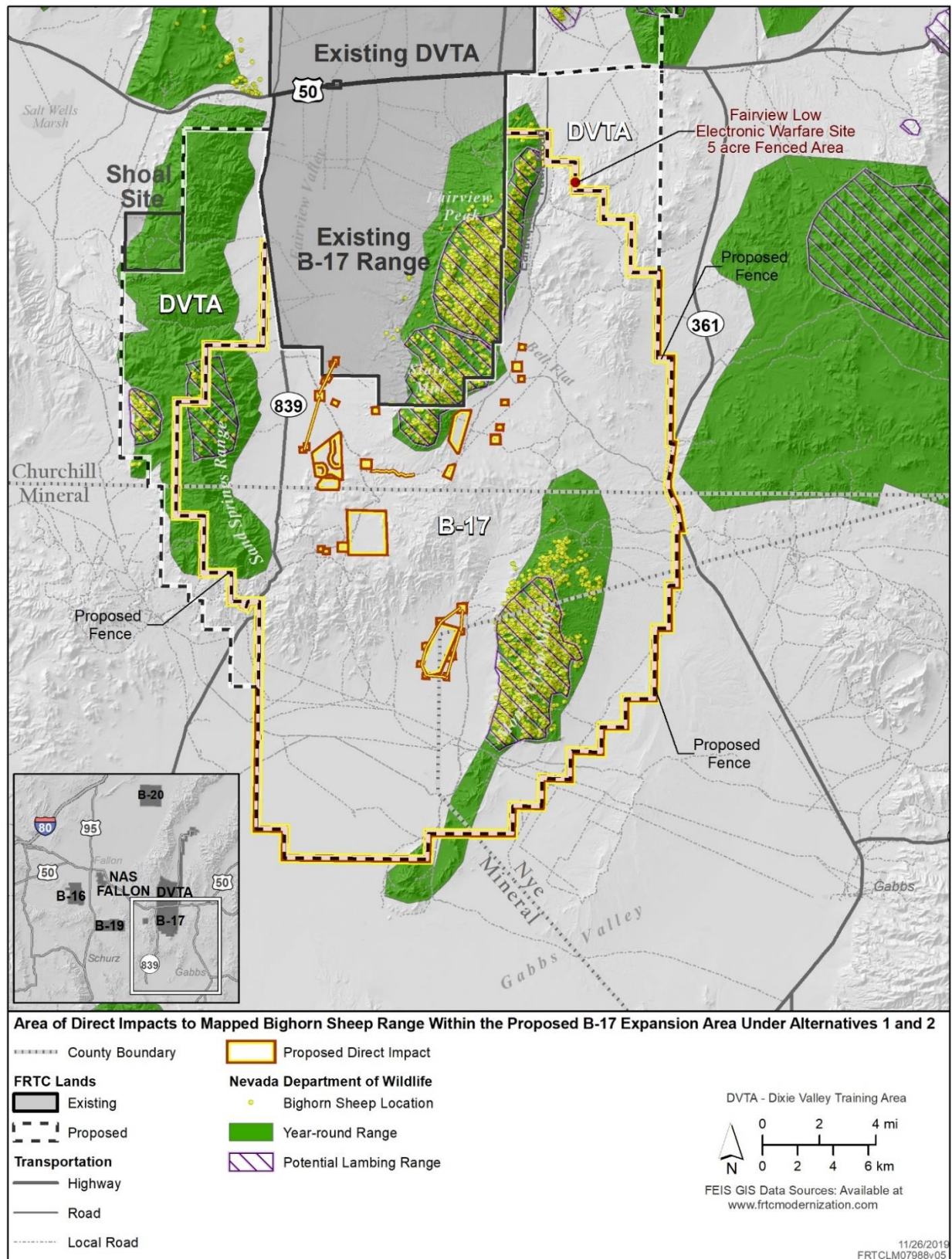


Figure 3.10-53: Area of Direct Impacts on Mapped Bighorn Sheep Range Within the Proposed B-17 Expansion Area Under Alternatives 1 and 2

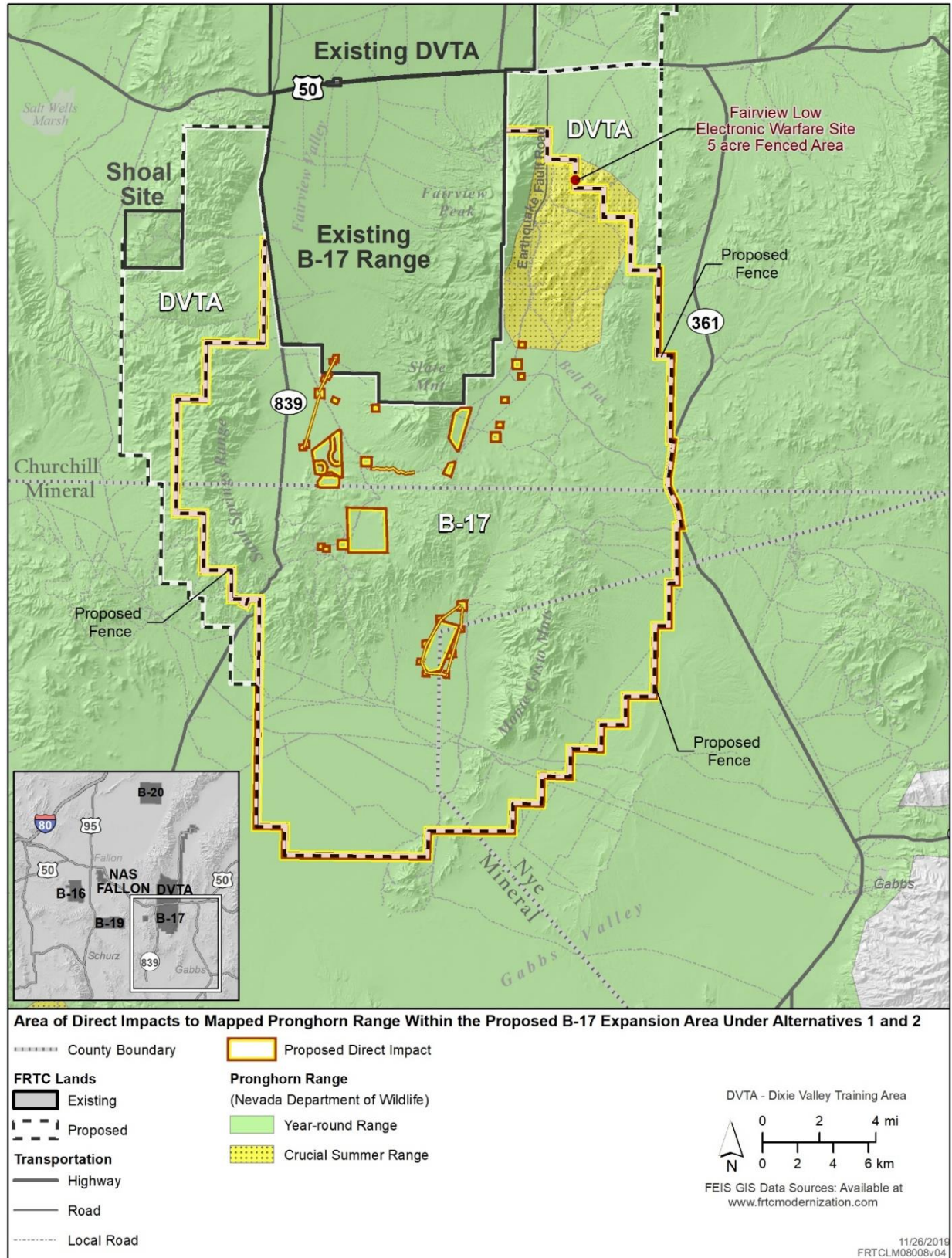


Figure 3.10-54: Area of Direct Impacts on Mapped Pronghorn Range Within the Proposed B-17 Expansion Area Under Alternatives 1 and 2

3.10.3.3.4 Infrastructure Projects to Support Alternative 1

State Route 839

Alternative 1 includes the potential relocation of State Route 839 and associated utility infrastructure. All three proposed options would include closing portions of the existing State Route 839 to public travel and improving existing roads from dirt roads to paved roads. The Navy is working with the Nevada Department of Transportation, BLM, Churchill County, and other stakeholders to identify a suitable location outside of the B-17 Weapons Danger Zone for the proposed relocation of State Route 839. The different alignments would generally affect biological resources in the same way. For example, direct impacts would occur through the vegetation removal and ground disturbance, with indirect effects resulting from potential habitat fragmentation. Depending on the selected alignment, State Route 839 options would permanently remove between approximately 115 and 180 acres of vegetation. A follow-on, site-specific NEPA document would be required to analyze the impacts of any route ultimately identified for the proposed relocation of the State Route 839, which would include analyzing potential impacts on biological resources.

Using funding provided by the Navy, the Federal Highway Administration, in cooperation with the Nevada Department of Transportation, would be responsible for planning, design, permitting, and constructing any realignment of State Route 839. The Navy has submitted a Needs Report to the Surface Deployment and Distribution Command requesting authority to utilize funding through the Defense Access Roads program. If approved, the Navy would coordinate construction execution through the Federal Highway Administration. Nevada Department of Transportation would ensure that construction of any new route is complete before closing any portion of the existing State Route 839, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing State Route 839 unless and until any such new route has been completed and made available to the public.

Paiute Pipeline

Alternative 1 includes potential relocation of the Paiute Pipeline and associated utility infrastructure outside the B-17 Weapons Danger Zone. Although the exact location of the potential pipeline relocation has not yet been determined, the impacts on biological resources resulting from the relocation would be temporary (as the majority of the pipeline infrastructure would be underground), with construction impacts generally within a 50-foot-wide corridor. Constructing a new pipeline and removing existing pipeline could result in impacts on biological resources, including direct physical disturbance on vegetation (e.g., excavating, grading, grubbing, and soil compaction) and wildlife species (e.g., construction noise). A follow-on, site-specific NEPA document would be required to analyze the impacts of any route ultimately identified for the proposed relocation of the Paiute Pipeline, which would include analyzing potential impacts on biological resources.

The Navy would purchase the impacted portion of the Paiute Pipeline and then would pay for relocation of the existing Paiute Pipeline south of the proposed B-17 range. Using funding provided by the Navy, the Paiute Pipeline Company would be responsible for planning, designing, permitting, funding, and constructing any realignment of the pipeline. A ROW application submitted to the BLM by the pipeline owner would formally identify any proposed reroute. Site-specific environmental analysis and NEPA planning would be required before any potential relocation of the pipeline could occur, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing pipeline unless and until any such re-routing of the pipeline has been completed and made

available to the pipeline owner. The BLM would have decision authority with respect to any proposed final routing subsequent to completion of site-specific environmental analysis.

3.10.3.3.5 Summary of Effects and Conclusions

Electromagnetic Radiation. Under Alternative 1, wildlife within the proposed expansion areas may experience a detectable behavioral response to an electromagnetic field but would quickly recover after the exposure. The health and behavior of individuals or wildlife populations would not be affected by electromagnetic fields generated from sources included under Alternative 1.

Lasers. Under Alternative 1, impacts associated with lasers are anticipated to be less than significant because (1) it is unlikely an animal would detect a laser beam; (2) if detected, the animal would be expected to recover quickly (within a few seconds); and (3) the health and behavior of individual animals would not be affected by this temporary effect.

Chaff. The principal components of chaff are biodegradable and pose no known risk to wildlife (Spargo, 1999; U.S. Department of the Air Force, 1997; U.S. Government Accountability Office, 1998). Therefore, there would be no significant impacts on biological resources (i.e., vegetation and populations of wildlife and special-status species) with the use of chaff during proposed training activities.

Physical Disturbance. The resources within the withdrawal areas associated with the proposed range expansion areas would be subject to physical disturbance from ordnance expenditures and construction activities. Impacts associated with construction activities and military training activities would not be significant because (1) although individual animals may be impacted by disturbance or strikes from ordnance, it is not anticipated that population-level effects would occur; and (2) BLM-certified fencing would be installed in accordance with specifications outlined in BLM Handbook H-1741-1 (Fencing), therefore minimizing impacts on animals and animal movements (e.g., bighorn sheep, pronghorn).

U.S. Navy policy requires NAS Fallon to manage their operations to minimize flight-related and aviation ground mishaps. As part of this policy, hazards to aircraft and ground operations must be identified and eliminated or minimized. With adherence to the NAS Fallon BASH Plan and use of the Avian Hazard Advisory System, there would be no significant impacts on bird or bat populations as no population-level effects to birds or bats would be expected.

Noise. Under Alternative 1, military training levels would continue at the same levels of activities analyzed in the 2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement (U.S. Department of the Navy, 2015), with activities dispersed more widely both vertically and horizontally within the existing and revised SUA. Wildlife resources would continue to be exposed at the same intensity because the training would be the same, but the exposures would be dispersed over a wider area and thus the same overall level (and nature) of impacts would be spread (or diffused) over a greater area. In particular, proposed low-level aircraft operations within the revised SUA would not result in significant impacts on wildlife populations for the following reasons:

1. The probability of an animal, nest, or other defined location experiencing overflights more than once per day would be low due to the random nature of flight within the SUA and the large area of land overflown.
2. Wildlife species within the region of influence are currently experiencing aircraft overflights at altitudes of less than 200 feet AGL.
3. Wildlife species within the region of influence are currently experiencing sonic booms.

4. The majority of aircraft operations within the SUA would occur at altitudes greater than the minimum altitude (floor).
5. Averaged noise levels within the proposed MOAs would be 55 dBA (L_{dnmr}) and within the Reno MOA would be less than 50 dBA (L_{dnmr}) (refer to the Supporting Study: Noise Study, available at <https://www.frtcmodernization.com>);
6. Noise levels from sonic booms within the Supersonic Operating Areas would only reach a maximum 52 dB C-weighted DNL (refer to the Supporting Study: Noise Study, available at <http://www.frtcmodernization.com>)
7. The majority of the literature suggests that wildlife species may exhibit adaptation, acclimation, or habituation after repeated exposure to jet aircraft overflights and associated noise, including sonic booms, and that there are no adverse impacts on wildlife populations from aircraft overflights (see Overview of Wildlife Responses to Noise in Section 3.10.3.1.1, Noise).

Therefore, there would be no significant impacts on wildlife populations, including special-status species, from noise associated with implementation of Alternative 1.

Endangered Species Act

There are no ESA-listed species within the proposed expansion areas under Alternative 1. Therefore, implementation of Alternative 1 would have no effect on populations of ESA-listed.

Migratory Bird Treaty Act

To avoid and minimize impacts on migratory bird populations during non-military readiness activities (i.e., construction of targets and infrastructure), construction would occur outside the breeding season to the maximum extent practicable, and pre-construction surveys would be conducted for MBTA-listed nesting birds. Construction would be delayed if nests were found within the ground disturbance footprint. Therefore, there would be no significant impacts on populations of migratory birds with implementation of proposed construction activities under Alternative 1.

Under Alternative 1, there are no proposed changes to the operating altitudes of the SUAs that overlap the Stillwater NWR, no changes in number of aircraft operations, and no changes in the approach and departure tracks of aircraft utilizing targets in B-20. The proposed B-20 expansion area that overlaps the NWRs is for a ground-based safety zone and is not due to an increase or change in aircraft operations over the NWRs. Stillwater NWR would continue to be considered a noise-sensitive area, and flight operations would be restricted to above 3,000 feet AGL and to a distance of 5 nautical miles from the center of the NWR. Therefore, there would be no change in the BASH potential with implementation of the proposed action. With adherence to the NAS Fallon BASH Plan and use of the Avian Hazard Advisory System, there would be no significant impacts on migratory bird populations, particularly the significant wintering population of canvasbacks and spring and fall migratory population of long-billed dowitchers within the region, as no population-level effects to birds would be expected. Therefore, there would be no significant impacts on populations of migratory birds with implementation of proposed aircraft operations under Alternative 1.

Pursuant with the Final Rule authorizing incidental take of migratory birds during military readiness activities (50 Code of Federal Regulations Part 21), implementation of Alternative 1 would not have a significant adverse effect on populations of migratory bird species. Based on this conclusion, the consultation requirements of the Final Rule authorizing DoD to take migratory birds during military readiness activities do not apply to the Proposed Action.

Bald and Golden Eagle Protection Act

Based on the impact analysis presented above for wildlife and special-status species, temporary direct impacts on bald and golden eagle populations from proposed aircraft operations and construction activities associated with the implementation of Alternative 1 would not be significant. Therefore, the Navy has determined that implementation of Alternative 1 would not result in the “taking” of bald or golden eagles, their nests, or their eggs as defined by the Bald and Golden Eagle Protection Act.

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

Alternative 2 is similar to Alternative 1. The proposed expansion areas, construction activities, and SUA would be the same as Alternative 1. The differences between Alternative 1 and Alternative 2 is that Alternative 2 would allow certain categories of users (ceremonial, cultural, or academic research visits; and land management activities) access to B-16, B-17, and B-20 when the ranges are not operational (i.e., typically weekends, holidays, and when closed for scheduled maintenance). In addition, due to the small difference in the boundary of the proposed B-16 expansion area under Alternative 2, there would be impacts on an additional 2 acres of intermountain greasewood wet shrubland due to the change in fenceline along the southeastern corner (Table 3.10-27 and Figure 3.10-49). Therefore, impacts on vegetation communities and wildlife populations, including special-status species, with implementation of Alternative 2 would be similar to those previously assessed under Alternative 1.

Table 3.10-27: Acreage of Direct Vegetation Impacts from Proposed Construction Activities Within the Proposed B-16, B-17, B-20, and DVTA Expansion Areas Under Alternative 2

Vegetation Type	Range				Total
	B-16	B-17	B-20	DVTA	
Bailey's Greasewood Shrubland	68.0	2,391.9	21.1	0	2,481
Big Sagebrush - Mixed Shrub Dry Steppe & Shrubland	0.2	4.4	0.8	0	5.4
Black Sagebrush Steppe & Shrubland	0	25.1	0.1	6.0	31.2
Cheatgrass Ruderal Grassland	0	10.5	0.5	0	11.0
Basin Big Sagebrush - Foothill Big Sagebrush Dry Steppe & Shrubland	0	25.5	0.7	0	26.2
Intermountain Greasewood Wet Shrubland	5.4	9.2	19.8	0	34.4
Fremont's Smokebush - Nevada Smokebush Desert Wash Scrub	0.4	0	0	0	0.4
Great Basin Singleleaf Pinyon-Utah Juniper/Shrub Woodland	0	0	0	4.0	4.0
Microphytic Playa	0	0.2	1,403.7	0	1,403.9
Mojave-Sonoran Burrobush - Sweetbush Desert Wash Scrub	0	200.8	0.1	0	200.9
Rubber Rabbitbrush - Sand Buckwheat - Four-part Horsebrush Sparse Scrub	0	135.9	0	0	135.9
Shadscale Saltbush Scrub	35.8	4.6	0.7	0	41.1
Utah Juniper/Shrub Woodland	0	6.7	0	5.0	11.7
Nevada Joint-fir Scrub	0	0.3	0	0	0.3
Mojave Seablite – Red Swampfire Alkaline Wet Scrub	0	0	2.5	0	2.5
Yellow Star-thistle – Dyer's Woad – Prickly Russian-thistle Ruderal Annual Forb	0	7.3	0	0	7.3
Wyoming Big Sagebrush Dry Steppe & Shrubland	0	248.5	0	0	248.5
*Total	109.8	3,070.9	1,450.0	15.0	4,645.7

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

Under Alternative 3, the Navy's current public land withdrawal would be renewed, and additional public and non-federally owned lands would be withdrawn or acquired for military training. As described in Chapter 2 (Description of Proposed Action and Alternatives), Alternative 3 would expand the FRTC to approximately 898,758 acres of land for military uses. This includes renewing the current withdrawal of 202,864 acres as well as requesting the withdrawal of an additional 602,216 acres of public land, and proposing to acquire 66,551 acres of private land. Under Alternative 3, new construction would be required for supporting infrastructure (e.g., new roads, administrative buildings, utility and communication infrastructure, and perimeter fencing).

Alternative 3 is similar to Alternative 1 and Alternative 2, but the proposed B-17 expansion area would extend further southeast. Unlike Alternative 1, the Navy would not withdraw land south of U.S. Route 50 as the DVTA. Rather, the Navy proposes that Congress categorizes this area as a Special Land Management Overlay. This Special Land Management Overlay would define two areas (one east and one west of the B-17 range) as Military Electromagnetic Spectrum Special Use Zones. These two areas, which are public lands under the jurisdiction of BLM, would not be withdrawn by the Navy and would not directly be used for land-based military training or managed by the Navy. This alternative would have the same access restrictions and Controlled Access Program as Alternative 2. All proposed activities associated with Alternative 3, including construction and training activities, are similar to Alternatives 1 and 2, although Alternative 3 would have a different laydown for the target areas within the proposed B-17 expansion area. The major construction differences between Alternative 3 and Alternative 1 are that Alternative 3 would not require the potential relocation of State Route 839 but would potentially relocate a portion of State Route 361. In addition, Alternative 3 has a different notional path for the Paiute Pipeline than Alternative 1.

3.10.3.5.1 Training Activities

Under Alternative 3, the amount of training within the proposed FRTC expansion areas and proposed revised SUA relative to baseline conditions analyzed in the 2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement (U.S. Department of the Navy, 2015) would remain the same but be dispersed within a larger area (i.e., throughout the existing FRTC ranges and SUA plus the proposed FRTC expansion areas and revised SUA). Training activities would use existing target locations within the existing FRTC ranges and include new targets and training areas within the proposed expansion areas. This would increase the area where stressors (e.g., noise, strikes) would potentially impact wildlife resources.

Vegetation and Special-Status Plant Species

Wildfire

The potential for wildfires from current training activities within the proposed range expansion areas would be the same as that presented under Alternative 1. Training activities on the ranges would not change in type or quantity under Alternative 3; they would change in target location. In addition, currently implemented fire management measures within FRTC lands would continue to be implemented as discussed under Alternative 1, and a fire management plan would be developed. Therefore, there would be no significant impacts on vegetation communities and special-status plant populations from potential wildfires within the proposed range expansion areas.

Wildlife and Special-Status Wildlife Species

Noise

Under Alternative 3, changes in the location of aircraft targets and land-based munitions and live-fire training areas within the proposed range expansion areas may result in potential noise impacts on wildlife species. Proposed changes in the noise environment and associated impacts on wildlife species within the proposed B-16, B-20, and DVTA expansion areas and the revised SUA would be the same as those presented under Alternative 1. The change in noise underlying the proposed FRTC airspace as related to the baseline or existing noise levels within the FRTC airspace under Alternative 3 is shown in Figure 3.10-55. Only the noise environment within the proposed B-17 expansion area differs from Alternative 1 and is summarized below.

- *Proposed B-17 Expansion Area.* Under Alternative 3, the expansion of the B-17 range to the south and southeast would increase the area subject to noise exposures during aircraft and land-based training activities. Aircraft targets and land-based training facilities would be installed southeast of the existing B-17 range thereby causing some associated aircraft and munitions activities to also shift to the south. Currently, DNL dBA noise contours from aircraft operations are confined within the existing B-17 range (see Figure 3.7-6). Under Alternative 3, the majority of aircraft activities and associated noise would remain within the existing B-17 range (see Figure 3.7-25). The 56–64 DNL dBA noise contours from proposed aircraft operations would overlie the majority of the proposed B-17 expansion area (see Figure 3.7-28). Similarly, estimated DNL dBC noise contours from proposed munitions activities would shift from occurring completely within the existing B-17 range (see Figure 3.7-7) to overlying the proposed expansion area (see Figure 3.7-29).

As with Alternative 1, estimated noise levels under Alternative 3 within proposed range expansion areas and revised SUA would likely elicit physiological and behavioral responses in avian and mammal species. As described previously under the general discussion on noise stressors, noise exposures on wildlife would be anticipated to be less than significant for the following reasons: (1) individual animals would be expected to recover quickly from these responses, (2) exposures would be intermittent and infrequent as training activities consist of non-continuous events, and (3) short-term behavioral responses would not be expected to affect individual animal fitness or have population-level effects. In addition, as estimated noise levels within the proposed range expansion areas would occur within the same habitats as found within the current range areas, the proposed expansion areas would be expected to contain the same wildlife species. As current training operations within the existing ranges have not significantly impacted wildlife species (U.S. Department of the Navy, 2015), it is expected that the same training activities would also not have significant impacts on the same wildlife populations within an immediately adjacent area (i.e., proposed range expansion areas).

Under Alternative 3, the estimated 65 DNL dBA aircraft noise contour and 57–70 DNL dBC munitions noise contours would overlie currently mapped bighorn sheep year-round range (i.e., the flats at the southern end of the Fairview Range). Given the estimated number of bighorn sheep within the vicinity of the existing B-17 range area are at an all-time high (Nevada Department of Wildlife, 2017a), existing training operations are not having an effect on regional bighorn sheep populations. Therefore, it is expected that current training operations conducted within the proposed expansion areas would not have a significant impact on regional bighorn sheep populations.

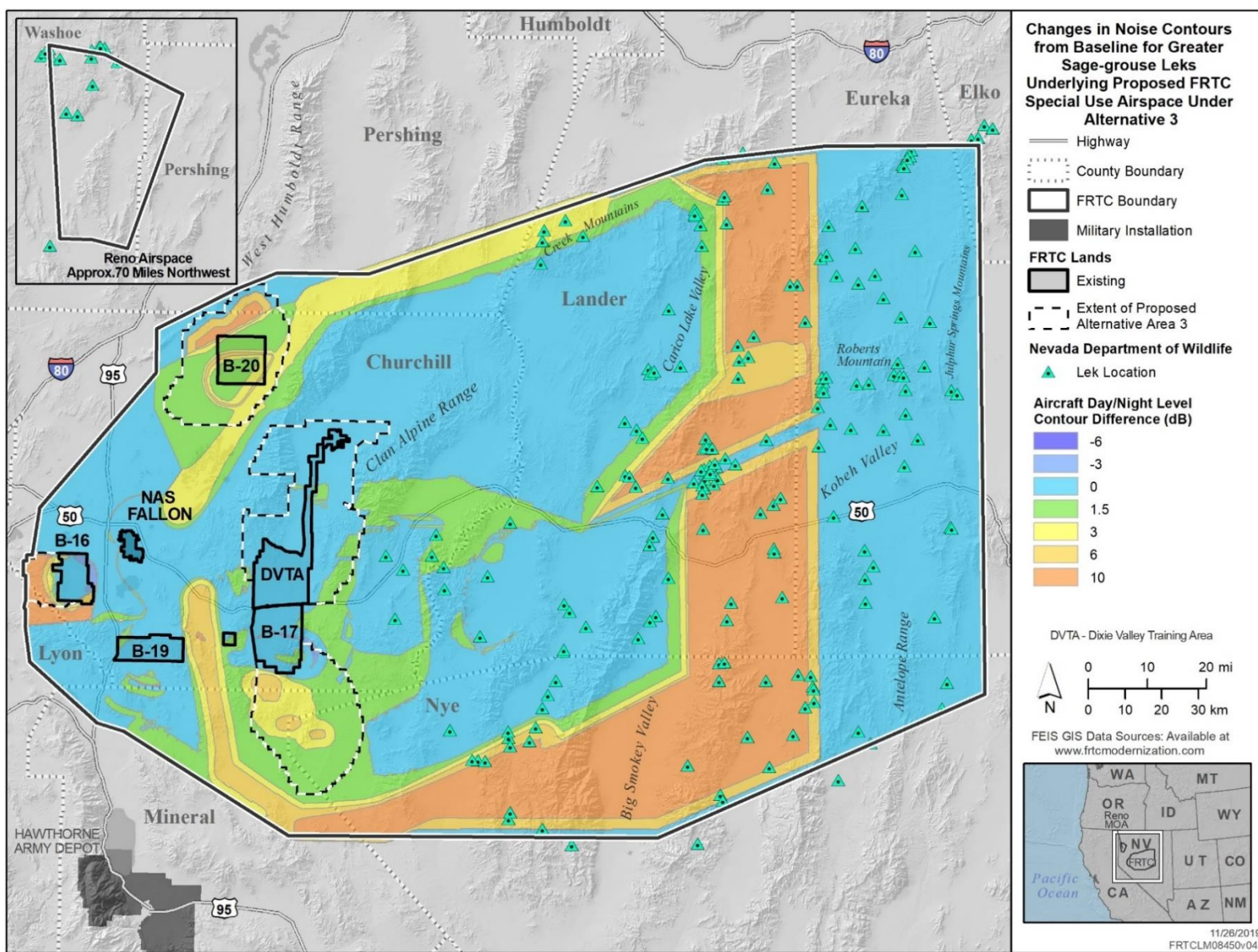


Figure 3.10-55: Changes in Noise Contours from Baseline for Greater Sage-Grouse Leks Underlying Proposed FRTC Special Use Airspace Under Alternative 3

Electromagnetic Fields

Potential impacts on wildlife species from electromagnetic fields under Alternative 3 would be the same as that previously described for Alternative 1. Therefore, there would be no significant impacts.

Lasers

Potential impacts on wildlife species from lasers under Alternative 3 would be the same as that previously described for Alternative 1. Therefore, there would be no significant impacts.

Chaff

Potential impacts on wildlife species from chaff under Alternative 3 would be the same as that previously described for Alternative 1. Therefore, there would be no significant impacts.

Physical Disturbance

Potential impacts on wildlife species from physical disturbance (i.e., direct munitions strikes, aircraft/wildlife strikes) under Alternative 3 would be the same as that previously described for Alternative 1. Therefore, there would be no significant impacts.

3.10.3.5.2 Public Access

Under Alternative 3, the Navy would close and restrict public access to the proposed range expansion areas and existing ranges except for Navy-authorized activities (e.g., ceremonial or cultural site visits, research/academic pursuits, or regulatory or management activities such as BLM, USFWS, NDOW activities). Under Alternative 3, allowable public uses of the lands within the existing DVTA and proposed DVTA expansion area would not change from current conditions. For further details regarding public access refer to Sections 3.2 (Land Use), 3.11 (Cultural Resources), and 3.12 (Recreation).

3.10.3.5.3 Construction Activities

Under Alternative 3, approximately 6,500 acres of 16 vegetation types would be impacted from construction activities associated with the proposed B-16, B-17, B-20, and DVTA expansion areas (Table 3.10-28). Two vegetation types comprise 89 percent of the total vegetation that would be impacted: Bailey's greasewood shrubland (4,342 acres or 67 percent) and microphytic playa (1,432 acres or 22 percent). The construction activities within the proposed B-17 expansion area would be similar to Alternative 1. The primary differences would be the location and length of the proposed perimeter fence and location of proposed target areas.

- *Proposed B-17 Expansion Area.* Proposed ground-disturbing construction activities (e.g., excavating, grading, grubbing, compacting, and clearing soil) associated with the proposed B-17 expansion area would directly impact 4,908 acres of vegetation (Table 3.10-28 and Figure 3.10-56). These ground-disturbing activities are associated with the proposed construction of convoy routes, military vehicle training routes, ground target areas, three electronic warfare sites, and 78 miles of security fencing with seven gates. The majority (4,342 acres or 67 percent) of the impacted vegetation is the regionally common and dominant Bailey's greasewood shrubland. Based on special-status plant surveys conducted in 2017 in support of this EIS, no special-status plant species occur in the vicinity of the proposed ground-disturbing activities within the proposed B-17 expansion area (Figure 3.10-56).

Table 3.10-28: Acreage of Direct Vegetation Impacts from Proposed Construction Activities Within the Proposed B-16, B-17, B-20, and DVTA Expansion Areas Under Alternative 3

Vegetation Type	Range				Total
	B-16	B-17	B-20	DVTA	
Bailey's Greasewood Shrubland	68.0	4,253.4	21.1	0	4,342.5
Big Sagebrush - Mixed Shrub Dry Steppe & Shrubland	0.2	8.2	0.8	0	9.2
Black Sagebrush Steppe & Shrubland	0	6.6	0.1	6.0	12.7
Fremont's Smokebush—Nevada Smokebush Desert Wash Scrub	0.4	0	0	0	0.4
Cheatgrass Ruderal Grassland	0	0.8	0.4	0	1.2
Basin Big Sagebrush - Foothill Big Sagebrush Dry Steppe & Shrubland	0	1.2	0.7	0	1.9
Intermountain Greasewood Wet Shrubland	5.4	23.9	22.4	0	51.7
Singleleaf Pinyon - Utah Juniper / Shrub Understory Woodland	0	0	0	4.0	4.0
Microphytic Playa	0	9.1	1,423.0	0	1,432.1
Mojave-Sonoran Burrobush - Sweetbush Desert Wash Scrub	0	309.6	0.1	0	309.7
Rubber Rabbitbrush - Sand Buckwheat - Four-part Horsebrush Sparse Scrub	0	285.8	0	0	285.8
Shadscale Saltbush Scrub	35.8	3.2	0.7	0	39.7
Utah Juniper/Shrub Woodland	0	5.7	0	5.0	10.7
Mojave Seablite - Red Swampfire Alkaline Wet Scrub	0	0	2.5	0	2.5
Yellow Star-thistle – Dyer's Woad - Prickly Russian-thistle Ruderal Annual Forb	0	0.1	0	0	0.1
Wyoming Big Sagebrush Dry Steppe & Shrubland	0	0.6	0	0	0.6
Total	109.8	4,908.2	1,471.8	15.0	6,504.8

Construction activities within the proposed B-16 expansion area would be similar to Alternative 1 but with a small change in the boundary along Simpson Road in the southeast corner (Figure 3.10-49). The proposed construction activities within the proposed B-20 expansion area would be the same as Alternative 1 (see Section 3.10.3.3.3, Construction Activities) (Figure 3.10-51). The only construction within the DVTA expansion area would be associated with three 5-acre electronic warfare sites (Figure 3.10-50 and Figure 3.10-52).

An SWPPP would be prepared for proposed construction activities when such activities would disturb 1 or more acres or be part of a common plan that disturbs 1 or more acres. In accordance with Nevada's Stormwater Construction General Permit, all project-related SWPPP(s) would include erosion and sediment control measures (e.g., wattles, silt fences) and best management practices that would minimize or avoid direct and indirect impacts on soil, vegetation, and surface waters (Nevada Division of Environmental Protection, 2015). SWPPP(s) would remain in effect until the construction sites have stabilized.

Therefore, there would be no significant impacts on vegetation and populations of special-status plant species with implementation of proposed construction activities under Alternative 3 because: (1) ground-disturbing activities would primarily impact a common and dominant vegetation type within the region; (2) no special-status plant species would be directly impacted; and (3) SWPPPs would be prepared and implemented to avoid and minimize potential direct and indirect impacts on soil and vegetation.

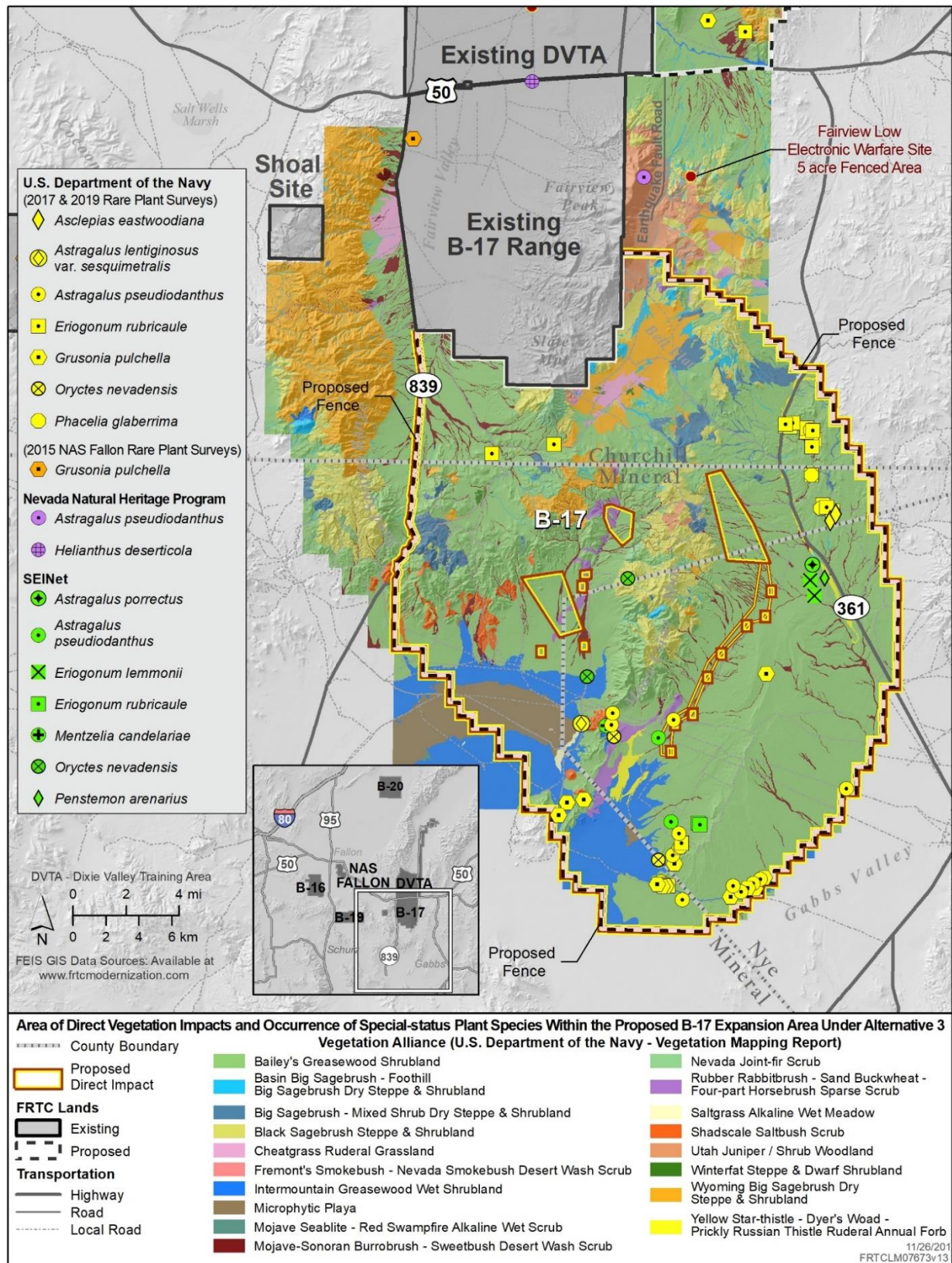


Figure 3.10-56: Area of Direct Vegetation Impacts and Occurrence of Special-Status Plant Species Within the Proposed B-17 Expansion Area Under Alternative 3

Wildlife and Special-Status Wildlife Species

For the purposes of this EIS, training activities within the proposed expansion areas are considered military readiness activities and the construction of the proposed targets and associated infrastructure within the proposed expansion areas is considered a non-military readiness activity. The DoD must confer and cooperate with the USFWS on developing and implementing conservation measures to minimize or mitigate adverse effects of a military readiness activity if that activity has a significant adverse effect on a population of a migratory bird species. Migratory bird conservation relative to non-military readiness activities is addressed separately in a Memorandum of Understanding developed in accordance with EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*.

As stated above under Vegetation, proposed construction activities associated with Alternative 3 would remove approximately 6,500 acres of vegetation from within the proposed B-16, B-17, B-20, and DVTA expansion areas. The removal of 4,342 acres of Bailey's greasewood shrubland would result in the loss of nesting, foraging, and resting areas for wildlife species. In addition, there would be impacts on 1,432 acres of microphytic playa, which does not support plants and therefore wildlife species during the majority of the year. During periods of sufficient rainfall, the playa would contain water and could support various wildlife species, particularly waterbirds and shorebirds that feed on invertebrates. However, proposed construction activities would impact only 1 percent of the total 130,000 acres of microphytic playa that has been mapped only within the proposed FRTC expansion areas, and does not include areas of additional microphytic playa within the region of influence.

Approximately 432 acres of mapped bighorn sheep year-round range, 2 acres of bighorn sheep winter and lambing range, 4,990 acres of mapped pronghorn year-round range, and 12 acres of pronghorn crucial summer range would be directly impacted by proposed construction activities within the proposed B-16, B-17, B-20, and DVTA expansion areas (Table 3.10-29, Figure 3.10-57, and Figure 3.10-58); mapped mule deer range would not be impacted. However, within the FRTC region of influence, there are over 1 million acres of mapped bighorn sheep year-round range and 5.6 million acres of mapped year-round pronghorn range. Therefore, impacts on these ungulate ranges would not have a significant or measurable impact on regional bighorn sheep or pronghorn populations.

Table 3.10-29: Acreage of Direct Impacts on Bighorn Sheep and Pronghorn Range from Proposed Construction Activities Within the Proposed B-16, B-17, B-20, and DVTA Expansion Areas Under Alternative 3

Species – Habitat/Range	Proposed Expansion Area				Total
	B-16	B-17	B-20	DVTA	
Bighorn Sheep – Year-round Range	0	422	0	10	432
Bighorn Sheep – Winter & Lambing Range	0	2	0	0	2
Pronghorn – Year-round Range	0	4,903	77	10	4,990
Pronghorn – Crucial Summer Range	0	12	0	0	12

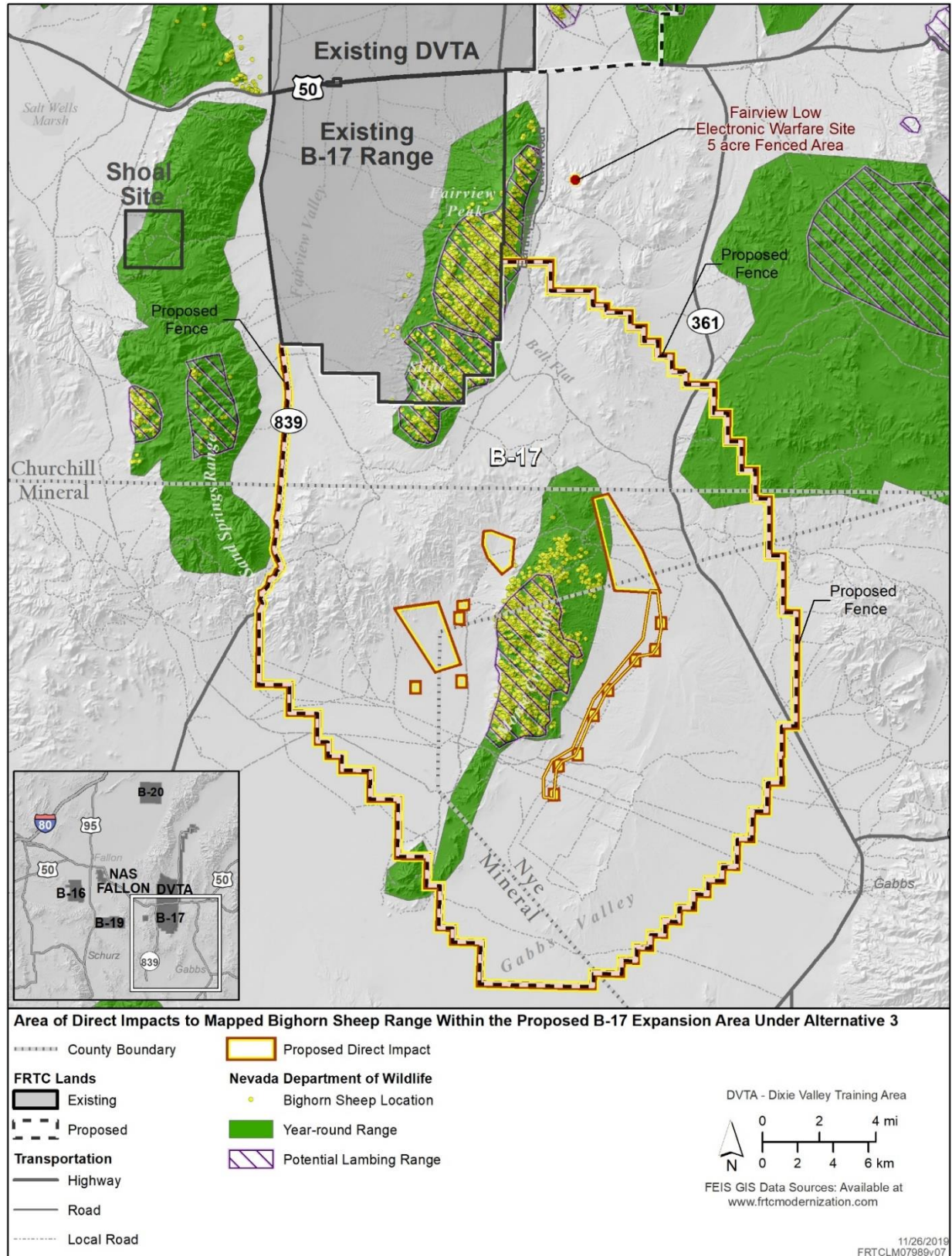


Figure 3.10-57: Area of Direct Impacts on Mapped Bighorn Sheep Range Within the Proposed B-17 Expansion Area Under Alternative 3

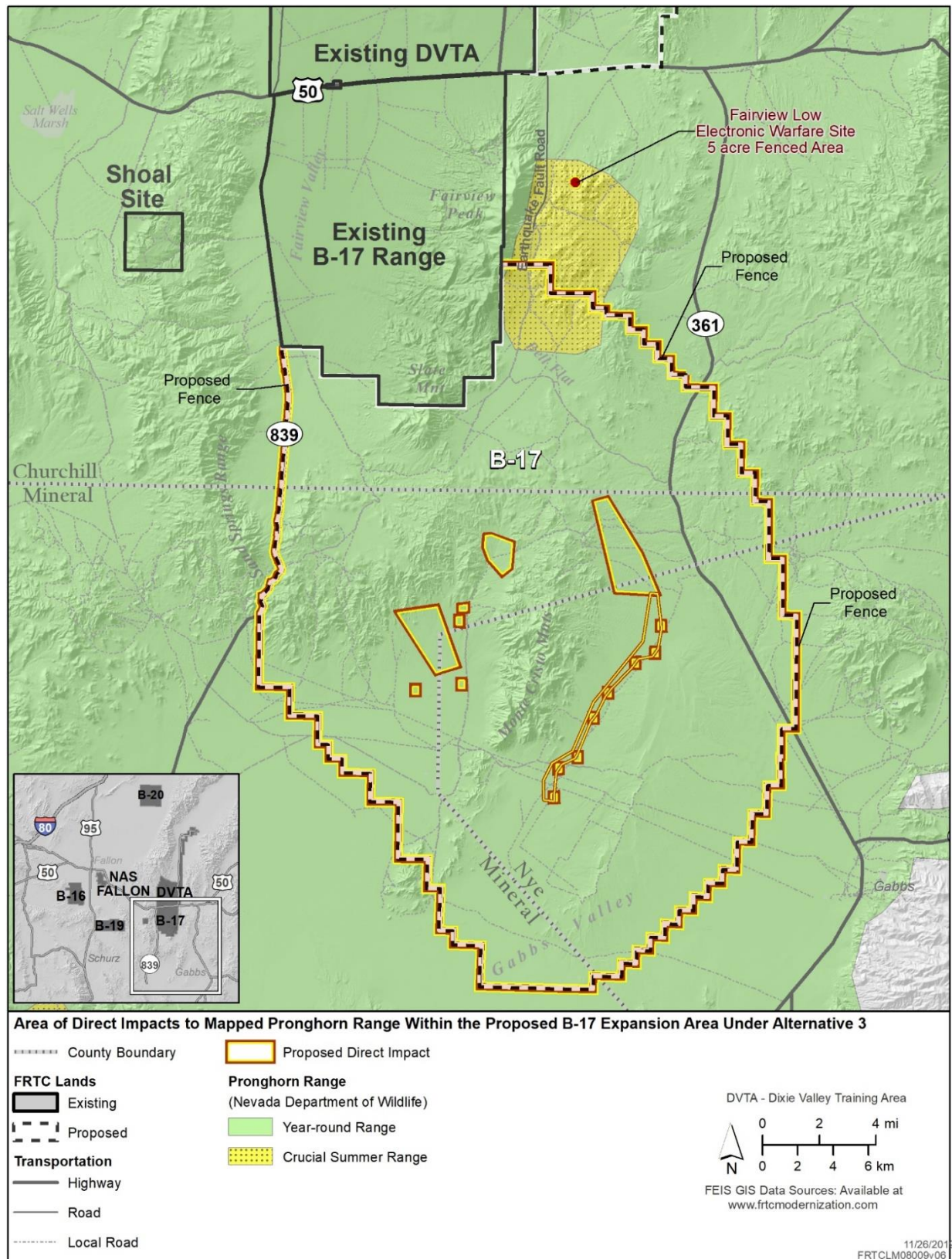


Figure 3.10-58: Area of Direct Impacts on Mapped Pronghorn Range Within the Proposed B-17 Expansion Area Under Alternative 3

Noise and the presence of construction equipment and human activity may cause wildlife to temporarily avoid areas in the immediate vicinity of construction activities. Nesting or breeding adults of various wildlife species may be disturbed by noise and construction activities, which may result in abandonment or depredation of eggs or young. These activities may also temporarily displace wildlife from breeding habitat, resulting in reduced breeding success. To avoid and minimize impacts on migratory birds, construction would occur outside the breeding season to the maximum extent practicable, and pre-construction surveys would be conducted for MBTA-listed nesting birds. Construction would be delayed if nests were found within the ground disturbance footprint.

Direct mortality from construction equipment is unlikely because noise associated with pre-construction activities and human presence is likely to disperse wildlife prior to any equipment use, although vehicle traffic would increase the potential for wildlife collisions. Smaller, less mobile species and those seeking refuge in burrows could inadvertently be killed during construction activities; however, long-term impacts on populations of such species would not result.

Proposed perimeter fencing would include BLM-approved wildlife friendly configured four-wire fencing. Spacing of wires would be configured appropriately for the wildlife in the area. The purpose of this fencing is to exclude public access and dissuade trespass. Perimeter fencing would not impact wildlife movements because special-status game species (e.g., mule deer) can jump 4-foot fence heights (as intended by fence design), pronghorn can move through fences installed with proper strand spacing, and wire height and spacing allow for passage of smaller animals (e.g., kit fox). Perimeter fencing, although encompassing a larger area than what currently exists, would not impede seasonal migrations and general wildlife movement.

Therefore, these temporary direct impacts on wildlife populations, including special-status species, from construction noise and human activities associated with the implementation of Alternative 3 would not be significant.

3.10.3.5.4 Infrastructure Projects to Support Alternative 3

State Route 361

Under Alternative 3, a portion (approximately 12 miles) of State Route 361 and associated utility infrastructure would potentially be relocated. The Navy is working with the Nevada Department of Transportation, BLM, Churchill County, and other stakeholders to identify a suitable location outside of the proposed B-17 expansion area for the relocation of State Route 361. Direct impacts would occur through the vegetation removal and ground disturbance, with indirect effects resulting from potential habitat fragmentation. A follow-on, site-specific NEPA document would be required to analyze the impacts of any route ultimately identified for the proposed relocation of the State Route 361, which would include analyzing potential impacts on biological resources.

Using funding provided by the Navy, the Federal Highway Administration, in cooperation with the Nevada Department of Transportation, would be responsible for planning, design, permitting, and constructing any realignment of State Route 361. The Navy has submitted a Needs Report to the Surface Deployment and Distribution Command requesting authority to utilize funding through the Defense Access Roads program. If approved, the Navy would coordinate construction execution through the Federal Highway Administration. Nevada Department of Transportation would ensure that construction of any new route is complete before closing any portion of the existing State Route 361, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the

existing State Route 361 unless and until any such new route has been completed and made available to the public.

Paiute Pipeline

As with Alternative 1, Alternative 3 includes the potential relocation of approximately 18 miles of the Paiute Pipeline and associated infrastructure outside the proposed B-17 expansion area. Constructing a new pipeline and utility infrastructure, and removing existing pipeline and utility infrastructure could result in impacts on biological resources, including direct impacts through vegetation removal disturbance. Although the exact location of the pipeline relocation has not yet been determined, the impacts on biological resources resulting from the relocation would be temporary (as the majority of the pipeline infrastructure is underground), with construction impacts generally within a 50-foot-wide corridor. A follow-on, site-specific NEPA document would be required to analyze the impacts of any feasible relocation of the Paiute Pipeline, which would include analyzing potential impacts on biological resources.

The Navy would purchase the impacted portion of the Paiute Pipeline and then would pay for relocation of the existing Paiute Pipeline south of the proposed B-17 range. Using funding provided by the Navy, the Paiute Pipeline Company would be responsible for planning, designing, permitting, funding, and constructing any realignment of the pipeline. A ROW application submitted to the BLM by the pipeline owner would formally identify any proposed reroute. Site-specific environmental analysis and NEPA planning would be required before any potential relocation of the pipeline could occur, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing pipeline unless and until any such re-routing of the pipeline has been completed and made available to the pipeline owner. The BLM would have decision authority with respect to any proposed final routing subsequent to completion of site-specific environmental analysis.

3.10.3.5.5 Summary of Effects and Conclusions

Under Alternative 3, military training levels would continue at the same levels of activities analyzed in the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement* (U.S. Department of the Navy, 2015), with activities dispersed more widely with the inclusion of the proposed expansion areas. Impacts under Alternative 3 would be similar to Alternative 1, but Alternative 3 would allow more public access to proposed expansion areas than Alternative 1. There would be no significant impacts with implementation of Alternative 3.

Endangered Species Act

There are no ESA-listed species within the proposed expansion areas under Alternative 3. Therefore, implementation of Alternative 3 would have no effect on populations of ESA-listed species.

Migratory Bird Treaty Act

To avoid and minimize impacts on populations of migratory birds during non-military readiness activities (i.e., construction of targets and infrastructure), construction would occur outside the breeding season to the maximum extent practicable, and pre-construction surveys would be conducted for MBTA-listed nesting birds. Construction would be delayed if nests were found within the ground disturbance footprint. Therefore, there would be no significant impacts on populations of migratory birds with implementation of Alternative 3.

Pursuant with the Final Rule authorizing incidental take of migratory birds during military readiness activities (50 Code of Federal Regulations Part 21), implementation of Alternative 3 would not have a significant adverse effect on populations of migratory bird species. In addition, the proposed training activities under Alternative 3 would not change from those activities assessed in the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement* (U.S. Department of the Navy, 2015). Based on this conclusion, the consultation requirements of the Final Rule authorizing DoD to take migratory birds during military readiness activities do not apply to the Proposed Action.

Bald and Golden Eagle Protection Act

Based on the impact analysis presented above for wildlife and special-status species under Alternative 1, temporary direct impacts on bald and golden eagle populations from proposed aircraft operations and construction activities associated with the implementation of Alternative 3 would not be significant. Therefore, the Navy has determined that implementation of Alternative 3 would not result in the “taking” of bald or golden eagles, their nests, or their eggs as defined by the Bald and Golden Eagle Protection Act.

3.10.3.6 Proposed Management Practices, Monitoring, and Mitigation

3.10.3.6.1 Proposed Management Practices

Management of proposed expansion areas would require extensive updates to management plans. If the Proposed Action is implemented (i.e., expansion of the existing DVTA and B-16, B-17, and B-20 ranges), the NAS Fallon INRMP would be revised to include management practices for special-status species and other actions pertaining to the expansion areas as identified in the ROD.

To the maximum extent possible and if compatible with mission training requirements, the Navy would avoid placing targets in “Biologically Sensitive Areas” as identified by NDOW and depicted in Figure 3.10-59.

3.10.3.6.2 Proposed Monitoring

The Navy would coordinate with BLM, Nevada Department of Wildlife, and USFWS in the revision of the INRMP and would consider which additional management or monitoring activities can be incorporated. This coordination would include grazing management by BLM on DVTA, invasive species control and interdiction, wildland fire management, and other stewardship conservation programs.

3.10.3.6.3 Proposed Mitigation

The Navy is proposing to fund a study that would be conducted by NDOW (in cooperation with the Navy) to monitor behavior of sage grouse on leks during aircraft overflights. In addition, the Navy is developing a Wildland Fire Management Plan. Lastly, in order to minimize impacts on wildlife from fencing, the Navy would utilize wildlife friendly configured four-wire fencing. Spacing of wires would be configured appropriately for the wildlife in the area.

3.10.3.7 Summary of Effects and Conclusions

Special-status wildlife species within withdrawal areas would be exposed to noise from aircraft operations and munitions activities. Noise may elicit physiological and behavioral responses in special status avian and mammal species under the action alternatives. Exposed individuals would be expected to quickly recover from these responses, and exposure would be intermittent and infrequent. The short-term behavioral responses are not expected to result in population-level effects to any species. Noise

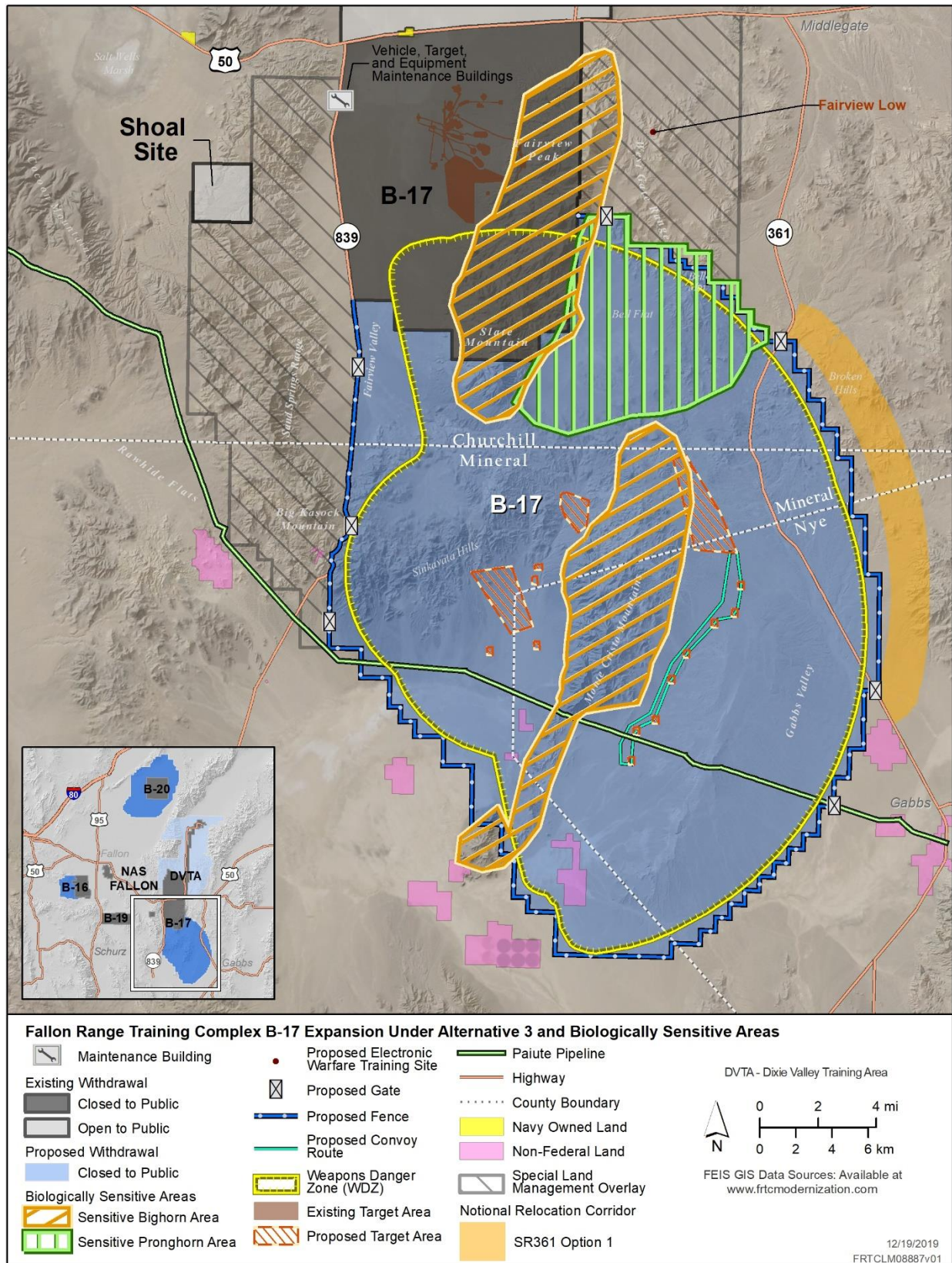


Figure 3.10-59: Fallon Range Training Complex B-17 Expansion Under Alternative 3 and Biologically Sensitive Areas

would have short-term effects on special-status avian and mammal species, but would be widespread throughout the withdrawal areas.

Under the action alternatives, special-status wildlife species within proposed expansion areas would be exposed to noise, energy, and strike (i.e., aircraft and munitions) stressors. Additionally, special-status wildlife species within the proposed expansion areas would be exposed to physical disturbance. As described above, these stressors are expected to result in short-term behavioral responses that are not expected to result in significant population-level effects to any species.

The MBTA prohibits the taking, killing, or possessing of migratory birds or the parts, nests, or eggs of such birds, unless permitted by regulation. The Final Rule authorizing DoD to take migratory birds during military readiness activities was published in the Federal Register on February 28, 2007 (50 Code of Federal Regulations Part 21). The Final Rules authorizes incidental take of migratory birds during military training and testing activities that would be conducted under the Proposed Action, but does not authorize incidental take during “non-military readiness activities” such as range construction or routine maintenance of targets. Accordingly, conclusions regarding compliance with the MBTA are presented separately for military readiness activities and non-military readiness activities. The Final Rule authorizing DoD to take migratory birds during military readiness activities provides that the Armed Forces must confer and cooperate with USFWS on the development and implementation of conservation measures. Doing so would minimize or mitigate adverse effects of a military readiness activity if the DoD determines that such activity may have a “significant adverse effect” on a population of a migratory bird species. An activity has a significant adverse effect if, over a reasonable period, it diminishes the capacity of a population of a migratory bird species to maintain genetic diversity, to reproduce, and to function effectively in its native ecosystem. As used here, population means a group of distinct, coexisting, conspecific individuals (i.e., organisms of the same species), whose breeding site fidelity, migration routes, and wintering areas are temporally and spatially stable, sufficiently distinct geographically (at some time of the year), and adequately described so that the population can be effectively monitored to discern changes in its status. The analysis presented in this section indicates that the combined effects of noise, general human disturbance, and reduced habitat quality associated with military readiness activities could result in reduced fitness of individual birds—in particular, species that may breed in habitats of the Bravo ranges. However, the analysis indicates that military readiness activities are not expected to have a significant adverse effect on a population of a migratory bird species. Based on this conclusion, the conferencing requirements of the Final Rule authorizing DoD to take migratory birds during military readiness activities do not apply to the Proposed Action. Table 3.10-30 summarizes the effects of the alternatives on biological resources.

Table 3.10-30: Summary of Effects for Biological Resources

Summary of Effects and National Environmental Policy Act Determinations	
No Action Alternative	
Summary	Biological resources would continue to be exposed to stressors from any continuing military training activities.
Impact Conclusion	The No Action Alternative would not result in significant impacts on biological resources.
Alternative 1	
Summary	<ul style="list-style-type: none"> Estimated noise contours from aircraft operations and munitions activities would be similar to current noise contours within existing ranges but under Alternative 1 would occur within the proposed expansion areas. The probability of an animal, nest, or other defined location experiencing overflights more than once per day would be low due to the random nature of flight within the SUA and the large area of land overflowed. Although proposed airspace revisions would include aircraft overflights of less than 500 feet AGL, wildlife populations (e.g., bighorn sheep, pronghorn, greater sage-grouse) within the region of influence are currently experiencing aircraft overflights at altitudes of less than 200 feet AGL. Wildlife populations (e.g., bighorn sheep, pronghorn, greater sage-grouse) within the region of influence are currently experiencing sonic booms. The majority of aircraft operations within the SUA would occur at altitudes greater than the minimum altitude (floor). Averaged noise levels within the proposed MOAs would be 55 dBA DNL and within the Reno MOA would be less than 50 dBA DNL. Noise levels from sonic booms within the SOAs would only reach a maximum 52 dB C-weighted DNL. The majority of the literature suggests that wildlife species may exhibit adaptation, acclimation, or habituation after repeated exposure to jet aircraft overflights and associated noise, including sonic booms, and that there are no adverse impacts on wildlife populations from aircraft overflights. There would be no significant impacts on wildlife populations from the use of electromagnetic radiation, chaff, and lasers within the proposed range expansion areas and revised SUA. Potential impacts on migratory birds would continue to be avoided and minimized by pilots by incorporating BASH awareness protocols as standard flight operation procedures. Direct impacts on approximately 4,644 acres of regionally common vegetation communities would not be significant. Potential direct impacts on bighorn sheep and pronghorn ranges would not have a significant or measurable impact on bighorn sheep or pronghorn populations.
Impact Conclusion	Implementation of Alternative 1 is not anticipated to result in significant impacts on vegetation communities or wildlife populations, including special-status species.

Table 3.10-30: Summary of Effects for Biological Resources (continued)

Summary of Effects and National Environmental Policy Act Determinations	
Alternative 2	
Summary	<ul style="list-style-type: none"> Impacts on wildlife populations under Alternative 2 would be similar to those under Alternative 1. Direct construction impacts on approximately 4,646 acres of regionally common vegetation communities would not be significant. Potential direct construction impacts on bighorn sheep and pronghorn ranges would not have a significant or measurable impact on bighorn sheep or pronghorn populations.
Impact Conclusion	Implementation of Alternative 2 is not anticipated to result in significant impacts on vegetation communities or wildlife populations, including special-status species.
Alternative 3	
Summary	<ul style="list-style-type: none"> Impacts on wildlife populations under Alternative 3 would be similar to those under Alternative 1 Direct construction impacts on approximately 6,505 acres of regionally common vegetation communities would not be significant. Potential direct construction impacts on bighorn sheep and pronghorn ranges would not have a significant or measurable impact to bighorn sheep or pronghorn populations.
Impact Conclusion	Implementation of Alternative 3 is not anticipated to result in significant impacts on vegetation communities or wildlife populations, including special-status species.

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3.11 Cultural Resources

No Action Alternative

Under the No Action Alternative, the 1999 Congressional land withdrawal of 201,933 acres from public domain (Public Law 106-65) would expire on November 5, 2021, and military training activities requiring the use of these public lands would cease. Expiration of the land withdrawal would terminate the Navy's authority to use nearly all of the Fallon Range Training Complex's (FRTC's) bombing ranges, affecting nearly 62 percent of the land area currently available for military aviation and ground training activities in the FRTC.

Alternative 1 – Modernization of the Fallon Range Training Complex

Under Alternative 1, the Navy would request Congressional renewal of the 1999 Public Land Withdrawal of 202,864 acres, which is scheduled to expire in November 2021. The Navy would request that Congress withdraw and reserve for military use approximately 618,727 acres of additional Federal land and acquire approximately 65,157 acres of non-federal land. Range infrastructure would be constructed to support modernization, including new target areas, and expand and reconfigured existing Special Use Airspace (SUA) to accommodate the expanded bombing ranges. Implementation of Alternative 1 would potentially require the reroute of State Route 839 and the relocation of a portion of the Paiute Pipeline. Public access to B-16, B-17, and B-20 would be restricted for security and to safeguard against potential hazards associated with military activities. The Navy would not allow mining or geothermal development within the proposed bombing ranges or the Dixie Valley Training Area (DVTA). Under Alternative 1, the Navy would use the modernized FRTC to conduct aviation and ground training of the same general types and at the same tempos as analyzed in Alternative 2 of the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada, Final Environmental Impact Statement* (EIS). The Navy is not proposing to increase the number of training activities under this or any of the alternatives in this EIS.

Alternative 2 – Modernization of Fallon Range Training Complex with Managed Access

Alternative 2 would have the same withdrawals, acquisitions, and SUA changes as proposed in Alternative 1. Alternative 2 would continue to allow certain public uses within specified areas of B-16, B-17, and B-20 (ceremonial, cultural, or academic research visits, land management activities) when the ranges are not operational and compatible with military training activities (typically weekends, holidays, and when closed for maintenance). Alternative 2 would also continue to allow grazing, hunting, off-highway vehicle (OHV) usage, camping, hiking, site and ceremonial visits, and large event off-road races at the DVTA. Additionally under Alternative 2, hunting would be conditionally allowed on designated portions of B-17, and geothermal and salable mineral exploration would be conditionally allowed on the DVTA. Large event off-road races would be allowable on all ranges subject to coordination with the Navy and compatible with military training activities.

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

Alternative 3 differs from Alternative 1 and 2 with respect to the orientation, size, and location of B-16, B-17, B-20 and the DVTA, and is similar to Alternative 2 in terms of managed access. Alternative 3 places the proposed B-17 farther to the southeast and rotates it slightly counter-clockwise. In conjunction with shifting B-17 in this manner, the expanded range would leave State Route 839 in its current configuration along the western boundary of B-17 and would expand eastward across State Route 361 potentially requiring the reroute of State Route 361. The Navy proposes designation of the area south of U.S. Route 50 as a Special Land Management Overlay rather than proposing it for withdrawal as the DVTA. This Special Land Management Overlay would define two areas, one east and one west of the existing B-17 range. These two areas, which are currently public lands under the jurisdiction of BLM, would not be withdrawn by the Navy and would not directly be used for land-based military training or managed by the Navy.

Environmental Impact Statement

Fallon Range Training Complex Modernization

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3.11 Cultural Resources

This section describes cultural resources in the existing Fallon Range Training Complex (FRTC) as well as additional areas proposed for withdrawal or acquisition. Each alternative is then analyzed to identify actions that could impact cultural resources within these areas. Factors considered in determining whether an alternative would have significant impacts on cultural resources include the extent or degree to which the impacts of proposed actions can be managed, addressed, and minimized or mitigated through implementation of specific management practices and/or compliance measures under specific cultural resources-related statutes and regulations.

The term cultural resource applies broadly to a variety of resources subject to consideration under the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA), the Archeological Resources Protection Act (ARPA), the Native American Graves Protection and Repatriation Act (NAGPRA), Executive Order 13007 “Indian Sacred Sites,” and similar laws. Included are historic properties as defined under NHPA. Historic properties consist of districts, sites, buildings, structures, or objects that are listed or eligible for listing in the National Register of Historic Places (NRHP). Under NEPA, the consideration of cultural resource issues may include properties that do not meet NRHP criteria, such as cemeteries and certain sacred sites (Council on Environmental Quality & Advisory Council on Historic Preservation, 2013).

For purposes of this Environmental Impact Statement (EIS), cultural resources are divided into three categories: archaeological resources, architectural resources, and traditional cultural properties and sacred sites.

- Archaeological resources: Any material remains of past human life or activity. Archaeological resources can date from prehistoric and historic periods and be present in sites and/or districts. Archaeological resources may contain NAGPRA cultural items, including Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony.
 - Archaeological sites are the place or places where the remnants of a past culture survive in a physical context that allows for the interpretation of these remains.
 - Archaeological districts comprise a significant concentration, linkage, or continuity of sites united historically or aesthetically by plan or physical development.
- Architectural resources: Buildings, structures, and objects, or districts of such resources.
 - Buildings principally shelter any form of human activity.
 - Structures are for purposes other than creating human shelter. Examples include roads and bridges, military structures such as water tanks and beacons, irrigation features, and others.
 - Objects are those constructions that are primarily artistic in nature or are relatively small in scale and simply constructed. Examples include boundary markers, mileposts, monuments, statuary, and others.
 - Districts comprise a significant concentration, linkage, or continuity of buildings, structures, or objects united historically or aesthetically by plan or physical development.
- Traditional Cultural Properties (TCPs) and Sacred sites: TCPs are historic properties that are eligible for inclusion in the National Register of Historic Places because of their association with cultural practices and beliefs of a living community that are (a) rooted in the community’s

history and (b) important to maintaining the continuing cultural identity of the community (National Park Service, 1998).

- Sacred sites are specific locations that are identified as sacred by virtue of their established religious significance to, or ceremonial use by, an Indian religion. Sacred sites may or may not be eligible for listing on the NRHP, but still subject to protection. Specifically, Indian sacred sites are any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.

3.11.1 Methodology

This analysis has been developed to describe cultural resources and potential impacts as a result of the Proposed Action discussed in this EIS. Subsequent sections review the locations associated with the Proposed Action, summarize cultural resources information, and analyze potential impacts.

3.11.1.1 Region of Influence

For purposes of this EIS, the region of influence for cultural resources is referred to as Potential Impact Areas (PIAs), a term analogous to the NHPA Section 106 Area of Potential Effect (APE). The present analysis, however, differs from Section 106 to the degree that it (1) considers a wide array of proposed actions that are not undertakings per 36 Code of Federal Regulations (CFR) Section 800.16, and also (2) considers the impact on a wider range of cultural resources than NRHP-eligible or potentially eligible historic properties alone. Importantly, APEs and assessments of effect to historic properties under Section 106 would be addressed when specific undertakings are proposed and known in detail in the future, consistent with an amended 2011 *Programmatic Agreement Among Naval Air Station, Fallon, Nevada, The Nevada State Historic Preservation Officer and the Advisory Council on Historic Preservation Regarding the Identification, Evaluation and Treatment of Historic Properties on Lands Managed by Naval Air Station, Fallon*. The Navy would continue to consult in order to ensure an amended 2011 Programmatic Agreement (PA) is updated as applicable for the Tribes.

The PIAs addressed in this document are based on activities associated with the Proposed Action to holistically analyze the potential impacts on cultural resources. PIA boundaries are defined in consideration of potential impacts on cultural resources from ground disturbance; vibrations from sonic booms, aerial target strikes, and military expended material strikes; visual and auditory intrusions; and changes in access (Figure 3.11-2, Figure 3.11-3, Figure 3.11-4, and Figure 3.11-5).

The PIAs include lands within the Surface Danger Zones (SDZs)/Weapons Danger Zones (WDZs) for each of the Bravo ranges (B-16, B-17, and B-20) and the Dixie Valley Training Area (DVTA) as well as lands below the FRTC Special Use Airspace (SUA). Accordingly, the analysis here focuses on ranges, but also considers the effects of noise on sensitive cultural resources beneath the proposed FRTC SUA. With respect to the existing B-19, there are no proposed changes to land withdrawal and training activities, and there would be no construction activities associated with this area. Therefore, B-19 is not discussed further and would be maintained as discussed in the 2015 *Fallon Range Training Complex Final Environmental Impact Statement* (U.S. Department of the Navy, 2015).

FRTC SUA is airspace in which military training activities must be confined. The FRTC SUA includes two Supersonic Operating Areas (SOAs), identified as SOA A and SOA B, nine restricted areas, 15 Military Operations Areas (MOAs), 14 Air Traffic Control Assigned Airspaces, and a Civilian Visual Flight Rules corridor. In order to utilize the four Bravo training ranges, aircraft typically follow predetermined routes (“course rules routes”) for access into (ingress) and out of (egress) the training ranges. Except for a slight expansion beyond the existing northern boundary of the FRTC (Table 2-4 and Figure 2-7), the requested airspace modifications would be within the existing boundary of the FRTC airspace. Proposed changes to the FRTC SUA that could impact cultural resources include the expansion of the two SOAs, narrowing of the ingress/egress corridors, and revisions to the minimum altitude (operational floor) in six MOAs. Under the current proposal, both SOA A and SOA B would be expanded (Figure 3.11-1), and the operations within the Reno, Zircon, Ruby, Diamond, Duckwater, and Smokie MOAs would occur at lower altitudes. Additionally, the ingress/egress corridors in the northern and southern portions of the FRTC SUA would be narrowed.

In NHPA Section 106 consultation to support the 2015 EIS analysis, the Navy determined that sonic booms from supersonic overflights at 30,000 feet or more above mean sea level (MSL) had a negligible potential to affect historic properties in SOA A and SOA B (Military Readiness Activities at Fallon Range Training Complex Environmental Impact Statement, 2015). For more about this methodology, see Section 3.11.1.4.1, Noise and Vibration. The Nevada (NV) State Historic Preservation Officer (SHPO) concurred with the Navy’s determination that the APE accounts for all potential direct, indirect, and cumulative effects that may result from this undertaking in keeping with 36 CFR Part 800.4(a)(1) and 36 CFR Part 800.16(d) (see Appendix B [Agency Correspondence] for a copy of the 30 August 2018 letter from the NV SHPO to the Navy).. Because all FRTC proposed SOA A supersonic flights would remain at altitudes above 30,000 feet MSL, the existing SOA A and proposed expansion of SOA A would have no potential impact on cultural resources and therefore is not analyzed as a PIA.



3.11.1.2 Regulatory Framework

Cultural resources are governed by federal laws and regulations, including the NHPA, Archeological and Historic Preservation Act, American Indian Religious Freedom Act, ARPA, and NAGPRA. A Federal agency's responsibility for protecting historic properties is defined primarily by sections 106 and 110 of the NHPA. Section 106 requires federal agencies to take into account the effects of their undertakings on historic properties. Section 110 of the NHPA requires federal agencies to establish—in conjunction with the Secretary of the Interior—historic preservation programs for the identification, evaluation, and protection of historic properties. Key implementing regulations include the Protection of Historic Properties (36 CFR Part 800); the Criteria for Evaluation (36 CFR Section 60.4); and the Curation of Federally-Owned and Administered Archeological Collections (36 CFR Part 79).

ARPA establishes permitting procedures for conducting archaeological fieldwork on public lands as well as fines and penalties for unauthorized excavation. It also calls for the preservation of objects and associated records and prohibits public disclosure of information on the locations of archaeological resources if they could be damaged.

Executive Order 13007 promotes the protection of and access to Indian Sacred Sites on Federal lands. It directs federal land managing agencies, to the extent practicable and consistent with the agency's mission and function, to accommodate access to, and ceremonial use of, Indian sacred sites by Indian religious practitioners as well as avoidance of adverse effects to such sacred sites.

NHPA is the predominant driver of cultural resource identification and protection. The criteria of eligibility for NRHP listing in 36 CFR Section 60.4 states: "the quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

- A. that are associated with events that have made a significant contribution to the broad pattern of our history; or
- B. that are associated with the lives of persons significant in the past; or
- C. that embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, possess high artistic value or represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. that have yielded, or may be likely to yield, information important in prehistory or history."

Properties that meet these criteria are afforded protection under the NHPA and are eligible for NRHP inclusion. It is important to note that unevaluated properties are treated as "eligible" unless and until assessed and concluded to be "ineligible" for NRHP listing. Section 106 requires federal agencies to take into account the effect of any undertaking upon NRHP listed, eligible, or potentially eligible properties; share information about proposed undertakings with the potential to affect historic properties; and to afford SHPO, Advisory Council on Historic Preservation (ACHP), and interested parties an opportunity to comment prior to initiating the proposed undertaking. Federal regulation 36 CFR Part 800, "Protection of Historic Properties," defines specific procedures for federal agencies to follow in complying with Section 106 of NHPA. Importantly, the transfer of properties into federal control is not an action with the potential to affect historic properties, because the protections and procedures under 36 CFR Part 800 apply. Subsequent actions with the potential to affect historic properties on transferred lands, such as construction and training, would be subject to Section 106 review prior to approval.

Under 36 CFR Section 800.14, federal agencies may develop program alternatives, such as a PA, in order to tailor Section 106 compliance measures to the resources, actions, and stakeholders involved. A PA may be developed to govern the implementation of a particular program or the resolution of adverse effects from complex projects or multiple undertakings by establishing alternative processes for managing historic preservation compliance for routine actions, or when the effects of an undertaking are not fully known in advance. In this case, the effects of the Proposed Action are not yet fully known, and an amended 2011 PA would administer NHPA for implementation of the Proposed Action.

Previous consultations under NHPA conducted in support of installation operations, training programs, and related activities resulted in the development of the 2011 PA between Naval Air Station (NAS) Fallon, ACHP, the Nevada SHPO, and the Nevada State Office of Bureau of Land Management (BLM) of the Department of the Interior. The 2011 PA was developed consistent with 36 CFR Section 800.14(b)(3) in consultation with interested parties as a program alternative to fulfill the installation's Section 106 responsibilities. The 2011 PA contains measures to develop and share information, and to consider the views of SHPO, ACHP, BLM, potentially affected Indian tribes, and other interested parties as projects are developed. The 2011 PA also included processes for consulting to determining mitigation measures when historic properties may be adversely affected. The Navy is consulting with SHPO, ACHP, federally recognized tribes, local governments, and the public to amend the 2011 PA to support operations and activities associated with the Proposed Action.

If human remains are discovered, depending on the origin and age of the remains, the Navy follows the procedures established under NAGPRA (implementing regulations 43 CFR Part 10), Chief of Naval Operations Instruction 11170.2B (*Navy Responsibilities Regarding Undocumented Human Burials*), and an amended 2011 PA. Recognizing the potential for encountering Native American graves, the Navy would also consult with culturally affiliated tribes to develop a NAGPRA Plan of Action or Comprehensive Agreement.

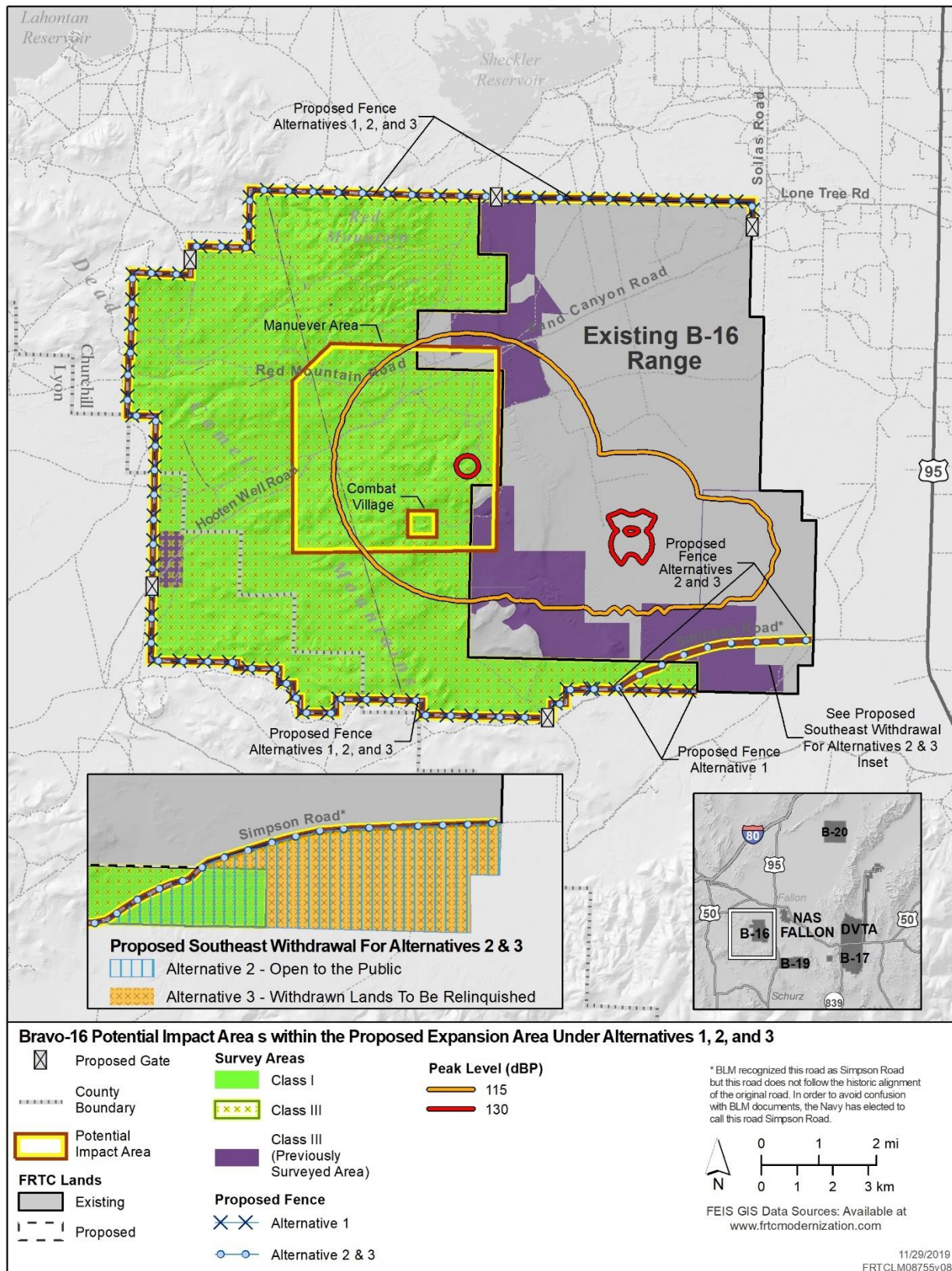


Figure 3.11-2: Bravo-16 Potential Impact Areas within the Proposed Expansion Area Under Alternatives 1, 2, and 3

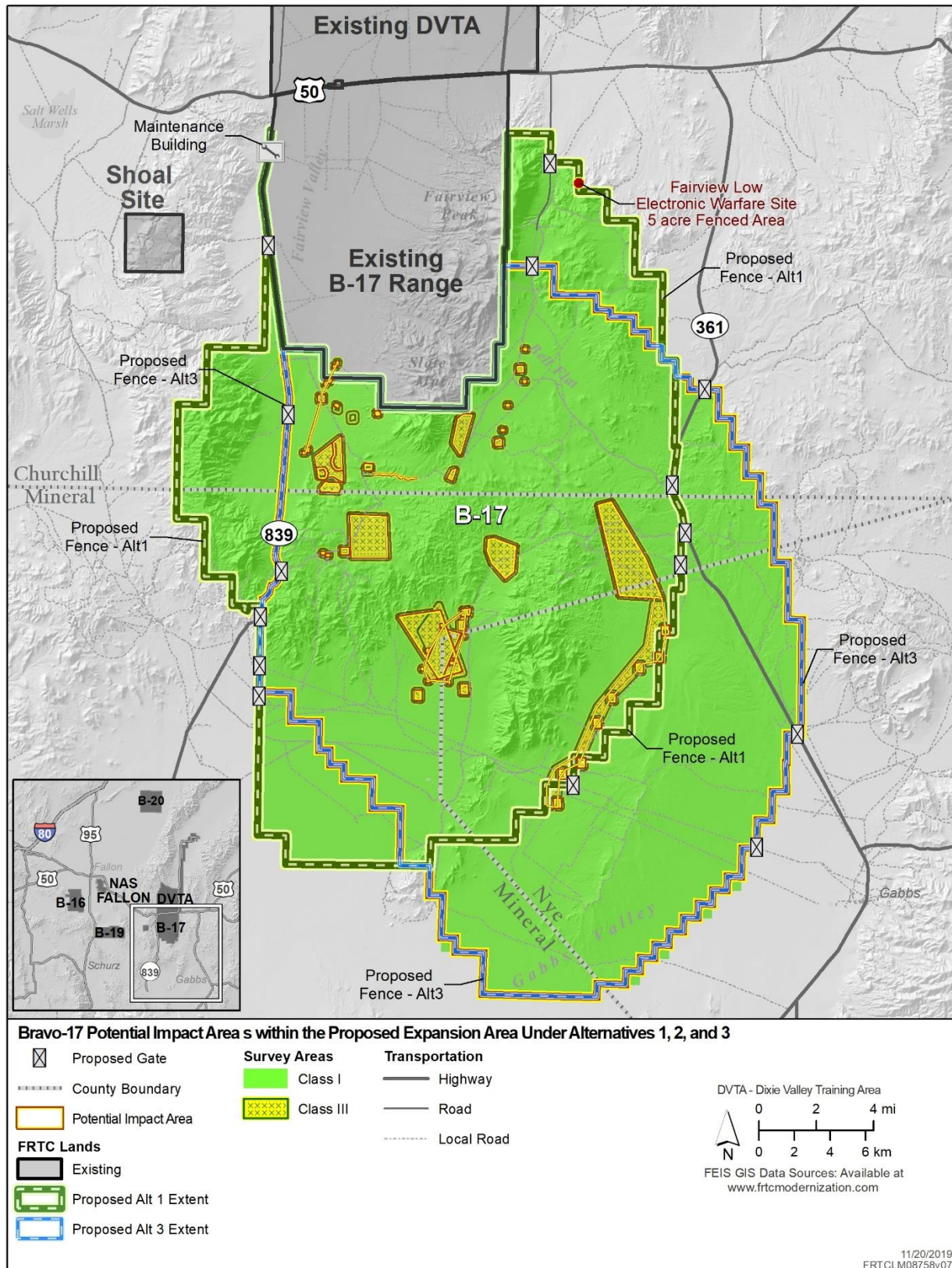


Figure 3.11-3: Bravo-17 Potential Impact Areas Within the Proposed Expansion Area Under Alternatives 1, 2, and 3

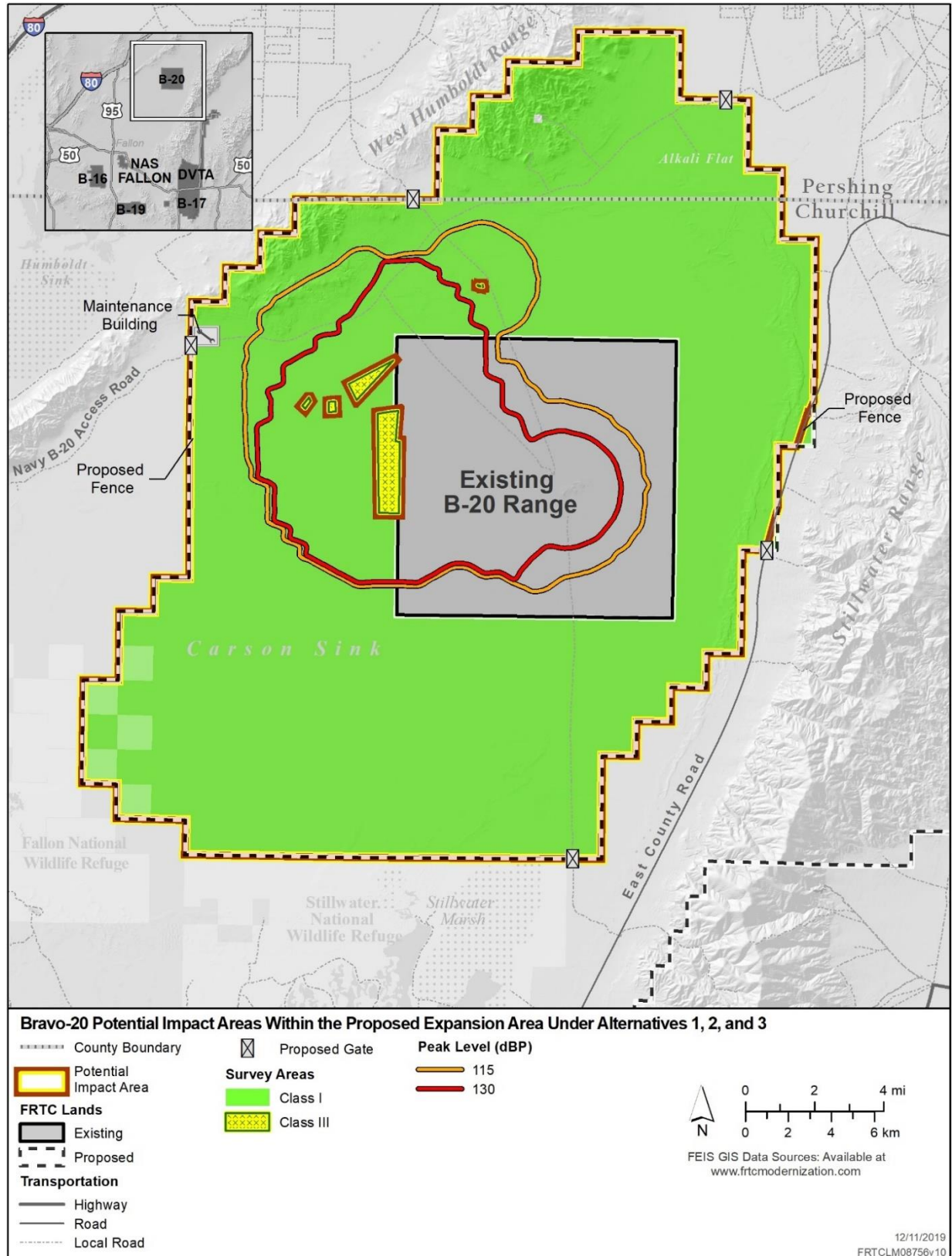


Figure 3.11-4: Bravo-20 Potential Impact Areas Within the Proposed Expansion Area Under Alternatives 1, 2, and 3

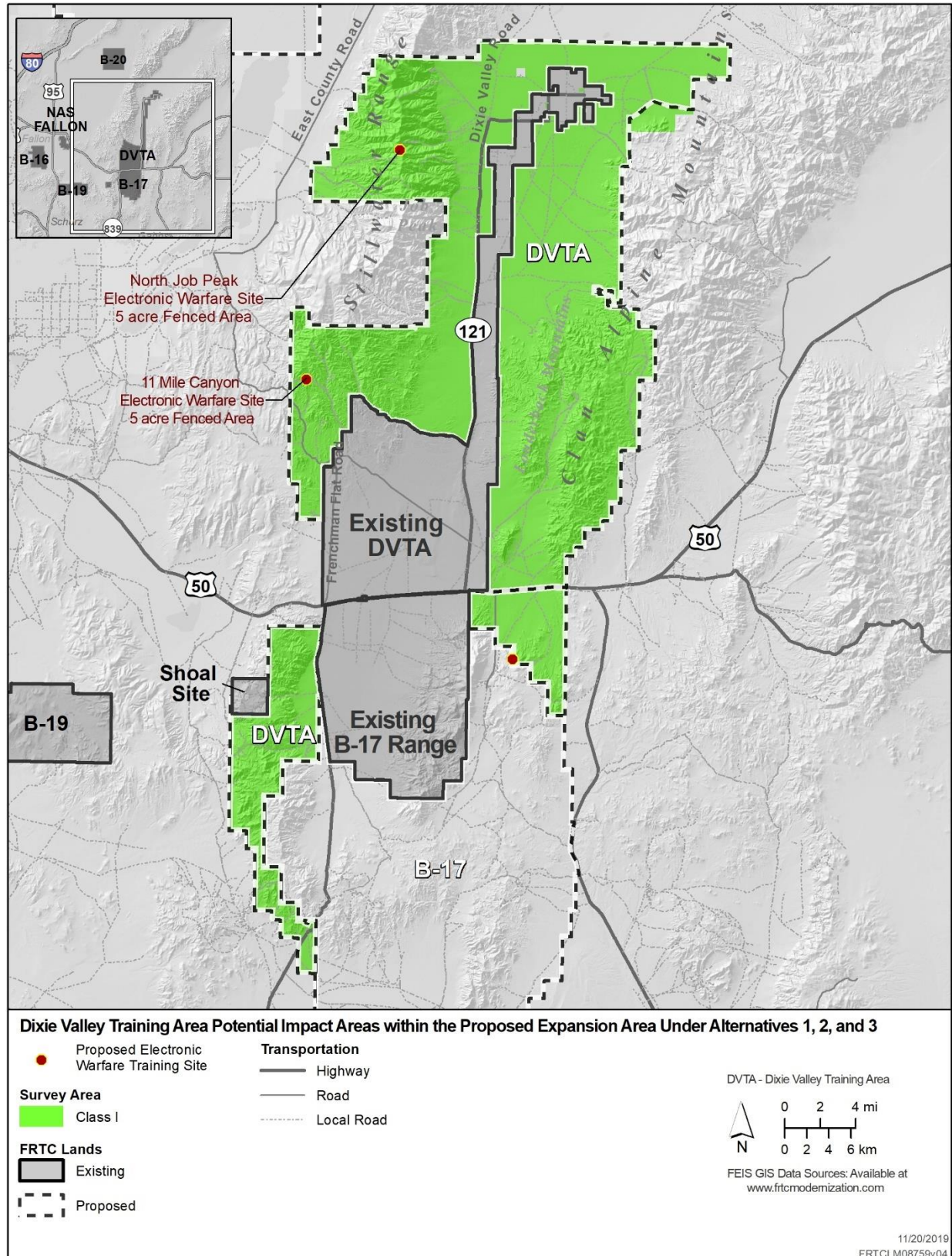


Figure 3.11-5: Dixie Valley Training Area Potential Impact Areas Within the Proposed Expansion Area Under Alternatives 1, 2, and 3

3.11.1.3 Cultural Resources Investigations

In the state of Nevada, cultural resources inventories are defined as Class I, Class II, or Class III studies:

- A Class I Inventory is a broad-based literature review of published and unpublished documents, records, reports, files, registers, and other sources, resulting in an analysis and synthesis of all reasonably available data.
- A Class II Inventory is a probabilistic field survey designed to help characterize the probable density, diversity, and distribution of archaeological properties in a large area.
- A Class III Inventory is an intensive pedestrian survey carried out by archaeologists to locate and record archaeological sites and other cultural resources, as applicable. Class III methods vary geographically, conforming to the prevailing standards for the region involved, but generally involve close-interval pedestrian survey transects.

All inventories conducted in association with past or present efforts are done so in accordance with the BLM Nevada State Office *Guidelines and Standards for Archaeological Inventory, Fifth Edition* (Bureau of Land Management Nevada, 2012) and the *State Protocol Agreement between the Bureau of Land Management Nevada and the Nevada State Historic Preservation Officer for Implementing the National Historic Preservation Act* (BLM-NVSHPO 2014).

3.11.1.3.1 Previous Studies and Investigations for Existing FRTC

For the existing FRTC, the Navy began by reviewing the *Analysis of the Management Situation: Carson City District Resource Management Plan Revision and Environmental Impact Statement* to identify potential cultural resources (Bureau of Land Management, 2013). The Navy then completed supplementary cultural resources surveys and Class III inventories within the existing B-16, B-17, and B-20 ranges between 2012 and 2014. In addition, the Nevada Cultural Resources Information System (NVCRIS) was also used to gather other recorded archaeological and architectural data within the existing ranges. The NAS Fallon Integrated Cultural Resources Management Plan (ICRMP) includes an inventory of completed studies and identified cultural resources for the NAS Fallon Main Station and seven outlying training areas administered by NAS Fallon, including the existing B-16, B-17, B-19, and B-20 ranges; the Dixie Valley Training Area; the Shoal Site; and the Sand Springs parcel (U.S. Department of the Navy, 2013). To date, the Navy has conducted Class III surveys for 48,812 acres of existing ranges.

In 2015, the Navy analyzed an increase in the types and number of training activities at the FRTC to accommodate new force changes. In conjunction with the NEPA process, the Navy conducted Section 106 consultation to account for potential effects as a result of the Navy's Proposed Action. In early 2015, the Navy consulted with the Nevada SHPO; interested federally recognized tribes including Battle Mountain Shoshone Tribe, Duckwater Shoshone Tribe, Elko Band (Te-Moak Tribe), Fallon Paiute-Shoshone Tribe, Lovelock Paiute Tribe, Pyramid Lake Paiute Tribe, South Fork Band (Te-Moak Tribe), Te-Moak Tribe of Western Shoshone, Walker River Paiute Tribe, Winnemucca Paiute Tribe, Yerington Paiute Tribe, and Yomba Shoshone Tribe; and the Inter-Tribal Council of Nevada. Nevada SHPO concurred with the Navy's determination of no adverse effect to historic properties.

3.11.1.3.2 Studies Conducted for the Requested Land Withdrawal and Proposed Acquisition Areas

In association with the Proposed Action analyzed within this EIS, the Navy compiled information from fieldwork, literature reviews, and input from Tribal representatives to evaluate the presence of and potential impacts on cultural resources within the proposed FRTC expansion lands.

The Navy prepared a Class I Cultural Resources Overview Study in 2018 for the B-16, B-17, B-20, and DVTA proposed land expansion areas (refer to Figure 3.11-2, Figure 3.11-3, Figure 3.11-4, and Figure 3.11-5). Sources of information for this report included Nevada SHPO site files, the National Register Database, the NVCRIS (for areas underlying the proposed airspace expansion area), previously conducted Class III BLM-surveys, as well as information compiled from BLM documents as part of the 2015 FRTC EIS (U.S. Department of the Navy, 2015). In total, this study covered 680,000 acres within Churchill, Lyon, Mineral, Nye, and Pershing counties for requested withdrawal and proposed acquisition areas associated with Alternatives 1, 2, and 3. The Navy also prepared a second Class I cultural resources overview for 92,315 acres associated with additional requested withdrawal and proposed acquisition areas under Alternative 3 only.

The Navy also completed a Class III Cultural Resource Inventory in 2017. The Class III inventory was conducted for approximately 14,000 acres of proposed target areas, convoy routes, and ground mobility training activities associated with the requested B-16, B-17, and B-20 land withdrawal areas under Alternatives 1 and 2. The Navy conducted a second Class III inventory in 2019 for 31,948 acres within the requested B-16 and B-17 land withdrawal area within proposed target areas, 200-meter buffer areas around all targets, and ground mobility training activities to include convoy routes in B-17, under all alternatives. The Navy also conducted a third Class III inventory in 2019 as an addendum to the previous inventories. This latter investigation assessed 2,867 acres to identify potential cultural resources within proposed target areas associated with the B-17 requested land withdrawal area under Alternative 3. All Class III survey areas were inventoried by crews of four to six archaeologists, with each transect separated by an interval of no more than 30 meters (see Supporting Study: Class I Archaeological Report, available at <https://frtcmodernization.com>; and Section 3.11.2 [Affected Environment], for more information).

3.11.1.3.3 Identification of Traditional Cultural Properties

In order to identify known and potential Traditional Cultural Properties and Sacred Sites, the Navy conducted a preliminary study to synthesize information obtained through a broad literature review of over 200 documents, and supplemented this through communication with the Fallon Paiute-Shoshone, the Walker River Paiute, and the Yomba Paiute Tribes (all tribes were invited), as well as the Bureau of Indian Affairs in Carson City, NV. The study sought to identify previously documented places of cultural and/or religious importance to Indian Tribes who are culturally affiliated with the lands within the proposed FRTC. Of the 900 places of potential cultural and religious importance identified in this study, about half are located on lands beneath FRTC SUA. Such properties include mountain peaks, springs, plant resources, and pinyon stands that derive importance from their association with traditional origin and mythological places or spiritual/ceremonial locations as well as traditional hunting and gathering locations.

Specifically, the Fallon Paiute-Shoshone, the Walker River Paiute, and the Yomba Paiute Tribes utilize resources within the existing and proposed FRTC Modernization area (U.S. Department of the Navy & Bureau of Land Management, 2001). Based on previous consultation and discussions with these tribes regarding the Resource Management Plan for certain federal lands in Churchill County, the Navy and BLM identified sensitive areas that may have religious or cultural importance (U.S. Department of the Navy & Bureau of Land Management, 2001).

Notwithstanding these efforts to identify TCPs and Sacred Sites, the Navy recognizes the need for additional studies or inventories to be conducted in consultation with the Indian tribes to more fully

determine the presence of potential TCPs or sacred sites. The Navy also recognizes that access constraints could impact traditional cultural practices of these tribes.

3.11.1.4 Approach to Analysis

Potential impacts on cultural resources may result from physically altering, damaging, or destroying all or part of a resource; altering characteristics of the surrounding environment that contribute to the importance of the resource; introducing visual, atmospheric, or audible elements that are out of character for the period the resource represents (thereby altering the setting); neglecting the resource to the extent that it deteriorates or is destroyed, or constraining access.

The Navy synthesized information from past and current studies to facilitate an analysis of potential impacts on known and potential cultural resources for each alternative within the existing FRTC and the proposed expansion areas. Under the Proposed Action, impacts on cultural resources may include, but are not limited to, the following:

- Physical destruction, damage, or alteration of all or part of an historic property
- Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting
- Isolation or neglect of a property resulting in its deterioration or destruction
- Limiting access to historic properties and sacred sites.

The following general principles were used to evaluate impacts:

- The extent, if any, to which the action would result in substantial physical alteration, damage, or destruction of all or part of a resource
- The extent, if any, that the action would alter characteristics of the surrounding environment that contribute to the importance of the resource through the introduction of visual, atmospheric, or audible elements
- The degree, if any, to which the action would constrain access to culturally important sites.

3.11.1.4.1 Noise and Vibration

Operational changes associated with the Proposed Action may introduce noise and vibrations with the potential to impact cultural resources. Yet given the wide variety of cultural resource types and noise measurements, there is not a precise threshold for determining impacts. Broadly, very high noise and vibration levels can, in extreme cases, cause direct physical harm to certain resource types while less intense noise levels can also impact resources, such as TCPs, by altering the setting. As discussed in more detail in Section 3.7 (Noise) of this EIS, different noise measurement methodologies assess the frequencies, duration, and sensitivity of noise receptors. Generally, noise measurements weighted to replicate human hearing sensitivity is expressed as A-Weighted Decibels (dBA), while C-Weighted Decibels (dBC) correspond to actual sound pressure levels received by sound meters.

In total, a Day Night Level (DNL) measurement assesses the average impact of noise events during the course of a day. In assessing potential noise impacts on the settings of cultural resources, the Navy adheres to the accepted standard of 65 dBC DNL as the threshold of potential noise annoyance. Noises at or above this level may interfere with the experience of cultural resources, especially TCPs and sacred sites.

Specifically, current and proposed aircraft supersonic operations involve sonic booms, impulsive sounds similar to thunder. The sound is generated by shock waves created by an object traveling through air faster than the speed of sound. The duration of a sonic boom is brief (less than one second), and the intensity is greatest directly under the flight path and weakens as distance from the flight track increases. Several factors influence the characteristics of sonic booms: weight, size, and shape of aircraft or vehicle; altitude; flight paths; and atmospheric conditions. Increasing altitude is the most effective method of reducing sonic boom intensity. Noise modeling results are presented in Section 3.7 (Noise). The change in air pressure associated with a sonic boom is only a few pounds per square foot greater than normal atmospheric pressure. This is about the same pressure change experienced by a change in elevation of 20–30 feet, or riding an elevator down two or three floors. This additional pressure above normal atmospheric pressure is called overpressure. It is the sudden onset of the pressure change that makes the sonic boom audible.

Cultural resources potentially impacted by noise and vibrations caused by sonic booms at lower altitudes may include certain types of historic properties, such as caves and rock shelters; petroglyphs or pictographs on rock faces; sensitive historic architectural resources, such as adobe structures, unreinforced stone structures, and mine shafts and adits; and traditional cultural properties and sacred sites. To assess the potential physical impacts on cultural resources from noise and vibration associated with the Proposed Action, the Navy utilized available noise studies and guidelines. A study of the effects of supersonic overflights (including Air Combat Maneuver flight training activities) on cultural resources that may be impacted by noise and vibration was conducted between 1988 and 1990 and included the Fallon Supersonic Operating Areas (Sutherland et al., 1990). This 1990 study found that the creation of sonic booms in the atmosphere at altitudes above 30,000 feet MSL reached a lateral cut-off point where refraction prevents the sonic boom from reaching the ground. Therefore, sonic booms at that altitude are less likely to create overpressures that would affect cultural resources sensitive to noise and vibration. The National Research Council also has developed general guidelines for evaluating overall impacts of various noise levels (National Research Council and National Academy of Sciences, 1977). The National Research Council guidelines have been cited consistently as the basis for evaluating impacts on historic properties. For example, sounds lasting more than one second and with a peak unweighted sound level greater than or equal to 130 decibels (dB) (in the 1 hertz [Hz] to 1,000 Hz frequency range) are considered potentially damaging to structural components. This is a conservative standard for assessing all sound.

Additional noise impact data is available from two studies conducted in the 1970s in connection with proposed Concorde operations in the U.S. Hershey, Kevala, and Burns (1975) examined the potential for structural feature breakage at five historic sites within the Concorde flightpath, including the St. George's Church near Kennedy Airport, and four historic sites near Dulles Airport (Sully Plantation, Dranesville Tavern, Broad Run Bridge and Tollhouse, and Manassas Battlefield Park). The historic sites chosen for study were all located within a few miles of the proposed Concorde flight paths. The authors evaluated the impact on structural features, including windows, brick chimneys, a stone bridge, and plaster ceilings. They determined that the potential for breakage was generally less than 0.001 percent for a year of overflights at all five historic sites. In 1977, Wesler reevaluated the noise analysis at the Sully Plantation and concluded that no damage was found to the 1795 plantation house from routine departures of the Concorde aircraft 1,500 feet from the runway centerline of Dulles Airport (Wesler, 1977). Wesler found that the structural vibration levels from the Concorde takeoff and landings were actually less than those caused by touring groups and vacuum cleaning. Of note, both Concorde studies also concluded that "noise exposure levels for compatible land use also were protective of conventional

historic and archaeological sites.” Meanwhile, a 2012 Navy study at NAS Whidbey Island assessed potential noise and vibration impacts from Navy airfield operations to historic buildings and structures. The study suggested that sounds lasting more than one second above a sound level of 130 dBC are potentially damaging to structural components, and that given takeoff conditions with C-weighted sound levels greater than 110 dBC for certain aircraft operations, there was some potential for noise-induced vibration (Kester & Czech, 2012).

3.11.1.5 Public and Tribal Concerns

The Navy invited Indian tribes to participate in the NEPA process for this EIS (see Appendix C, Tribal Correspondence). In addition, the Navy invited interested Indian tribes to (1) participate in project meetings, (2) provide additional information related to cultural resources, (3) provide internal document review (e.g., of the Class III Cultural Resources Inventory Report) during the development of this EIS, and (4) provide input during the Section 106 Government-to-Government consultation to amend the existing 2011 PA. The federally recognized Indian tribes that were contacted are listed in Table 3.11-1.

During the public scoping process, the public review of the Draft EIS, and through government to government consultation meetings, the public and Indian tribes provided a number of comments concerning cultural resources and the Proposed Action’s potential impacts on these resources. Such comments included a general concern for compliance with Section 106 of the NHPA and NAGPRA. Public comments also addressed possible conflicts between the Proposed Action and the objectives of federal, regional, state, local, and Indian tribes’ land use plans, policies, and controls for the concerned areas. Public concerns focused primarily on cultural resources related to Gabbs Valley; historic sites and effects from sonic booms; restricted access; noise; and visual integrity.

The Navy received tribal concerns during public outreach and Tribal Council meetings from the Fallon Paiute-Shoshone Tribe, the Walker River Paiute Tribe, the Duckwater Shoshone Tribe, and the Yomba Shoshone Tribe. The Fallon Paiute-Shoshone Tribe expressed concerns with restrictions on the tribe’s access to sacred and other cultural sites, aircraft overflights, respect for cultural heritage, fire control, and damage to cultural resources generally, and the fact that cultural resources surveys/investigations have not been conducted throughout the entirety of the proposed range expansion areas. The Walker River Paiute Tribe expressed concerns regarding monitoring of cultural resources, use of tribal monitors, access to ancestral lands including ceremonial use, ordnance issues in regard to contamination and safety, increased aircraft (jet) activity and noise, increased use of the airspace over tribal lands, increased pollution, and off-target bomb drops. Concerns from the Duckwater Shoshone Tribe included conducting archaeological surveys after tribal consultation, use of a tribal monitor, placing a higher value on visual integrity in regard to vision quest sites, and access to vision quest sites. The Yomba Shoshone Tribe expressed concerns related to use of tribal members when conducting cultural resource surveys, sonic booms and jet flyovers and associated noise, and consultation with elders and tribal members.

For further information regarding comments received during the public scoping process and public comments during the public comment period, please refer to Appendix E (Public Participation) and Appendix F (Public Comments and Responses).

Table 3.11-1: Indian Tribes Contacted/Consulted

Battle Mountain Shoshone Tribe
Duckwater Shoshone Tribe
Elko Band Council
Fallon Paiute-Shoshone Tribe
Fort McDermitt Paiute and Shoshone Tribe
Lovelock Paiute Tribe
Pyramid Lake Paiute Tribe
Reno-Sparks Indian Colony
South Fork Band Council
Summit Lake Paiute Tribe
Te-Moak Tribe of Western Shoshone
Walker River Paiute Tribe
Washoe Tribes of California and Nevada
Wells Band Council
Winnemucca Indian Colony of Nevada
Yerington Paiute Tribe
Yomba Shoshone Tribe

3.11.2 Affected Environment

Note: It is Navy policy to protect certain information related to cultural resources from general distribution. The policy is consistent with NHPA and ARPA, which address confidentiality restrictions to prevent the inappropriate release of locational data for archaeological sites and TCPs. Accordingly, this EIS does not contain detailed locational descriptions or figures showing the specific locations of archaeological sites or TCPs.

3.11.2.1 Cultural Context

The following cultural context is excerpted and adapted from the NAS Fallon ICRMP (U.S. Department of the Navy, 2013), the Class I Survey Report for the lands requested for withdrawal and proposed for acquisition, and the Class III Cultural Resources Inventory of proposed new target areas and convoy routes.

3.11.2.1.1 Prehistoric Context

Prehistoric periods identified in or near the existing and proposed FRTC Modernization Area include the Hypothetical Pre-Clovis (< 20,000–9500 BC), Western Clovis (9500–8500 BC), Great Basin Stemmed Point (8500–5000 BC), Mixed Dart (5000–2500 BC), Gatecliff (2500–500 BC), Elko (500 BC–AD 500), Rosegate (AD 500–1350), and Desert (AD 1350–1850) periods (U.S. Department of the Navy, 2013).

Historical evidence suggests that Pre-Clovis groups were organized into highly mobile, independent family units with an unspecialized subsistence economy based on hunting and gathering a wide variety of plants and animals. Sites would most likely be identified along the former shorelines of Pleistocene Lakes. The Western Clovis period occupations areas are identified by the presence of fluted points (ancient stone weaponry) and may represent an adaptation to lacustrine (marshes, lakes, and rivers) resources rather than big game hunting, as defined in other parts of the western United States. The lacustrine adaptation continues in the Great Basin Stemmed Point period and is characterized by weakly shouldered large blades with heavily ground and usually rounded bases. Twined basketry and weaving are present during this period.

The Mixed Dart period represents a shift from the large stemmed points to a variety of strongly shouldered dart points, some notched with expanding stems, others with square stems, and most importantly the Pinto Split-stem point. Milling slabs and handstones for processing seeds are common. Basketry including simple S-twist and diagonal twisting as well as some of the earliest examples of coiled basketry are associated with this period. Olivella shell beads were also being traded from the California coast.

The Gatecliff period occupations indicate some degree of sedentism suggested by the structural complexity, and the size and number of houses found in winter villages. Lowland sites tend to have well-developed milling assemblages and fauna dominated by rabbits and rodents. Periodic movement to resource zones away from these villages is indicated by the use of caves as temporary camps and cache sites. Specialized hunting camps in the mountains are also common throughout the area and often include faunal assemblages dominated by bighorn sheep. Trade of Olivella shell beads increased during this time. The Elko period occupations were a continuation of the Gatecliff adaptation; however, the trade of Olivella shell beads decreased greatly.

Bow and arrow technology characterizes the Rosegate Period. Villages along major rivers were occupied but the houses became smaller. Cave sites continued to be used for burials and caches. Intensification of plant food processing and small game harvest (especially rabbits) characterized the subsistence in the Rosegate period, with less emphasis on the use of large game. The Desert period is identified by the presence of the Desert Side-Notched point. Residential sites near rivers and marshes were still in use in this period, but house size decreased, and most houses lack internal features such as hearths, post holes, and cache and burial pits. The diet appears to have been dominated by fish, small game, waterfowl, and seeds. Some groups began to intensively exploit pinyon along the eastern slope of the Sierra and in some of the higher interior ranges.

3.11.2.1.2 Historic Context

The Fallon area's Euro-American history began in the late 1820s with fur trapping parties and exploratory expeditions. Major events that influenced the region's chronology included emigrant wagon trains in the 1840s, the 1849 California Gold Rush, and Comstock Lode (1859–1880). In the early 20th century, the Newlands Project (1903–1905), highway construction, and the construction of the Churchill County's airstrip set the stage for the Fallon area's strong ties to the federal government that continue to the present.

In 1943, the Navy assumed control of the airfield and constructed barracks, hangars, air traffic control facilities, and target ranges. In 1944, it commissioned the Naval Auxiliary Air Station Fallon. The Navy placed the station on caretaker status in 1946, but reactivated it in 1951. On January 1, 1972, Naval Auxiliary Air Station Fallon became NAS Fallon. NAS Fallon's training mission expanded steadily in the 1980s with the arrival of the Tactical Aircrew Combat Training System and the permanent assignment of Strike Fighter Squadron 127, the "Desert Bogeys." Changes in aviation technology brought more advanced aircraft to NAS Fallon, such as the F/A-18 Hornet. In 1995 and 1996, the U.S. Navy Fighter Weapons School (TOPGUN) and the Carrier Airborne Early Warning Weapons School (TOPDOME) were merged with Strike University, creating the Naval Strike and Air Warfare Center, which is now named the Naval Aviation Warfighting Development Center.

3.11.2.2 Bravo-16

The B-16 PIA consists of the existing B-16 range (27,359 acres) and the proposed expansion area (32,201 acres).

3.11.2.2.1 Archaeological Resources

Based on previous Class III studies of 15,263 acres within the existing B-16 range, there are 71 NRHP-eligible or potentially eligible archaeological sites.

Within the proposed B-16 expansion area, a total of 32 NRHP-eligible or potentially-eligible archaeological sites have been identified based on Class I and Class III surveys of all 32,201 acres. To identify archaeological sites within this proposed expansion area, the Navy completed two supplementary studies, (1) a Class I Cultural Resources Overview for the entire proposed expansion area in 2018 and (2) a Class III cultural resource inventory conducted from 2017 through 2019 (refer to Section 3.11.1.3.2, Studies Conducted for the Requested Land Withdrawal and Proposed Acquisition Areas). Archaeological sites that have been identified in the Class I and Class III cultural resources investigations are shown in Table 3.11-2.

Table 3.11-2: NRHP-Eligible and Potentially Eligible Archaeological Sites in the Proposed B-16 Expansion Area

Location	BLM Site No.	State Site No.	AGE	Site Type	NRHP Criterion*
B-16 Class I Inventory					
Maneuver Area	-	CH2100	P	Rock Art	-
Maneuver Area	03-6287	CH2092	P	Rock Art/South Salt Cave Pictographs	-
Maneuver Area	03-4989	CH2084	P	Rock Art/Rockshelter/Salt Cave #3	-
Maneuver Area	03-5262	CH2082	M	Cave/Rockshelter/Trapping/Ground Stone	C/D
Maneuver Area	03-0564	CH84	P	Rock Art/Rockshelter/Salt Cave Shelters 1&2	-
Maneuver Area	03-4990	CH2083	P	Cave/Rockshelter/Salt Cave #4	-
Fence	03-8419	CH3343	H	Road	-
Fence	03-9425	CH3814	H	Road	-
SDZ	03-9426	CH3815	P	Simple Flaked Stone	-
SDZ	03-9428	CH3817	P	Simple Flaked Stone	-
SDZ	03-8746	CH3533	P	Basic Habitation	-
SDZ	03-9447	CH3836	H	Road	-
SDZ	03-9446	CH3835	H	Road	-
SDZ	03-9444	CH3833	P	Simple Flaked Stone	-
B-16 Class III Survey					
SDZ	03-8746	CH3533	P	Complex Habitation	D
SDZ	03-11208	CH4756	P	Complex Flaked Stone	D
SDZ	03-11222	CH4770	P	Basic Habitation	D
SDZ	03-11223	CH4771	P	Complex Habitation	-
SDZ	03-11245	CH4793	M	Rockshelter/Animal Trap	D
SDZ	03-11254	CH4801	P	Lithic Procurement - Clast Quarry	-
SDZ	03-11260	CH4807	P	Complex Flaked Stone	D
SDZ	03-11267	CH4814	P	Complex Flaked Stone	D
SDZ	03-11271	CH4818	ETHNO	Complex Flaked Stone	D

**Table 3.11-2: NRHP-Eligible and Potentially Eligible Archaeological Sites in the Proposed B-16 Expansion Area
(continued)**

Location	BLM Site No.	State Site No.	AGE	Site Type	NRHP Criterion*
SDZ	03-11273	CH4820	P	Basic Habitation	D
SDZ	03-11275	CH4822	P	Basic Habitation	D
SDZ	03-11327	LY2775	P	Lithic Procurement - Clast Quarry	D
SDZ	03-11355	LY2788	P	Complex Flaked Stone	D
SDZ	03-11373	CH4874	U	Stacked Rock Cairns	-
SDZ	03-11375	CH4876	M	Basic Habitation/Animal Trap	D
SDZ	03-11377	LY2797	P	Complex Flaked Stone	D
SDZ	03-11379	CH4878	P	Complex Habitation	D
SDZ	03-11382	CH4881	P	Basic Habitation	-

Notes: P = prehistoric, M = multicomponent (prehistoric and historic), NRHP = National Register of Historic Places.

*NRHP Criterion "C" are sites that embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, possess high artistic value or represent a significant and distinguishable entity whose components may lack individual distinction. NRHP Criterion "D" are sites that have yielded, or may be likely to yield, information important in prehistory or history.

Potential impacts on archaeological resources within the B-16 PIA are discussed in Section 3.11.3 (Environmental Consequences).

3.11.2.2.2 Architectural Resources

Based on previous studies (see Sections 3.11.1.3.1, Previous Studies and Investigations for Existing FRTC; and 3.11.1.3.2, Studies Conducted for the Requested Land Withdrawal and Proposed Acquisition Areas), there are no known NRHP-eligible architectural resources within the B-16 range PIA (see Figure 3.11-2).

3.11.2.2.3 Traditional Cultural Properties and Tribal Resources

One place of potential traditional cultural significance is known to occur within the requested B-16 land withdrawal area. The site is eligible for the NRHP under criteria C and D and may have traditional cultural importance to the Northern Paiute Tribes. Site-specific information is sensitive and is not included in this EIS.

3.11.2.3 Bravo-17

The B-17 PIA consists of the existing B-17 range (54,786 acres) and the proposed expansion area (178,013 acres). The B-17 PIA includes a large SDZ/WDZ as well as target areas and convoy routes.

3.11.2.3.1 Archaeological Resources

Based on previous Class III inventories of 14,019 acres within the existing B-17 range, there are 133 NRHP-eligible or potentially eligible archaeological sites. Most of the sites in the existing B-17 range are open lithic scatters (chipped stone debris). Other archaeological sites associated with mining sites and camps have been identified within the existing B-17 range and consist of dry stacked stone structures, mine adits, shafts, and prospect pits; none of these sites have yet been inventoried or evaluated to determine NRHP eligibility and are managed as eligible until formally evaluated for NRHP significance (U.S. Department of the Navy, 2015). In accordance with the 2011 PA, portions of the existing B-17 range are exempt from Section 106 review.

Within the proposed B-17 expansion area, a total of 56 NRHP-eligible or potentially eligible archaeological sites have been identified based on a complete Class I survey and 21,769 acres of Class III surveys. The Navy used two major sources of information to identify potential archaeological sites within the proposed B-17 expansion area. The first was a Class I Cultural Resources Inventory conducted in 2018. The second was a series of Class III cultural resource inventories, including 6,613 acres surveyed by prior agencies and 15,256 acres surveyed by the Navy from 2017 through 2019 focusing on the proposed target and convoy areas (refer to Section 3.11.1.3.2, Studies Conducted for the Requested Land Withdrawal and Proposed Acquisition Areas). Archaeological sites that have been identified in the Class I and Class III cultural resources investigations are shown in Table 3.11-3.

Table 3.11-3: NRHP-Eligible or Potentially Eligible Archaeological Sites Within the Proposed B-17 Area

Location	BLM Site No.	State Site No.	AGE	Site Type	NRHP Criterion*
B-17 Class I Inventory (Alt 1)					
SDZ/WDZ (All Alts)	03-8562	CH1763	P	Complex Flaked Stone	-
SDZ/WDZ (All Alts)	03-3731	CH1237	P	Lithic Quarry	D
SDZ/WDZ (All Alts)	03-4655	CH2055	M	Basic Habitation/Historic Camp	D
SDZ/WDZ (All Alts)	03-3504	CH942	P	Complex Habitation	D
SDZ/WDZ (All Alts)	03-0637	NY537	P	Complex Habitation	-
SDZ/WDZ (All Alts)	03-1197	NY2012	P	Rock Alignments	-
SDZ/WDZ (All Alts)	03-8564	CH1765	P	Complex Flaked Stone	D
SDZ/WDZ (All Alts)	03-7169	MN1753	P	Basic Habitation	D
SDZ/WDZ (All Alts)	03-7019	MN1742	M	Complex Habitation/Refuse Scatter	D
SDZ/WDZ (All Alts)	03-7439	MN1898	M	Basic Habitation/Homestead	D
SDZ/WDZ (All Alts)	03-7021	MN1744	P	Complex Habitation	D
SDZ/WDZ (All Alts)	03-7012	MN1735	P	Complex Habitation	D
SDZ/WDZ (All Alts)	03-1998		H	Mine (uninhabited)	-
SDZ/WDZ (All Alts)	03-8553	CH3406	P	Basic Habitation	D
SDZ/WDZ (All Alts)	03-7017	MN1740	M	Complex Flaked Stone/Prospect Complex	D
SDZ/WDZ (Alt 1 & 2)	03-4661	CH2061	P	Lithic Quarry	-
SDZ/WDZ (All Alts)	03-3730	CH1236	M	Complex Habitation/Ranching	D
SDZ/WDZ (All Alts)	03-7807	NY14106	P	Basic Habitation	-
SDZ/WDZ (All Alts)	03-7809	MN1986	P	Basic Habitation	D
SDZ/WDZ (Alt 1 & 2)	03-8550	CH3403	M	Basic Habitation/Refuse Scatter	D
SDZ/WDZ (All Alts)	03-1885	N/A	H	Mining Camp	-
SDZ/WDZ (All Alts)	03-1984	N/A	H	Mining Camp	-
SDZ/WDZ (All Alts)	03-1985	N/A	H	Mine Complex (uninhabited)	-
SDZ/WDZ (All Alts)	03-1997	N/A	H	Mine Complex (uninhabited)	-
SDZ/WDZ (All Alts)	03-2015	N/A	H	Mill	-
SDZ/WDZ (All Alts)	03-1998	N/A	H	Mine (uninhabited)	-
SDZ/WDZ (Alt 3)	03-3142	N/A	P	Complex Habitation	-
SDZ/WDZ (Alt 3)	03-5765	N/A	H	Grave	-
SDZ/WDZ (Alt 3)	03-1974	N/A	H	Mining (Known but not recorded)	-

**Table 3.11-3: NRHP-Eligible or Potentially Eligible Archaeological Sites Within the Proposed B-17 Area
(continued)**

Location	BLM Site No.	State Site No.	AGE	Site Type	NRHP Criterion*
B-17 Class III Inventory					
Convoy Route (Alt 1 & 2)	03-7966	26CH3181	P	Lithic Procurement - Clast Quarry	D
Target Area (Alt 1 & 2)	03-10482	26CH4548	M	Lithic Procurement - Clast Quarry/ Refuse Deposit	D
Target Area (Alt 1 & 2)	03-10475	26CH4541	P	Complex Flaked Stone	D
Target Area (Alt 1 & 2)	03-10499	26CH4565	P	Complex Flaked Stone	D
Target Area (All Alts)	03-10541	26MN2418	P	Basic Habitation	-
Target Area (Alt 1 & 2)	03-10542	26NY15876	P	Complex Flaked Stone	-
Target Area (Alt 1 & 2)	03-11419	26CH4917	P	Complex Flaked Stone	D
Convoy Route (Alt 1 & 2)	03-11504	26MN2825	P	Basic Habitation	D
Fence (Alt 1 & 2) Convoy Route (Alt 3)	03-11743	26NY16319	H	Road	D
SDZ/WDZ (All Alts)	03-11414	26CH4912	P	Lithic Procurement - Clast Quarry	D
SDZ/WDZ (All Alts)	03-11418	26CH4916	P	Basic Habitation	D
SDZ/WDZ (All Alts)	03-11437	26CH4928	P	Basic Habitation	D
SDZ/WDZ (All Alts)	03-11442	26CH4933	P	Complex Flaked Stone	D
SDZ/WDZ (All Alts)	03-11464	26MN2785	P	Lithic Procurement - Bedrock Quarry	D
SDZ/WDZ (Alt 1 & 2) Target Area (Alt 3)	03-11465	26MN2786	P	Complex Flaked Stone	D
SDZ/WDZ (Alts 1&2)	03-11466	26MN2787	P	Basic Habitation	D
SDZ/WDZ (Alt 1 & 2) Target Area (Alt 3)	03-11470	26MN2791	P	Basic Habitation	D
SDZ/WDZ (Alt 1 & 2) Target Area (Alt 3)	03-11473	26MN2794	P	Complex Habitation	D
SDZ/WDZ (Alt 1 & 2) Target Area (Alt 3)	03-11474	26MN2795	P	Basic Habitation	D
SDZ/WDZ (All Alts)	03-11493	26MN2814	U	Rock Alignment	-
SDZ/WDZ (All Alts)	03-11499	26MN2820	P	Basic Habitation	-
SDZ/WDZ (All Alts)	03-11503	26MN2824	P	Basic Habitation	-
SDZ/WDZ (All Alts)	03-11506	26NY16253	P	Complex Habitation	-
SDZ/WDZ (All Alts)	03-11507	26NY16254	P	Complex Habitation	D
SDZ/WDZ (Alt 1 & 2) Target Area (Alt 3)	03-11642	26MN2953	P	Lithic Procurement - Clast Quarry	-
Target Area (Alt 3)	31-3505	MN662	P	Basic Habitation	D
Convoy Route (Alt 3)	03-11743	NY16319	H	Road	A

Notes: H = historic, P = prehistoric, M = multicomponent (prehistoric and historic), NRHP = National Register of Historic Places.

*NRHP Criterion "A" are sites that are associated with events that have made a significant contribution to the broad pattern of our history. NRHP Criterion "D" are sites that have yielded, or may be likely to yield, information important in prehistory or history.

Potential impacts on archaeological resources within the B-17 PIA are discussed in Section 3.11.3 (Environmental Consequences).

3.11.2.3.2 Architectural Resources

Based on previous studies (see Sections 3.11.1.3.1, Previous Studies and Investigations for Existing FRTC; and 3.11.1.3.2, Studies Conducted for the Requested Land Withdrawal and Proposed Acquisition Areas), there are no known NRHP-eligible architectural resources within the B-17 PIA (Figure 3.11-3).

3.11.2.3.3 Traditional Cultural Properties and Tribal Resources

Five potentially significant tribal resource sites are located in the B-17 PIA. These sites consist mostly of resource collection areas and spiritual/ceremonial locations. Site-specific information is sensitive and is not included in this EIS.

3.11.2.4 Bravo-20

The B-20 PIA consists of the existing B-20 range (41,005 acres) and the proposed expansion area (180,329 acres under Alternatives 1 and 2, and 177,144 acres under Alternative 3). The B-20 PIA includes a large SDZ/WDZ surrounding and including the target areas.

3.11.2.4.1 Archaeological Resources

In accordance with the 2011 PA, all of the existing B-20 range is exempt from further Section 106 review, due to the historical use of high explosives and the resulting disturbance of the area.

Within the proposed B-20 expansion area, a total of 11 NRHP-eligible or potentially eligible archaeological sites have been identified based on a complete Class I survey in 2018, 1,200 acres of previously completed (non-Navy) Class III surveys, and 1,408 acres of Navy-completed Class III surveys that focused on proposed target areas (refer to Section 3.11.1.3.2, Studies Conducted for the Requested Land Withdrawal and Proposed Acquisition Areas). Archaeological sites that have been identified in this proposed expansion area are shown in Table 3.11-4.

Potential impacts on archaeological resources within the B-20 PIA are discussed in Section 3.11.3 (Environmental Consequences).

3.11.2.4.2 Architectural Resources

Based on previous studies (see Sections 3.11.1.3.1, Previous Studies and Investigations for Existing FRTC; and 3.11.1.3.2, Studies Conducted for the Requested Land Withdrawal and Proposed Acquisition Areas), there are no known NRHP-eligible architectural resources within the B-20 PIA (Figure 3.11-4).

3.11.2.4.3 Traditional Cultural Properties and Tribal Resources

There is one place of cultural and religious importance located within existing B-20. It is affiliated with the Northern Paiute as a traditional origin and mythological place, as well as a spiritual and ceremonial location. There is one additional potential traditional cultural property in close proximity to the B-20 PIA. While not located within the requested B-20 land withdrawal area, it is located 0.29 mile outside the westerly boundary. Site-specific information is sensitive and is not included in this EIS.

Table 3.11-4: NRHP-Listed, Eligible, and Potentially Eligible Archaeological Sites Within the Proposed B-20 Expansion Area

Location	BLM Site No. (CrNV-03)	State Site No (26-)	Age	Site Type	NRHP Criterion*
SDZ/WDZ (All Alts)	-	CH1446	P	Complex Habitation	D
Fence	-	CH1448	P	Complex Habitation	D
SDZ/WDZ (All Alts)	-	CH1449	P	Complex Habitation	D
SDZ/WDZ (All Alts)	03-0626	CH474	P	Basic Habitation	D
SDZ/WDZ (All Alts)	03-2282	CH739	P	Lithic Quarry	-
SDZ/WDZ (All Alts)	03-2283	CH740	P	Complex Habitation	-
SDZ/WDZ (All Alts)	03-2284	CH741	P	Simple Flaked Stone	-
SDZ/WDZ (All Alts)	03-2285	CH742	P	Complex Flaked Stone	-
SDZ/WDZ (All Alts)	22-7736	-	P	Complex Habitation	D
SDZ/WDZ (All Alts)	22-7738	-	P	Complex Habitation	D
Fence	-	CH304	P	Stillwater Marsh Archaeological Area	D

Notes: P = prehistoric, NRHP = National Register of Historic Places, SDZ = Surface Danger Zone, WDZ = Weapons Danger Zone.

*NRHP Criterion "D" are sites that have yielded, or may be likely to yield, information important in prehistory or history.

3.11.2.5 Dixie Valley Training Area

The DVTA PIA consists of the existing DVTA (77,559 acres) and the proposed expansion area (293,343 acres).

3.11.2.5.1 Archaeological Resources

Based on previous studies conducted within the existing DVTA, there are 23 NRHP-eligible or potentially eligible archaeological sites based on 5,625 acres of Class III surveys.

Within the proposed DVTA expansion area, a total of 20 NRHP-eligible or potentially eligible archaeological sites have been identified based on a Class I survey conducted in 2018 and 4,839 acres of previously completed (non-Navy) Class III surveys (refer to Section 3.11.1.3.2, Studies Conducted for the Requested Land Withdrawal and Proposed Acquisition Areas). Archaeological sites that have been identified in the proposed DVTA expansion area are shown in Table 3.11-5.

Table 3.11-5: NRHP-Eligible and Potentially Eligible Archaeological Sites Within the Proposed DVTA Expansion Area

Location	BLM Site No. (CrNV-)	State Site No. (26-)	Age	Site Type	NRHP Criterion*
Maneuver Area	03-9525	CH2199	H	Historic Camp (Remnant Structure and Walls	-
Maneuver Area	-	CH1891	M	Complex Habitation/Refuse Deposit	D
Maneuver Area	03-3618	CH1078	P	Cave/Rockshelter	D
Maneuver Area	03-7846	CH2177	H	Homestead (Loraine Spencer Homestead)	A/D
Maneuver Area	03-7848	CH2179	H	Homestead (Devore Homestead)	C
Maneuver Area	03-7849	CH2180	H	Homestead (Ellis Homestead)	A/C/D
Maneuver Area	03-7852	CH2183	H	Homestead (Derrick Complex)	A/D
Maneuver Area	03-4595	-	H	Mining Camp	-
Maneuver Area	03-4594	-	H	Mining Camp	-
Maneuver Area	03-5369	-	H	Mining Camp	-
Maneuver Area	03-1857	-	H	Mining Camp	-
Maneuver Area	03-1819	-	H	Mine (uninhabited)	-
Maneuver Area	03-1846	-	H	Mining Camp	-
Maneuver Area	03-7428	CH2165	M	Complex Habitation/Refuse Scatter	-
Maneuver Area	03-9523	CH476	P	Complex Flaked Stone	-
Maneuver Area	03-7429	CH2166	P	Basic Habitation	-
Maneuver Area	03-7836	CH2167	P	Complex Habitation	-
Maneuver Area	03-7421	CH2158	P	Complex Flaked Stone	-
Maneuver Area	03-3445	CH921	P	Basic Habitation	-
Maneuver Area	03-2292	CH749	P	Complex Flaked Stone	-

Notes: H = historic, P = prehistoric, M = multicomponent (prehistoric and historic), NRHP = National Register of Historic Places.

*NRHP Criterion "A" are sites that are associated with events that have made a significant contribution to the broad pattern of our history. NRHP Criterion "C" are sites that embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, possess high artistic value or represent a significant and distinguishable entity whose components may lack individual distinction. NRHP Criterion "D" are sites that have yielded, or may be likely to yield, information important in prehistory or history.

3.11.2.5.2 Architectural Resources

Five known architectural resources, within the requested DVTA land withdrawal area, are eligible for listing on the NRHP (shown in Table 3.11-6). Despite the abandonment of nearly all of the ranches in the 1980s, a number of features continue to exist that are preserved by the efforts of the people in the Valley. Eligible architectural resources in the DVTA PIA are shown in Table 3.11-6.

Potential impacts on architectural resources within the DVTA PIA are discussed in Section 3.11.3 (Environmental Consequences).

Table 3.11-6: NRHP-Eligible Architectural Sites Within the Proposed DVTA Expansion Area

Location	Building/Site No. (26-)	Name	Location	Date of Construction	Description
Maneuver Area	CH2177	Lorraine-Spencer Homestead	DVTA	1920s	Eroded stone foundation, cottonwoods and corrals, 1950s refuse scatter
Maneuver Area	CH2179	Devore Homesite (formerly part of Ellis Ranch)	DVTA	1920s	Eroded adobe structure and small adobe food cellar associated with the historic archaeological deposits
Maneuver Area	CH2180	Ellis Ranch	DVTA	1920s	Semi-subterranean food storage building with stone foundation associated with the historic archaeological deposits
Maneuver Area	CH2183	Spencer-Derrick Homestead	DVTA	1920s	Nine contributing elements (five wood frame buildings consisting of two stores and three residences, four structures including three wood frame and earthen root cellars and a wood headframe) and two non-contributing elements
Maneuver Area	CH3100	Chalk Mountain Mining Camp	DVTA	1920s	Mine shafts, adits, drifts, prospects, tent platforms, standing wood shack, collapsed mining shacks, and refuse scatters

Notes: DVTA = Dixie Valley Training Area.

3.11.2.5.3 Traditional Cultural Properties and Tribal Resources

The Navy identified seven potentially significant tribal resource sites in the DVTA PIA. These sites are primarily traditional origin or mythological places and resource collection areas, as well as spiritual/ceremonial locations. Due to the sensitivity of this information, site specific information for potential TCPs is not included in this EIS.

3.11.2.6 Special Use Airspace

As discussed in 3.11.1.1 (Region of Influence), the FRTC SUA has been identified as a PIA for the purposes of impacts analysis for cultural resources, with emphasis on the areas with proposed changes.

Aircraft overflights may introduce visual, audible, or atmospheric elements that are out of character with certain cultural resources and may alter the setting in ways that diminish important resource qualities. While the Navy anticipates that aircraft operations-related impacts to cultural resources would be less than significant (see Section 3.11.3.3.5.2, Aircraft Overflights), potential impacts would be considered further during ongoing consultations pursuant to an amended 2011 PA, to include potential impacts from aircraft operations at lower altitudes within the modified SUA. Cultural resources potentially impacted by proposed auditory and visual intrusions may include sensitive architectural properties, such as adobe structures, traditional cultural properties, and sacred sites.

3.11.2.6.1 Archaeological Resources

There are nine noise and vibration-sensitive NRHP-eligible and potentially eligible archaeological sites that have been identified within the ground footprint beneath the proposed SOA B expansion area based on a data search from the NVCRIS.

3.11.2.6.2 Architectural Resources

Based on data from NVCRIS, two NRHP-listed architectural resources have been identified beneath the proposed expansion of Supersonic Operations Area B as well as the ground areas beneath proposed airspace modifications in the SUA as described in Section 3.11.1.1 (Region of Influence). Additionally, there are 7 architectural resources that underlie the Ruby, Zircon, Diamond, Duckwater, Reno, and Smokie MOAs (Table 3.11-7).

Table 3.11-7: Vibration Sensitive Architecture under the Proposed Ruby, Zircon, Diamond, Duckwater, Reno, and Smokie Military Operations Areas and Ingress/Egress routes

Location (MOA)	Resource Number
ZIRCON MOA	B1686
ZIRCON MOA	A_232
ZIRCON MOA	A_232
ZIRCON MOA	S1732
ZIRCON MOA	B11930
RUBY/ZIRCON/DIAMOND MOA	S1079
ZIRCON MOA	S1079

Notes: MOA = Military Operations Area

3.11.2.6.3 Traditional Cultural Properties and Tribal Resources

Based on the site files searches and a comprehensive study of available secondary sources, the Navy identified nine potential TCPs beneath proposed expansion and modification areas of the SUA PIA. For the purposes of this analysis, these sites are considered potential TCPs. Potential TCPs within the SUA PIA include traditional origin or mythological places, spiritual and ceremonial locations, and resource collection areas. There is one potential TCP directly under the proposed expansion area of SOA B. Within the Reno MOA, there are two potential TCPs. There are an additional five potential TCPs in the vicinity of the ingress/egress corridors. Site-specific information is sensitive and is not included in this EIS.

3.11.3 Environmental Consequences

This section evaluates how the Proposed Action and alternatives could impact cultural resources within the region of influence, or PIAs, for cultural resources using the general principles identified in Section 3.11.1.4 (Approach to Analysis). The analysis addresses potential impacts on all cultural resources that may result from implementation of the no action alternative and three action alternatives. Section 3.11.3.7 (Summary of Impacts and Conclusions) then provides a summary of potential impacts associated with implementation of the no action alternative and the three action alternatives.

The potential impacts on cultural resources from the Proposed Action vary in intensity, frequency, and location within the region of influence. The following types of activities and impacts are applicable to cultural resources within the region of influence, as reflected in the PIAs analyzed in this EIS:

- Training activities: Live and inert air-to-ground bomb drops, explosives ordnance disposal, air-to-ground machine gun fire, ground mobility training, and combat search and rescue training.
- Public accessibility: Constraints on access to lands, due to safety and operational considerations.
- Construction: Installation of new target systems, aircraft landing zones, launch and recovery areas for unmanned aircraft systems, and free maneuver areas for Tactical Ground Maneuver Training.
- Aircraft Operations: low-altitude overflights, sonic booms, and ingress/egress corridor overflights.

3.11.3.1 Potential Impacts

The following sections provide an overview of potential impacts of the No Action Alternative and Alternatives 1 through 3 against the environmental baseline as described in Section 2.4 (Environmental Baseline [Current Training Activities]). Note that because the potential impacts for all three action alternatives are nearly identical, they are fully analyzed under Alternative 1 and summarized to highlight any differences in Alternatives 2 and 3.

3.11.3.2 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and the current withdrawal would expire on November 5, 2021. All training activities that require use of these public lands would cease. Upon the expiration of this withdrawal, the Navy would work with stakeholders to prioritize and address any environmental remediation needed on these lands, in anticipation of potential relinquishment to the BLM or other potential disposal options.

Under the No Action Alternative, a decision to allow the FRTC land withdrawal to expire would have no significant impact on cultural resources because the land would continue to be protected by federal statutes and regulations pertaining to cultural resources. With the likely cessation of military training activities within current FRTC ranges, there would be net beneficial impacts in the form of reduced levels of noise potentially affecting cultural resources and greater access to lands under Department of Defense control. Although some of the actions needed to decommission, decontaminate, and reuse the closed range could potentially affect the cultural resources present in the FRTC, both the Navy and BLM would be involved in the processing of the closed FRTC and would share responsibility for compliance with cultural resources regulations. Management and use of the closed FRTC would continue to be subject to NHPA Section 106, NAGPRA, and other applicable law and regulations governing the protection and management of cultural resources. Any future land use proposals and potential impacts on cultural resources associated with the closure process would be addressed by the responsible agencies.

3.11.3.3 Alternative 1: Modernization of the Fallon Range Training Complex

Under Alternative 1, the Navy would renew the current public land withdrawal, propose to acquire or request to withdraw additional land, and expand the SUA reserved for military use. Alternative 1 would expand all bombing ranges and training areas to accommodate the larger safety zones needed for standoff weapons training. The amount of training within the proposed FRTC expansion areas and proposed revised SUA relative to baseline conditions analyzed in the 2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement (U.S. Department of the Navy, 2015) would remain the same but be dispersed within a larger area, i.e., throughout the existing FRTC ranges and SUA plus the proposed FRTC expansion areas and revised SUA. Training

activities would use existing target locations within the existing FRTC ranges and include new targets and training areas within the proposed expansion areas. This would increase the area where potential impacts on cultural resources could occur.

Changes in the location of aircraft targets and land-based munitions and live-fire training areas within each PIA have the potential to impact cultural resources. The following sections include discussion of the proposed changes in noise levels within each proposed range expansion area.

The following narrative addresses potential impacts associated with the proposed range expansions, airspace modifications, and range infrastructure-related changes, including construction and installation of perimeter fencing. Five PIAs have been identified and are described in Section 3.11.1.1 (Region of Influence). The PIAs for Alternative 1 include B-16, B-17, B-20, DVTA, and the FRTC SUA (Figure 3.11-1).

3.11.3.3.1 Bravo-16

Training Activities

Training activities within the B-16 range primarily consist of unit-level ground and air training. Training activities include tactical ground mobility training, helicopter gunnery training, fixed-wing inert ordnance, and Close Air Support and Combat Search and Rescue missions. The continued use of high-impact explosives (explosives ordnance disposal and land demolitions only) at previously disturbed target areas within the existing B-16 would not be considered a potential impact on cultural resources because intact archaeological sites no longer exist in such areas and because the type of activities carried out in these locations would not change from what has previously been analyzed and assessed for potential impacts in the 2015 EIS.

Based on Class I and Class III investigations conducted within the proposed B-16 expansion area for this EIS, six known archaeological sites and one potential TCP have been identified within the proposed maneuver area/close air support target area. An additional 24 archaeological sites are within the proposed SDZ. No architectural resources are present within the existing B-16 range (Section 3.11.2.3.1, Studies Conducted for the Requested Land Withdrawal and Proposed Acquisition Areas).

Ground-disturbing activities associated with use of the drill ground maneuver area and close air support target area would be conducted in accordance with an amended 2011 PA and placed to avoid affecting known cultural resources when mission and safety requirements allow. With respect to the potential TCP, it is considered eligible for listing on the NRHP based on Criteria C and D but may have additional importance as a traditional cultural property. High-impact explosives would not be utilized in the proposed expansion area for B-16, and the types of ground training proposed for this area would not result in unanticipated explosives-related impacts. If cultural resources cannot be avoided, the Navy would follow 36 CFR Section 800.6 with additional stipulations as included in an amended 2011 PA. In the event of post-review discovery of cultural resources, or an inadvertent discovery under NAGPRA during training activities, training in the immediate vicinity of the discovery would be suspended until an archaeologist could assess the potential significance of the resource(s) and actions to be taken in accordance with applicable legal requirements, as appropriate. The Navy anticipates that, with implementation of these measures, training activities in B-16 under Alternative 1 could impact cultural resources, but through the implementation of avoidance, minimization, and mitigation measures consistent with an amended 2011 PA, the impacts would be reduced to a level less than significant.

Under Alternative 1, the B-16 range would expand the operational area subject to noise exposures during land-based training activities, primarily to the west of the existing B-16 range. Due to the

proposed munitions activities within the proposed expansion area, the estimated 57–70 DNL dBC noise contours would shift to the west along the border of the existing B-16 range, but remain primarily within the range boundary (see Figure 3.7-16). The Navy anticipates the risk of noise-related impacts to cultural resources outside the range boundary would be low, but would consult as appropriate to identify and evaluate any potential adverse effects to NRHP-eligible resources pursuant to an amended 2011 PA. Munitions noise under Alternative 1 has the potential to impact 5 noise-sensitive sites through the introduction of noise levels of 115-130 dB Peak. Final assessments of eligibility and effect would be carried out in accordance with an amended 2011 PA, and in consultation with potentially-affected tribes. For purposes of this analysis, the Navy assumed that these sites would be negatively impacted and would require mitigation, potentially in the form of recording oral histories, detailed documentation, and/or archaeological data recovery.

Public Accessibility

Under Alternative 1, the Navy would install approximately 31 miles of perimeter fencing to enclose the proposed expansion area and connect with the existing B-16 range perimeter fencing. The Navy would close and restrict public access to the proposed range expansion areas and existing B-16 range except for Navy-authorized activities (e.g., ceremonial or cultural site visits, research/academic pursuits, or regulatory or management activities such as BLM, United States Fish and Wildlife Service [USFWS], Nevada Department of Wildlife [NDOW] activities). As discussed above, one potential TCP is located within the B-16 PIA. Access to this site for ceremonial, cultural, or academic purposes would be allowed; however, access would need to be managed and coordinated based on mission constraints related to training and safety requirements, and thus would be limited relative to current conditions. The Navy would consult with tribes who attach religious and cultural significance to the TCP and similar sites within the PIA in accordance with an amended 2011 PA and 36 CFR Part 800. The Navy also proposes to manage access through a Memorandum of Understanding (MOU) with tribes who attach religious and cultural significance to sites within the PIA. Access to cultural resources within B-16 would be managed and not eliminated. Given the proposed access MOU has not been finalized and the high degree of concern with respect to potential loss of access documented in comments received from Indian tribes, the Navy concludes limiting tribal access to cultural resources may result in significant impacts. The Navy also notes that restricting public access could potentially provide for greater protection of historic properties and other cultural resources by reducing frequency of activities such as off-road vehicle use and unauthorized collection of archaeological material.

Construction

Under Alternative 1, proposed ground-disturbing construction activities (e.g., excavating, grading, grubbing, compacting, and soil clearing) in the proposed B-16 expansion area would directly impact approximately 150 acres. These construction activities are associated with the proposed combat village containing 35–45 conex boxes as well as the construction of 31 miles of perimeter fencing with five access gates.

Based on Class I and Class III investigations conducted in 2018 and 2019 in support of this EIS, two known archaeological sites and no potential TCPs have been identified in the vicinity of the proposed perimeter fence and the proposed combat village area. Ground-disturbing activities associated with new construction and staging areas would be conducted in accordance with an amended 2011 PA and placed to avoid affecting known cultural resources when mission and safety requirements allow. If cultural resources cannot be avoided, the Navy would consult with the SHPO, ACHP, potentially affected Indian

tribes and other interested parties in accordance with an amended 2011 PA and 36 CFR Section 800.6 to resolve adverse effects. In the case of post-review discovery of other cultural resources or an inadvertent discovery subject to NAGPRA during construction activities, construction would be suspended until an archaeologist could assess the significance of the encountered resource(s) and any actions to be taken in accordance with applicable legal requirements, as appropriate. Through implementation of these measures, construction activities would not result in significant impacts on cultural resources under Alternative 1.

3.11.3.3.2 Bravo-17

Training Activities

B-17's primary use is advanced aerial training with multiple aircraft, as well as land-based training. Existing and new target areas would accommodate live and inert munitions, including high-impact explosives. The continued use of high-impact explosives in target areas within the existing B-17 would not be considered a potential impact on cultural resources because the existing target areas are previously disturbed, and the type and frequency of activities would not change. While the vast majority of training weapons within the B-17 PIA would land within target areas (which for purposes of this analysis include the buffer areas surrounding targets), a small number may fall on non-target areas due to weapons failure, and thus could potentially land elsewhere within the WDZ.

Ground-disturbing training activities associated with convoy operations, as well as direct impacts and vibrations from aerial target strikes and military expended material strikes, may impact cultural resources within B-17. Based on Class I and Class III investigations conducted in support of this EIS, eight known archaeological sites and no potential TCPs have been identified within proposed new target and convoy operations areas. There are 42 archaeological sites and 5 potential TCPs within the SDZ/WDZ areas in the B-17 PIA for Alternative 1 (see Section 3.11.2.3.1, Archaeological Resources). No architectural resources are present within the existing B-17 range or the requested land withdrawal expansion area (see Section 3.11.2.3.1, Studies Conducted for the Requested Land Withdrawal and Proposed Acquisition Areas). The Navy plans to avoid known cultural resources when placing new target areas and convoy routes when mission and safety requirements allow, with close attention to potentially vibration-sensitive resources.

With respect to cultural resources located within target areas and their associated 200-meter buffers, although the Navy would attempt to avoid cultural resources when placing target areas, it is anticipated that such resources would be impacted by training activities. A number of resources within target or buffer areas have been determined to be eligible for listing on the NRHP. However, with the implementation of an amended 2011 PA, adverse effects would be avoided, minimized, and/or mitigated to such an extent that impacts would be less than significant.

Of the eight known archaeological resources within proposed target/buffer areas or convoy routes on B-17 under Alternative 1, six are NRHP-eligible under Criterion D (resources that have either yielded or are likely to yield information important in prehistory or history) and two remain unevaluated. Where resources have not been evaluated, it is because there was insufficient information on which to make a determination as to NRHP eligibility at the time the resources were recorded. Unevaluated properties within such areas are treated as NRHP-eligible until their eligibility can conclusively be determined. Prior to any potential utilization of the proposed target/buffer areas or convoy routes, the Navy would (1) conduct further investigation to update and confirm the eligibility of unevaluated resources within the target/buffer areas and convoy routes; and (2) for eligible resources, engage in consultation with the

SHPO, ACHP, interested Indian Tribes, and other interested parties to identify measures to avoid, minimize, and/or mitigate potential adverse effects in accordance with an amended 2011 PA. Potential mitigation measures include data recovery, which may include controlled excavation, collection of artifacts, and preparation and publication of technical reports. Mitigation measures also include additional research and development of interpretive materials to record and preserve information concerning the resources.

The majority of weapons fall within target areas; however, the Navy recognizes that, although the risk is substantially lower, there is a potential for impacts to occur on cultural resources by both live and inert weapons if they were to fall outside of the target area. Therefore, the Navy proposes to investigate any errant weapon delivery, assess any potential impacts to cultural resources, and consult with SHPO and Tribes if necessary. These procedures will be stipulated in an amended PA.

Munitions-related noise impacts under Alternative 1 in the expansion of the B-17 range to the south would increase the area subject to noise exposures during aircraft and land-based training activities. Aircraft targets and land-based training facilities would be installed south of the existing B-17 range thereby causing associated aircraft and munitions activities to also shift to the south. Estimated DNL dBC noise contours from proposed munitions activities would also shift from occurring completely within the existing B-17 range (Figure 3.7-7) to overlying the proposed expansion area (Figure 3.7-19).

Munitions noise associated with Alternative 1 has the potential to impact cultural resources. Within the new 130 dB peak contours, three potentially noise sensitive cultural sites could be impacted. Final assessments of eligibility and effect would be carried out in accordance with an amended 2011 PA. For purposes of this analysis, the Navy assumed that these sites would be impacted and would require mitigation, potentially in the form of data recovery. Additional archaeological sites located within the new 115 dB contour are not expected to be impacted.

If sites cannot be avoided, the Navy would consult with the ACHP, SHPO, potentially affected Indian Tribes, and interested parties in accordance with an amended 2011 PA and 36 CFR Section 800.6 for resolution of adverse effects. Reporting and monitoring protocols for eligible archaeological sites, architectural resources, and any TCPs located in the B-17 range would be implemented in accordance with an amended 2011 PA. In the event of post-review discovery of cultural resources, or an inadvertent discovery subject to NAGPRA, during training activities, training would be suspended in the immediate vicinity of the discovery until an archaeologist could determine the significance of the encountered resource(s) and any actions to be taken in accordance with applicable legal requirements, as appropriate. In the event of unanticipated impacts from errant weapons, the Navy would engage in consultation pursuant to an amended 2011 PA. Through systematic implementation of measures in an amended PA, the Navy anticipates that training activities in B-17 under Alternative 1 would impact cultural resources, but the impacts would be reduced to a level less than significant.

Public Accessibility

Under Alternative 1, the Navy would install approximately 75 miles of perimeter fencing to enclose the proposed expansion area and connect with the existing B-17 range perimeter fencing. The Navy would close and restrict public access to the proposed range expansion areas and existing B-17 range except for Navy-authorized activities (e.g., ceremonial or cultural site visits, research/academic pursuits, or regulatory or management activities such as BLM, USFWS, NDOW activities). Five potential TCPs are located within the B-17 PIA. Access to these sites for ceremonial, cultural, or academic purposes would be allowed; however, access would need to be managed and coordinated based on mission constraints

related to training and safety requirements, and thus would be limited relative to current conditions. The Navy would consult with Tribes who attach religious and cultural significance to any TCPs, in accordance with an amended 2011 PA and 36 CFR Part 800. The Navy also proposes to manage access through an MOU with Tribes who attach religious and cultural significance to sites within the PIA. The Navy notes that restricting public access could potentially provide for greater protection of historic properties and other cultural resources by reducing frequency of activities such as off-road vehicle use and unauthorized collection of archaeological material. Access to cultural resources within B-17 would be managed and not eliminated. Given the proposed access MOU has not been finalized and the high degree of concern with respect to potential loss of access documented in comments received from Indian Tribes, the Navy concludes limiting tribal access to cultural resources may result in significant impacts.

Construction

Proposed ground-disturbing construction activities (e.g., excavating, grading, grubbing, compacting, and clearing soil) associated with the proposed B-17 expansion area would directly impact approximately 3,000 acres. These ground-disturbing activities are associated with the proposed construction of two target maintenance buildings, two communication towers, convoy routes, military vehicle training routes, ground target areas, and 75 miles of security fencing with eight gates.

Based on Class I and Class III investigations conducted in support of this EIS, nine known archaeological sites and no potential TCPs have been identified in the vicinity of the proposed perimeter fence, convoy and military vehicle training routes, and the proposed ground target areas. Pre-construction surveys would be conducted prior to any ground-disturbing construction activities related to the construction of the target maintenance buildings and the communication towers once they are placed. Ground-disturbing activities associated with new construction and staging areas would be conducted in accordance with an amended 2011 PA and placed to avoid affecting known cultural resources when mission and safety requirements allow. If cultural resources cannot be avoided, the Navy would consult with the SHPO, ACHP, potentially affected Indian Tribes, and interested parties in accordance with an amended 2011 PA and 36 CFR Section 800.6 to resolve adverse effects. In the case of post-review discovery of cultural resources, or an inadvertent discovery under NAGPRA, during construction activities, construction would be suspended until an archaeologist could determine the significance of the encountered resource(s) as well as any appropriate actions to be taken in accordance with applicable legal requirements. Because of these measures, construction activities would not result in significant impacts on cultural resources under Alternative 1.

Road and Infrastructure Improvements to Support Alternative 1

State Route 839

Alternative 1 includes the potential realignment of State Route 839 and associated utility infrastructure. The Navy has identified three notional relocation corridors and is working with the Nevada Department of Transportation, BLM, Churchill County, and other stakeholders to identify a suitable location outside of the B-17 WDZ for the proposed relocation of State Route 839. A follow-on, site-specific NEPA document would be required to analyze the impacts of any route ultimately identified for the proposed relocation of the State Route 839, which would include analyzing potential impacts on cultural resources.

Using funding provided by the Navy, the Federal Highway Administration, in cooperation with the Nevada Department of Transportation, would be responsible for planning, designing, permitting, and

constructing any realignment of State Route 839. The Navy has submitted a Needs Report to the Surface Deployment and Distribution Command requesting authority to utilize funding through the Defense Access Roads program. If approved, the Navy would coordinate construction execution through the Federal Highway Administration. Nevada Department of Transportation would ensure that construction of any new route is complete before closing any portion of the existing State Route 839, and the Navy would not utilize any portion of the proposed expansion area of the B-17 range (if implemented) that would overlap the existing State Route 839 unless and until any such re-routing of the highway has been completed and made available to the public. Site-specific environmental analysis, appropriate cultural resource inventories, consultation, and pre-construction surveys would be conducted in the future, consistent with Section 106.

Paiute Pipeline

Alternative 1 includes potential relocation of the Paiute Pipeline and associated utility infrastructure outside the B-17 WDC. The exact location of the potential pipeline relocation has not yet been determined, and the impacts on cultural resources resulting from the relocation cannot yet be analyzed. A follow-on, site-specific NEPA document would be required to analyze the impacts of any route ultimately identified for the proposed relocation of the Paiute Pipeline, which would include analyzing potential impacts on cultural resources.

The Navy would purchase the impacted portion of the Paiute Pipeline and then would pay for relocation of the existing Paiute Pipeline south of the proposed B-17 range. Using funding provided by the Navy, the Paiute Pipeline Company would be responsible for planning, designing, permitting, funding, and constructing any realignment of the pipeline. A Right of Way application submitted to the BLM by the pipeline owner would formally identify any proposed reroute. Site-specific environmental analysis, appropriate cultural resource inventories, pre-construction surveys, and NEPA planning would be required before any potential relocation of the pipeline could occur, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing pipeline unless and until any such re-routing of the pipeline has been completed and made available to the pipeline owner. The BLM would have decision authority with respect to any proposed final routing subsequent to completion of site-specific environmental analysis. Site-specific environmental analysis, appropriate cultural resource inventories, consultation, and pre-construction surveys would be conducted in the future, consistent with Section 106.

3.11.3.3 Bravo-20

Training Activities

B-20 is primarily used for advanced weapons training and large force exercises. Existing and new target areas would accommodate both live and inert ordnance. The continued use of high-impact explosives in existing target areas would not be considered a potential impact because these areas have been previously disturbed, the type and frequency of activities would not change.

Ground-disturbing training activities include direct impacts, vibration and resultant noise from aerial target strikes, and military expended material strikes. Based on surveys conducted in 2017, no historic properties (eligible archaeological, architectural resources, or potential TCPs) are located within the 1,450 acres of proposed new B-20 target or convoy operations areas (see Section 3.11.2.3.1, Studies Conducted for the Requested Land Withdrawal and Proposed Acquisition Areas). There are nine identified archaeological sites within the proposed B-20 SDZ/WDCs. The potential impacts to cultural

resources in non-target areas would be the same as discussed above with respect to Training Activities for B-17.

Under Alternative 1, the aircraft targets and land-based training facilities would be installed west of the existing B-20 range, thereby causing associated aircraft and munitions activities to also shift to the west. As a result, the estimated 57–70 DNL dBC noise contours from proposed munitions activities would shift to the northwest corner of the existing B-20 range and within the proposed expansion area (Figure 3.7-26). Munitions noise associated with Alternative 1 are not expected to impact cultural resources. The two archaeological sites located within the 130 peak dB contour are not considered noise and vibration sensitive.

Reporting and monitoring protocols for historic properties located in the B-20 training range would be implemented in accordance with an amended 2011 PA and as articulated in the ICRMP (U.S. Department of the Navy, 2013). In the event of post-review discovery of cultural resources or an inadvertent discovery subject to NAGPRA during training activities, training would be suspended in the immediate vicinity of the discovery until an archaeologist could determine the significance of the encountered resource(s) as well as any appropriate actions to be taken in accordance with applicable legal requirements. Through implementation of these measures, the Navy anticipates that there would be impacts on cultural resources as a result of training activities in B-20 under Alternative 1, but that these impacts would be reduced to a level less than significant.

Public Accessibility

Under Alternative 1, the Navy would install approximately 90 miles of perimeter fencing to enclose the B-20 range. The Navy would close and restrict public access to the proposed range expansion areas and the existing B-20 range except for Navy-authorized activities (e.g., ceremonial or cultural site visits, research/academic pursuits, or regulatory or management activities such as BLM, USFWS, NDOW activities). One potential TCP is located within the existing B-20 range and within a high impact area that would not be available for managed access. The area is not able to be used for traditional use as the site has lost the trait which made it special to the Walker River Paiute Tribe and the area would be clear of any Traditional or cultural value at this time as described by the Walker River Paiute Tribe and Fallon Paiute-Shoshone Tribe respectively in past correspondence with the Navy. However, this site would be part of a planned ethnographic study and the Navy would continue to engage the Tribes regarding issues concerning the site. The Navy would consult with Tribes who attach religious and cultural significance to this potential TCP, in order to identify measures to avoid, minimize, and mitigate constraints to this potential TCP, in accordance with an amended 2011 PA and 36 CFR Part 800. Importantly, the Navy intends to develop an MOU with Tribes attaching religious and cultural significance to the sites to manage safe access. The Navy notes that restricting public access could potentially provide for greater protection of historic properties and other cultural resources by reducing frequency of activities such as off-road vehicle use and unauthorized collection of archaeological material. Given the proposed access MOU has not been finalized and the high degree of concern with respect to potential loss of access documented in comments received from Indian tribes, the Navy concludes limiting tribal access to cultural resources may result in significant impacts.

Construction

Proposed ground-disturbing construction activities, e.g., excavating, grading, grubbing, compacting, and clearing soil in the proposed B-20 expansion area would directly impact approximately 1,450 acres. The

proposed ground-disturbing activities include a target maintenance building, associated vehicle parking and staging, target areas, and 90 miles of security fencing with five gates.

Based on Class I and Class III investigations conducted in support of this EIS, two known archaeological sites and no potential TCPs have been identified in the vicinity of the proposed perimeter fence. Sites near the fence line would be avoided. Surveys would be conducted prior to any ground disturbance to establish site boundaries and ensure avoidance. Additionally, pre-construction surveys would be conducted prior to any ground-disturbing construction activities related to the construction of the target maintenance building once placed. Ground-disturbing activities associated with facility construction and staging areas would be conducted in accordance with an amended 2011 PA and placed to avoid affecting known cultural resources when mission and safety requirements allow. If cultural resources cannot be avoided, the Navy would consult with the SHPO, ACHP, and the BLM in accordance with an amended 2011 PA and 36 CFR Section 800.6 to resolve adverse effects. In the event of post-review discovery of cultural resources or an inadvertent discovery under NAGPRA during construction activities, construction would be suspended until an archaeologist could determine the significance of the encountered resource(s) as well as any appropriate actions to be taken in accordance with applicable legal requirements. Through implementation of these measures, impacts on cultural resources as a result of construction activities under Alternative 1 would be reduced to a level less than significant.

3.11.3.3.4 Dixie Valley Training Area

Training Activities

The DVTA is typically used for convoy training, fixed-wing and helicopter night vision device training, helicopter mountain-flying training, and Combat Search and Rescue activities. The DVTA also supports aviation electronic warfare and some Naval Special Warfare activities. No Air-to-Ground munitions delivery training or live-fire training activities occur within the DVTA.

Ground-disturbing training activities such as convoy operations and tactical ground mobility training would continue to occur within the existing DVTA and would therefore have at most a limited potential to impact cultural resources (Figure 3.11-5). Based on the Class I and Class III inventories conducted in support of this EIS (see Section 3.11.1.3.2, Studies Conducted for the Requested Land Withdrawal and Proposed Acquisition Areas), there are 43 known NRHP-eligible or potentially eligible archaeological sites and 6 potential TCPs within the existing DVTA and proposed DVTA expansion area. None of the architectural resources present within the existing DVTA or the requested land withdrawal area would be affected by training activities (Section 3.11.1.3.2, Studies Conducted for the Requested Land Withdrawal and Proposed Acquisition Areas). When possible, new training areas would be placed to avoid known cultural resources when mission safety requirements allow. If cultural resources cannot be avoided, the Navy would consult with the ACHP, SHPO, potentially interested Indian Tribes, and interested parties in accordance with an amended 2011 PA and 36 CFR Section 800.6 for resolution of adverse effects.

Reporting and monitoring protocols for cultural resources located in the existing DVTA training area would be implemented in accordance with an amended 2011 PA and as articulated in the ICRMP (U.S. Department of the Navy, 2013).

As munitions activities are not proposed within the proposed DVTA expansion area, there would be no impacts within the proposed DVTA expansion area with respect to munitions. In the event of post-review discovery of cultural resources, or inadvertent discovery subject to NAGPRA, during training activities, training in the immediate vicinity of the discovery would be suspended until an archaeologist

could determine the significance of the encountered resource(s) as well as any appropriate actions to be taken in accordance with applicable legal requirements. Because of these measures, the Navy anticipates that impacts to cultural resources as a result of training activities in DVTA under Alternative 1 would be reduced to a level less than significant through implementation of an amended 2011 PA to avoid, minimize, and mitigate adverse effects.

Public Accessibility

The majority of the DVTA is accessible to the public under the terms of the 1999 Military Lands Withdrawal Act. There are several facilities on the existing DVTA that are fenced and locked, including radar sites, a maintenance yard, and an electronic support facility (Centroid Complex). The proposed expansion area would be open to the public for allowable uses and managed by the BLM. There are six potential TCPs located within the DVTA PIA. The Navy would not restrict access to these sites. Because access would be unrestricted, there would be no significant impact on cultural resources within DVTA with respect to public accessibility under Alternative 1.

Construction

Proposed ground-disturbing construction activities (e.g., excavating, grading, grubbing, compacting, and clearing soil) associated with the proposed DVTA expansion area would directly impact approximately 15 acres. These ground-disturbing activities are associated with three proposed 5-acre, graded, fenced electronic warfare sites at North Job Peak, 11 Mile Canyon, and Fairview Low. Based on the Class I inventory, there is one potential TCP near the North Job Peak electronic warfare site. Ground-disturbing activities associated with new construction and staging areas would be conducted in accordance with an amended 2011 PA and placed to avoid affecting known cultural resources when mission and safety requirements allow. If sites cannot be avoided, the Navy would consult with the SHPO, ACHP, potentially interested Indian tribes, and interested parties in accordance with an amended 2011 PA and 36 CFR Section 800.6 to resolve adverse effects. In the event of post-review discovery of cultural resources or the inadvertent discovery under NAGPRA during construction activities, construction would be suspended until an archaeologist could determine the significance of the encountered resource(s) as well as any appropriate actions to be taken in accordance with applicable legal requirements. Because of these measures, construction activities would not result in significant impacts on historic properties under Alternative 1.

3.11.3.3.5 Fallon Range Training Complex Special Use Airspace

Estimated noise levels associated with aircraft operations within the majority of the proposed SUA would not change from existing noise levels (see Figure 3.7-31). There are areas where noise from aircraft overflights would increase slightly, namely areas underlying the ingress/egress corridors and the proposed SOA B expansion area. Additionally, aircraft noise and overflights may impact certain types of cultural resources, these include prehistoric archaeological sites with natural features (e.g., caves, rockshelters, petroglyphs or pictographs on rock faces), historic architectural resources (e.g., adobe structures, unreinforced stone structures, and mine shafts and adits [horizontal mine passages]), and places of cultural and religious importance.

3.11.3.3.5.1 Supersonic Operating Area B

While the number of overflights would not increase, there are proposed changes in the airspace that could result in impacts to cultural resources, including the expansion of Supersonic Operation Area B (SOA B). Potential impacts from supersonic overflights within the existing SOA B were analyzed in the

2015 EIS. Because there is no change in use of this area, potential impacts on cultural resources are not re-analyzed for the existing SOA B. The proposed expansion of SOA B eastward is analyzed as part of the SUA PIA. The extension of SOA B is described in Section 2.3.4.7 (Special Use Airspace Modifications), which provides detailed, specific airspace modifications under Alternative 1.

Most supersonic flights within SOA B occur during adversarial training simulating air-to-air combat situations during Air Warfare and Large Force Exercises. The current frequency of supersonic events would not change under Alternative 1. The frequency of events is within the parameters (500 supersonic sorties per month or 6,000 sorties per year) defined by Sutherland et al. (1990) as unlikely to damage caves, rockshelters, or rock formations containing petroglyphs. Based on a review of available data from NVCRIS and the NRHP database, there are two known cultural (built-environment) resources and one potential TCP that may be sensitive to noise and vibration within the proposed SOA B expansion area. Consistent with an amended PA, any unanticipated impacts from the operations would be subject to review and consultation to identify appropriate treatment measures.

Procedures in an amended 2011 PA require further evaluation and protection of noise-sensitive cultural resources. With regard to religious, ceremonial, and other traditional activities at potential TCPs within the SUA, including ceremonies conducted on non-Navy property, the Navy would continue discussions with the Tribes to try to identify opportunities to minimize impacts from supersonic overflights, to the maximum extent practicable consistent with training requirements.

3.11.3.3.5.2 Aircraft Overflights

The Navy is proposing to modify training altitudes within six MOAs in order to improve tactical training capabilities and maximize scheduling flexibilities at the FRTC as well as to narrow the ingress/egress corridors. These tactical training abilities include the release of chaff and flares, both of which are so small as have minimal potential to impact cultural resources. Under Alternative 1, the noise analysis (Section 3.7.3.2.4, Fallon Range Training Complex Special Use Airspace) demonstrates that the resultant DNL noise contours caused by the lowered floors would not exceed 65 dBC DNL. There would therefore be no significant impacts on cultural resources caused by the lowering of the floor in the six MOAs. The noise analysis presented in Section 3.7.3.2.4 (Fallon Range Training Complex Special Use Airspace), however, demonstrates that the proposed narrowing of the ingress/egress routes would generate two narrow 65 dBC DNL contours—one that runs east of Gabbs, in Nye County, and one that runs northeast of Fallon (Figure 3.7-31). The Navy acknowledges potential impacts on the setting of certain cultural resources that may result from the introduction of 65 dBC DNL aircraft noise. However, the Navy anticipates that noise or other overflight -related impacts to cultural resources are unlikely, and ultimately would be less than significant.

3.11.3.3.5.2.1 B-16

In general, under Alternative 1, estimated aircraft noise levels within the proposed B-16 expansion area (Figure 3.7-19) would be consistent with existing levels (Figure 3.7-3).

3.11.3.3.5.2.2 B-17

Currently, DNL dBA noise contours from aircraft operations are confined within the existing B-17 range (Figure 3.7-6). Under Alternative 1, the 56–64 DNL dBA noise contours from proposed aircraft operations would overlie the majority of the proposed B-17 expansion area (Figure 3.7-18). Aviation noise under Alternative 1 has the potential to impact the setting of five TCPs through the introduction of noise levels of 65 dBC DNL. Final assessments of eligibility and effect would be carried out in accordance

with an amended PA, and in consultation with affected tribes. For purposes of this analysis, the Navy assumed that the TCP would be negatively impacted and would require mitigation, potentially in the form of recording oral histories or other documentation developed in consultation with the affected tribes.

3.11.3.3.5.2.3 B-20

Currently, noise contours from aircraft operations overlie the existing B-20 range and also some areas to the west, south, and east (Figure 3.7-9). Estimated 61–65 DNL dBA noise contours from proposed aircraft operations under Alternative 1 would increase within the existing B-20 range and to the west, south, and east within the proposed expansion area (Figure 3.7-22). Aviation noise under Alternative 1 may impact one potential TCP that falls within the 65 dBA DNL contour. Final assessments of potential NHPA eligibility and potential Section 106 adverse effects would be carried out in accordance with an amended PA, and in consultation with affiliated tribes. For purposes of this analysis, the Navy assumed that the TCP would be negatively impacted and would require mitigation, potentially in the form of recorded oral histories or other documentation developed in consultation with the affected tribes.

3.11.3.3.6 Summary of Impacts and Conclusions

Training. Under Alternative 1, impacts associated with military training activities would not be anticipated to be significant because (1) proposed target and maneuver areas would be placed to avoid known cultural resources when mission and safety requirements allow. If they cannot be avoided, the Navy would consult with the ACHP, SHPO, potentially affected Indian Tribes, and interested parties in accordance with an amended 2011 PA and 36 CFR Section 800.6 to resolve adverse effects; (2) NAS Fallon has procedures and protocols in place through an amended 2011 PA and ICRMP for the identification, evaluation, and protection of cultural resources that may be impacted by training and associated noise; and (3) before training activities would be authorized in requested withdrawal or proposed acquisition areas, all training locations would be reviewed in accordance with an amended 2011 PA to ensure adverse effects to historic properties are avoided, minimized, or mitigated, as appropriate. The Navy anticipates that significant impacts to unidentified cultural resources would be unlikely to occur and that through the implementation of the measures of an amended 2011 PA, impacts to known cultural resources would be less than significant.

Public Accessibility. Under Alternative 1, access to cultural resources for ceremonial, cultural, and academic activities would be allowed; however, access needs to be managed and coordinated based on mission constraints related to training and safety requirements, and thus would be limited relative to current conditions. The Navy would manage access through an MOU with Indian tribes who attach religious and cultural significance to specific potential TCPs. The Navy notes that restricting public access could potentially provide for greater protection of historic properties and other cultural resources by reducing frequency of detrimental activities such as off-road vehicle use and unauthorized collection of archaeological material. Access to cultural resources within the FRTC would be managed and not eliminated. Given the proposed access MOU has not been finalized and the high degree of concern with respect to potential loss of access documented in comments received from Indian tribes, the Navy concludes limiting tribal access to cultural resources may result in significant impacts.

Construction. Under Alternative 1, impacts associated with construction activities would not be significant because (1) cultural resources would be avoided if possible. If they cannot be avoided, the Navy would consult with the ACHP, SHPO, potentially interested Indian Tribes, and interested parties in accordance with an amended 2011 PA and 36 CFR Section 800.6 to resolve adverse effects; and (2)

before construction activities would be authorized in requested withdrawal or proposed acquisition areas, all proposed construction sites and staging areas would be reviewed in accordance with an amended 2011 PA to ensure adverse effects to historic properties are avoided, minimized, or mitigated, as appropriate.

Aircraft Overflights. Under Alternative 1, the frequency of supersonic overflights would not change, and thus would remain within the parameters (500 supersonic sorties per month or 6,000 sorties per year) defined by Sutherland et al. (1990) as unlikely to damage cultural resources that are potentially sensitive to noise and vibrations. In addition, under Alternative 1, supersonic flight activity would be distributed over a larger area, thus decreasing the amount of exposure to any one site. Additionally, procedures are in place for the identification, evaluation, and protection of cultural resources as defined in an amended 2011 PA. With regard to religious, ceremonial, and other traditional activities at potential TCPs within the SUA, including ceremonies conducted on non-Navy property, the Navy would continue discussions with the Tribes to try to identify opportunities to minimize impacts from supersonic overflights, to the maximum extent practicable consistent with training requirements. With implementation of these measures, accordingly, the Navy anticipates that potential impacts on cultural resources resulting from sonic booms would be less than significant.

Similarly, the modified training altitudes and ingress/egress routes within the SUA, there may be impacts on the setting of archaeological sites or TCPs but this is not expected to have significant impacts based on a maximum exposure of 65 dBC DNL. Additionally, procedures are in place for the identification, evaluation, and protection of cultural resources as defined in an amended 2011 PA. With regard to religious, ceremonial, and other traditional activities at potential TCPs within the SUA, the Navy would continue to coordinate with the Tribes to minimize impacts from overflights, including ceremonies conducted on non-Navy property, as stipulated in the MOU with Indian tribes who attach religious and cultural significance to potential TCPs.

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

Alternative 2 is similar to Alternative 1. The proposed expansion areas, construction activities, and SUA would be the same as Alternative 1. The only difference between Alternative 1 and Alternative 2 are the allowable land use activities on the ranges and in the DVTA. Under Alternative 2, though withdrawn, a small portion south of Simpson Road and the lands south of Simpson Road at B-16 would remain open for public use. Under Alternative 2, access for certain land use activities would be allowed within B-16, B-17, and B-20 when the ranges are not in use (i.e., typically weekends, holidays, and when closed for scheduled maintenance) (see Table 2-5). Due to the small difference in the boundary of the proposed B-16 expansion area under Alternative 2, there would be a slight change in fence line along the southeastern corner. However, this difference with respect to the fence line would not be anticipated to generate new or different impacts – or to avoid impacts previously discussed under Alternative 1 – and so impacts on cultural resources would be the same as those previously assessed under Alternative 1.

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

Alternative 3 is similar to Alternative 1 and Alternative 2, but the proposed B-17 expansion area would extend further southeast. Unlike Alternative 1, the Navy would not withdraw land south of U.S. Route 50 as the DVTA. Rather, the Navy proposes that Congress categorizes this area as a Special Land Management Overlay. This Special Land Management Overlay would define two areas (one east and one west of the B-17 range) as Military Electromagnetic Spectrum Special Use Zones. These two areas, which are public lands under the jurisdiction of BLM, would not be withdrawn by the Navy and would not be

used for land-based military training or be managed by the Navy. Alternative 3 would have the same access restrictions and Controlled Access Program as Alternative 2. All proposed activities associated with Alternative 3, including construction and training activities, are similar to Alternatives 1 and 2, although Alternative 3 would have a different laydown for the target areas within the proposed B-17 expansion area. Additionally, under Alternative 3, part of the Paiute Pipeline and a segment of State Route 361 would potentially be relocated, and additional site-specific environmental analysis, including cultural resource inventories, would be required prior to any ultimate implementation.

3.11.3.5.1 Bravo-17

Training Activities

Under Alternative 3, B-17 would rotate counterclockwise from the proposed configuration of Alternatives 1 and 2 (see Figure 2-12). As in Alternatives 1 and 2, ground-disturbing training activities would occur within the proposed B-17 range expansion area under Alternative 3. Training activities would use existing target locations within the existing B-17 range and include new targets and training areas within the proposed expansion area. Instead of the numerous target areas proposed in Alternatives 1 and 2, all targets and convoy areas would be situated in three large areas. Alternative 3 would have similar munitions noise levels as Alternatives 1 and 2. However, due to the reconfiguration of the target areas, the placement of the targets and the resultant munitions noise contours would impact different cultural resources (Table 3.11-3).

As with Alternative 1, munitions noise associated with Alternative 3 has the potential to impact cultural resources. Within the new 130 dB peak contours five potentially noise sensitive cultural sites could be impacted. Final assessments of eligibility and effect would be carried out in accordance with an amended PA. For purposes of this analysis, the Navy assumed that these sites would be impacted and would require mitigation, potentially in the form of data recovery. Additional archaeological sites located within the new 115 dB contour are not expected to be impacted.

The potential for impacts to cultural resources in both target/buffer areas and the SDZ/WDZ would be comparable to the discussion of such impacts with respect to training activities for B-17 under Alternative 1. When possible, targets and convoys would be placed away from eligible or unevaluated sites. If sites cannot be avoided, the Navy would consult with the SHPO in accordance with an amended 2011 PA and 36 CFR Section 800.6 for resolution of adverse effects. Therefore, the Navy anticipates that through implementation of measures in an amended 2011 PA, impacts would be reduced to a level less than significant as a result of training activities under Alternative 3.

Public Accessibility

Under Alternative 3, impacts on access to cultural resources are the same as Alternative 2, with the exception of the Special Land Management Overlay discussed in Section 3.11.3.5 (Alternative 3: Bravo-17 Shift and Managed Access [Preferred Alternative]), which would not be restricted. Access to cultural resources within B-17 would be managed and not eliminated. Given the proposed access MOU has not been finalized and the high degree of concern with respect to potential loss of access documented in comments received from Indian tribes, the Navy concludes limiting tribal access to cultural resources may result in significant impacts.

Construction

The construction activities within the proposed B-17 expansion area would be similar to Alternative 1. The major construction differences between Alternative 3 and Alternative 1 are that Alternative 3 would

not require the potential relocation of State Route 839 but would potentially relocate a portion of State Route 361. In addition, Alternative 3 has a different notional path for the Paiute Pipeline than Alternative 1.

Proposed ground-disturbing construction activities (e.g., excavating, grading, grubbing, compacting, and clearing soil) associated with the proposed B-17 expansion area are associated with the proposed construction of convoy routes, military vehicle training routes, ground target areas, three electronic warfare sites, and 78 miles of security fencing with seven gates.

Construction and reporting and monitoring measures under Alternative 3 would be the same as proposed under Alternatives 1 and 2. Therefore, there would be no significant impact on cultural resources as a result of construction under Alternative 3.

Road and Infrastructure Improvements to Support Alternative 3

State Route 361

Under Alternative 3, a portion (approximately 12 miles) of State Route 361 and associated utility infrastructure would potentially be relocated. The Navy is working with the Nevada Department of Transportation, BLM, Churchill County, and other stakeholders to identify a suitable location outside of the proposed B-17 expansion area for the relocation of State Route 361. A follow-on, site-specific NEPA document would be required to analyze the impacts of any route ultimately identified for the proposed relocation of the State Route 361, which would include analyzing potential impacts on cultural resources. Site-specific environmental analysis, appropriate cultural resource inventories, and pre-construction surveys would be conducted in the future in association with the proposed relocation of State Route 361.

Using funding provided by the Navy, the Federal Highway Administration, in cooperation with the Nevada Department of Transportation, would be responsible for planning, designing, permitting, and constructing any realignment of State Route 361. The Navy has submitted a Needs Report to the Surface Deployment and Distribution Command requesting authority to utilize funding through the Defense Access Roads program. If approved, the Navy would coordinate construction execution through the Federal Highway Administration. Nevada Department of Transportation would ensure that construction of any new route is complete before closing any portion of the existing State Route 361, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing State Route 361 unless and until any such new route has been completed and made available to the public.

Paiute Pipeline

As with Alternative 1, Alternative 3 includes the potential relocation of approximately 18 miles of the Paiute Pipeline and associated infrastructure outside the proposed B-17 expansion area. Constructing a new pipeline and utility infrastructure, and removing existing pipeline and utility infrastructure could result in impacts on cultural resources. The exact location of the pipeline relocation has not yet been determined, and a follow-on, site-specific NEPA document would be required to analyze the impacts of any route ultimately identified for the proposed relocation of the Paiute Pipeline, which would include analyzing potential impacts on cultural resources. Site-specific environmental analysis, appropriate cultural resource inventories, and pre-construction surveys would be conducted in the future in association with the proposed relocation of the Paiute Pipeline.

The Navy would purchase the impacted portion of the Paiute Pipeline and then would pay for relocation of the existing Paiute Pipeline south of the proposed B-17 range. Using funding provided by the Navy, the Paiute Pipeline Company would be responsible for planning, designing, permitting, funding, and constructing any realignment of the pipeline. A ROW application submitted to the BLM by the pipeline owner would formally identify any proposed reroute. Site-specific environmental analysis, including for cultural resources, and NEPA planning would be required before any potential relocation of the pipeline could occur, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing pipeline unless and until any such re-routing of the pipeline has been completed and made available to the pipeline owner. The BLM would have decision authority with respect to any proposed final routing subsequent to completion of site-specific environmental analysis.

3.11.3.5.2 Summary of Impacts and Conclusions

Impacts under Alternative 3 would be similar to Alternatives 1 and 2, and the Navy anticipates that impacts on cultural resources would be less than significant through the implementation of an amended 2011 PA. The Navy anticipates impacts to unidentified cultural resources would be unlikely to occur.

3.11.3.6 Proposed Management Practices, Monitoring, and Mitigation

3.11.3.6.1 Proposed Management Practices

Management of proposed expansion areas would require updates to the ICRMP. If the Proposed Action is implemented (i.e., expansion of the existing DVTA and B-16, B-17, and B-20 ranges), the NAS Fallon ICRMP would be revised to include management practices for cultural resources in the proposed expansion areas.

An amended 2011 PA and the ICRMP would continue to be implemented on existing withdrawn lands and lands requested for withdrawal and proposed for acquisition.

The Navy is also working with Indian Tribes to prepare an MOU defining access procedures to the requested renewal and proposed expansion areas.

3.11.3.6.2 Proposed Monitoring

The Navy would coordinate with BLM, Nevada SHPO, and affected Tribes in the revision of the ICRMP and would consider which additional management or monitoring activities can be incorporated. This coordination would include archaeological and tribal monitoring, as appropriate.

3.11.3.6.3 Proposed Mitigation

In cases where avoidance and minimization of adverse effect to historic properties is not possible, the process outlined in an amended 2011 PA and 36 CFR Section 800.6 (resolution of adverse effects) would be followed. The Navy acknowledges that there may be impacts that have yet to be defined and that it would continue to develop and incorporate mitigation measures consistent with an amended 2011 PA and 36 CFR Section 800.6.

3.11.3.7 Summary of Impacts and Conclusions

The Navy anticipates that through implementation of an amended 2011 PA, management practices of avoidance, the use of monitors, and mitigation measures, the Proposed Action impacts on cultural resources would be lessened to a level less than significant with respect to training activities, construction, and aircraft overflights, but may be significant with respect to public accessibility due to potential loss of access documented in comments received from Indian tribes (Table 3.11-8).

Under Alternatives 1, 2, and 3, military training levels would continue at the same levels of activities analyzed in the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement* (U.S. Department of the Navy, 2015), with activities dispersed more widely with the inclusion of the proposed expansion areas. Under the alternatives, impacts related to training activities, construction, and aircraft overflights would be less than significant because: (1) proposed target and maneuver areas, to include munitions and aircraft noise, would be placed to avoid known cultural resources when mission and safety requirements allow. If they cannot be avoided, the Navy would consult with the ACHP, SHPO, Indian tribes, and interested parties in accordance with an amended 2011 PA and 36 CFR Section 800.6 to resolve adverse effects, (2) NAS Fallon has procedures and protocols in place for the identification, evaluation, and protection of cultural resources that may be impacted by training, (3) before training activities would be authorized in requested withdrawal or proposed acquisition areas, all training locations would be reviewed in accordance with an amended 2011 PA to ensure adverse effects to historic properties are avoided, minimized, or mitigated, as appropriate; and (4) impacts to unidentified cultural resources would be unlikely to occur. Under the alternatives, access to cultural resources within the FRTC would be managed and not eliminated. Given the proposed access MOU has not been finalized and the high degree of concern with respect to potential loss of access documented in comments received from Indian tribes, the Navy concludes limiting tribal access to cultural resources may result in significant impacts.

Impacts with respect to Public accessibility, Construction, and Aircraft Overflights under Alternative 3 would be essentially the same as discussed in the Summary of Alternative 1 at Section 3.11.3.3.6 (Summary of Impacts and Conclusions).

Table 3.11-8: Summary of Impacts and Conclusions for Cultural Resources

Summary of Impacts and National Environmental Policy Act Determinations	
No Action Alternative	
Summary	<ul style="list-style-type: none"> Decommissioning, decontamination, and reuse of the closed range could potentially affect cultural resources present in the FRTC. A decision to allow the FRTC land withdrawal to expire would have no direct effects on cultural resources because federal management of the area would continue.
Impact Conclusion	The No Action Alternative would not result in significant impacts on cultural resources.
Alternative 1	
Summary	<ul style="list-style-type: none"> The Navy would implement protective measures and negotiated mitigations for ground-disturbing activities and munitions noise for NRHP-eligible cultural resources and potential TCPs/sacred sites within the ranges in accordance with an amended PA and the ICRMP. Access for ceremonial, cultural, and academic activities and procedures for site visits would be allowed, dependent on the Navy's training and safety requirements, however, due to potential loss of access documented in comments received from Indian tribes, the Navy concludes limiting tribal access to cultural resources may result in significant impacts. Noise and vibration associated with sonic booms have the potential to result in negligible-to-minor damage to caves, rockshelters, or rock formations containing petroglyphs as well as adobe walls and stone structures. Procedures are in place for identifying, evaluating, and protecting such resources as defined by an amended PA and the ICRMP.
Impact Conclusion	Under Alternative 1, the Navy anticipates that, with avoidance of known cultural resources and implementation of the other mitigation measures discussed in the chapter above, impacts to cultural resources would be lessened to less than significant levels. Access to cultural resources within the FRTC would be managed and not eliminated. Given the proposed access MOU has not been finalized and the high degree of concern with respect to potential loss of access documented in comments received from Indian tribes, the Navy concludes limiting tribal access to cultural resources may result in significant impacts.

Table 3.11-8: Summary of Impacts and Conclusions for Cultural Resources (continued)

Summary of Impacts and National Environmental Policy Act Determinations	
Alternative 2	
Summary	<ul style="list-style-type: none"> As with Alternative 1, the Navy would implement protective measures and negotiated mitigations for ground-disturbing activities and munitions noise for NRHP-eligible cultural resources and potential TCPs/sacred sites within the ranges in accordance with an amended PA. Access for ceremonial, cultural, and academic activities and procedures for site visits would be allowed, dependent on the Navy's training and safety requirements, however, due to potential loss of access documented in comments received from Indian tribes, the Navy concludes limiting tribal access to cultural resources may result in significant impacts. In comparison with Alternative 1, there is no difference in cultural resource access associated under Alternative 2. Noise and vibration associated with sonic booms have the potential to result in negligible to minor damage to caves, rockshelters, or rock formations containing petroglyphs as well as adobe walls and stone structures. Procedures are in place for identifying, evaluating, and protecting such resources as defined by an amended PA and the ICRMP. Impacts are the same as compared to Alternative 1.
Impact Conclusion	<p>Under Alternative 2, the Navy anticipates that, with avoidance of known cultural resources and implementation of the other mitigation measures discussed in the chapter above, impacts to cultural resources would be lessened to less than significant levels. Access to cultural resources within the FRTC would be managed and not eliminated. Given the proposed access MOU has not been finalized and the high degree of concern with respect to potential loss of access documented in comments received from Indian tribes, the Navy concludes limiting tribal access to cultural resources may result in significant impacts.</p>

Table 3.11-8: Summary of Impacts and Conclusions for Cultural Resources (continued)

Summary of Impacts and National Environmental Policy Act Determinations	
Alternative 3	
Summary	<ul style="list-style-type: none"> As with Alternatives 1 and 2, the Navy would implement protective measures and negotiated mitigations for ground-disturbing activities and munitions noise for NRHP-eligible cultural resources and potential TCPs/sacred sites within the ranges in accordance with an amended PA. Access for ceremonial, cultural, and academic activities and procedures for site visits would be allowed, dependent on the Navy's training and safety requirements, however, due to potential loss of access documented in comments received from Indian tribes, the Navy concludes limiting tribal access to cultural resources may result in significant impacts. In comparison with Alternatives 1 and 2, there is no difference in cultural resource access associated under Alternative 3. Noise and vibration associated with sonic booms have the potential to result in negligible to minor damage to caves, rockshelters, or rock formations containing petroglyphs as well as adobe walls and stone structures. Procedures are in place for identifying, evaluating, and protecting such resources as defined by an amended PA and the ICRMP. Impacts are the same as compared to Alternative 1 and Alternative 2.
Impact Conclusion	<p>Under Alternative 3, the Navy anticipates that, with avoidance of known cultural resources and implementation of the other mitigation measures discussed in the chapter above, impacts to cultural resources would be lessened to less than significant levels. Access to cultural resources within the FRTC would be managed and not eliminated. Given the proposed access MOU has not been finalized and the high degree of concern with respect to potential loss of access documented in comments received from Indian tribes, the Navy concludes limiting tribal access to cultural resources may result in significant impacts.</p>

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3.12 Recreation

No Action Alternative

Under the No Action Alternative, the 1999 Congressional land withdrawal of 201,933 acres from public domain (Public Law 106-65) would expire on November 5, 2021, and military training activities requiring the use of these public lands would cease. Expiration of the land withdrawal would terminate the Navy's authority to use nearly all of the Fallon Range Training Complex's (FRTC's) bombing ranges, affecting nearly 62 percent of the land area currently available for military aviation and ground training activities in the FRTC.

Alternative 1 – Modernization of the Fallon Range Training Complex

Under Alternative 1, the Navy would request Congressional renewal of the 1999 Public Land Withdrawal of 202,864 acres, which is scheduled to expire in November 2021. The Navy would request that Congress withdraw and reserve for military use approximately 618,727 acres of additional Federal land and acquire approximately 65,157 acres of non-federal land. Range infrastructure would be constructed to support modernization, including new target areas, and expand and reconfigured existing Special Use Airspace (SUA) to accommodate the expanded bombing ranges. Implementation of Alternative 1 would potentially require the reroute of State Route 839 and the relocation of a portion of the Paiute Pipeline. Public access to B-16, B-17, and B-20 would be restricted for security and to safeguard against potential hazards associated with military activities. The Navy would not allow mining or geothermal development within the proposed bombing ranges or the Dixie Valley Training Area (DVTA). Under Alternative 1, the Navy would use the modernized FRTC to conduct aviation and ground training of the same general types and at the same tempos as analyzed in Alternative 2 of the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada, Final Environmental Impact Statement* (EIS). The Navy is not proposing to increase the number of training activities under this or any of the alternatives in this EIS.

Alternative 2 – Modernization of Fallon Range Training Complex with Managed Access

Alternative 2 would have the same withdrawals, acquisitions, and SUA changes as proposed in Alternative 1. Alternative 2 would continue to allow certain public uses within specified areas of B-16, B-17, and B-20 (ceremonial, cultural, or academic research visits, land management activities) when the ranges are not operational and compatible with military training activities (typically weekends, holidays, and when closed for maintenance). Alternative 2 would also continue to allow grazing, hunting, off-highway vehicle (OHV) usage, camping, hiking, site and ceremonial visits, and large event off-road races at the DVTA. Additionally under Alternative 2, hunting would be conditionally allowed on designated portions of B-17, and geothermal and salable mineral exploration would be conditionally allowed on the DVTA. Large event off-road races would be allowable on all ranges subject to coordination with the Navy and compatible with military training activities.

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

Alternative 3 differs from Alternative 1 and 2 with respect to the orientation, size, and location of B-16, B-17, B-20 and the DVTA, and is similar to Alternative 2 in terms of managed access. Alternative 3 places the proposed B-17 farther to the southeast and rotates it slightly counter-clockwise. In conjunction with shifting B-17 in this manner, the expanded range would leave State Route 839 in its current configuration along the western boundary of B-17 and would expand eastward across State Route 361 potentially requiring the reroute of State Route 361. The Navy proposes designation of the area south of U.S. Route 50 as a Special Land Management Overlay rather than proposing it for withdrawal as the DVTA. This Special Land Management Overlay would define two areas, one east and one west of the existing B-17 range. These two areas, which are currently public lands under the jurisdiction of BLM, would not be withdrawn by the Navy and would not directly be used for land-based military training or managed by the Navy.

Environmental Impact Statement

Fallon Range Training Complex Modernization

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3.12 Recreation

The public engages in a variety of recreational activities within the region of influence. For purposes of this section, “recreational activities” refers to outdoor activities such as hunting, fishing, hiking, popular racing events, camping, wildlife viewing, rock/fossil collecting, horseback riding, operating off-highway vehicles (OHVs), sightseeing, and visiting historic sites. The term “Recreation Area” includes federal, state, or local designated parks, playgrounds, recreation management areas, and wildlife refuges as well as other discernable areas where the public regularly recreates.

3.12.1 Methodology

This analysis focuses on the implementation of the Proposed Action and the potential for significant impacts on recreation. In addition, this analysis focuses on potential impacts on recreation arising from movement of training activities, changes to public access to withdrawn or acquired land, and construction. Recreation is an interdisciplinary issue, and its aspects intertwine with other environmental topics. Section 3.2 (Land Use) considers the impacts on use of lands with the implementation of the Proposed Action. Section 3.5 (Transportation) discusses impacts on transportation on the ground, including paved roads, trails, and public transit such as trains. Section 3.7 (Noise) addresses human impacts and community noise levels resulting from training noise. The impacts of airspace activities in Special Use Airspace (SUA) on biological recreation resources such as mule deer, bighorn sheep, and pronghorn antelope are discussed in Section 3.10 (Biological Resources). Wilderness Study Areas (WSAs) are also discussed in Section 3.10 (Biological Resources). Section 3.13 (Socioeconomics) addresses the financial impacts of the Proposed Action in the surrounding areas. Section 3.14 (Public Health and Safety and Protection of Children) addresses impacts of the Proposed Action on public health and safety as a result of the implementation of the Proposed Action.

3.12.1.1 Region of Influence

The region of influence for recreation includes the land requested for withdrawal or proposed for acquisition and land underlying SUA as well as any nearby recreation area that the alternatives could directly or indirectly affect. This includes all areas below existing and proposed Fallon Range Training Complex (FRTC) SUA. The region of influence includes land managed by the Bureau of Land Management (BLM) (including WSAs), United States (U.S.) Fish and Wildlife Service (USFWS), U.S. Forest Service, and Bureau of Reclamation, as well as private and Indian Tribal lands.

The U.S. Department of the Navy (Navy) currently allows public recreation on small areas of the Bravo (B)-19 range. There are no changes proposed for the requested land withdrawal, training activities, public access, or construction on B-19. Therefore, B-19 is not discussed further and would be maintained as discussed in the 2015 *Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement* (U.S. Department of the Navy, 2015).

3.12.1.2 Regulatory Framework

State and local ordinances and zoning regulations govern recreation on non-federal lands, which the landowners usually conduct at their discretion. Federal land management agencies oversee recreation on federal lands within the region of influence, in accordance with the following rules and regulations as applicable:

- Federal Land Policy Management Act (43 United States Code [U.S.C.] section 1701 et seq.)
- National Wildlife Refuge System Administrative Act (16 U.S.C. sections 668dd–668ee)

- National Wildlife Refuge System Improvement Act (Public Law 105-57)
- Wilderness Act (16 U.S.C. section 1131 et seq.)
- National Trail Systems Act (16 U.S.C. section 1241 et seq.)
- Land and Water Conservation Fund Act (54 U.S.C. section 200301 et seq.)
- Military reservation and facilities - hunting, fishing and trapping (10 U.S.C. section 2671)
- Migratory Bird Treaty Act (16 U.S.C. sections 703–712)
- Nevada Revised Statutes (NRS) 501 Administration and Enforcement (Title 45 Wildlife)
- NRS 502 Wildlife: Licenses, Tags and Permits
- NRS 503 Hunting, Fishing and Trapping; Miscellaneous Protective Measures
- NRS 504 Management and Propagation
- NRS 505 Fur Dealers
- NRS 506 Wildlife Violator Compact

The following instruction and manual provide additional guidance and recommendations for flying over noise-sensitive areas, such as public recreation areas, and were used in identifying potential land use incompatibilities:

- Chief of Naval Operations Instruction (OPNAVINST) 3710.7v, *Naval Air Training and Operating Procedures Standardization Program, and Commander, Naval Air Force (CNAF) Manual 3710.7* (U.S. Department of the Navy, 2016)
- Federal Aviation Administration (FAA) Aeronautical Information Manual (Federal Aviation Administration, 2017)

3.12.1.3 Approach to Analysis

The Navy analyzed impacts on recreation from the implementation of the Proposed Alternatives to public recreational activities and designated recreation areas. The following factors help determine whether impacts on recreation would be significant:

- Whether the action would cause a long-term, permanent, or substantial impairment to a recreational activity that plays an important or vital role within the local or regional community, as identified during public scoping.
- Whether the action would be inconsistent with applicable federal, state, or local recreation regulations and recreation plans.
- Whether the action would stop (or prevent) the public from accessing federal, state, or locally designated recreational areas, rendering these areas unusable or effectively unusable for recreational purposes.
- Whether potential noise or safety zones would be incompatible with existing recreational activities or recreation areas as suggested by Navy policy.

These factors help determine significance but are not thresholds for significance. For example, inconsistency with state or local plans by itself would not automatically result in a significant impact (Federal Aviation Administration, 2015). Rather, the Navy analyzes impacts on recreation resources in the context of these factors.

A review of available literature and public scoping comments submitted on this Environmental Impact Statement (EIS) identified recreational activities and recreation areas within the region of influence. The Navy also worked with affected land management agencies to identify existing and proposed recreational activities and recreation areas on federal lands. The Nevada Department of Wildlife (NDOW) provided the Navy with detailed information regarding game species within the region of influence (Nevada Department of Wildlife, 2017a). The Navy has also prepared noise modeling (see Supporting Study: Noise Study, available at <https://frtcmodernization.com>) and transportation studies (see Supporting Study: Transportation/Traffic Study for the Fallon Range Training Complex, available at <https://frtcmodernization.com>), which pertain directly to the analysis of impacts on public recreation.

3.12.1.4 Public Concerns

One of the public's primary concerns was that the requested land withdrawal and proposed land acquisition would result in a loss of access to federal and non-federal lands currently used for recreational activities. Public comments received during public scoping and the public comment period on the Draft EIS for recreation were largely concerned with potential impacts on OHV activities, races (e.g., the Vegas to Reno, the Valley Off Road Racing Association, Fallon Night Vision 250, the High Desert Classic Endurance Ride, and other popular racing events), hunting of large- (e.g., mule deer, bighorn sheep, and pronghorn antelope) and small-game (e.g., chukar partridge), general aviation, gliders, and other recreation activities (e.g., hiking, camping, and rockhounding). Many public comments were received regarding the potential loss of OHV routes around B-17 and Gabbs, as well as a perceived loss of access to the Berlin Ichthyosaur State Park due to the potential change in routing of a portion of State Route 361. Other commenters, such as the Blue Ribbon Coalition, expressed concerns about access to and maintenance of trails such as the Pony Express National Historic Trail. The Wilderness Society expressed concerns about impacts that the Proposed Action could have on hunting and proposed recreation areas, particularly around B-16 and B-17 (with regard to WSAs).

The Office of the Governor of Nevada listed concerns about closing public access to the Sand Springs Range, Fairview Peak, Slate Mountain, Bell Flat, and the Monte Cristo Range as well as to portions of Simpson Road and State Route 839. Churchill County expressed the same concerns as the Governor's Office, along with concern for closure or restricted public access to Fallon National Wildlife Refuge, East County Road, Pole Line Road (including the West Humboldt Range), Sand Canyon Road (including the Dead Camel Mountains), and local roads (including areas in B-17 such as Slate Mountain and Monte Cristo Range). A private owner also expressed concern for the loss of Wedell Hot Springs, which is located on approximately 80 acres of land within the area requested for withdrawal and proposed for acquisition that would make up B-17 under Alternative 3.

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).

3.12.2 Affected Environment

This section describes recreational activities within the region of influence. This section provides an overview of recreation within the State of Nevada, which includes additional information on OHV use, hunting, trapping, and fishing within the region of influence, prior to identifying particular recreational activities and recreation areas within the lands requested for withdrawal and proposed for acquisition.

Nevada is one of the largest states (in area) in the U.S., but it ranks 32nd in population (U.S. Fish and Wildlife Service, 2011; World Population Review, 2019). The vast expanses of undeveloped public lands within the region of influence support a variety of outdoor recreational activities for Nevada residents and visitors (U.S. Fish and Wildlife Service, 2011). A recent study by the Congressional Research Service estimated that five federal land agencies administer 79.6 percent of Nevada land (55,928,507 acres of 70,246,320 acres) (see Section 3.2, Land Use) (Vincent et al., 2017). Nevada is also the driest and most mountainous state in the United States, offering unique areas for recreation (Nevada Division of State Parks, 2016).

3.12.2.1 Off-Highway Vehicles

All OHV operators must comply with Nevada laws and regulations when operating on public lands. Generally, public land managers may designate areas as open, limited, or closed to OHV use. Open areas are areas where the operator has freedom to travel on or off-road. Limited or restricted areas are areas where OHV use may be restricted in some manner. Closed areas are areas that typically do not permit or allow OHV use. Pursuant to 43 Code of Federal Regulations part 420.2, “Reclamation lands are closed to off-road vehicle use, except for an area or trail specifically opened to use of off-road vehicles in accordance with section 420.21.” For BLM lands, “The operation of off-road vehicles is permitted on those areas and trails designated as open to off-road vehicle use,” pursuant to 43 Code of Federal Regulations subpart 8341 section 8341.1a. OHV use restrictions vary on USFWS lands from area to area.

Within the FRTC, the Navy only allows OHVs in areas that are jointly managed by the BLM (e.g., the Dixie Valley Training Area [DVTA]) (U.S. Department of the Navy, 2014a). Although BLM public lands are largely open for OHV use in the region of influence, the BLM Carson City District wrote a *Draft Resource Management Plan* that proposes limits on OHV use. Alternative E of the Draft Resource Management Plan would limit OHV use on most of the land within the region’s existing routes. As discussed in greater detail of the *Carson City District Draft Resource Management Plan*, Section 5.0 (Cumulative Impacts), the BLM proposed to open (i.e., un-restrict) OHV use in the proposed Sand Mountain and proposed Dead Camel Mountains Special Recreation Management Areas, as well as on a playa north of the DVTA, with smaller areas closed to motorized travel near Sand Mountain (Bureau of Land Management, 2014). This proposal was in response to several comments during public scoping for the *Draft Resource Management Plan* discussed the need for designated trail systems in this area (Bureau of Land Management, 2012).

3.12.2.2 Hunting, Trapping, and Fishing

Hunting in Nevada includes hunting for big-game wildlife (e.g., bighorn sheep and pronghorn), waterfowl, small-game wildlife (e.g., desert cottontail), upland game birds (e.g., chukar partridge), furbearers (e.g., beaver, mink, otter), and unprotected species (e.g., raccoons, black-tailed jackrabbits). The NDOW regulates and administers hunting, trapping, and fishing in Nevada. The distribution of

Off-highway vehicles include off-road vehicles, all-terrain vehicles, utility terrain vehicles (also known as “side by side” or recreation off-highway vehicles), off-highway motorcycles, rock crawlers, and off-road motorcycles as well as mountain bikes.

Off-road vehicles are a type of vehicle that can be driven on or off paved roads. Off-road vehicles include four-by-four vehicles, such as trucks, jeeps, and sport utility vehicles.

All-terrain vehicles are a subset of off-road vehicles and include a wide variety of vehicles that can be driven on and off road but are not typically street legal.

Utility terrain vehicles are similar to all-terrain vehicles but are typically larger.

wildlife populations may vary annually depending on season, precipitation, vegetation growth, and other factors. Big game hunting is generally limited to the period from 30 minutes before sunrise to sunset, and typically occurs in the fall (August through December) (Commissioner Report 15-09, Amendment 2). A hunting license is required for anyone over the age of 12 to hunt game birds and mammals. Hunters may hunt coyote (*Canis latrans*), black-tailed jackrabbit (*Lepus californicus*), and other unprotected species without a hunting license, but if trapping these species, a trapping license is required. A trapping license is also required to trap certain furbearing animals (e.g., beaver, mink, otter, bobcat, and certain fox species).

Big game species within the region of influence include mule deer (*Odocoileus hemionus*) (Figure 3.12-1), desert bighorn sheep (*Ovis canadensis nelsoni*) (Figure 3.12-2), pronghorn antelope (*Antilocapra americana*) (Figure 3.12-3), and elk (*Cervus canadensis*).

Big-game hunting seasons vary by species, hunting unit, and weapon. Based on species populations and habitat conditions, NDOW sets the number of tags issued annually. For the State of Nevada, the 10-year average (2007–2017) by species for hunting tags issued and species harvested is shown in Table 3.12-1.

Table 3.12-1: Nevada 10-Year Average (2007–2017) by Species of Hunting Tags Issued and Species Harvested

Species	Hunting Tags Issued	Species Harvested
Mule Deer	19,133	7,945
Bighorn Sheep	260	232
Pronghorn	3,612	2,294

Source: (Cox et al., 2017)

The number of deer tags issued decreased in the 1990s but has remained relatively stable since then. Desert bighorn sheep tags were relatively static from the mid-1980s until the late 2000s, when they had an increasing trend. The State of Nevada had a high of 334 desert bighorn sheep tags in 2017. Meanwhile, pronghorn tags have gradually increased since at least the mid-1980s. In 2017, 16,069 hunting tags were issued for deer and 7,300 were harvested; 4,463 hunting tags were issued for pronghorn and 3,302 were harvested; 334 hunting tags were issued for bighorn sheep and 302 were harvested (Cox et al., 2017).

The NDOW Migratory Bird Harvest Information Program requires that any person who plans to hunt migratory birds obtain a Harvest Information Program validation number prior to entering the field. Popular upland game bird species in Nevada include chukar partridge (*Alectoris chukar*), California quail (*Callipepla californica*), Gambel's quail (*Callipepla gambelii*), ruffed grouse (*Bonasa umbellus*), blue grouse (*Dendragapus obscurus*), the Himalayan snowcock (*Tetraogallus himalayensis*), and several species of dove (Columbidae) (Nevada Department of Wildlife, 2017b). Hunters may also hunt waterfowl (e.g., ducks, geese) within the region of influence (Nevada Department of Wildlife, 2017b). Nevada is home to over 200 lakes and 600 streams and rivers (Nevada Department of Wildlife, 2017c). Popular fishing destinations within the region of influence include the Lahontan Reservoir, west of B-16; Liberty Pond, north of Naval Air Station (NAS) Fallon; and the Humboldt River, near Lovelock (Nevada Department of Wildlife, 2017c). The majority of the waterbodies within the lands requested for withdrawal and proposed for acquisition are ephemeral washes. Popular fishing species in Nevada vary depending on geography but may include several species of cutthroat trout (*Oncorhynchus clarkii*). As with hunting, a license is required to fish in Nevada if you are over the age of 12 (Nevada Department of Wildlife, 2014).

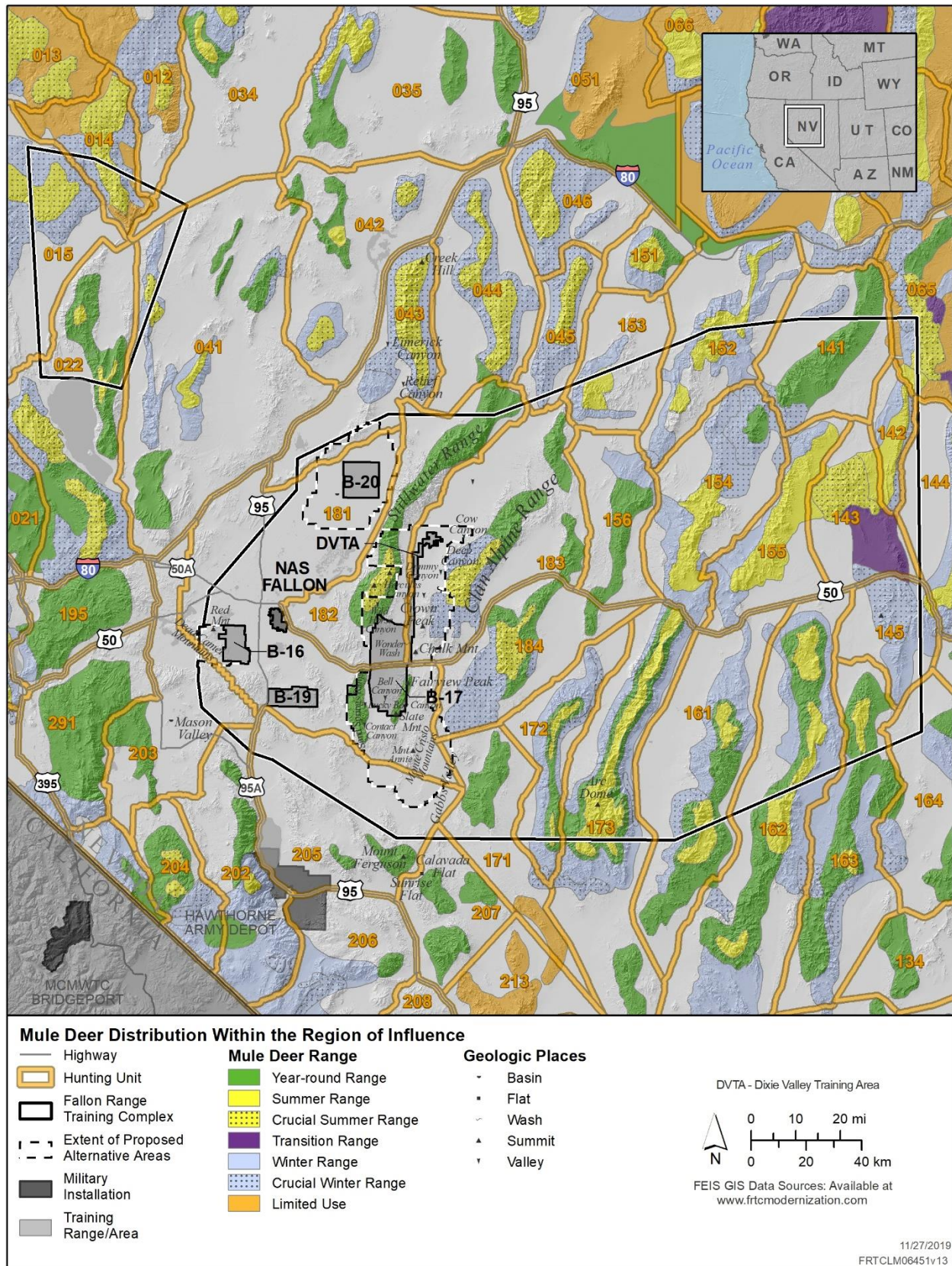


Figure 3.12-1: Mule Deer Distribution within the Region of Influence

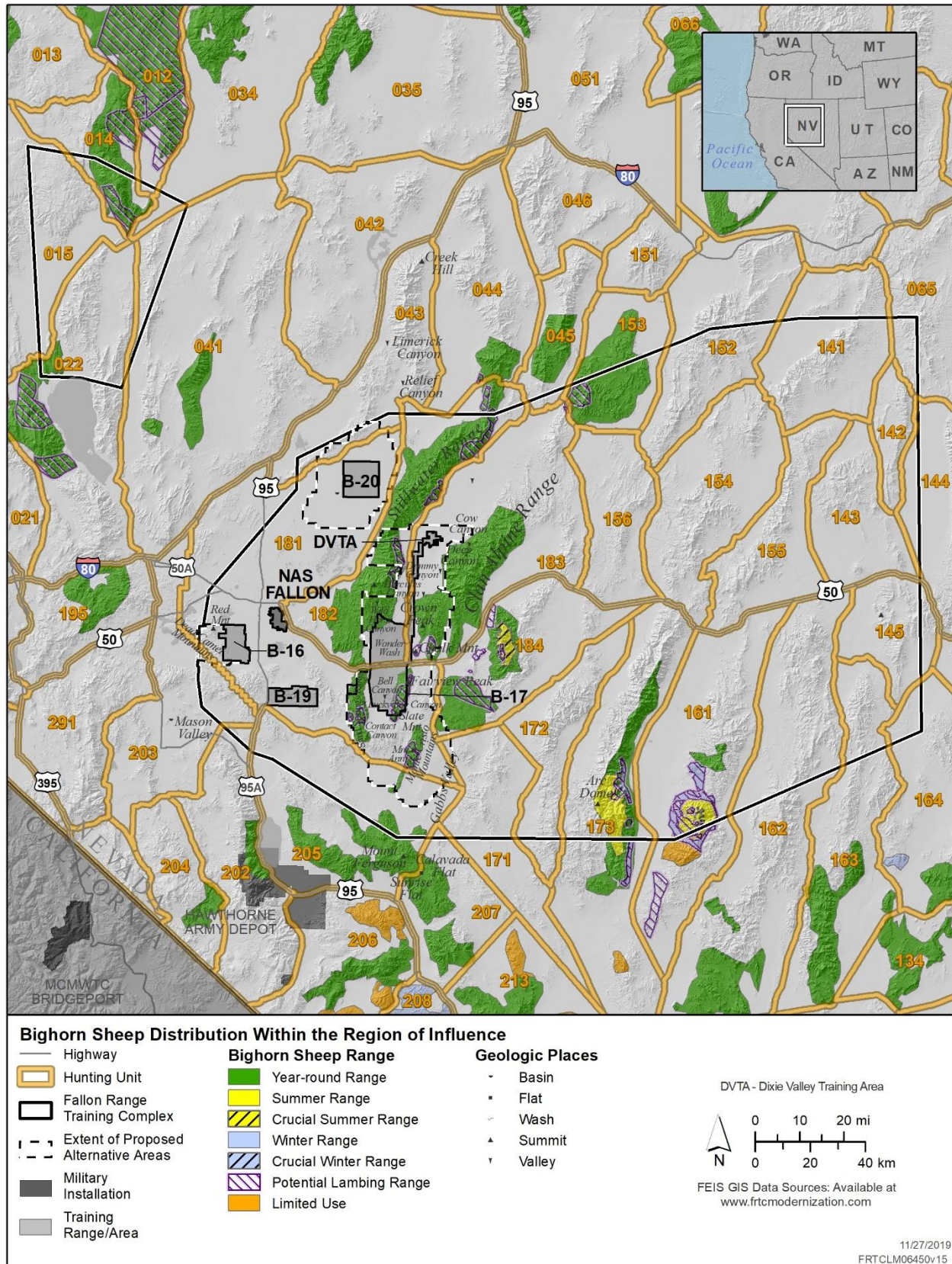


Figure 3.12-2: Bighorn Sheep Distribution within the Region of Influence

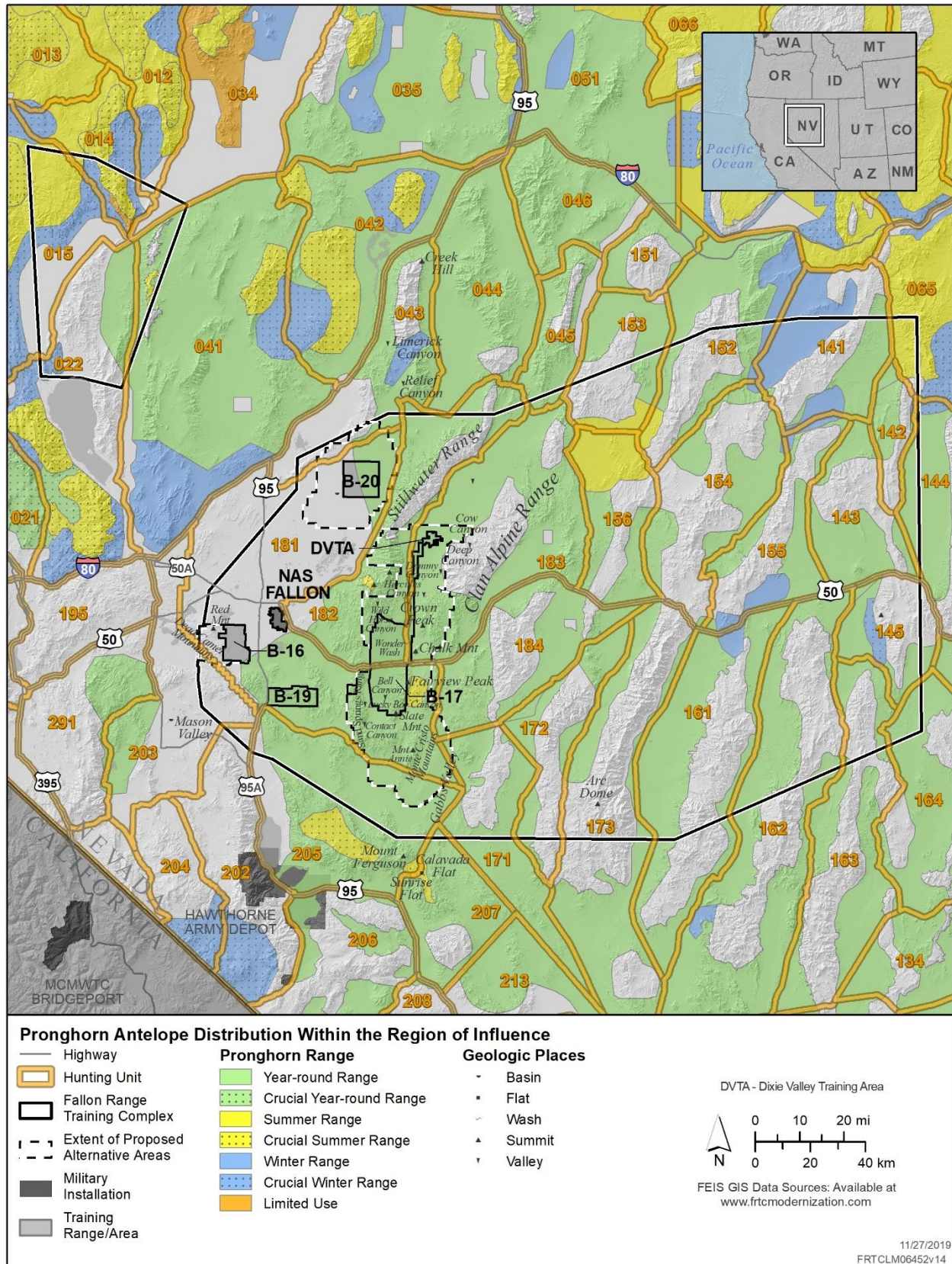


Figure 3.12-3: Pronghorn Antelope Distribution within the Region of Influence

3.12.2.3 Other Recreation Resources

Recreation resources other than those discussed previously include designated recreation areas (e.g., WSAs), notable recreation resources (e.g., off-road races), mining districts, target shooting areas, and trail use (e.g., running, hiking, horseback riding, rock collection, fossil hunting, swimming in hot springs, and sightseeing). Notable “other” recreation resources that are discussed in this section include the Raptor Off-Road Community Festival, the Pony Express National Historic Trail, the American Discovery Trail network, the tarantula migration, Fairview Peak, Fallon National Wildlife Refuge, Stillwater National Wildlife Refuge, Stillwater Range WSA, the High Desert Classic Endurance Ride, the Stillwater Mountains Range, ghost towns, the Clan Alpine Mountains WSA, Job Peak WSA, Sand Mountain Recreation Area, Stillwater Range WSA, the Humboldt-Toiyabe National Forest and campgrounds such as Groves Lake, Kingston Canyon, San Juan Canyon, Big Creek Canyon, Bob Scott Campground and others. The Navy discusses impacts on geologic sites in Section 3.1 (Geological Resources), impacts on water in Section 3.9 (Water Resources), impacts on biologic sites in Section 3.10 (Biological Resources), and impacts on cultural sites and areas in Section 3.11 (Cultural Resources).

3.12.2.4 Bravo-16

The existing B-16 is located southwest of NAS Fallon and west of U.S. Route 95 near the border of Churchill and Lyon Counties. Navy safety policy prohibits the public from engaging in recreational activities on active bombing ranges. The land requested for withdrawal is composed largely of BLM-administered land and Bureau of Reclamation land.

3.12.2.4.1 Off-Highway Vehicles

The majority of the existing B-16 is closed to the public; however, currently, the northern portion of B-16, approximately 4,576 acres, is open to the public and provides access to areas north and west of B-16. Bureau of Reclamation lands are closed to off-road vehicle use.

Public land around B-16 is currently undesignated relative to OHV use, which means that this land is managed as open areas with unrestricted vehicle use (Bureau of Land Management, 2014).

BLM-administered lands west of B-16 and along the southern border of B-16 are popular destinations for OHV use (Figure 3.12-4 and Figure 3.12-5). These lands are primarily used for motorcycle races, rock crawling, and casual use due to their close proximity and easy access from the city of Fallon. Portions of the General Tire “Vegas to Reno” Race are located south of B-16. At approximately 550 miles, this race is the longest off-road race in the United States. This annual, televised event occurs in August and is the flagship event for the Best in the Desert Racing Association (Best in the Desert Racing Association, 2017a). Over 330 race teams participated in this race in 2017 (Best in the Desert Racing Association, 2017b).

The Navy conducted OHV counts near B-16 on land requested for withdrawal. The OHV data collection took counts from 11 locations on roads and trails on the land requested for withdrawal near B-16, over the course of two seasons (August 2017 to January 2018). The maximum count for all locations on the land requested for withdrawal was 165 on Saturday, October 14, 2017 (this date coincides with the start of upland species hunting season in Nevada). Overall, the count data was sporadic with counts of zero on multiple days during the count period at most locations (see Supporting Study: Transportation/Traffic Study for the Fallon Range Training Complex, available at <https://frtcmodernization.com>, for details).

3.12.2.4.2 Hunting, Trapping, and Fishing

B-16 is located within NDOW Hunting Unit 181. Pronghorn antelope are the only big-game species with habitat within B-16 (see Figure 3.12-3); however, there is mule deer habitat north and east of B-16 within Hunting Unit 181 (see Figure 3.12-1). For mule deer and pronghorn hunts, Hunting Unit 181 is typically managed collectively with Hunting Units 182, 183, and 184. The pronghorn population within these units has steadily increased since 2003. The NDOW estimated this population to be around 660 pronghorn in 2017 (Nevada Department of Wildlife, 2017a). The NDOW estimated a herd size of approximately 1,230 mule deer in 2017 for Hunting Units 181 through 184, which is a slight decrease from prior years (Nevada Department of Wildlife, 2017a). Hunting Unit 203 is south and west of B-16. Big-game species within Hunting Unit 203 are not known to occur within the region of influence. Mule deer may be found within agricultural and riparian areas within this hunting unit, and may occasionally be found in the adjacent mountains; however, these areas are outside of the region of influence (Figure 3.12-1). Small game hunting and trapping may occur within the region of influence, particularly for chukar, partridge, and upland bird species. The Lahontan Reservoir, which is a popular destination for fishing, hunting (in designated areas) and other water-related recreational activities, is west of B-16 in Lyon County. Although this area is outside of the region of influence, the public is known to use the dirt and primitive roads around B-16 to access this area.

3.12.2.4.3 Other Recreation Resources

Although the public uses the open areas of B-16 for a variety of recreational activities, there are no designated recreation areas or notable recreation resources within the existing B-16 or in the lands requested for withdrawal and proposed for acquisition. The BLM is currently proposing to create a recreation area for OHVs west of B-16 in the lands requested for withdrawal and proposed for acquisition, called Dead Camel Mountain, in order to protect recreation opportunities, values, and experiences, while promoting regional economic development (Figure 3.12-4 and Figure 3.12-5) (Bureau of Land Management, 2014). In addition, events like the Raptor Off-Road Community Festival have occurred in this area. Additional recreational activities around B-16 include trail running, hiking, and horseback riding as well as rock collecting and fossil hunting. The Salt Caves are located west of B-16 (see Figure 3.12-4). The caves contain rock art and are discussed further in Section 3.11.2.3.3 (Traditional Cultural Properties and Tribal Resources). The caves are accessed currently via Sand Canyon road and other OHV trails in the lands requested for withdrawal and proposed for acquisition.

Within the region of influence, the Pony Express National Historic Trail is located south of B-16 (Figure 3.12-4 and Figure 3.12-5). This trail is historic and traverses eight states from Missouri to California. A number of recreational activities exist along the approximately 1,800-mile long trail, including sightseeing, hiking, biking, and horseback riding. An annual trail ride along the Pony Express National Historic Trail takes place in June. The National Park Service manages the trail. Since the trail traverses land owned by multiple public and private entities, the landowner or land manager has the ability to limit recreational activities on the trail. Portions of the Pony Express National Historic Trail are also part of the American Discovery Trail, a coast-to-coast hiking trail that is currently not part of the National Trails System and therefore is not federally managed. The American Discovery Trail is a nationwide non-profit organization that administers the affairs of the American Discovery Trail network and coordinates the efforts of many local trail organizations. The Navy discusses impacts on geologic sites in Section 3.1 (Geological Resources), impacts on water in Section 3.9 (Water Resources), impacts on biologic sites in Section 3.10 (Biological Resources), and impacts on cultural sites and areas in Section 3.11 (Cultural Resources).

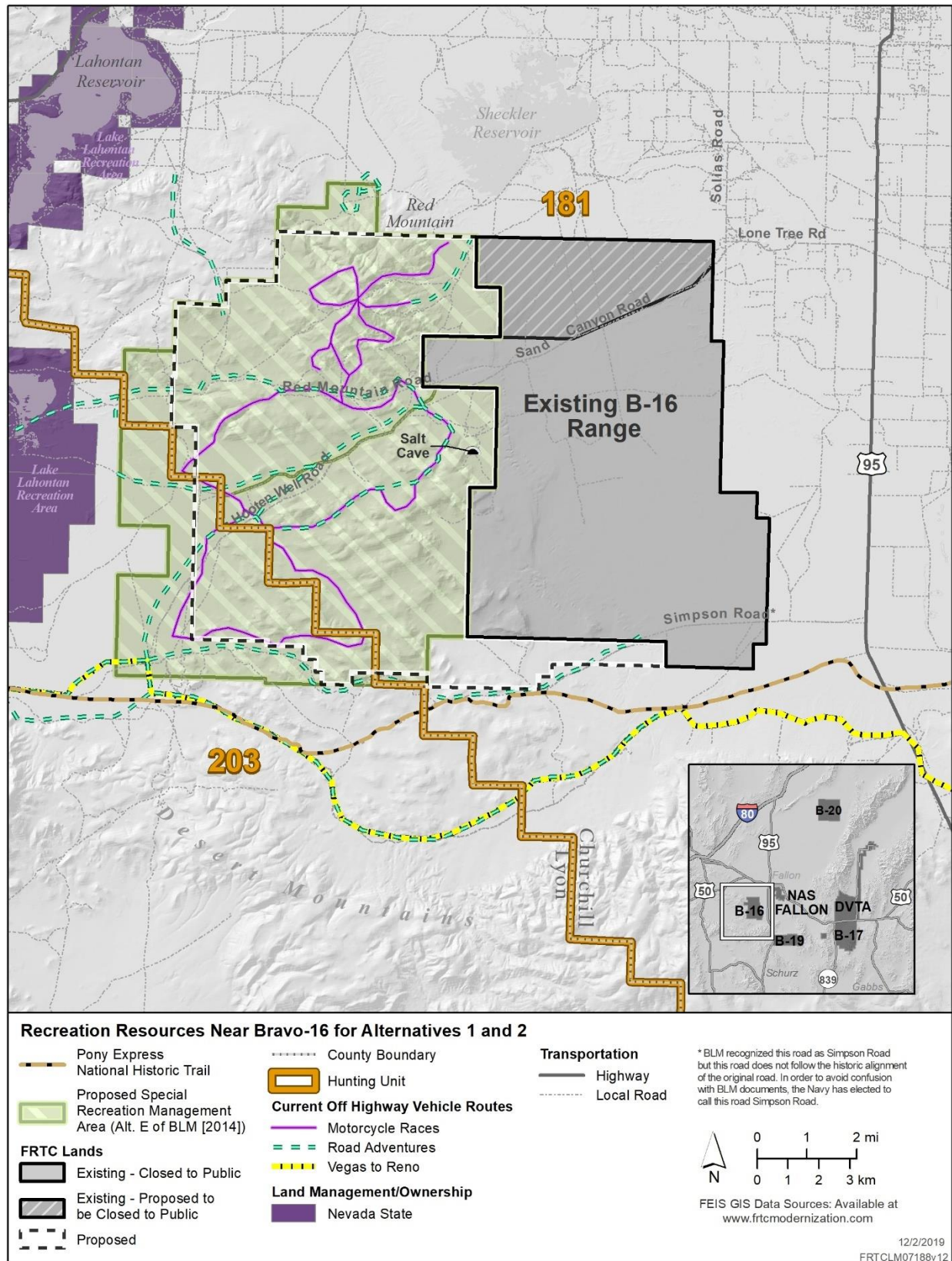


Figure 3.12-4: Recreation Resources Near Bravo-16 for Alternatives 1 and 2

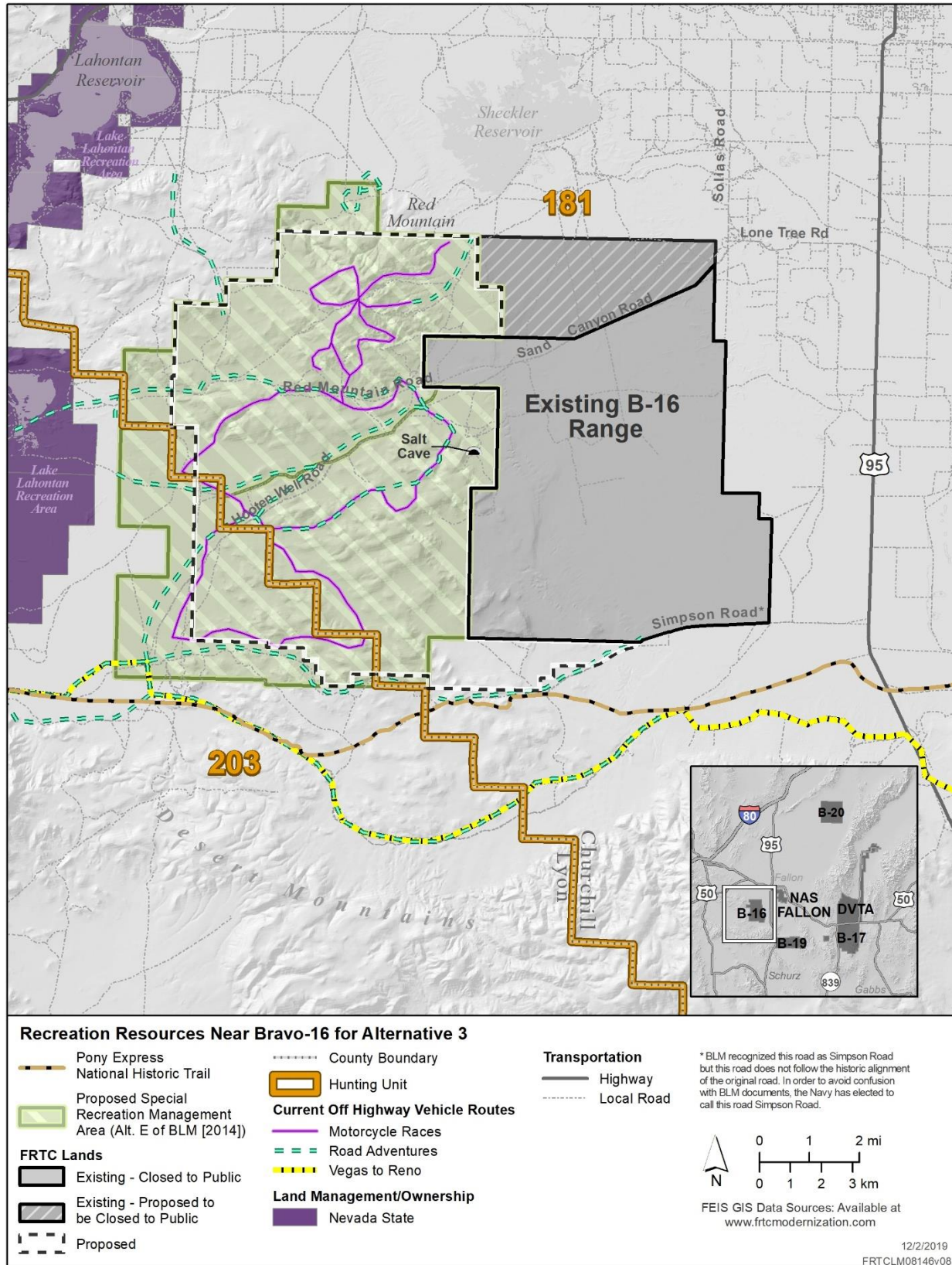


Figure 3.12-5: Recreation Resources Near Bravo-16 for Alternative 3

3.12.2.5 Bravo-17

B-17 is located east of NAS Fallon and south of U.S. Route 50. The area around B-17 is composed primarily of BLM-administered land with a few private parcels. B-17 is wholly located within Churchill County. Mineral and Nye Counties are south of B-17, and the Walker River Indian Reservation is southwest of B-17.

Navy safety policy prohibits the public from engaging in recreational activities on active bombing ranges. Except for an annual bighorn sheep hunt, which occurs when the range is inactive, the public is not allowed to access B-17 for recreation (U.S. Department of the Navy, 2015).

3.12.2.5.1 Off-Highway Vehicles

The public is prohibited from using OHVs within the boundaries of B-17 for purposes of recreation. The public is known to use OHVs on BLM-administered land around B-17, including land requested for withdrawal particularly near the community of Middlegate.

Federal land around B-17 is currently undesignated, which means that this land is managed as open area with unrestricted vehicle use (Bureau of Land Management, 2014). Several popular racing events regularly occur south and west of B-17, including the Vegas to Reno Race, which is described in Section 3.12.2.4.1 (Off-Highway Vehicles), and the Valley Off Road Racing Association Night Vision Fallon 250 (as shown in Figure 3.12-6 and Figure 3.12-7). Both of these races use routes south of B-17 in Gabbs Valley. The Valley Off Road Racing Association Night Vision Fallon 250 is an annual 225-mile desert race that typically occurs in September (Valley Off Road Racing LLC, n.d.). This race, which is west of B-17, also overlaps with the open portions of B-19 and the Navy's Shoal Site.

The Navy conducted OHV counts near B-17 on land requested for withdrawal between August 2017 and January 2018. The maximum count for all locations on land requested for withdrawal was 119 on October 6, 2017. Counts on B-17 were more uniform and consistent throughout the count period than on B-16, and the combined total for B-17 was more than three times the combined total for B-16. There were locations near B-17 that saw regular use by OHVs during the count period, which suggested recurring vehicle traffic at these locations (see Supporting Study: Transportation/Traffic Study for the Fallon Range Training Complex, available at <https://frtcmodernization.com>, for details).

3.12.2.5.2 Hunting, Trapping, and Fishing

With the exception of an annual bighorn sheep hunt, hunting, fishing, and trapping is prohibited on B-17. B-17 is located within Hunting Unit 181; Hunting Unit 184 is located east of B-17 (east of State Route 839), and a portion of the Hunting Unit is in the area requested for withdrawal and proposed for acquisition under Alternative 3. NDOW manages Hunting Units 181 and 184 collectively with Hunting Units 182 and 183 for mule deer and pronghorn but as separate hunting units for bighorn sheep. Mule deer generally inhabit the three major mountain ranges within Hunting Units 181 through 184. This includes the Sand Spring Range (west of B-17) and a portion of the Slate/Fairview mountains (Nevada Department of Wildlife, 2017a). This population ranged from a high of 1,465 deer in 1985 to a low of approximately 750 deer in 1994 (Nevada Department of Wildlife, 2017a). The current population appears to be relatively stable and is estimated to be 1,230 deer, which is slightly above average (Nevada Department of Wildlife, 2016, 2017a).

Bighorn sheep live in mountainous areas within Hunting Unit 181. Bighorn sheep are distributed throughout the Sand Springs Mountain Range, Fairview Mountain, Slate Mountain, and the Monte Cristo Mountains (Nevada Department of Wildlife, 2017a).

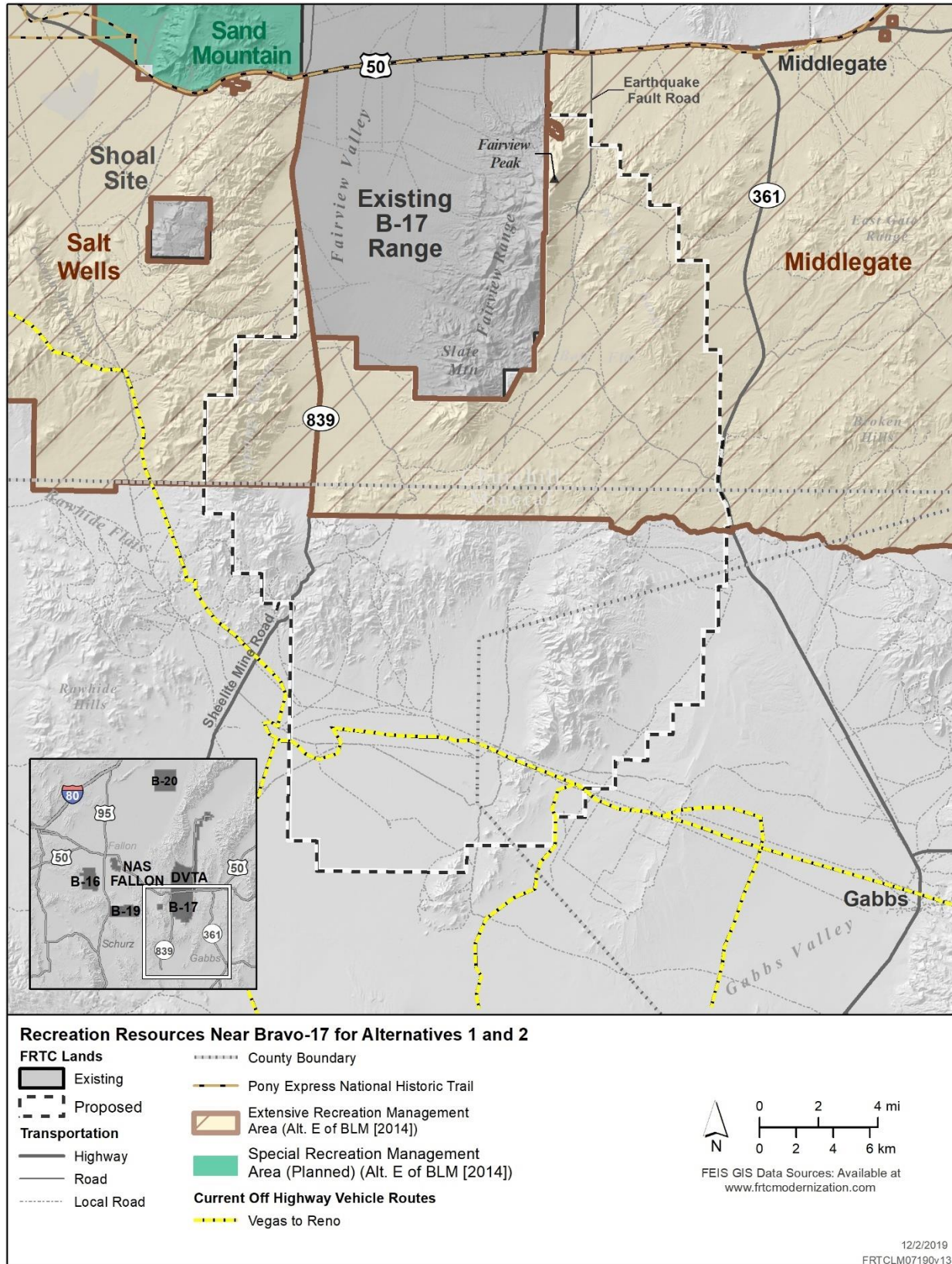


Figure 3.12-6: Recreation Resources Near Bravo-17 for Alternatives 1 and 2

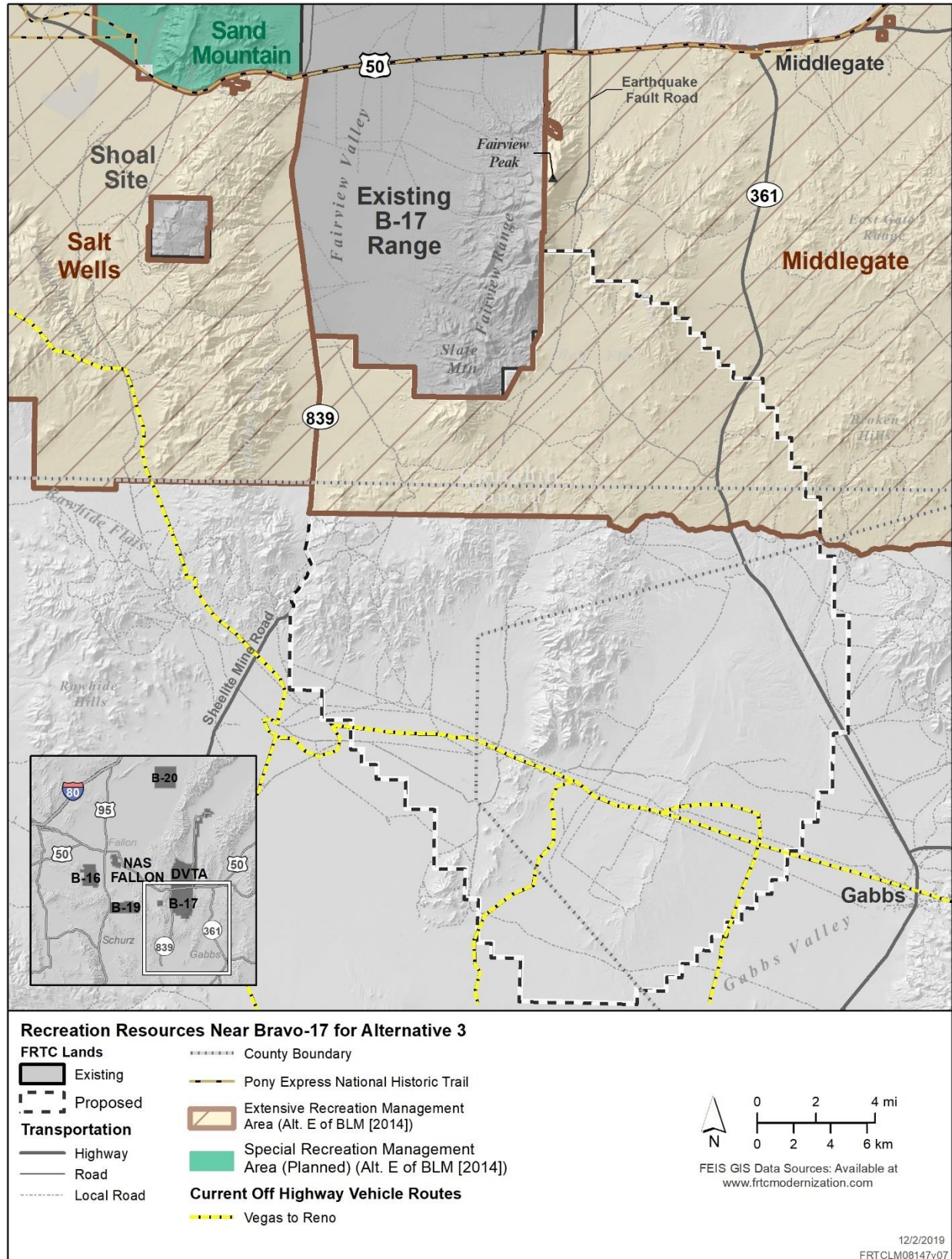


Figure 3.12-7: Recreation Resources Near Bravo-17 for Alternative 3

The NDOW estimated a population of 380 bighorn sheep in Unit 181 in 2016 (Nevada Department of Wildlife, 2016) and 425 individuals in 2017 (Nevada Department of Wildlife, 2017a). Unit 181 includes large portions of occupied habitat for bighorn sheep, and the entire distribution area is classified as year-round habitat for the species.

The Navy allows access onto portions of B-17 during the NDOW-managed bighorn sheep hunting season. Typically, 20–30 bighorn sheep hunt tags are issued for Unit 181. The bighorn sheep hunting season extends from November through December. For the bighorn sheep hunt, the Navy requires that hunters complete a hunting safety briefing prior to hunting within B-17.

NDOW manages Hunting Units 181 through 184 as a single hunting unit for pronghorn antelope. NDOW population modeling shows steady growth of pronghorn populations within Units 181 through 184 for the last 15 years. Approximately 25 percent of the Unit 181–184 pronghorn population resides within the current or requested B-17 withdrawal areas. As stated in the Population Summary document, the 2017 pronghorn population estimate was 660 individuals (Nevada Department of Wildlife, 2017a). It is estimated that 25 percent of the pronghorn population in Units 181–184 are found within the requested withdrawal of B-17.

Figure 3.12-8 and Figure 3.12-9 show the wildlife water developments (or “guzzlers”) that are located in and around the B-17 range. These guzzlers include both big game and small game guzzlers. Big game guzzlers are meant to be accessible to larger animals such as mule deer and bighorn sheep and can be troughs of water. Small game guzzlers are meant to only be accessible to small game such as chukars and are not accessible to big game species. New 10,000-gallon guzzlers were installed in the Sand Springs Range on B-17 in 2014, which benefit the bighorn sheep population (Nevada Department of Wildlife, 2016). Guzzlers are typically made of metal or fiberglass and include an “apron,” which collects water from snowmelt or rain, and a tank(s), which stores the water. Fences may also be added to keep livestock away from the guzzlers. These water developments are essential in areas where there is not enough water to support wildlife (Nevada Department of Wildlife, 2017d). Guzzlers were upgraded in 2015 in the Sand Springs Range on B-17, and old water developments around Fairview Peak on B-17 were also recently upgraded (with the Navy’s assistance), including an additional 10,000-gallon water guzzler. The Navy assisted with upgrading water developments around Slate Mountain on B-17 as well.

Hunting Unit 205 is located south of B-17. The NDOW estimated a herd size of 500 mule deer in 2016 for hunting units 202, 205, and 206, which includes an interstate population (Nevada Department of Wildlife, 2016). Mule deer habitat within these hunting units is outside of the region of influence (see Figure 3.12-1). There is year-round bighorn sheep habitat in the Monte Cristo Mountains, which are located within Unit 181 and partially within Unit 205. The NDOW estimated the bighorn sheep population for Unit 205 was approximately 650 sheep in 2016, an increase from an estimated 600 bighorn sheep in 2015 (Nevada Department of Wildlife, 2016).

Hunting Unit 171 is southeast of the existing B-17 and within the proposed area under Alternative 3. There is year-round mule deer habitat east of the proposed area (see Figure 3.12-1). There is no bighorn sheep habitat within Hunting Unit 171 (see Figure 3.12-2). There is year-round pronghorn habitat within this hunting unit southeast of B-17 (see Figure 3.12-3). The number of pronghorn units in the region of influence varies greatly because of their movement between Nye, Esmeralda, Mineral, and Churchill Counties (Nevada Department of Wildlife, 2016).

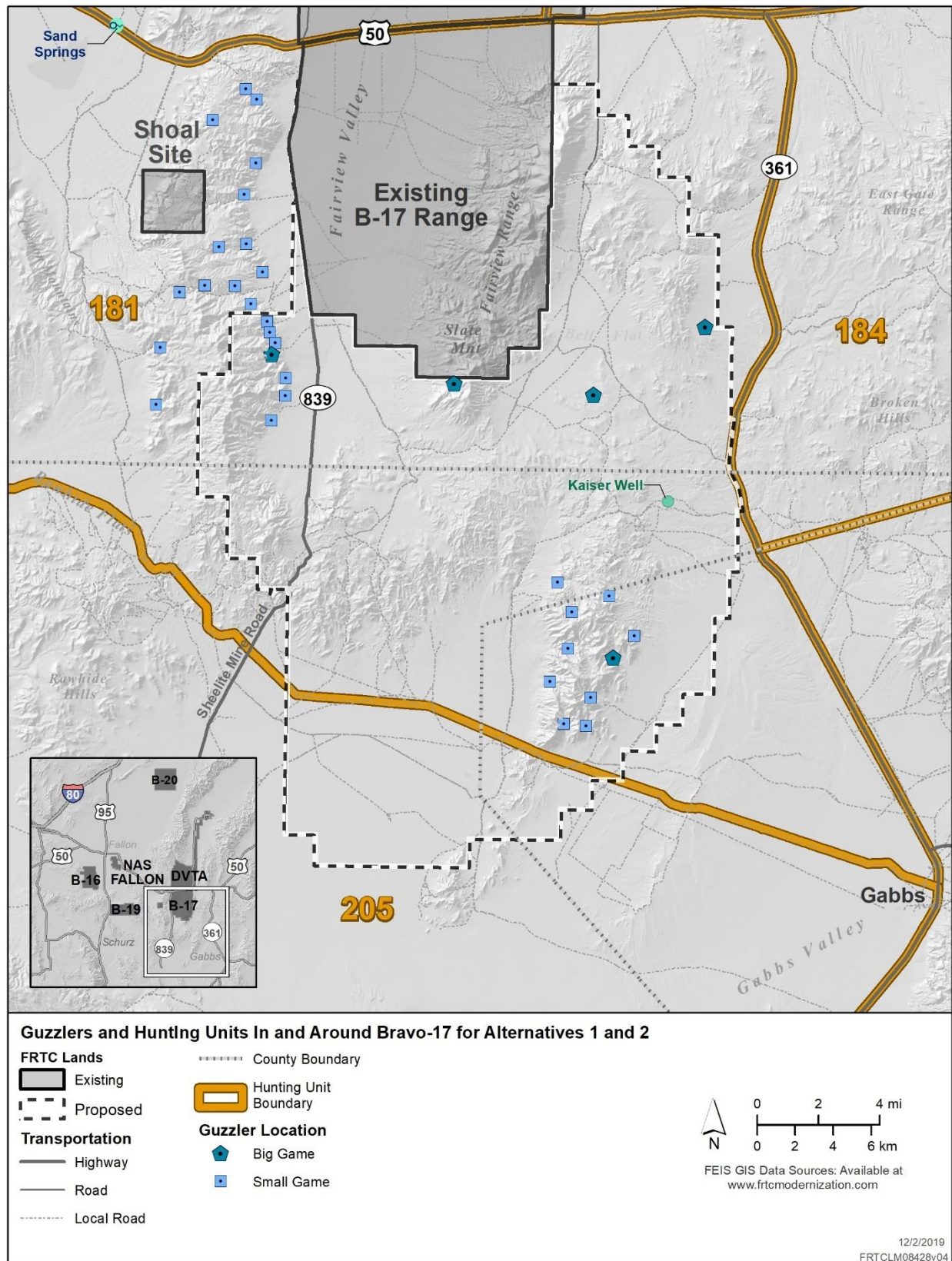


Figure 3.12-8: Guzzlers and Hunting Units in and Around Bravo-17 for Alternatives 1 and 2

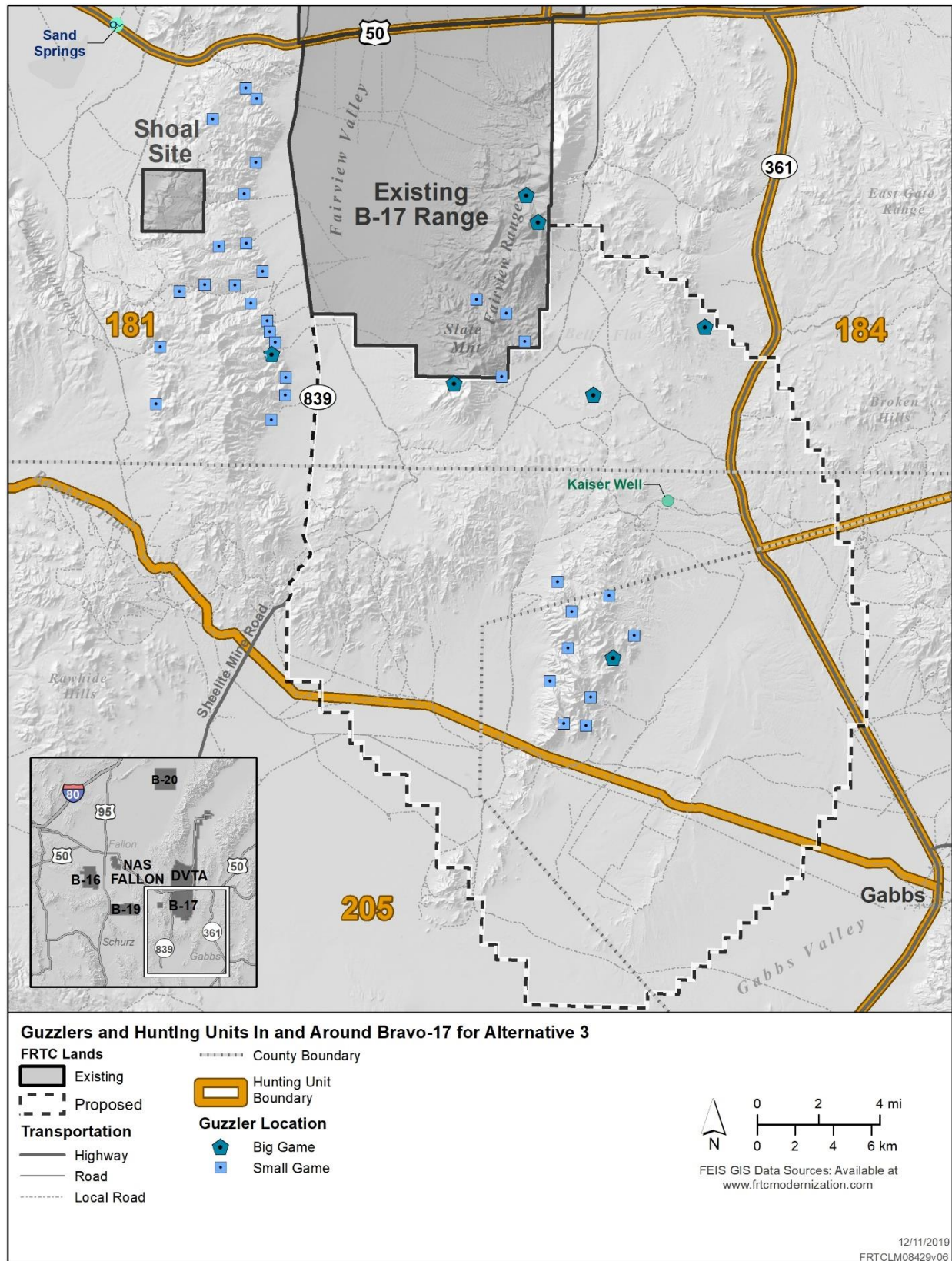


Figure 3.12-9: Guzzlers and Hunting Units in and Around Bravo-17 for Alternative 3

3.12.2.5.3 Other Recreation Resources

There are no additional recreation areas or resources within the existing B-17 (see Figure 3.12-6 and Figure 3.12-7). The BLM is currently proposing to create recreation areas for OHVs around B-17 in the land requested for withdrawal or proposed for acquisition (Bureau of Land Management, 2014). State Route 839 is west of B-17, while Earthquake Road and State Route 361 are east of B-17. Outdoor recreationalists are known to frequent these roads. In addition, according to DesertUSA, the best place to see the tarantula migration is in Gabbs, Nevada, which is approximately 16 miles southeast of the existing B-17 range (DesertUSA, 2010).

The Pony Express National Historic Trail is located north of B-17 (see Figure 3.12-6 and Figure 3.12-7). This trail runs parallel to U.S. Route 50 between the DVTA and B-17. A historic Pony Express Station is located nearby in the town of Middlegate.

Fairview Peak is a mountain peak east of B-17. In 1954, a catastrophic earthquake struck Dixie Valley and, since then, public access to Fairview Peak has been provided to observe fault scars via Earthquake Fault Road, off U.S. Route 50 near Fairview Peak. The peak is also an area that the public uses for stargazing; however, it is not classified as a “dark sky” place. A communication site, which includes fenced buildings that are closed to the public, is also on top of this peak. The Navy discusses impacts on geologic sites in Section 3.1 (Geological Resources), impacts on water in Section 3.9 (Water Resources), impacts on biologic sites in Section 3.10 (Biological Resources), and impacts on cultural sites and areas in Section 3.11 (Cultural Resources).

3.12.2.6 Bravo-20

B-20 is located north of Fallon, Nevada, within the Carson Sink. The surrounding land is laid out largely in a checkerboard pattern of federal and non-federal undeveloped land with wildlife refuges to the south (Figure 3.12-10 and Figure 3.12-11). B-20 is within the northern portion of Churchill County south of Pershing County. The Stillwater Mountain Range is east of B-20, and the Humboldt Mountain Range is to the northwest. Navy safety policy prohibits the public from engaging in recreational activities on active bombing ranges. The public is not allowed to access B-20 for recreation (U.S. Department of the Navy, 2015).

3.12.2.6.1 Off-Highway Vehicles

Given the type of soil and the depth to the water table within the Carson Sink, this area does not typically attract OHV operators, nor are there any other known popular racing events that occur within the Carson Sink. However, there is some recreational use of nearby roads off of the alkali flat.

3.12.2.6.2 Hunting, Trapping, and Fishing

B-20 is located in Hunting Unit 181. Even with the pronghorn habitat inside the eastern portion of B-20, hunting, fishing, and trapping is prohibited on B-20, and the surrounding area is not known to be a popular destination for hunters. Although the Navy is currently the only authorized user of the B-20 Access Road (known locally as Pole Line Road), hunters may use it and East County Road to access nearby hunting areas in the Humboldt and Stillwater Mountain Ranges, respectively. Hunting Unit 043 is north of B-20. Although there is mule deer habitat within Hunting Unit 043, this habitat is not within the region of influence. In addition, bighorn sheep are not known to occur in this hunting unit. Hunting Unit 043 does include year-round pronghorn habitat.

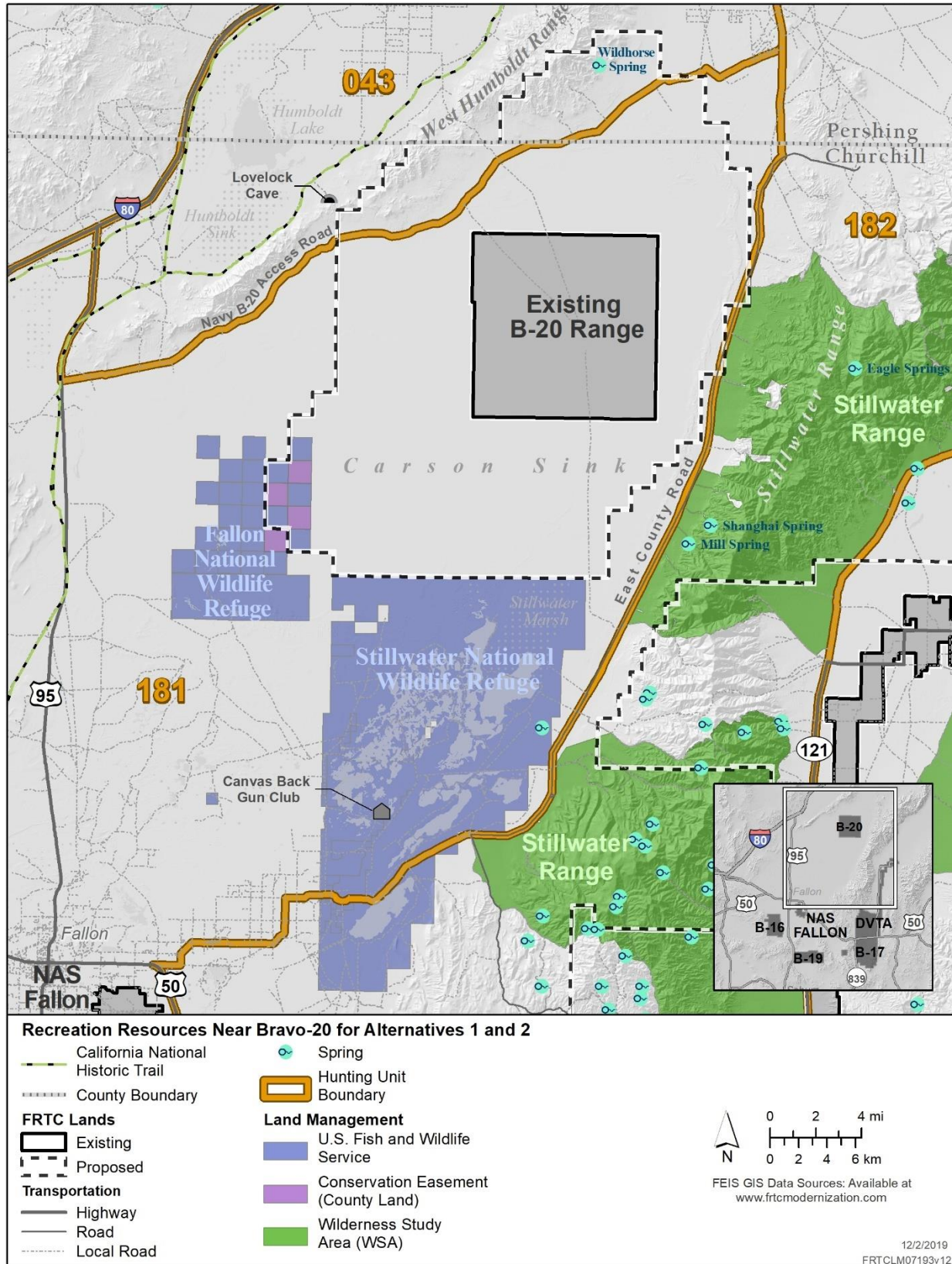


Figure 3.12-10: Recreation Resources Near Bravo-20 for Alternatives 1 and 2

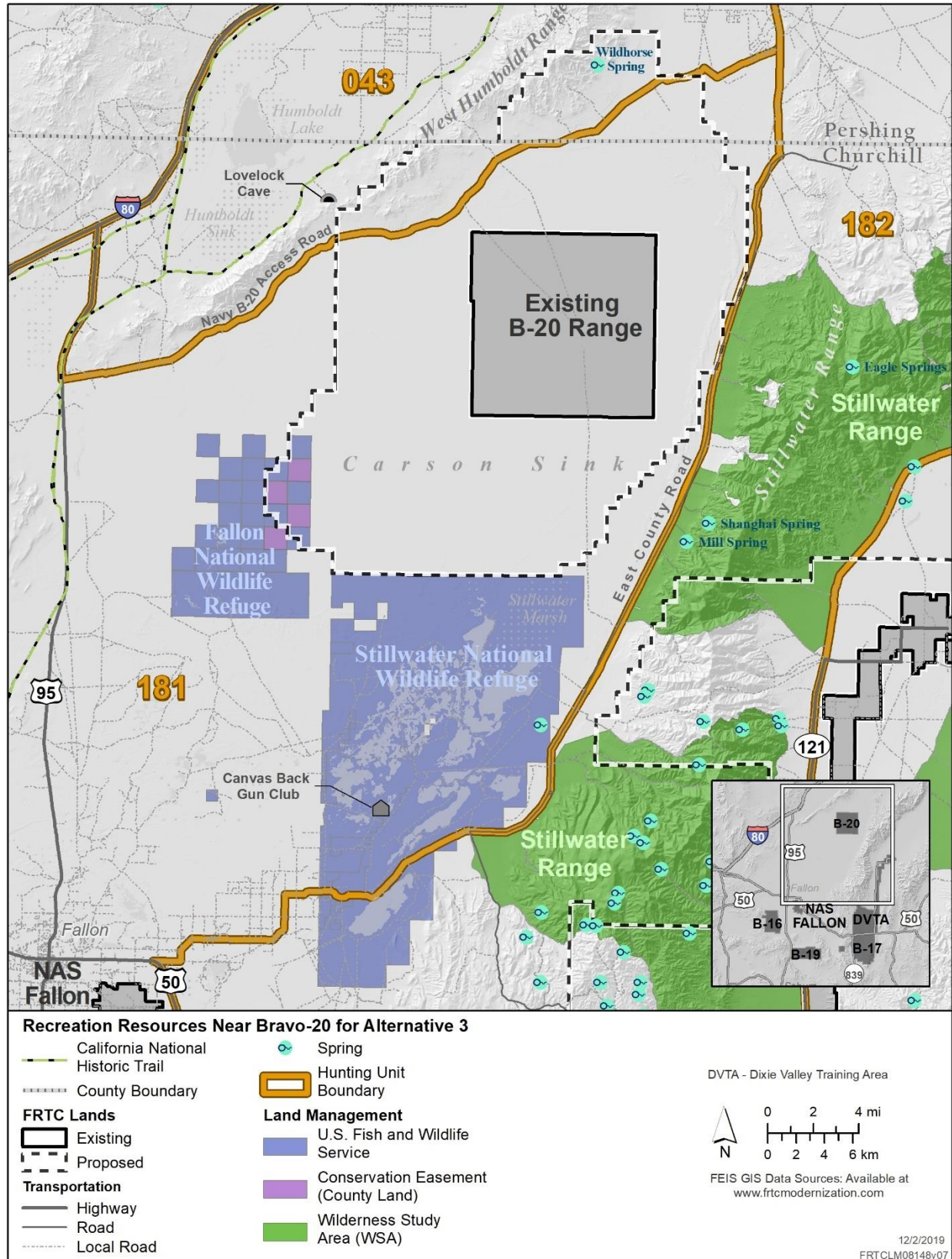


Figure 3.12-11: Recreation Resources Near Bravo-20 for Alternative 3

Pronghorn typically winter in large groups and are generally located in the valleys within Units 043–046. The NDOW estimated a herd size of roughly 600 pronghorn within these units in 2016, which is an increase from an estimated 450 pronghorn in 2015 (Nevada Department of Wildlife, 2016). There are fishable streams within this unit, and chukar populations are widespread.

Fallon National Wildlife Refuge and Stillwater National Wildlife Refuge: These refuges are open to the public for general recreation; however, recreational activities are limited to wildlife-related activities. Allowed activities generally include hunting, environmental education, and observing and photographing wildlife. Hunters are required to follow state- and federally approved hunting seasons within the Stillwater National Wildlife Refuge. The Refuge restricts the use of toxic ammunition (e.g., lead) and only allows non-toxic shots or slugs (e.g., steel) during hunting. Boating is allowed within the Refuge during waterfowl hunting seasons (U.S. Fish and Wildlife Service, 2016a). The Refuge does not currently allow fishing.

Private Hunting Clubs: The Canvas Back Gun Club, shown in Figure 3.12-11, is one of several private hunting clubs in and around the Stillwater National Wildlife Refuge. Another private club in the area is the Greenhead Hunting Club. These clubs provide recreational opportunity and invest in wildlife habitat to benefit waterfowl, shorebirds, and other migratory birds in the Lahontan Valley.

3.12.2.6.3 Other Recreation Resources

Other recreation in the area includes, but is not limited to, visiting cultural, geologic, biological, and water resources. Examples include the Ocala Indian Cave, the Lovelock Indian Cave, Lone Rock, the California Trail, the nearby mercury mines, and various mining camps. There are no recreation areas or resources within the existing B-20. However, the following recreation resources are located near B-20, as shown in Figure 3.12-10 and Figure 3.12-11.

The Navy discusses impacts on geologic sites in Section 3.1 (Geological Resources), impacts on water in Section 3.9 (Water Resources), impacts on biologic sites in Section 3.10 (Biological Resources), and impacts on cultural sites and areas in Section 3.11 (Cultural Resources).

Fallon National Wildlife Refuge: The Fallon National Wildlife Refuge is located southwest of the existing B-20 range. The Fallon National Wildlife Refuge is within the Carson Sink and is northwest of Fallon, Nevada. The USFWS manages the Fallon National Wildlife Refuge as part of the Stillwater National Wildlife Refuge Complex. The FRTC directs pilots to maintain an altitude of no lower than 3,000 feet above ground level (AGL) when flying over the Fallon National Wildlife Refuge (U.S. Department of the Navy, 2011). The Fallon National Wildlife Refuge is open to the public; however, recreational activities are limited to wildlife-related activities. Allowed activities generally include hunting, environmental education, observing, and photographing wildlife. Fishing is not allowed within the refuge. There are no cell phone services or public use facilities at the Refuge, and access to the Refuge is limited to a dirt track. Off-road vehicles that are not street legal cannot be used within the refuge (U.S. Fish and Wildlife Service, 2016b).

Stillwater National Wildlife Refuge: The Stillwater National Wildlife Refuge is located south of B-20 in the Lahontan Valley, near the community of Fallon. The USFWS manages the Stillwater National Wildlife Refuge as part of the Stillwater National Wildlife Refuge Complex, which also includes the Fallon National Wildlife Refuge and Anaho Island National Wildlife Refuge. The FRTC directs pilots to maintain an altitude of no lower than 3,000 feet AGL when overflying the Stillwater National Wildlife Refuge (U.S. Department of the Navy, 2011).

The Stillwater National Wildlife Refuge, also known as the “Oasis in the Desert,” is open to the public for general recreation. However, recreational activities are generally limited to wildlife-related activities that help protect or understand wildlife. Wildlife recreational activities on the Refuge include observing and photographing wildlife, hunting, and environmental education.

The Stillwater National Wildlife Refuge is a popular destination for migratory birds (Neel & Henry, 1996). The Western Hemisphere Shorebird Reserve Network designated the Lahontan Valley as a site of hemispheric importance in 1988. This valley hosts more than 250,000 shorebirds annually and is a popular destination for birders (Western Hemisphere Shorebird Reserve Network, 2018).

Stillwater Range WSA: The Stillwater Range WSA (NV-030-104) is located east of B-20 and west of the DVTA. Making up roughly the center third of the Stillwater Mountain Range, this WSA is 94,607 acres of BLM-administered lands and 619.78 acres of non-federal land. None of the Stillwater Range WSA is considered suitable for wilderness designation (Bureau of Land Management, 2013).

Dixie Valley Training Area: The DVTA is located east of NAS Fallon and north of U.S. Route 50 between the Stillwater and Clan Alpine mountain ranges. The Navy allows access to its “fee owned” lands in the DVTA. The Navy has allowed access to and casual uses on these lands (areas along the Settlement Area including Settlement Road and Horse Creek for activities such as camping, hunting, and fishing in ponds) and would continue to do so into the future. The Navy and the BLM manage the rest of the DVTA jointly; it is open to the public for activities such as hunting, camping, hiking, OHV use, site visits, and grazing. This includes OHV use within joint BLM-managed areas. Both air and ground training activities on the DVTA are restricted due to public safety and environmental concerns. Implementation of the following policies and procedures helps avoid conflict with non-Navy users on open lands:

- Military personnel must submit ground training requests to the NAWDC Range Office 45 days in advance.
- Military personnel should anticipate contact with civilians. Open Navy lands are joint-use with the public. The military has no authority to ask civilians to exit or leave open land areas.
- All personnel shall adhere to posted speed limits. Dirt and gravel road speed limits must be commensurate with road conditions and should not exceed 45 miles per hour.
- Only blank ammunition, smoke, and flares are allowed on any of the open training areas. Flares and other pyrotechnics may be restricted during fire season. Military personnel may not use lasers on open lands.
- Helicopter landings on open lands may occur as long as the landing area avoids disturbing the public (if present).

3.12.2.6.4 Off-Highway Vehicles and Racing

OHV use is allowed under joint BLM management in the DVTA (U.S. Department of the Navy, 2014a). Public land around the DVTA is largely undesignated, which means that this land is managed as open area with unrestricted vehicle use (Bureau of Land Management, 2014). However, motorized travel is restricted to existing routes within the adjacent WSAs.

3.12.2.6.5 Hunting, Trapping, and Fishing

The DVTA is within Hunting Units 182 and 183. NDOW manages Hunting Units 181 through 184 as a single hunting unit for mule deer. Although very little of the existing DVTA overlaps mule deer habitat, there is crucial winter and crucial summer habitat east of the DVTA in the Clan Alpine Mountains (see

Figure 3.12-1). There is also year-round habitat in the Stillwater Mountains and crucial summer habitat around Fox Peak and Table Mountain (see Figure 3.12-1). Although population data is not available for the proposed expansion area, the current population for these hunting units is 1,230 deer (Nevada Department of Wildlife, 2017a).

Bighorn sheep are known to occur in both the Clan Alpine and the Stillwater Mountain Ranges, as shown in Figure 3.12-2. These areas provide year-round habitat for the species. Bighorn sheep are distributed through the south and west sides of the Clan Alpine Range, and there is a large portion of occupied habitat within the proposed expansion area. Reintroduced in 1986, the Clan Alpine population was estimated to be 440 bighorn sheep in 2017 (an all-time high). The following areas are highly used by bighorn sheep within this area (Nevada Department of Wildlife, 2017a):

- from Contact Canyon north to Lucky Boy Canyon in the Sand Springs Range,
- the west side of Slate Mountain,
- from Bell Canyon north to the south end of Fairview peak, on the west side of the mountain, and
- from Mount Anna south to Mount Annie in the Monte Cristo Mountains.

Desert bighorn sheep were re-introduced into the Stillwater Mountains in 1981, and population modeling results are presented from 1981 to 2017. The 2017 population estimate for bighorn sheep in the Stillwater Mountains and East Range is at an all-time high of approximately 430 sheep (Nevada Department of Wildlife, 2017a).

NDOW manages Hunting Units 181 through 184 as a single hunting unit for pronghorn. Pronghorn habitat occurs throughout the DVTA. The NDOW has identified crucial summer habitat for the pronghorn around Fox Peak. This population has steadily increased since 2003 and is currently at 660 pronghorn within these hunting units (Nevada Department of Wildlife, 2017a).

3.12.2.6.6 Other Recreation Resources

There are no additional recreation areas or resources within the existing DVTA. The BLM is currently proposing to create a recreation area for OHVs in the lands around B-17 (Bureau of Land Management, 2014). The Pony Express National Historic Trail is south of the DVTA, along U.S. Route 50. The annual High Desert Classic Endurance Ride occurs within the Stillwater Mountain Range. In May 2017, 80 participants raced.

Additional recreation resources near the DVTA include two ghost towns (Frenchman and Wonder) and the following resources, as shown in Figure 3.12-12 and Figure 3.12-13. The Navy discusses impacts on geologic sites in Section 3.1 (Geological Resources), impacts on water in Section 3.9 (Water Resources), impacts on biologic sites in Section 3.10 (Biological Resources), and impacts on cultural sites and areas in Section 3.11 (Cultural Resources).

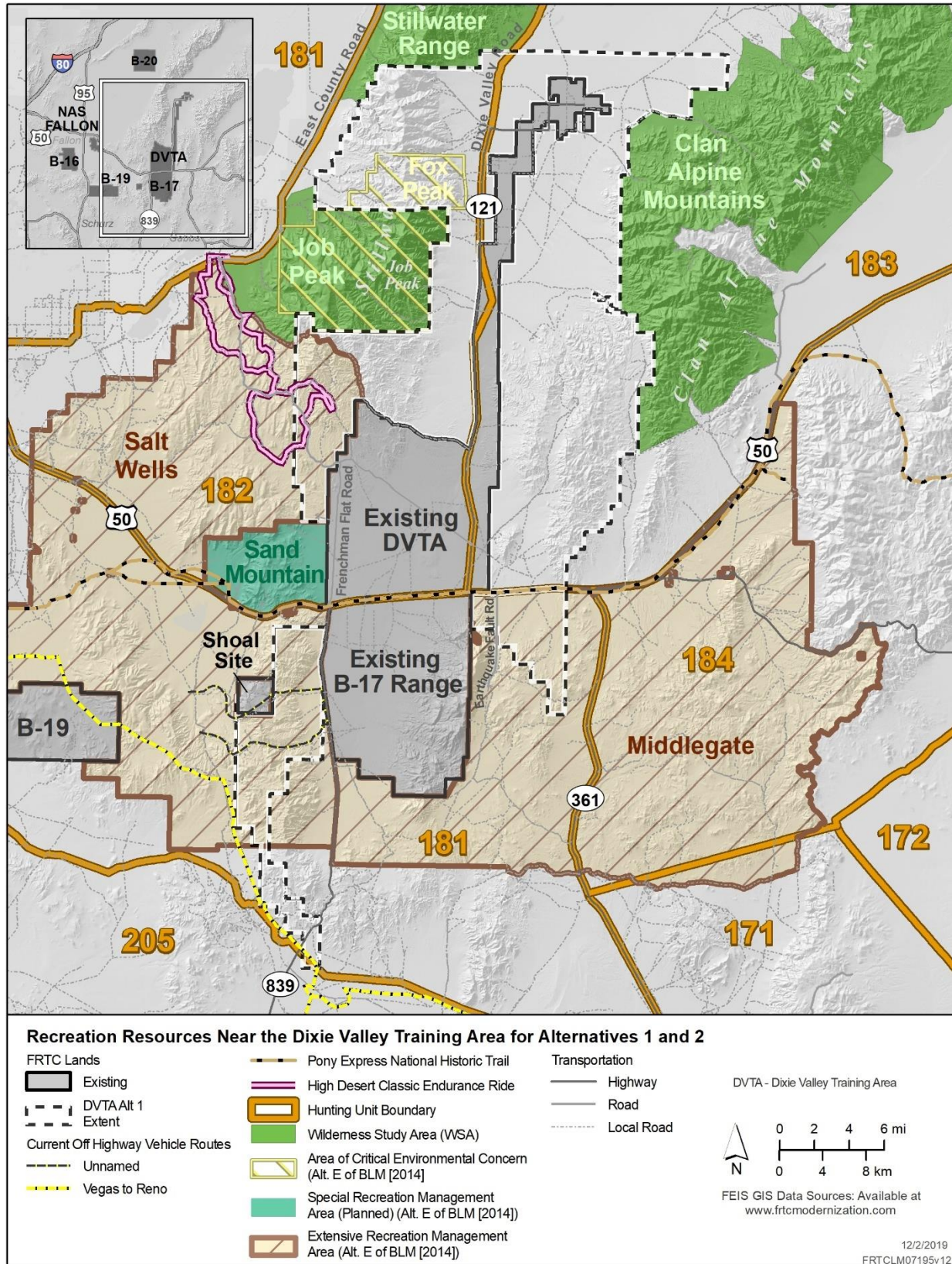


Figure 3.12-12: Recreation Resources Near the Dixie Valley Training Area for Alternatives 1 and 2

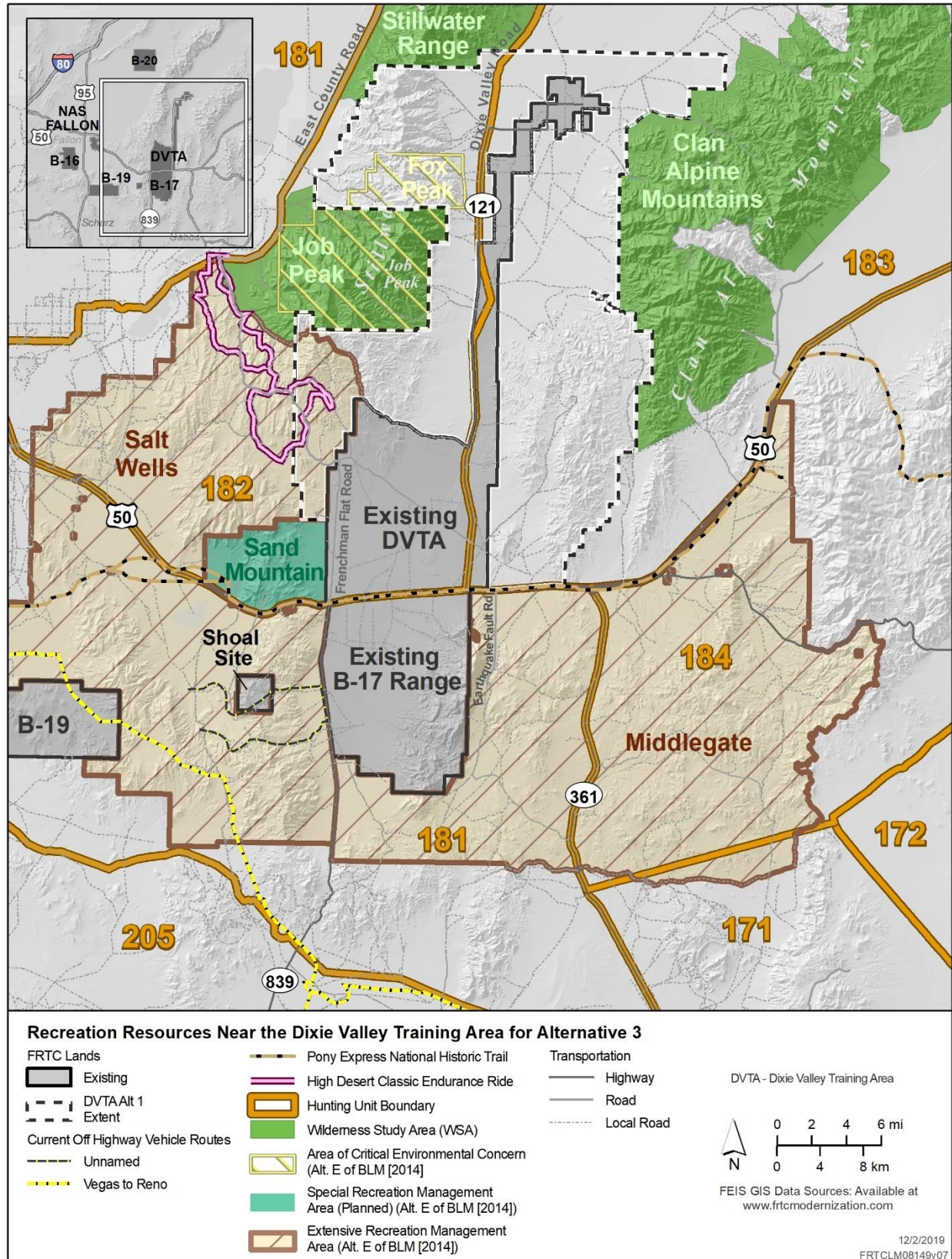


Figure 3.12-13: Recreation Resources Near the Dixie Valley Training Area for Alternative 3

Clan Alpine Mountains WSA: The Clan Alpine Mountains WSA (NVN-030-102) is located east of the DVTA. This WSA is composed of 196,128 acres of BLM-administered lands. Although there are private lands around the periphery of the WSA, there are no non-federal lands within the WSA. The BLM currently recommends the consideration of approximately 68,458 acres of this WSA for wilderness because of its extreme ruggedness, lack of major intrusions, and absence of non-federal inholdings or known mineral reserves. The BLM does not recommend the northern half of the WSA and around the periphery of the WSA to be designated as wilderness habitat (Bureau of Land Management, 2013).

Job Peak WSA: The Job Peak WSA (NV-030-127) is located in Churchill County, north and west of the DVTA. This WSA includes Fox Peak, which is the highest peak in the Stillwater Range. Including roughly the southern third of the Stillwater Mountain Range, this WSA is composed of 90,209 acres of BLM-administered lands. There are no non-federal lands within the WSA. None of the land within the WSA is recommended as suitable for wilderness designation (Bureau of Land Management, 2013).

Sand Mountain Recreation Area: The BLM designated the Sand Mountain Recreation Area almost 20 years ago for OHV use. This area is located 25 miles east of Fallon, north of U.S. Route 50, and west of the DVTA. The recreation area consists of 4,795 acres of BLM-administered land. With its large sand dunes, the recreation area is a popular destination for OHV operators, hikers, and sand boarders (Bureau of Land Management, 2014). Annual visitation at the Sand Mountain Recreation Area currently numbers between 50,000 and 70,000 visitors per year (Bureau of Land Management, 2017). Visitors to the Recreation Area also visit nearby sites, including portions of the Pony Express National Historic Trail, the 1860s Pony Express Station, and the Sand Springs Desert Study Area (Churchill County, 2010).

Since 2007, vehicles have been restricted to approved routes when within vegetated areas of the recreation area (72 Federal Register 12187). These restrictions reduce the route system within the recreation area from an estimated 200 miles to 21.5 miles. The BLM implemented these emergency restrictions to protect the Sand Mountain blue butterfly (*Euphilotes pallescens arenamontana*) and its habitat (76 Federal Register 47123–47133). In its Draft Resource Management Plan, the BLM proposes to increase the Sand Mountain Recreation Area to 19,700 acres, which would include the following BLM resource management zones: dune, desert habitat, trail riding, and mining districts (Bureau of Land Management, 2014).

Stillwater Range WSA: The Stillwater Range WSA (NV-030-104) is located east of B-20 and west of the DVTA. Making up roughly the center third of the Stillwater Mountain Range, this WSA is 94,607 acres of BLM-administered lands and 619.78 acres of non-federal land. None of the Stillwater Range WSA is considered suitable for wilderness designation (Bureau of Land Management, 2013).

3.12.2.7 Special Use Airspace

Recreation occurs on federal and non-federal lands beneath FRTC SUA as shown in Figure 3.12-14. FRTC SUA overlies approximately 10.4 million acres of land, including large portions of Churchill, Lander, and Eureka Counties as well as portions of Pershing, Nye, Mineral, Lyon, and Washoe Counties. The BLM manages the majority of the area under SUA, but it also includes portions of the Humboldt-Toiyabe National Forest, USFWS land, Bureau of Reclamation land, and non-federal land. The Humboldt-Toiyabe National Forest offers a wide variety of outdoor recreational activities, portions of which are open to the public for OHV use and hunting. The area is known for the Toiyabe Crest trail and campgrounds such as Groves Lake, Kingston Canyon, San Juan Canyon, Big Creek Canyon, and Bob Scott campground.

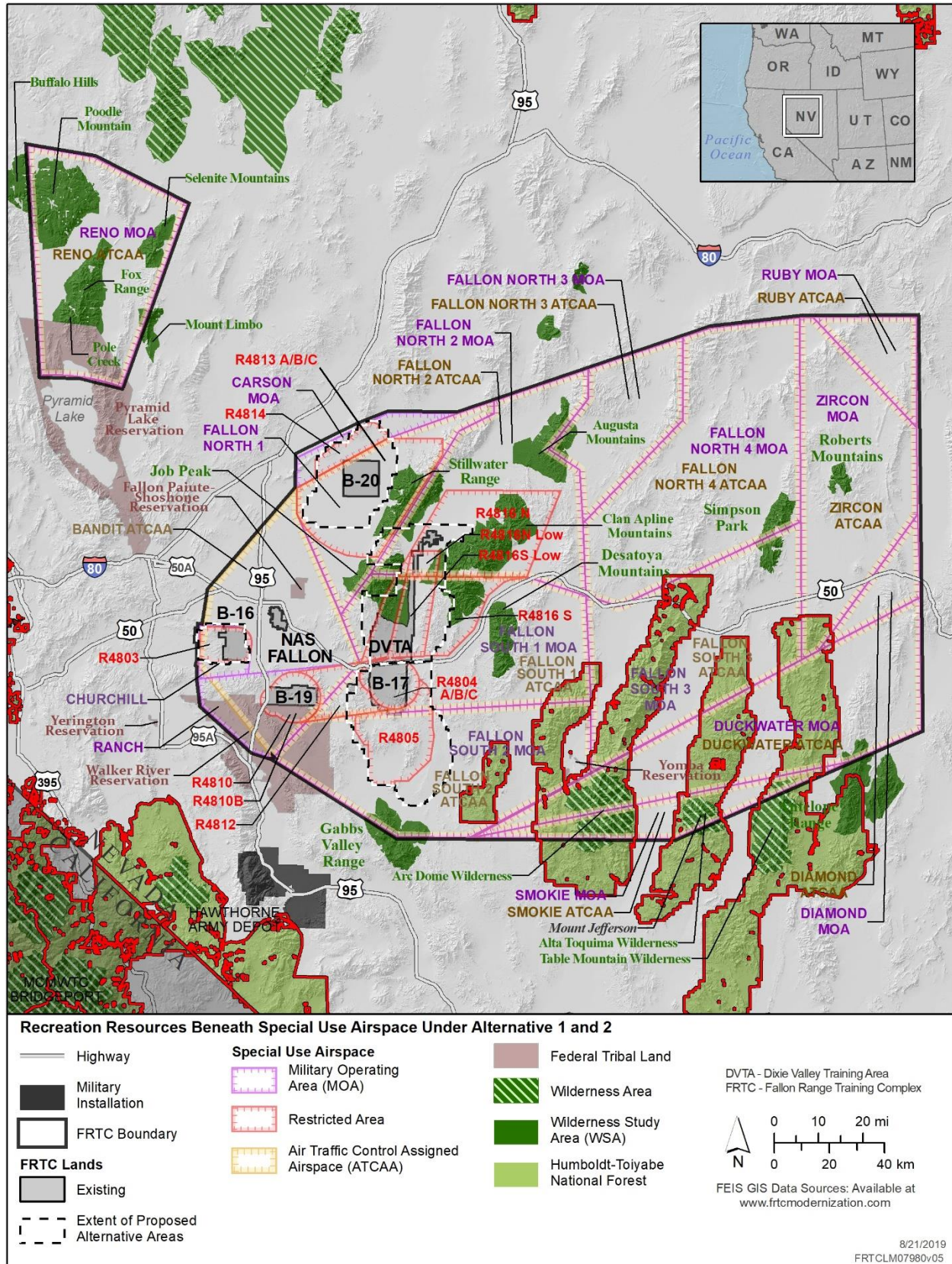


Figure 3.12-14: Recreation Resources Beneath Special Use Airspace Under Alternative 1 and 2

The Humboldt-Toiyabe National Forest includes 23 wilderness areas. FRTC SUA exists over portions of the Arc Dome Wilderness Area (120,556 acres), which is Nevada's largest Wilderness Area, and the Alta Toquima Wilderness Area (35,860 acres), which includes Mount Jefferson, the tallest peak in Nevada, and the Table Mountain Wilderness Area (92,485 acres).

The BLM manages WSAs as wilderness unless there is congressional action to change the designation of these lands. There are 15 WSAs beneath the FRTC current and proposed airspace. They are the Antelope Range, Augusta Mountains, Buffalo Hills, Clan Alpine Mountains, Desatoya Mountains, Fox Range, Gabbs Valley Range, Job Peak, Mount Limbo, Pole Creek, Poodle Mountain, Roberts Mountains, Selenite Mountains, Simpson Park, and Stillwater Range WSAs. FRTC airspace also overlaps portions of the following Indian reservations: Walker River Paiute Indian Reservation, Fallon Paiute-Shoshone Reservation, Pyramid Lake Paiute Reservation, Duckwater Reservation, and Yomba Indian Reservation.

3.12.3 Environmental Consequences

This analysis focuses on potential impacts on recreation arising from movement of training activities, changes of access to withdrawn or acquired land, and construction. Recreation is an interdisciplinary issue, and its aspects intertwine with other environmental topics. Section 3.2 (Land Use) considers the impacts on use of lands with the implementation of the Proposed Action. Section 3.5 (Transportation) discusses impacts on transportation on the ground, including paved roads, trails, and public transit such as trains. Section 3.7 (Noise) addresses human impacts and community noise levels resulting from training noise. Section 3.13 (Socioeconomics) addresses the financial impacts of the Proposed Action in the FRTC and surrounding areas. Section 3.14 (Public Health and Safety and Protection of Children) addresses impacts of the Proposed Action on public health and safety as a result of the implementation of the Proposed Action. These sections inform the Navy's analysis of recreation-related impacts. This section evaluates each proposed alternative's potential effect on recreation within the B-16, B-17, and B-20 ranges, as well as the DVTA. The following provides an analysis of environmental effects of the No Action Alternative and Alternatives 1 through 3 against the environmental baseline as described in Section 2.4 (Environmental Baseline [Current Training Activities]). 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 (see Section 3.12.3.6, Summary of Effects and Conclusions).

3.12.3.1 No Action Alternative

Based on the information presented below, there would be a significant impact on recreation under the No Action Alternative. Under the No Action Alternative, the Proposed Action would not occur, and the current land withdrawal would expire on November 5, 2021. Release of the FRTC lands to another Department of Defense agency, the BLM, or the State of Nevada would likely open currently restricted lands to public use. Prior to potential relinquishment to the BLM or other transfer or disposal, the Navy would identify areas for post-range planning and clean up. Recreational activities would not occur at these ranges during the decontamination process. Assuming the Navy could render these lands safe, meaning the lands requiring cleanup, then those areas could potentially become available to the public for recreational activities (e.g., hiking, camping, birding, hunting, OHV, and other recreation-based activities), following the decontamination process. Land that the Navy cannot render safe for public access would remain off limits to the public. As such, the No Action Alternative could potentially improve access to federal lands and increase outdoor recreation opportunities within the region of

influence in the long-term. Therefore, implementation of the No Action Alternative would have a significant impact on recreation.

3.12.3.2 Alternative 1: Modernization of the Fallon Range Training Complex

Based on the information presented below, there would be a significant impact on recreation under Alternative 1. Under Alternative 1, the Navy requests renewal by Congress of the current public land withdrawal at the FRTC. Under Alternative 1, the Navy would request additional lands for withdrawal and propose to acquire additional non-federal land to be reserved for military use. Meanwhile, although the DVTA would expand under Alternative 1, recreational activities within the expanded DVTA would be similar to existing baseline conditions. However, Congressional withdrawal legislation would remove the WSA designation for portions of the Clan Alpine Mountains, Stillwater Range, and Job Peak and would decrease existing restrictions on recreation in those areas (e.g., restrictions on OHV use), potentially opening them to additional recreational activities in the DVTA.

3.12.3.2.1 Bravo-16

Based on the information presented below, there would be a significant impact on recreation for B-16 under Alternative 1.

Land Withdrawal and Acquisition

Under Alternative 1, the B-16 range would expand to the west by virtue of the Navy withdrawing approximately 32,201 acres of BLM-administered land (see Table 2-1), increasing the range's total area to approximately 59,560 acres. These new lands would be fenced in accordance with all applicable regulations and would restrict all recreational activities from the additional 32,201 acres within the expanded B-16 boundary. The Navy would expand their fence line patrol and maintenance procedures to include fences that are on withdrawn lands. The Navy proposes to establish two Conservation Law Enforcement Officers at NAS Fallon. Part of the duties of these officers would include patrolling of the added fence line for trespass issues and reporting to the Navy any broken or downed fences for maintenance repair. Therefore, there would be a significant impact on recreation because of the withdrawal under Alternative 1.

Training Activities

All training activities would be located within the proposed boundary of B-16. Recreational activities are not compatible within an active weapons danger zone (WDZ) or surface danger zone. The surface danger zone at B-16 would be wholly located within the proposed B-16 boundary. The noise contours from aircraft, munitions, and support vehicles would not extend off range at levels higher than 55 A-weighted decibels (dBA). This operational noise would be commensurate to existing conditions (see Section 3.7, Noise). Visual inspection of aerial maps of the areas within regions where the Day Night Level (DNL) indicates 55 dBA contour reveals no sensitive receptors (e.g., parks, camping areas, wilderness areas) or inconsistency with current land use. Training activities would not change in type or tempo under Alternative 1. Therefore, training activities at B-16 would not significantly impact recreation.

Public Accessibility

Alternative 1 would close and restrict an additional 32,201 acres within the expanded B-16 range from public use except for Navy-authorized activities (e.g., ceremonial visits; cultural site visits; research/academic pursuits; or regulatory or management activities, such as BLM or NDOW activities). The Navy would not allow recreational activities and would install fencing and signage warning the public of the closure within the proposed closed areas of B-16.

If implementation of Alternative 1 occurred, all current and proposed OHV use would stop in the proposed B-16 range. Although the OHV data collection found a maximum count for all locations in the requested B-16 withdrawal area to be 165 vehicles, count data was sporadic, with counts of zero collected on multiple days at most locations. Counts increased during upland species hunting season in Nevada (see Supporting Study: Transportation/Traffic Study for the Fallon Range Training Complex, available at <https://frtcmodernization.com>). Implementing Alternative 1 would prevent access to areas west of B-16, which have historically been used by OHVs and for off-road racing, events, and hunting. Therefore, expanding B-16 would significantly impact public access to the area west of the existing B-16 for OHV racing and hunting.

Implementing Alternative 1 would also close the northern portion of B-16 that is currently withdrawn but open to the public for recreation, which would include closing Sand Canyon Road within B-16 (see Figure 3.12-4). The public uses Sand Canyon Road to access the proposed Dead Camel Mountains Special Recreation Management Areas and the Lahontan Reservoir. Closing Sand Canyon Road would not prevent access to open areas within the proposed Dead Camel Mountains Special Recreation Management Areas or to the Lahontan Reservoir, because these areas would still be accessible by other roads. Alternative 1 would also close the Salt Caves from public access except for ceremonial visits, cultural site visits, or research/academic purposes. The land requested for withdrawal would not overlap or affect public access to the Pony Express National Historic Trail, which would remain open south of B-16.

The area that the Navy would withdraw for B-16 is not known to be a popular hunting area. Public exclusion would likely have positive and negative impacts on any game species that may occur within this area. Removal of hunting pressure would likely increase numbers of game species. However, hunting activities provide an ecological service, particularly when managed with NDOW tag limits, in facilitating long-term population health. Although perimeter fencing would include a larger area than current baseline conditions, fencing would be designed to allow large game species (e.g., pronghorn, mule deer, bighorn sheep) to jump over or crawl under the fence and smaller game species (e.g., chukar, rabbits) to fit between or below the wires. The Navy would also incrementally remove the existing interior fencing within the withdrawal area, which would decrease the fragmentation of habitat. Although this would decrease the impact of habitat fragmentation to hunting on adjacent lands, the expanded land in the B-16 withdrawal area would still be lost to hunting activities. Therefore, expanding B-16 would significantly impact hunting.

Road and Infrastructure Improvements to Support Alternative 1

Proposed Dead Camel Mountains Special Recreation Management Areas

Alternative 1 includes the planning for alternative routes to provide public access to the proposed Dead Camel Mountains Special Recreation Management Areas. The BLM and Navy would continue to coordinate on recreation opportunities that may be impacted and conduct alternative route planning and follow-on, site-specific National Environmental Policy Act (NEPA) would be conducted.

Construction

The Navy analyzed existing fencing in the *Environmental Assessment for the Proposed Addition of Training Activities and Range Enhancements at NAS Fallon on Training Range Bravo-16, Churchill County, Nevada*, September 2014 (U.S. Department of the Navy, 2014b). BLM-approved four-strand fencing would be installed under this alternative and join with existing fencing and other new proposed fencing around the withdrawn or acquired lands. Since the proposed construction activities would occur within the B-16 range, where public access would be restricted, these activities would not significantly impact recreation. Any proposed fencing and maintenance roads would be evaluated further in follow-on NEPA documentation after any ultimate Congressional decision is made.

3.12.3.2.2 Bravo-17

Based on the information presented below, there would be a significant impact on recreation for B-17 under Alternative 1.

Land Withdrawal and Acquisition

Under Alternative 1, approximately 178,013 acres (176,977 acres of BLM-administered lands and 1,036 acres of non-federally owned land) would be withdrawn or acquired to expand the B-17 range to the south (see Table 2-1), increasing its total area to approximately 232,799 acres. These new lands would be fenced in accordance with all applicable regulations and would remove recreational activities from B-17. The Navy would expand their fence line patrol and maintenance procedures to include fences that are on withdrawn lands. The Navy proposes to establish two Conservation Law Enforcement Officers at NAS Fallon. Part of the duties of these officers would include patrolling of the added fence line for trespass issues and reporting to the Navy any broken or downed fences for maintenance repair. Therefore, there would be a significant impact on recreation because of the withdrawal and acquisition under Alternative 1.

Training Activities

All training activities would be located within the proposed boundary of B-17 (with the exception of aircraft passing over the range), and the public would not be able to access B-17. The public may observe and hear aircraft, munitions, and support vehicles from adjacent areas during training activities. However, these activities are currently occurring within B-17 and would not increase in frequency under Alternative 1. Noise from training exercises could startle or disturb recreationists and game species in the area, however, noise from training activities would be largely contained within the proposed boundary of B-17, with noise contours of 55 dBA DNL extending south from the proposed boundary at the noise contours' furthest point in Nye County (see Section 3.7, Noise). Therefore, training activities at B-17 would not significantly impact recreation.

Public Accessibility

Under Alternative 1, the entire B-17 range would be closed and restricted from public use, except for Navy-authorized activities such as ceremonial or cultural site visits, and management activities. The Navy would not allow recreational activities within the proposed boundary of B-17, which would be fenced and closed for public safety with signage installed to warn the public of the closure. Navy policy does not allow anyone within a WDZ when a range is in active use. The Navy also does not allow members of the public in a non-operational WDZ without prior clearance and coordination.

Implementing Alternative 1 would prevent public access to Fairview Peak and Sand Springs Range, which would no longer be accessible by the public for recreational purposes. This would affect wildlife hunters, hikers, OHV operators, rock collectors, and other recreationists who visit the area. The OHV data collection found a maximum count for all locations at B-17 of 119 vehicles. The counts on B-17 were more regular than at other locations during the count period, which suggests recurring vehicle traffic near B-17. Counts increased during upland species hunting season in Nevada (see Supporting Study: Transportation/Traffic Study for the Fallon Range Training Complex, available at <https://frtcmodernization.com>). As such, closing access to Fairview Peak and portions of the Sand Springs Range would be a significant impact on recreation and OHV users.

The Pony Express National Historic Trail parallels U.S. Route 50 through B-17. Alternative 1 would not affect public access to this trail system. All improvements at B-17 would be south of this trail system. Therefore, the Pony Express National Historic Trail would not be affected by the expansion of B-17.

Alternative 1 would prevent access to trail systems historically used by the Vegas to Reno Race and the Valley Off-Road Racing Association Fallon circuits. Expanding B-17 under Alternative 1 would significantly impact these popular races. Race operators would be required to select alternate paths that avoid B-17.

The requested withdrawal area includes habitat for bighorn sheep, mule deer, and pronghorn. This includes wintering lambing habitat for bighorn sheep within and along the existing perimeter of B-17 and crucial summer habitat for the pronghorn in the eastern portion of the requested withdrawal. Road closures east of Fairview Peak and Slate Mountain would have a long-term effect on the public's ability to access these areas for wildlife-related activities (e.g., hunting and viewing). The Navy would no longer allow hunting within B-17, which includes cancelling the Navy's annual bighorn sheep hunt. Therefore, expanding B-17 under Alternative 1 would significantly impact hunting.

The NDOW would continue maintaining wildlife guzzlers with the coordination of the Navy within range or training areas. In addition, although perimeter fencing would include a larger area than current baseline conditions, fencing would be designed to allow large game species (e.g., pronghorn, mule deer, bighorn sheep) to jump over or crawl under the fence and smaller game species (e.g., chukar, rabbits) to fit between or below the wires. The Navy would also incrementally remove the existing interior fencing within the withdrawal area, which would decrease the fragmentation of habitat.

Indirectly, this alternative could also affect other recreation areas within the region, due to the closing of portions of the Salt Wells and Middlegate Recreation areas, as the public shifts activities to those areas. This may lead to an increase in recreationists at those areas, including at the Sand Mountain recreation area or at nearby hunting grounds. Annual visitation at the Sand Mountain recreation area currently numbers between 50,000 and 70,000 visitors per year (Bureau of Land Management, 2017).

Construction

Since the proposed construction activities would occur within the B-17 range where public access is restricted, these activities would not significantly impact public recreation. Any proposed fencing and maintenance roads would be evaluated further in follow-on NEPA documentation after any ultimate Congressional decision is made.

Road and Infrastructure Improvements to Support Alternative 1

State Route 839

Alternative 1 includes the potential relocation of State Route 839. State Route 839 has an average count of 40 vehicles per day as of 2015. The Navy, which uses State Route 839 to access B-17, is the primary user of this road (see Supporting Study: Transportation/Traffic Study for the Fallon Range Training Complex, available at <https://frtcmodernization.com>). In addition to providing access to the Rawhide-Denton Mine, State Route 839 also allows hunters and other recreationists to access the eastern slope of the Sand Springs Range. Using funding provided by the Navy, the Federal Highway Administration, in cooperation with the Nevada Department of Transportation, would be responsible for planning, designing, permitting, and constructing any realignment of State Route 839. The Navy has submitted a Needs Report to the Surface Deployment and Distribution Command requesting authority to utilize funding through the Defense Access Roads program. If approved, the Navy would coordinate construction execution through the Federal Highway Administration. NDOT would ensure that construction of any new route is complete before closing any portion of the existing State Route 839, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing State Route 839 unless and until any such new route has been completed and made available to the public.

Paiute Pipeline

Alternative 1 includes the potential relocation of a segment of the Paiute Pipeline outside of the B-17 WDZ. The Navy would purchase the impacted portion of the Paiute Pipeline and then would pay for relocation of the existing Paiute Pipeline south of the proposed B-17 range. Using funding provided by the Navy, the Paiute Pipeline Company would be responsible for planning, designing, permitting, funding, and constructing any realignment of the pipeline. A ROW application submitted to the BLM by the pipeline owner would formally identify any proposed reroute. Site-specific environmental analysis and NEPA planning would be required before any potential relocation of the pipeline could occur, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing pipeline unless and until any such re-routing of the pipeline has been completed and made available to the pipeline owner. The BLM would have decision authority with respect to any proposed final routing subsequent to completion of site-specific environmental analysis.

3.12.3.2.3 Bravo-20

Based on the information presented below, there would be a significant impact on recreation for B-20 under Alternative 1.

Land Withdrawal and Acquisition

B-20 would expand in all directions, growing by approximately 180,329 acres (see Table 2-1) and increasing in total size to approximately 221,334 acres. This expansion includes approximately 3,200 acres of land currently withdrawn by the USFWS as a portion of the Fallon National Wildlife Refuge. The Navy is not proposing to develop targets in the refuge. Due to the safety concerns associated with being within a WDZ, the Navy and the USFWS would close the withdrawn refuge lands to the public. The USFWS would continue to manage the land under a Memorandum of Understanding (MOU) with the Navy once terms of the MOU were reached. However, the USFWS would undergo a public planning process to revise the Stillwater National Wildlife Refuge Complex Comprehensive

Conservation Plan and associated compatibility determinations, consistent with the National Wildlife Refuge System Administrative Act, as amended (16 U.S.C. 668dd–668ee).

The new lands requested for withdrawal and proposed for acquisition would be fenced in accordance with all applicable regulations and would remove recreational activities from B-20. The Navy would expand their fence line patrol and maintenance procedures to include fences that are on withdrawn lands. The Navy proposes to establish two Conservation Law Enforcement Officers at NAS Fallon. Part of the duties of these officers would include patrolling of the added fence line for trespass issues and reporting to the Navy any broken or downed fences for maintenance repair. Therefore, there would be a significant impact on recreation because of the withdrawal or acquisition under Alternative 1.

Training Activities

All training activities would be located within the proposed boundary of B-20, and the public would not be able to access the training areas. Under Alternative 1, the peak noise levels from air gunnery operations would not extend past the proposed expanded B-20 boundaries. Noise from training operations at B-20 including noise contours of 65 dB DNL and below would extend northeast and south west of the range for air activities. Noise from training exercises could startle or disturb recreationists and game species in the area. The public may observe and hear aircraft, munitions, and support vehicles from adjacent areas during training activities. However, these activities are currently occurring within B-20, and these activities would not increase in frequency under Alternative 1. Therefore, training activities at the expanded B-20 would not significantly impact recreational activities adjacent to the range because they would be intermittent and of low intensity.

Public Accessibility

Under Alternative 1, the B-20 withdrawn or acquired lands would be closed and restricted from public use, except for Navy-authorized activities such as ceremonial or cultural site visits, or regulatory or management activities (e.g., BLM, NDOW, or USFWS activities). The Navy would not allow recreational activities within the proposed closed portions of B-20, which would be fenced and closed for public safety. Navy policy does not allow anyone within a WDZ when a range is in active use. The Navy also does not allow members of the public into a non-operational WDZ without prior clearance and coordination. This area would also include fencing and signage warning the public it cannot enter this area.

Implementing Alternative 1 would prevent public access to the northeast portion of the Fallon National Wildlife Refuge. For purposes of public safety, the perimeter of B-20 would be fenced off within the Fallon National Wildlife Refuge. The B-20 boundary would expand south to the northern perimeter of the Stillwater National Wildlife Refuge, and it would include 3,200 acres of the Fallon National Wildlife Refuge (18 percent) as well as adjoining Lyon County Conservation Easements (1,920 acres). The Navy and the USFWS would prepare an MOU for the management of those portions of the Fallon National Wildlife Refuge that would be within B-20; however, the land would still be maintained as it currently is under the refuge. The area being fenced off within the Refuge has little recreation opportunity currently because it is a remote area that is not readily accessible by the public. Under Alternative 1, public access to the West Humboldt Range would be restricted to access from the west and north of the range, which could impact recreation for users that normally would access the area from the east or south for recreation or cultural visits. Hunters wouldn't be able to access the east slope of the West Humboldt Range, including Wild Horse Pass and Wild Horse Spring.

East County Road overlaps portions of the proposed eastern boundary of B-20. East County Road and the area east of East County Road that overlaps B-20 would remain open. Therefore, the requested withdrawal would not affect the public's ability to access the Stillwater National Wildlife Refuge or the western slope of the Stillwater Mountains. Therefore, expanding B-20 would not significantly impact public access for recreation.

Alternative 1 would place gates across the Navy's access road to B-20 (locally known as "Pole Line Road"), effectively closing this road to the public. This east/west unpaved road passes to the north of the existing B-20 in northern Churchill County and provides access for B-20 maintenance. Although this road is occasionally used by hunters and other recreationists (see Supporting Study: Transportation/Traffic Study for the Fallon Range Training Complex, available at <https://frtcmodernization.com>), the Navy is the only authorized user of this road. Installation of gates would prevent any further incidental use of this road by the public.

Public exclusion would likely have positive and negative impacts on any game species that may occur within this area. Removal of hunting pressure would likely increase numbers of game species. However, hunting activities provide an ecological service, particularly when managed with NDOW tag limits, in facilitating long-term population health. Although perimeter fencing would include a larger area than current baseline conditions, fencing would be designed to allow large game species (e.g., pronghorn, mule deer, bighorn sheep) to jump over or crawl under the fence and smaller game species (e.g., chukar, rabbits) to fit between or below the wires. Hunters could also access the area that the Navy's access road to B-20 led to via the East County road and OHVs on the east side of B-20. Therefore, expanding B-20 would not significantly impact hunting.

Construction

Since the proposed construction activities would occur within the expanded B-20 range where public access is restricted, these activities would not significantly impact public recreation. Any proposed fencing and maintenance roads would be evaluated further in follow-on NEPA documentation after any ultimate Congressional decision is made.

3.12.3.2.4 Dixie Valley Training Area

Based on the information presented below, there would not be a significant impact on recreation in the DVTA under Alternative 1. With regard to natural resources management and recreation, including hunting, the BLM and the Navy would jointly manage the DVTA via the Integrated Natural Resources Management Plan, per the Sikes Act, and OPNAVINST 5090.

Land Withdrawal and Acquisition

Under Alternative 1, the DVTA would expand in all directions by approximately 293,343 acres (see Table 2-1), increasing its total size to approximately 370,903 acres. The proposed expansion overlaps portions of the Clan Alpine Mountain WSA, the Job Peak WSA, the Stillwater Range WSA, and the BLM-proposed Fox Peak Area of Critical Environmental Concern (ACEC) (proposed under Alternative E of the *Carson City District Draft Resource Management Plan*). Under Alternative 1, Congressional withdrawal legislation would remove the WSA designation from those portions of the WSAs that would be withdrawn as the DVTA: Stillwater Range WSA (approximately 10,951 acres [12 percent]), Jobs Peak WSA (approximately 41,680 acres [47 percent]), and Clan Alpine Mountains WSA (approximately 22,324 acres [11 percent]) within the DVTA.

Alternative 1 recommends removing a portion of the proposed Fox Peak ACEC designation described in the *Carson City Draft Resource Management Plan 2014* (Preferred Alternative E) within the DVTA. The BLM would continue managing the remaining portions of the WSAs. In an evaluation of the Stillwater Range WSA, the BLM determined that the Stillwater Range WSA no longer contains wilderness characteristics. A change to the WSA designation would presumably be accomplished through any ultimate Congressional withdrawal legislation. Lands that are acquired through Congressional Decision in the DVTA would be open for public use in the same manner as the rest of the DVTA area. Therefore, there would be no significant impact on recreation because of the withdrawal or acquisition under Alternative 1.

Training Activities

Training activities would expand within the proposed DVTA boundary into areas where they have not previously occurred. The public may observe and hear aircraft and support vehicles during training activities within this area. Noise from training exercises could startle or disturb recreationists and game species in the area. Noise from training operations in the DVTA would not change significantly from the baseline contours in the training area. These contours are from airspace use only and the highest-level contour in the DVTA would be at 65 dBA DNL in the northeastern corner of the DVTA (see Section 3.7, Noise). The BLM would manage public recreation activities within the DVTA.

The Navy would minimize impacts of training on the public by following Navy policies and procedures that restrict training activities on the DVTA because of public safety and environmental concerns. For example, the Navy's safety measures include standard operating procedures designed to avoid or minimize civilian exposure to training activities within the DVTA (which are not live fire). If the public enters a training area within the open land areas of the DVTA while a training event is underway, the training would temporarily cease or move elsewhere while the public is in or transits the training area. In addition, removing the designation of the withdrawn portions of the WSAs would open up the areas for ground training activities in the DVTA.

Public Accessibility

Allowable public uses of the DVTA would not change from current conditions under Alternative 1 except within the de-designated withdrawn portions of the WSAs, and mineral resource exploration and development. A change to the WSA designation would presumably be accomplished through any ultimate Congressional decision withdrawal legislation. The Navy, through the BLM, would allow existing recreational activities to continue within the DVTA. Alternative 1 does not include installing perimeter fencing around the DVTA; however, fencing would be installed around the perimeter of the three proposed electronic warfare sites (up to 15 acres total) (see Figure 2-5), which would prevent the public from entering these areas. The 11-Mile Canyon Electronic Warfare Site would be located in the Stillwater Mountains south of the Jobs Peak WSA. The Fairview Low Electronic Warfare Site would be located east of the Fairview Mountains and Earthquake Road. Meanwhile, the North Job Peak Electronic Warfare Site would be located at Fox Peak. The public would continue to have access to the remainder of the DVTA for public recreation, including hunting, camping, hiking, and OHV use. In addition, removing the designation of the withdrawn portions of the WSAs could potentially open up recreation restrictions on approximately 74,955 acres. Under this alternative, mineral resource exploration or development would not be allowed within the DVTA, which may benefit public recreation because these activities are generally incompatible with outdoor recreation. Therefore, expanding the DVTA would not significantly impact public access for recreation in the DVTA.

Construction

Under Alternative 1, construction activities at the DVTA would include constructing three Electronic Warfare sites: North Job Peak, 11-Mile Canyon, and Fairview Low (see Figure 2-1). Each site would be located on a small (up to five acres) flat parcel of land to minimize soil disturbance and grading activities. The Navy would fence each Electronic Warfare site with 8-foot chain link fencing and a 16-foot swing gate. A mobile emitter would be placed at each site to minimize the amount of construction necessary (see Figure 2-6). The Navy would use existing trails and roads to transport construction materials to the new Electronic Warfare sites and provide service access. These activities would be intermittent and temporary, therefore, any impact on recreation from construction would be less than significant.

3.12.3.2.5 Special Use Airspace

Based on the information presented below, there would not be a significant impact on recreation in or under SUA under Alternative 1. Restricted airspace (R-) that would change to surface levels include R-4805A, R-4816S (Low), and R-4816N (Low) (see Figure 3.6-1 for locations of restricted airspace). Other restricted areas that are already to the surface include R-4810, R-4812 and R-4813A (see Figure 3.6-1). These areas overlap with recreational resources such as the Stillwater Range WSA, the Clan Alpine Mountains WSA, and the special land management overlay over the Sand Springs Range. The Navy has been performing aircraft maneuvers in the region of influence for over 70 years. Under Alternative 1, the Navy proposes to expand its existing SUA and reconfigure existing airspace to address current training constraints (see Figure 3.12-14). Alternative 1 would not increase military operations within the region; however, it would reconfigure WDZs and SUA over the proposed bombing ranges within the FRTC. The WDZs for the FRTC Bravo ranges would be wholly located within their respective expanded range boundaries or respective new range boundaries.

FAA and Navy policy requires that the Navy control the land under restricted SUA (i.e., area of armed overflight). Existing restricted SUA would be reconfigured over the proposed expanded ranges. The Navy would not allow recreational activities within the SUA over bombing ranges under this alternative. There would be no change to the restricted airspace over B-19 or between B-17 and B-19. NAS Fallon and the Walker River Paiute Tribe under SUA between B-17 and B-19 recently signed a Memorandum of Agreement regarding operational changes to reduce the risk of off-range ordnance and to provide access for the Navy to the reservation lands to conduct sweeps.

Military Operations Areas provide the minimum SUA for the safe maneuvering of aircraft on the FRTC. The Navy would avoid population centers and noise-sensitive areas by 3,000 feet AGL, as per current Navy and FAA regulations. The Navy recommendation regarding land compatibility uses and noise, is that noise levels above 65 dBA DNL are generally incompatible with recreational activities. Section 3.7 (Noise) shows the areas on the noise maps where noise contours are greater than 65 dBA DNL. These areas are generally contained on all of the ranges.

The 65 dBA contour extends past the range boundaries on the northeast, and on the southwest sides of B-20. Lands to the northeast and southwest of B-20 are a mixture of privately-owned parcels, or BLM-managed lands, none of which are currently developed. The Stillwater Range WSA is immediately to the east of B-20, but the 65-dBA contour does not extend to the WSA boundary. In addition, although Military Operations Areas (MOAs) would be changed, and in some cases lowered, over other existing WSAs and national wildlife refuges (see Figure 3.12-14), the FAA requests that pilots maintain a minimum of 3,000 feet AGL above wilderness areas and national wildlife refuges (Federal Aviation Administration, 2017). OPNAVINST 3710.7 (series) says that these areas “shall be avoided when at

altitudes of less than 3,000 feet AGL except when in compliance with an approved: (1) traffic or approach pattern, (2) VR or IR, (3) SUA.” This policy further states, “Noise sensitive areas shall be avoided in the development of instrument routes and visual routes and additional SUA unless the 3,000-foot criteria can be observed.”

Under the Reno MOA and Air Traffic Control Assigned Airspace, which overlap with the Pyramid Lake Paiute Reservation and the northern part of Pyramid Lake, the noise levels are projected to be less than 35 dBA, which is lower than the 65-dBA recommendation. Therefore, recreational activities would not be impacted under the military training route over Pyramid Lake, and visitation to the lake should not change (see Tables 3.7-7, 3.7-9, and 3.7-10). In other areas under airspace, the noise data show a slight increase for some sensitive receptors during daytime events where a recreationist may experience outdoor speech interference. But the most notable interference would be near the town of Gabbs and in the eastern portions of the FRTC SUA (see Section 3.7.3.2.9, Effects on Recreation).

Wildfires could potentially affect recreation activities under FRTC airspace. However, as described in in Section 3.14 (Public Health and Safety and Protection of Children), there would be no change to the current use of chaff and flares within SUA. The Navy would continue to use minimum flare release heights that rise to 2,000 feet AGL during the annual fire season (typically between May and October of each year) to prevent wildfire occurrence, and the Navy is also actively developing a new Wildland Fire Management Plan, as discussed further in Section 3.14 (Public Health and Safety and Protection of Children), to manage any changes to the FRTC.

3.12.3.2.6 Summary of Effects and Conclusions

Under Alternative 1, the Navy would expand B-16, B-17, B-20, and the DVTA, and the public would have either no access or limited access to approximately 477,551 acres of existing open federal land. This land withdrawal would impact 0.51 percent of the lands administered by the BLM Humboldt River Field Office, 0.11 percent of the lands administered by the BLM Sierra Front Field Office, and 11.7 percent of the lands administered by the BLM Stillwater Field Office. Of note, the lands impacted by the withdrawal would not all be closed to the public as they would be part of the DVTA, which would remain open for public recreation. Alternative 1 includes areas that would be closed and restricted from public use except for Navy-authorized activities (e.g., ceremonial visits; cultural site visits; research/academic pursuits; or regulatory or management activities, such as BLM or NDOW activities). All closed areas would be fenced and include signage to discourage public access. Alternative 1 also includes Congress removing the designation of WSAs in withdrawn portions of the Clan Alpine Mountains (approximately 22,324 acres [11 percent]), Job Peak (approximately 41,680 acres [47 percent]), and Stillwater Range (approximately 10,951 acres [12 percent]) WSAs, potentially opening these areas found in the DVTA to new types of recreational activities (e.g., OHV use [which is already allowed on established trails]). A change to the WSA designation would presumably be accomplished through any ultimate Congressional decision withdrawal legislation. Alternative 1 would close public access to 3,200 acres of the Fallon National Wildlife Refuge and 1,920 acres of adjacent Lyon County Conservation Easements. This alternative would also require the partial relocation of popular racing events, including the Vegas to Reno, to avoid the range areas. In addition, the public would no longer have access to popular hunting areas within Sand Springs and around Fairview Peak under this alternative. Therefore, implementation of Alternative 1 would have significant impacts on recreation.

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

Based on the information presented below, there would be a significant impact on recreation under Alternative 2. Under Alternative 2, the Navy would renew its current public land withdrawal at the FRTC. The Navy would also withdraw or acquire additional land to be reserved for military use, as described under Alternative 1. Alternative 2 would close public access to 513,693 acres for the expansion of B-16, B-17, and B-20 but would allow certain uses when the ranges are not in operation, with prior coordination (see Table 2-5). Meanwhile, recreational activities within the DVTA would be similar to existing baseline conditions. However, Congressional legislation would remove the designation of withdrawn portions of the Clan Alpine Mountains, Stillwater Range, and Job Peak WSAs, with the expansion of the DVTA, and this change would decrease existing restrictions on recreation in those areas (e.g., OHV use [which is already allowed on established trails]). A change to the WSA designation would presumably be accomplished through any ultimate Congressional decision withdrawal legislation.

3.12.3.3.1 Bravo-16

Based on the information presented below, there would be a significant impact on recreation for B-16 under Alternative 2.

Land Withdrawal and Acquisition

Alternative 2 would have the same withdrawals as proposed in Alternative 1. Therefore, as discussed under Alternative 1, there would be a significant impact on recreation because of the withdrawal under Alternative 2.

Training Activities

Under Alternative 2, there would be no change to tempo or type of training activities at B-16, but training activities would occur in new areas. Therefore, as discussed under Alternative 1, there would be no significant impact on recreation as a result of training activities under Alternative 2.

Public Accessibility

Expanding B-16 under Alternative 2 would have similar impacts on recreation as those of Alternative 1 (Section 3.12.3.2.1). As discussed under Alternative 1, hunting would not be allowed in the expanded B-16 range area. Implementing Alternative 2 would prevent access to areas west of B-16, which have historically been used by OHVs and for off-road racing, events, and hunting. Therefore, expanding B-16 would significantly impact public access to the area west of B-16 for OHV racing and hunting.

With the exception of Simpson Road and that portion of B-16 south of Simpson Road, the perimeter of B-16 would be fenced in its entirety and closed for public safety. The Navy would install the same perimeter fence as proposed under Alternative 1 to prevent public access to the bombing range. However, the Navy would permit certain race events (i.e., Reno to Vegas) to continue within B-16 under this alternative. The Navy and the BLM would coordinate the permitting and scheduling of these events. The Navy and either the BLM or the State of Nevada would jointly manage these races in accordance with an MOU. The Navy would clear race routes of potential safety hazards prior to these events. A range sweep would be conducted prior to the race or event, using government-provided ground transportation. After all race participants have exited the restricted area on Navy property, the Navy would conduct a final sweep with the designated race or event officials. As such, this alternative would reduce impacts on the racing community that uses B-16 compared to Alternative 1. Impacts from proposed construction and training activities within B-16 under this alternative would be the same as

under Alternative 1 (Section 3.12.3.2.1). Racing events would occur only when the range is not operational. Therefore, expanding B-16 would significantly impact public access for recreation on B-16, under Alternative 2.

Road and Infrastructure Improvements to Support Alternative 2

Proposed Dead Camel Mountains Special Recreation Management Areas

Like Alternative 1, Alternative 2 includes the planning for alternative routes to provide public access to the proposed Dead Camel Mountains Special Recreation Management Areas. The BLM and Navy would continue to coordinate on recreation opportunities that may be impacted and conduct alternative route planning and follow-on, site-specific NEPA would be conducted.

Construction

Construction activities proposed under Alternative 2 would be the same as those proposed under Alternative 1. Therefore, as discussed under Alternative 1, there would be no significant impact on recreation as a result of construction under Alternative 2.

3.12.3.3.2 Bravo-17

Based on the information presented below, there would be a significant impact on recreation for B-17 under Alternative 2.

Land Withdrawal and Acquisition

Alternative 2 would have the same withdrawals or acquisitions as requested and proposed in Alternative 1. Therefore, as discussed under Alternative 1, there would be a significant impact on recreation because of the withdrawal and acquisition under Alternative 2.

Training Activities

Under Alternative 2, there would be no change to tempo or type of training activities at B-17, but training activities would occur in new areas. Therefore, there would be no significant impact on recreation as a result of training activities under Alternative 2.

Public Accessibility

As with Alternative 1, the Navy would install a perimeter fence that would prevent public access to the expanded bombing range. Although the Navy would prohibit OHV use, it would continue to allow certain races, including the Vegas to Reno Race, which would occur in the southern portion of B-17. The Navy and the BLM would coordinate the permitting and scheduling of these events. The Navy and either the BLM or the State of Nevada would jointly manage these races in accordance with an MOU. The Navy would clear race routes of unexploded ordnance and other potential safety hazards prior to these events. A range sweep would be conducted prior to the race or event, using government-provided ground transportation. After all race participants have exited the restricted area on Navy property, the Navy would conduct a final sweep with the designated race or event officials. As such, this alternative reduces impacts on the racing community that currently uses B-17 compared to Alternative 1.

The Governor's Alternative, discussed in Section 2.5.7 (Governor's Alternative ["Nevada Alternative"]), and other scoping comments were considered during the creation of Alternative 2 to allow more access to the ranges. Portions of the Fairview Peak, Slate Mountain are currently within the B-17 withdrawal. The Sand Springs Range, the Monte Cristo Mountains, the rest of the Fairview Peak, and Slate Mountain

areas outside of the current B-17 withdrawal are popular hunting areas. Alternative 2 reduces impacts on hunting by allowing limited hunting on B-17.

The proposed hunt program would be limited to hunting bighorn sheep because of projected mission constraints on access and safety concerns. Bighorn sheep hunting would be compatible with operations on designated portions of B-17 due to bighorn sheep use of remote habitat, low tag number, and the fall/winter hunting season. Hunting seasons on B-17 would operate on a not-to-interfere basis with operational training requirements. The Navy proposes to allow bighorn sheep hunting in the B-17 range to the maximum extent practicable, aiming to accommodate 15 consecutive days during the bighorn sheep hunting season, which occurs from November to January. Safety considerations include unexploded ordnance sweeps, road blocks, signage for avoidance areas, and range operations control. The Navy and NDOW would manage the hunting program through a Memorandum of Agreement. Access and safety would be handled by the Navy, while all other hunt management (e.g., number of tags, hunt seasons) would remain under NDOW control.

As discussed in Section 2.3.5.2.2 (Hunting Activities) and in Appendix D (Memoranda, Agreements, and Plans), proposed program requirements for hunting activities on B-17 may include the policies listed below. These policies would be reviewed annually as they would be part of the annual Hunt Program Work Plan and would need to be flexible enough to meet the mission requirements while allowing the maximum access possible for hunting on the FRTC.

- Hunting program for bighorn sheep managed jointly by the Navy and NDOW in accordance with NDOW policies and reviewed annually. The review of the hunting program would occur for continued evaluation of compatible hunting opportunities and adaptive management of the hunting program; additional hunts and feasibility for opportunistic hunt access would be evaluated.
- Hunting activities remain compatible with mission training activities and operate on a not-to-interfere basis.
- Range access managed by a Controlled Access Program, with stipulations.
- Hunters must complete ground safety training and sign an MOU for the hunting program.
- Hunters must sign a waiver agreement releasing the Navy of any liability for injury to or death of hunters or hunting party members, or for damage to vehicles or equipment or other property of such persons.
- Hunting party is limited to five persons, including the tag holder, on FRTC at any one time, with no member of the hunting party under 18 years of age.
- Bombing range access procedures would be in accordance with Navy range policies.
- A face-to-face Hunter Safety ground access brief would be required.
- Prior scheduling would be required. Check-in and Check-out with Range Control would be mandatory for any access to the B-17 range.
- Hunters must remain clear of B-17 designated avoidance areas, as marked on maps to be provided to hunters during annual safety training. These areas would be determined annually based on range conditions and reviewed and updated annually by range operations and safety department. In general, avoidance areas would include targets and areas of known unexploded ordnance.
- No pets, to include hunting dogs, would be allowed on B-17.

The Navy would make all reasonable accommodations through adaptive management to maintain the quality of the experience during the bighorn sheep hunting program. The proposed implementation of the bighorn sheep hunt would include opening access to the B-17 range for a minimum of 15 consecutive days between November and January, when compatible with military training activities. The Navy would take steps to incorporate a process and designate areas that are suitable for hunters to camp on the range while hunting. The Navy would conduct an annual review of the Hunt Program Work Plan. NDOW would notify tag holders each year indicating the course/training requirements, dates of training sessions, seasonal hunting date opportunities, and any other pertinent information.

The Navy is committed to continuing a bighorn sheep hunting program on the FRTC's B-17 and would annually evaluate and review the hunting program scope. The review of the annual Hunt Program Work Plan would occur for continued evaluation of compatible hunting opportunities and adaptive management of the hunting program; additional hunts and feasibility for opportunistic hunt access would also be evaluated. Hunting would occur within B-17 in accordance with NDOW rules and regulations, including designated hunting seasons. NAS Fallon would create a Controlled Access Program to manage hunting at B-17. The Navy and NDOW would jointly manage the hunting program. Access and safety would be handled by the Navy, while all other hunt management (e.g., number of tags, hunt seasons) would remain under NDOW control. Hunters would be required to comply with the requirements found in Section 2.3.5.2.2 (Hunting Activities).

Although impacts on hunters would be reduced under Alternative 2, a reduction in hunting in the B-17 range would still be anticipated because of access restrictions when compared to baseline conditions. Hunting of pronghorn, mule deer, chukar, waterfowl, and small game is not currently proposed to be permitted on B-17 under Alternative 2. This would result in a negative impact on hunting activities on the proposed expansion land. NDOW would be able to access existing water developments (e.g., guzzlers) on the range for maintenance and repair. The Navy would also reduce impacts on hunters by coordinating with NDOW and installing water developments outside of the range with the aim of moving herds of pronghorn off range and increasing hunting quality outside of the expanded B-17 range. In addition, although perimeter fencing would include a larger area than current baseline conditions, fencing would be designed to allow large game species (e.g., pronghorn, mule deer, bighorn sheep) to jump over or crawl under the fence and smaller game species (e.g., chukar, rabbits) to fit between or below the wires. The Navy would incrementally remove existing interior fencing within the withdrawal area.

Indirectly, this alternative could also affect other recreation areas within the region as the public shifts activities to those areas. Under Alternative 2, the bighorn sheep hunting program and installation of water developments for movement of pronghorn off-range would reduce impacts on hunters. Coordinated racing events would occur when the range is not operational. The range would not be open for OHV use. Therefore, expanding B-17 and changes to public access would significantly impact recreation.

Construction

Construction activities proposed under Alternative 2 would be the same as those proposed under Alternative 1. Construction activities would increase noise and fugitive dust; however, the recreationalists would not be permitted in the areas of B-17 where construction would be occurring. Therefore, as discussed under Alternative 1, there would be a significant impact on recreation under Alternative 2.

Road and Infrastructure Improvements to Support Alternative 2

The additional infrastructure improvements that would potentially occur after the implementation of Alternative 2 would be the same as those described under Alternative 1. Site-specific environmental analysis and NEPA planning would be required before any potential relocation of the portion of State Route 839 or the pipeline could occur. In addition, the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing State Route 839 or the pipeline unless and until any such re-routing of the State Route or pipeline has been completed and made available to the public or the pipeline owner. The Navy has submitted a Needs Report to the Surface Deployment and Distribution Command requesting authority to utilize funding through the Defense Access Roads program. If approved, the Navy would coordinate construction execution through the Federal Highway Administration. NDOT would ensure that construction of any new route is complete before closing any portion of the existing State Route 839, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing State Route 839 unless and until any such new route has been completed and made available to the public. The BLM would have decision authority with respect to any proposed final routing subsequent to completion of site-specific environmental analysis of the pipeline.

3.12.3.3.3 Bravo-20

Based on the information presented below, there would be a significant impact to recreation for B-20 under Alternative 2.

Land Withdrawal and Acquisition

Alternative 2 would have the same withdrawals and acquisitions as requested and proposed in Alternative 1. Therefore, as discussed under Alternative 1, there would be a significant impact on recreation because of the withdrawal and acquisition under Alternative 2.

Training Activities

Under Alternative 2, there would be no change in tempo or type of training activities at B-20, but training activities would occur in new areas. Therefore, as discussed under Alternative 1, there would be no significant impact on recreation as a result of training activities under Alternative 2.

Public Accessibility

Expanding B-20 under Alternative 2 would have similar impacts on recreation as those of Alternative 1 (Section 3.12.3.2.3). As with Alternative 1, the Navy would install a perimeter fence that would prevent public access to the bombing range. The public would not be able to access portions of the Fallon National Wildlife Refuge and Lyon County Conservation Easements. Alternative 2 would allow race events to occur within B-20, however, this area is not known to be a popular destination for OHVs or racing. The Navy and the BLM would coordinate the permitting and scheduling of these events. The Navy and either the BLM or the State of Nevada would jointly manage these races in accordance with an MOU. The Navy would clear race routes of potential safety hazards prior to these events. A range sweep would be conducted prior to the race or event, using government-provided ground transportation. After all race participants have exited the restricted area on Navy property, the Navy would conduct a final sweep with the designated race or event officials. Therefore, expanding B-20 would not significantly impact public access for recreation at B-20, under Alternative 2.

Construction

Construction activities proposed under Alternative 2 would be the same as those proposed under Alternative 1. Therefore, as discussed under Alternative 1, there would be no significant impact on recreation as a result of construction under Alternative 2.

3.12.3.3.4 Dixie Valley Training Area

Based on the information presented below, there would not be a significant impact on recreation for the DVTA under Alternative 2. With regard to natural resources management and recreation, including hunting, the BLM and the Navy would jointly manage the DVTA via the Integrated Natural Resources Management Plan, per the Sikes Act, and OPNAVINST 5090.

Land Withdrawal and Acquisition

Alternative 2 would have the same withdrawals and acquisitions as requested and proposed in Alternative 1. Therefore, as discussed under Alternative 1, there would be no significant impact on recreation because of the withdrawal and acquisition under Alternative 2.

Training Activities

Under Alternative 2, there would be no change to training activities at the DVTA. Therefore, as discussed under Alternative 1, there would be no significant impact on recreation as a result of training activities under Alternative 2.

Public Accessibility

Changes to the DVTA under Alternative 2 would have similar impacts on recreation as Alternative 1 (Section 3.12.3.2.4). This would include Congressional legislation to remove the designation of the withdrawn portions of the Clan Alpine Mountains, Job Peak, and Stillwater Range WSAs in the same manner as Alternative 1. A change to the WSA designation would presumably be accomplished through any ultimate Congressional decision withdrawal legislation. Allowing geothermal (as managed under the Geothermal Steam Act of 1970 where compatible) and salable mineral resource development activities could potentially interfere with recreation within the DVTA; however, these activities (particularly geothermal) are currently occurring within the Dixie Valley (see Section 3.3, Mining and Mineral Resources) and would have minimal impacts on recreation. The Navy would no longer allow locatable mineral mining within the DVTA under this alternative, potentially offsetting, at least in part, any adverse impacts on recreation from leasable and salable mineral resource development compared to baseline conditions. Therefore, expanding the DVTA would not significantly impact recreation.

Construction

Construction activities proposed under Alternative 2 would be the same as those proposed under Alternative 1. Therefore, as discussed under Alternative 1, there would be no significant impact on recreation as a result of construction under Alternative 2.

3.12.3.3.5 Special Use Airspace

Based on the information presented below, there would not be a significant impact on recreation for SUA under Alternative 2. Changes to FRTC SUA under Alternative 2 would have the same impacts on recreation as Alternative 1 (Section 3.12.3.2.5). Recreationalists outside of ranges and under SUA may experience visual and auditory impacts from aircraft overflights. This alternative includes areas that would be closed and restricted from public use such as the Bravo ranges, except for Navy-authorized

activities (e.g., ceremonial visits; cultural site visits; research/academic pursuits; or regulatory or management activities, such as BLM or NDOW activities). Therefore, as discussed under Alternative 1, changes to FRTC SUA would have no significant impact on recreation under Alternative 2.

3.12.3.3.6 Summary of Effects and Conclusions

Under Alternative 2, the Navy would expand B-16, B-17, B-20, and the DVTA. This alternative would have the same land and airspace configurations as Alternative 1. Alternative 2 would close public access to 513,693 acres for expansion of the Bravo ranges; but, unlike Alternative 1, Alternative 2 would allow certain uses of the land when the ranges are not in operation, with prior coordination. The Navy would fence all closed areas and would also include signage, warning the public that they cannot enter these areas. Alternative 2 also includes Congressional legislation to remove the WSA designation of the withdrawn portions of the Clan Alpine Mountains (approximately 22,324 acres [11 percent]), Job Peak (approximately 41,680 acres [47 percent]), and Stillwater Range (approximately 10,951 acres [12 percent]) WSAs, potentially opening these areas up to additional types of recreation activities. Any change to the WSA designation would presumably be accomplished through any ultimate Congressional decision withdrawal legislation. Alternative 2 would also close public access to 3,200 acres of the Fallon National Wildlife Refuge (approximately 18 percent) and 1,920 acres of adjoining lands under Lyon County Conservation Easements. Alternative 2 would allow access for racing events, like the Vegas to Reno, on B-16, B-17, and B-20, and the popular bighorn sheep hunting areas on B-17 (e.g., Sand Springs and Fairview Peak) except for those areas that would be closed for public safety (i.e., target areas). Hunting would occur on B-17 in accordance with the requirements in Section 2.3.5.2.2 (Hunting Activities). Though Alternative 2 modifies public access in relation to Alternative 1, implementation of Alternative 2 would have significant impacts on recreation.

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

Based on the information presented below, there would be a significant impact on recreation under Alternative 3. The main difference between Alternatives 1 and 2, and Alternative 3 is that the B-17 range would be shifted and situated farther south and east under Alternative 3. Unlike Alternative 1, the Navy would not withdraw land south of U.S. Route 50 as DVTA. Rather, the Navy proposes that Congress categorizes this area as a Special Land Management Overlay (see Figure 2-12). This Special Land Management Overlay would define two areas (one east and one west of the B-17 range) as Military Electromagnetic Spectrum Special Use Zones. These two areas, which are public lands under the jurisdiction of BLM, would not be withdrawn by the Navy, and would not directly be used for land-based military training or managed by the Navy. Otherwise, these two areas would remain open to public access and would be available for all appropriate uses, including recreation and mining for locatable and leasable mineral resources. However, prior to issuing any decisions on projects, permits, leases, studies, and other land uses within the two special use zones, BLM would be required to consult with NAS Fallon. BLM and the Navy would also enter into an MOU to administer the details of the consultation and approval process.

Alternative 3 would implement the same managed access programs as Alternative 2. Recreational activities within the DVTA would be similar to existing baseline conditions, and Congressional legislation to remove the WSA designation of the withdrawn portions of the Clan Alpine Mountains, Stillwater Range, and Job Peak WSAs may decrease existing restrictions on recreation in those areas (e.g., allowing OHV use and hunting) under Alternative 3. Any change to the WSA designation would presumably be accomplished through any ultimate Congressional decision withdrawal legislation.

3.12.3.4.1 Bravo-16

Based on the information presented below, there would be a significant impact on recreation for B-16 under Alternative 3.

Land Withdrawal and Acquisition

Under Alternative 3, the B-16 range would expand to the west by approximately 31,875 acres (see Figure 2-15), increasing the total area to approximately 59,234 acres. Unlike Alternatives 1 and 2, the lands south of Simpson Road (and Simpson Road itself) would not be withdrawn, and since they are currently withdrawn lands, they would be relinquished by the Navy back to the BLM. Although these lands south of Simpson Road represent lands that are being relinquished by the Navy to the BLM for public use, they are already open to the public, and therefore would not represent a significant change from current conditions. Therefore, as discussed under Alternatives 1 and 2, there would be a significant impact on recreation because of the withdrawal and acquisition of new land under Alternative 3.

Training Activities

Under Alternative 3, there would be no change to training activities at B-16. Therefore, there would be no significant impact on recreation as a result of training activities under Alternative 3.

Public Accessibility

Visits requiring access to the Bravo ranges would be coordinated with the Navy and allowed if compatible with Navy training activities and range safety. The proposed expansion areas, construction activities, and training activities for B-16 under Alternative 3 would be the same as that described for Alternatives 1 and 2 (see Sections 3.12.3.2.1 and 3.12.3.3.1). Alternative 3 would have the same access restrictions on B-16 as Alternative 2. Therefore, as discussed under Alternative 2, expanding B-16 under Alternative 3 would have a significant impact on recreation on B-16.

Road and Infrastructure Improvements to Support Alternative 3

Proposed Dead Camel Mountains Special Recreation Management Areas

Like Alternative 1 and 2, Alternative 3 includes the planning for alternative routes to provide public access to the proposed Dead Camel Mountains Special Recreation Management Areas. The BLM and Navy would continue to coordinate on recreation opportunities that may be impacted, conduct alternative route planning, and conduct follow-on, site-specific NEPA.

Construction

Construction activities proposed under Alternative 3 would be the same as those proposed under Alternatives 1 and 2. Therefore, as discussed under Alternatives 1 and 2, there would be no significant impact on recreation as a result of construction under Alternative 3.

3.12.3.4.2 Bravo-17

Based on the information presented below, there would be a significant impact on recreation for B-17 under Alternative 3.

Land Withdrawal and Acquisition

The Governor's Alternative, discussed in Section 2.5.7 (Governor's Alternative ["Nevada Alternative"]), and other scoping comments were considered during the creation of Alternative 3 to allow more access to areas of concern requested for withdrawal or proposed for acquisition under Alternatives 1 and 2.

Under Alternative 3, B-17 would expand by approximately 212,016 acres and be rotated counterclockwise (see Figure 2-16). The requested withdrawal would eliminate the overlap with Fairview Peak, Sand Spring Range (a popular hunting and recreation area), and of State Route 839 (under Alternatives 1 and 2). These new lands would be fenced in accordance with all applicable regulations and would remove recreational activities from B-17. The Navy would expand their fence line patrol and maintenance procedures to include fences that are on withdrawn lands. The Navy proposes to establish two Conservation Law Enforcement Officers at NAS Fallon. Part of the duties of these officers would include patrolling of the added fence line for trespass issues and reporting to the Navy any broken or downed fences for maintenance repair. Therefore, there would be a significant impact on recreation because of the withdrawal and acquisition under Alternative 3.

Training Activities

All training activities would be located within the proposed boundary of B-17. Public access to B-17 would be restricted based on managed access agreements at all times. As with Alternative 1, the public may observe and hear aircraft, munitions, and support vehicles during training activities. However, these activities are currently occurring within B-17 and would not increase in frequency under Alternative 3.

Noise contours of 65 dB DNL would be mostly contained on the B-17 range under Alternative 3, with the exception of a 65 dB DNL contour that extends north of the B-17 boundary over the Special Land Management Overlay to the east and west of B-17 (see Section 3.7, Noise). This is not expected to significantly impact recreation, as it is not above the 65-dBA threshold for noise impacts on sensitive receptors, and the contour is from airspace activities and does not change from baseline extension in the northeast portion of overlap.

Public Accessibility

Visits requiring access to the Bravo ranges would be coordinated with the Navy and allowed if compatible with Navy training activities and range safety. Under Alternative 3, the public accessibility within the proposed boundary of B-17 would be the same as described under Alternative 2. This range would be fenced and closed for public safety. Navy policy does not allow anyone within a WDW when a range is in active use. The Navy also does not allow members of the public in a non-operational WDW without prior clearance/coordination. This area would also include signage warning the public it cannot enter this area.

Expanding B-17 under Alternative 3 would have similar impacts on recreation access as those under Alternative 2. Implementing Alternative 3 would prevent public access to several recreation resources, including the BLM's proposed Middlegate Extensive Recreation Management Areas. Unlike Alternatives 1 and 2, this alternative would not close portions of the BLM's proposed Salt Wells Extensive Recreation Management Area, Sand Springs Range, and Fairview Peak.

The Pony Express National Historic Trail parallels U.S. Route 50 through B-17. Alternative 3 would not affect public access to this trail system. All improvements at B-17 would be south of this trail system. Although the Navy would prohibit OHV use by the public, it would continue to allow certain races, including the Vegas to Reno Race, which would occur in the southern portion of B-17. The Navy and the BLM would coordinate the permitting and scheduling of these events in accordance with the requirements listed in Section 2.3.5.2.9 (Large Event Race Activities). Indirectly, this alternative could also affect other recreation areas within the region as the public shifts activities to those areas, which

would include Sand Mountain Recreation Area. Annual visitation at Sand Mountain Recreation Area currently numbers between 50,000 and 70,000 visitors per year (Bureau of Land Management, 2017).

The proposed B-17 range includes habitat for bighorn sheep, mule deer, and pronghorn. This habitat includes wintering lambing range for bighorn sheep within and along the existing perimeter of B-17 and crucial summer habitat for the pronghorn in the eastern portion of the requested withdrawal. This alternative reduces impact on hunters by allowing access to Fairview Peak (via Earthquake Fault Road) and the eastern slope of the Sand Springs Mountains (via State Route 839) in the Special Land Management Overlay areas.

Alternative 3 also reduces impacts on hunting by permitting a bighorn sheep hunting program in B-17. Hunting would occur within B-17 in accordance with NDOW rules and regulations, including designated hunting seasons. NAS Fallon would create a Hunt Program Work Plan to manage hunting at B-17 as described under Alternative 2. The Navy would manage this program jointly with NDOW. Hunters would be required to comply with the requirements found in Section 2.3.5.2.2 (Hunting Activities) and outlined above in Section 3.12.3.3.2 (Bravo-17). In addition, although perimeter fencing would include a larger area than current baseline conditions, fencing would be designed to allow large game species (e.g., pronghorn, mule deer, bighorn sheep) to jump over or crawl under the fence and smaller game species (e.g., chukar, rabbits) to fit between or below the wires. The Navy may also remove existing interior fencing within the withdrawal area, which would decrease the fragmentation of habitat.

Construction

Since the proposed construction activities would occur within the expanded B-17 range and access to areas under construction would be restricted, these activities would not significantly impact public recreation.

Road and Infrastructure Improvements to Support Alternative 3

State Route 361

Alternative 3 includes the potential relocation of State Route 361. Approximately 12 miles of State Route 361 would be proposed to be relocated after the implementation of Alternative 3, because this portion of the road would fall within the proposed eastern portion of B-17. This route connects the community of Gabbs to U.S. Route 50. Using funding provided by the Navy, the Federal Highway Administration, in cooperation with the Nevada Department of Transportation, would be responsible for planning, designing, permitting, and constructing any realignment of State Route 361. The Navy has submitted a Needs Report to the Surface Deployment and Distribution Command requesting authority to utilize funding through the Defense Access Roads program. If approved, the Navy would coordinate construction execution through the Federal Highway Administration. NDOT would ensure that construction of any new route is complete before closing any portion of the existing State Route 361, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing State Route 361 unless and until any such new route has been completed and made available to the public.

Paiute Pipeline

As with Alternatives 1 and 2, Alternative 3 also includes the potential relocation of a segment of the Paiute Pipeline outside the B-17 WDZ. The Navy would purchase the impacted portion of the Paiute Pipeline and then would pay for relocation of the existing Paiute Pipeline south of the proposed B-17 range. Using funding provided by the Navy, the Paiute Pipeline Company would be responsible for

planning, designing, permitting, funding, and constructing any realignment of the pipeline. A ROW application submitted to the BLM by the pipeline owner would formally identify any proposed reroute. Site-specific environmental analysis and NEPA planning would be required before any potential relocation of the pipeline could occur, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing pipeline unless and until any such re-routing of the pipeline has been completed and made available to the pipeline owner. The BLM would have decision authority with respect to any proposed final routing subsequent to completion of site-specific environmental analysis.

3.12.3.4.3 Bravo-20

Based on the information presented below, there would be a significant impact on recreation for B-20 under Alternative 3.

Land Withdrawal and Acquisition

Under Alternative 3, B-20 would expand in all directions, growing by approximately 177,114 acres (see Table 2-7) and increasing in total size to approximately 218,119 acres. This expansion includes approximately 2,720 acres of land currently withdrawn by the USFWS as a portion of the Fallon National Wildlife Refuge and 1,920 acres of Lyon County Conservation Easements. As discussed under Alternative 1, the Navy is not proposing to develop targets in the refuge. Unlike Alternatives 1 and 2, the Navy would not request for withdrawal the lands east of East County Road and the road itself. The Navy would leave the areas east of East County Road and the Road itself open under Alternatives 1 and 2; therefore, the impacts on recreation under Alternative 3 are the same as discussed under Alternatives 1 and 2. Therefore, there would be a significant impact on recreation because of the withdrawal and acquisition of land under Alternative 3.

Training Activities

Under Alternative 3, there would be no change to training activities at B-20. Therefore, there would be no significant impact on recreation as a result of training activities under Alternative 3.

Public Accessibility

Visits requiring access to the Bravo ranges would be coordinated with the Navy and allowed if compatible with Navy training activities and range safety. Alternative 3 would have the same access restrictions on B-20 as Alternative 2. Therefore, as discussed under Alternative 2, expanding B-20 under Alternative 3 would have the same impacts on recreation as Alternative 2.

Construction

Construction activities proposed under Alternative 3 would be the same as those proposed under Alternatives 1 and 2. Therefore, as discussed under Alternatives 1 and 2, there would be no significant impact on recreation as a result of construction under Alternative 3.

3.12.3.4.4 Dixie Valley Training Area

Based on the information presented below, there would not be a significant impact on recreation for the DVTA under Alternative 3. With regard to natural resources management and recreation, including hunting, the BLM and the Navy would jointly manage the DVTA via the Integrated Natural Resources Management Plan, per the Sikes Act, and OPNAVINST 5090.

Land Withdrawal and Acquisition

Under Alternative 3, the land requested for withdrawal would decrease by 77,010 acres with the creation of the Special Land Management Overlay when compared to Alternatives 1 and 2. With the shift of B-17, the BLM would create a Special Land Management Overlay along the western side of State Route 839 south of U.S. Route 50 and around Earthquake Fault Road. The requested withdrawal and proposed acquisition would total approximately 247,762 acres (see Figure 2-12) for the DVTA and would increase the total training area size to 325,322 acres. Alternative 3 would have the same impacts on WSAs as Alternatives 1 and 2. Under Alternative 3, Congressional legislation would remove the WSA designation of withdrawn portions of the following WSAs: Stillwater Range WSA (approximately 10,951 acres [12 percent]), Jobs Peak WSA (approximately 41,680 acres [47 percent]), and Clan Alpine Mountains WSA (approximately 22,324 acres [11 percent]). The BLM would continue managing the remaining WSA portions of Clan Alpine WSA, Job Peak WSA, and Stillwater Range WSAs as WSAs. In an evaluation of the Stillwater Range WSA, the BLM determined that the Stillwater Range WSA no longer contains wilderness characteristics. A change to the WSA designation would presumably be accomplished through any ultimate Congressional withdrawal legislation.

Training Activities

Training activities would expand within the proposed DVTA into areas where they have not previously occurred. The public may observe and hear aircraft and support vehicles during training activities within these areas. Noise from training exercises could startle or disturb recreationists and game species in the area. However, noise contours over the DVTA would not change significantly from the baseline contours in the training area. These contours are from airspace use only and the highest-level contour in the DVTA would be at 65 dBA DNL in the northeastern corner of the DVTA. Training activities are currently occurring within the DVTA and would not increase in frequency under Alternative 3.

De-designating the WSAs would allow the Navy to conduct ground training throughout the DVTA. A change to the WSA designation would presumably be accomplished through any ultimate Congressional decision withdrawal legislation. The BLM would manage recreational activities within the DVTA. The Navy would minimize impacts on the public by following the policies and procedures that restrict training activities on the DVTA because of public safety and environmental concerns. For example, the Navy's safety measures include standard operating procedures designed to avoid or minimize civilian exposure to training activities within the DVTA. The military has no authority to ask civilians to exit or leave open land areas within the DVTA. If the public enters a training area within the DVTA while a training event is underway, the training would temporarily cease or move elsewhere while the public transits the training area. Therefore, training activities at the DVTA would not significantly impact recreation under Alternative 3.

Public Accessibility

Under Alternative 3, the existing recreational activities would be allowed to continue within the DVTA. Alternative 3 would not install perimeter fencing around the DVTA but would install perimeter fencing around three proposed electronic warfare sites (up to 15 acres total), which would prevent the public from entering these areas. The 11-Mile Canyon Electronic Warfare Site would be located in the Stillwater Mountains south of the Jobs Peak WSA. The Fairview Low Electronic Warfare Site would be located east of the Fairview Mountains and Earthquake Fault Road, within the BLM's proposed Middlegate Extensive Recreation Management Area. Meanwhile, the North Job Peak Electronic Warfare Site would be located near Job Peak. The public would continue to be able to access the remainder of

the DVTA for public recreation, including hunting, camping, hiking, and OHV use. In addition, de-designating WSAs could potentially remove recreation restrictions on approximately 74,955 acres. A change to the WSA designation would presumably be accomplished through any ultimate Congressional decision withdrawal legislation.

The primary difference between Alternative 3 and Alternative 2 is that State Route 839 and the area west of State Route 839 (between Highway 50 and the existing Paiute Pipeline) would remain open to the public as shown in Figure 2-12. The BLM Special Land Management Overlay would be open to the public and allow for public uses through the BLM. However, prior to issuing any decisions on projects, permits, leases, studies, and other land uses within the two special use zones, BLM would be required to consult with NAS Fallon. This consultation would inform the Navy of proposed projects, permits, leases, studies, and other land uses and afford the Navy an opportunity to collaborate with BLM to preserve the training environment. Further, prior to issuing approval for installation or use of mobile or stationary equipment used to transmit and receive electromagnetic signals in the two special use zones as part of any federal action, BLM would be required to obtain permission for NAS Fallon for use of this equipment. This requirement to obtain Navy permission for the use of this equipment would afford the Navy an opportunity to ensure military and civilian use of the electromagnetic spectrum does not interfere with their respective activities. BLM and the Navy would also enter into an MOU to administer the details of the consultation and approval process. Alternative 3 would also continue to allow access to Fairview Peak via Earthquake Road.

Construction

Under Alternative 3, construction activities at the DVTA would include constructing three electronic warfare sites. Construction activities would temporarily increase noise, vibrations, exhaust, and fugitive dust at these locations, which could startle or disturb nearby recreationists or wildlife, and any impact on recreation from construction would be less than significant. These activities would be intermittent, temporary, and phased to minimize impacts on the public.

3.12.3.4.5 Special Use Airspace

Based on the information presented below, there would not be a significant impact on recreation for SUA under Alternative 3. Under Alternative 3, the Navy proposes to expand its existing SUA and reconfigure existing airspace to address current training constraints (Figure 3.12-15). Alternative 3 would not increase military operations within the region; however, it would reconfigure WDZs and SUA over the proposed bombing range expansions within the FRTC. The WDZs for the FRTC Bravo ranges would be wholly located within their respective expanded range boundaries or respective new range boundaries.

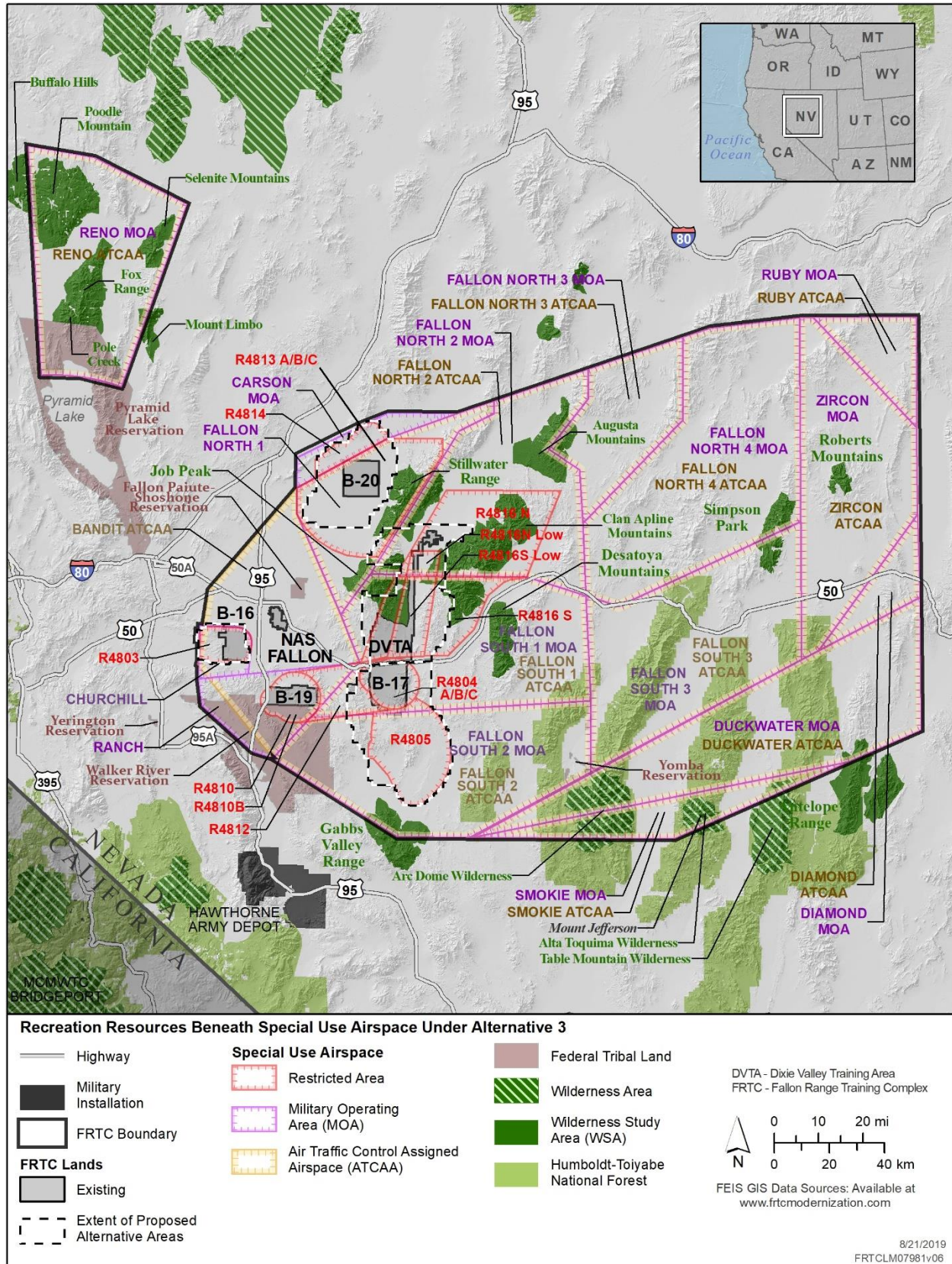


Figure 3.12-15: Recreation Resources Beneath Special Use Airspace Under Alternative 3

Under the Reno MOA and Air Traffic Control Assigned Airspace, which overlap with the Pyramid Lake Paiute Reservation and the northern part of Pyramid Lake, the noise levels are projected to be less than 35 dBA, which is lower than the 65 dBA recommendation. Therefore, recreational activities would not be impacted under the military training route over Pyramid Lake, and visitation to the lake should not change (see Tables 3.7-11 and 3.7-13). In other areas under airspace, the noise data show a slight increase for some sensitive receptors during daytime events where a recreationist may experience outdoor speech interference. But the most notable interference would be near the town of Gabbs and in the eastern portions of the FRTC SUA (see Section 3.7.3.4.10, Effects on Recreation). Changes to the FRTC SUA under Alternative 3 would have the same impacts on recreation as discussed under Alternative 1, and 2. The same avoidance areas as discussed under Alternatives 1 and 2 would apply for the population centers, noise-sensitive areas, WSAs, and wilderness areas as described under Alternative 1. Training activities and types would continue as described under Alternative 1.

3.12.3.4.6 Summary of Effects and Conclusions

Under Alternative 3, the Navy would expand B-16, B-17, B-20, and the DVTA. Alternative 3 would close public access to approximately 418,553 acres for expanding the Bravo ranges but would allow certain uses when the ranges are not in operation, with prior coordination. Alternative 3 includes areas that would be closed and restricted from public use except for Navy-authorized activities (e.g., ceremonial visits; cultural site visits; research/academic pursuits; or regulatory or management activities, such as BLM or NDOW activities). These areas would also include signage warning the public it cannot enter. Alternative 3 also includes Congressional legislation to remove the WSA designation of withdrawn portions of the Clan Alpine Mountains (approximately 22,324 acres [11 percent]), Job Peak (approximately 41,680 acres [47 percent]), and Stillwater Range (approximately 10,951 acres [12 percent]) WSAs, potentially opening these areas up to new types of recreation activities. Any change to the WSA designation would presumably be accomplished through any ultimate Congressional decision withdrawal legislation. Alternative 3 would close public access to 2,720 acres of the Fallon National Wildlife Refuge (approximately 18 percent) and 1,920 acres of adjoining Lyon County Conservation Easements. This land withdrawal would impact 0.5 percent of the lands administered by the BLM Humboldt River Field Office, 0.11 percent of the lands administered by the BLM Sierra Front Field Office, and 11.39 percent of the lands administered by the BLM Stillwater Field Office. Of note, the lands impacted by the withdrawal would not all be closed to the public as they would be part of the DVTA, which would remain open for public recreation. Alternative 3 would allow access for racing events, like the Vegas to Reno, on B-16, B-17, and B-20. This alternative also would reduce impacts by shifting the proposed expansion of B-17 off popular hunting areas within the Sand Springs Mountain Range and around Fairview Peak.

Alternative 3 would allow limited public access to designated portions of B-17 for bighorn sheep hunting tag holders and their hunting parties, except for those areas that the Navy would close for public safety (e.g., target areas). Hunting would be permitted on B-17 in accordance with the requirements in Section 2.3.5.2.2 (Hunting Activities). Therefore, although impacts have been lessened with the shift of B-17 and the managed access programs, implementation of Alternative 3 would still have significant impacts on public recreation.

3.12.3.5 Proposed Management Practices, Monitoring, and Mitigation

3.12.3.5.1 Proposed Management Practices

Management practices were found to be warranted for recreation based on the analysis presented in Section 3.12.3 (Environmental Consequences) and are listed below:

- The Navy is working with NDOW 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.
- The Navy currently supports the NDOW actions to install/maintain guzzlers for wildlife and will continue this partnership with the NDOW within range or training areas.
- Allow the BLM or NDOW to continue to access and maintain existing water developments. The Navy would also work with the NDOW to determine if moving certain guzzlers would be applicable within range or training areas.
- Install wildlife friendly fence design for any new fences and removal of all existing fences not required for safety/security purposes within the withdrawal area.
- The Navy would expand their fence line patrol and maintenance procedures to include fences that are on withdrawn lands. The Navy proposes to establish two Conservation Law Enforcement Officers at NAS Fallon. Part of the duties of these officers would include patrolling of the added fence line for trespass issues and reporting to the Navy any broken or downed fences for maintenance repair.
- The USFWS would continue to manage the Fallon National Wildlife Refuge under an MOU with the Navy once terms of the MOU were reached.

3.12.3.5.2 Proposed Monitoring

No monitoring measures would be warranted for recreation based on the analysis presented in Section 3.12.3 (Environmental Consequences).

3.12.3.5.3 Proposed Mitigation

Mitigation measures were found to be warranted for recreation based on the analysis presented in Section 3.12.3 (Environmental Consequences) and are listed below:

- Install big game and small game water developments outside of closed Navy lands to support populations outside of the ranges in order to mitigate against impacts on hunting. Numbers and locations of water developments are to be determined cooperatively with NDOW.
- Conduct annual review of the Hunt Program Work Plan to determine if additional hunts are feasible and compatible with mission requirements on the FRTC.

3.12.3.6 Summary of Effects and Conclusions

Table 3.12-2 summarizes the effects of the alternatives on recreation.

Table 3.12-2: Summary of Effects and Conclusions for Recreation

Summary of Effects and National Environmental Policy Act Determinations	
No Action Alternative	
Summary	<ul style="list-style-type: none"> Land within the FRTC could be converted to recreational use following clean up. Land that the Navy cannot render safe for public access would remain off limits to the public.
Impact Conclusion	The No Action Alternative would result in significant impacts on recreation.
Alternative 1	
Summary	<ul style="list-style-type: none"> The public would no longer be able to access approximately 327,742 acres of federal land due to the modernization of B-16, B-17, and B-20. The public would be allowed access to the DVTA for recreational activities. Congressional legislation would remove the WSA designation of withdrawn portions of the Clan Alpine Mountains (approximately 11 percent), Job Peak (approximately 47 percent), and Stillwater Mountains (approximately 12 percent) WSAs, potentially opening these areas up to new types of recreation. Any change to the WSA designation would presumably be accomplished through any ultimate Congressional decision withdrawal legislation. The public would not be able to access approximately 18 percent of the Fallon National Wildlife Refuge for recreation. Large racing events that currently occur near the existing B-16 and B-17 ranges would have to be relocated outside of the boundaries of the proposed Bravo ranges. Public access would be eliminated or significantly reduced to the Dead Camel Mountains, Sand Springs Range, Slate Mountain, Monte Cristo Mountains, Fairview Peak, and the West Humboldt Range. Other opportunities for hiking, camping, and wildlife watching would be lost. The public would not be able to access hunting areas on any of the closed bombing ranges. Hunting would not be impacted in the DVTA. This Alternative includes areas that would be closed and restricted from public use except for Navy-authorized activities (e.g., ceremonial visits; cultural site visits; research/academic pursuits; or regulatory or management activities, such as BLM or NDOW activities).
Impact Conclusion	Alternative 1 would result in significant impacts on recreation.

Table 3.12-2: Summary of Effects and Conclusions for Recreation (continued)

Summary of Effects and National Environmental Policy Act Determinations	
Alternative 2	
Summary	<ul style="list-style-type: none"> • The public would no longer be able to access approximately 327,442 acres of public land due to the modernization of B-16, B-17, and B-20; but, unlike Alternative 1, Alternative 2 would allow certain uses of the land when the ranges are not in operation with prior coordination. • The public would be allowed access to the DVTA for recreational activities. Congressional legislation would remove WSA designation of withdrawn portions of the Clan Alpine Mountains (approximately 11 percent), Job Peak (approximately 47 percent), and Stillwater Mountains (approximately 12 percent) WSAs, potentially opening these areas up to new types of recreation. A change to the WSA designation would presumably be accomplished through any ultimate Congressional decision withdrawal legislation. • The public would not be able to access approximately 18 percent of the Fallon National Wildlife Refuge for recreation. • Large racing events that currently occur near B-16 and B-17 would continue on B-16 and B-17 in accordance with the requirements listed in Section 2.3.5.2.9 (Large Event Race Activities). • Public access would be eliminated or significantly reduced to the Dead Camel Mountains, Sand Springs Range, Slate Mountain, Monte Cristo Mountains, Fairview Peak, and the West Humboldt Range. • Opportunities for other popular hiking, camping, and wildlife watching would be lost. • The public would not be able to access hunting areas on any of the closed bombing ranges. Hunting would not be impacted in the DVTA. • The Navy would allow hunting of bighorn sheep on B-17 in accordance with the requirements listed in Section 2.3.5.2.2 (Hunting Activities).
Impact Conclusion	Alternative 2 would result in significant impacts on recreation; however, these impacts would be reduced by allowing bighorn sheep hunting within B-17 and popular racing events to continue on B-16, B-17, B-19, and B-20.

Table 3.12-2: Summary of Effects and Conclusions for Recreation (continued)

Summary of Effects and National Environmental Policy Act Determinations	
Alternative 3	
Summary	<ul style="list-style-type: none"> • The public would no longer be able to access approximately 356,788 acres of federal land due to the modernization of B-16, B-17, and B-20. • The public would be allowed access to the DVTA for recreational activities. Congressional legislation would remove the WSA designation of withdrawn portions of the Clan Alpine Mountains (approximately 11 percent), Job Peak (approximately 47 percent), and Stillwater Mountains (approximately 12 percent), potentially opening these areas up to new types of recreation. Any change to the WSA designation would presumably be accomplished through any ultimate Congressional decision withdrawal legislation. • The public would not be able to access approximately 18 percent of the Fallon National Wildlife Refuge for recreation. • Large racing events that currently occur near B-16, B-17, and B-19 would continue on B-16, B-17, and B-19 in accordance with the requirements listed in Section 2.3.5.2.9 (Large Event Race Activities). • Public access would be eliminated or significantly reduced to the Dead Camel Mountains, Slate Mountain, Monte Cristo Mountains, and the West Humboldt Range. • Opportunities for other popular hiking, camping, and wildlife watching would be lost. • The public would not be able to access hunting areas on any of the closed bombing ranges. Hunting would not be impacted in the DVTA. • The Navy would allow bighorn sheep hunting only on B-17 in accordance with the requirements listed in Section 2.3.5.2.2 (Hunting Activities).
Impact Conclusion	<p>Alternative 3 would result in significant impacts on recreation; however, these impacts would be reduced by allowing bighorn sheep hunting within B-17 and popular racing events to continue on B-16, B-17, B-19, and B-20. In addition, B-17 would be shifted off the Sand Springs Range and Fairview Peak, which would be part of the publicly accessible Special Land Management Overlay.</p>

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3.13 Socioeconomics

No Action Alternative

Under the No Action Alternative, the 1999 Congressional land withdrawal of 201,933 acres from public domain (Public Law 106-65) would expire on November 5, 2021, and military training activities requiring the use of these public lands would cease. Expiration of the land withdrawal would terminate the Navy's authority to use nearly all of the Fallon Range Training Complex's (FRTC's) bombing ranges, affecting nearly 62 percent of the land area currently available for military aviation and ground training activities in the FRTC.

Alternative 1 – Modernization of the Fallon Range Training Complex

Under Alternative 1, the Navy would request Congressional renewal of the 1999 Public Land Withdrawal of 202,864 acres, which is scheduled to expire in November 2021. The Navy would request that Congress withdraw and reserve for military use approximately 618,727 acres of additional Federal land and acquire approximately 65,157 acres of non-federal land. Range infrastructure would be constructed to support modernization, including new target areas, and expand and reconfigured existing Special Use Airspace (SUA) to accommodate the expanded bombing ranges. Implementation of Alternative 1 would potentially require the reroute of State Route 839 and the relocation of a portion of the Paiute Pipeline. Public access to B-16, B-17, and B-20 would be restricted for security and to safeguard against potential hazards associated with military activities. The Navy would not allow mining or geothermal development within the proposed bombing ranges or the Dixie Valley Training Area (DVTA). Under Alternative 1, the Navy would use the modernized FRTC to conduct aviation and ground training of the same general types and at the same tempos as analyzed in Alternative 2 of the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada, Final Environmental Impact Statement* (EIS). The Navy is not proposing to increase the number of training activities under this or any of the alternatives in this EIS.

Alternative 2 – Modernization of Fallon Range Training Complex with Managed Access

Alternative 2 would have the same withdrawals, acquisitions, and SUA changes as proposed in Alternative 1. Alternative 2 would continue to allow certain public uses within specified areas of B-16, B-17, and B-20 (ceremonial, cultural, or academic research visits, land management activities) when the ranges are not operational and compatible with military training activities (typically weekends, holidays, and when closed for maintenance). Alternative 2 would also continue to allow grazing, hunting, off-highway vehicle (OHV) usage, camping, hiking, site and ceremonial visits, and large event off-road races at the DVTA. Additionally under Alternative 2, hunting would be conditionally allowed on designated portions of B-17, and geothermal and salable mineral exploration would be conditionally allowed on the DVTA. Large event off-road races would be allowable on all ranges subject to coordination with the Navy and compatible with military training activities.

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

Alternative 3 differs from Alternative 1 and 2 with respect to the orientation, size, and location of B-16, B-17, B-20 and the DVTA, and is similar to Alternative 2 in terms of managed access. Alternative 3 places the proposed B-17 farther to the southeast and rotates it slightly counter-clockwise. In conjunction with shifting B-17 in this manner, the expanded range would leave State Route 839 in its current configuration along the western boundary of B-17 and would expand eastward across State Route 361 potentially requiring the reroute of State Route 361. The Navy proposes designation of the area south of U.S. Route 50 as a Special Land Management Overlay rather than proposing it for withdrawal as the DVTA. This Special Land Management Overlay would define two areas, one east and one west of the existing B-17 range. These two areas, which are currently public lands under the jurisdiction of BLM, would not be withdrawn by the Navy and would not directly be used for land-based military training or managed by the Navy.

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 socioeconomics 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 & Visser, 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 & Visser, 2016). Nevada produces about 83 percent of the gold mined in the United States (Perry & Visser, 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://frtcmodernization.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://frtcmernization.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://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 3.13-17: 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://frtcmodernization.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://frtcmodernization.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://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 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://frtcmmodernization.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 DVTAs. 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://frtcmodernization.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://frtcmodernization.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://frcmodernization.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://frtcmodernization.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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3.14 Public Health and Safety

No Action Alternative

Under the No Action Alternative, the 1999 Congressional land withdrawal of 201,933 acres from public domain (Public Law 106-65) would expire on November 5, 2021, and military training activities requiring the use of these public lands would cease. Expiration of the land withdrawal would terminate the Navy's authority to use nearly all of the Fallon Range Training Complex's (FRTC's) bombing ranges, affecting nearly 62 percent of the land area currently available for military aviation and ground training activities in the FRTC.

Alternative 1 – Modernization of the Fallon Range Training Complex

Under Alternative 1, the Navy would request Congressional renewal of the 1999 Public Land Withdrawal of 202,864 acres, which is scheduled to expire in November 2021. The Navy would request that Congress withdraw and reserve for military use approximately 618,727 acres of additional Federal land and acquire approximately 65,157 acres of non-federal land. Range infrastructure would be constructed to support modernization, including new target areas, and expand and reconfigured existing Special Use Airspace (SUA) to accommodate the expanded bombing ranges. Implementation of Alternative 1 would potentially require the reroute of State Route 839 and the relocation of a portion of the Paiute Pipeline. Public access to B-16, B-17, and B-20 would be restricted for security and to safeguard against potential hazards associated with military activities. The Navy would not allow mining or geothermal development within the proposed bombing ranges or the Dixie Valley Training Area (DVTA). Under Alternative 1, the Navy would use the modernized FRTC to conduct aviation and ground training of the same general types and at the same tempos as analyzed in Alternative 2 of the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada, Final Environmental Impact Statement (EIS)*. The Navy is not proposing to increase the number of training activities under this or any of the alternatives in this EIS.

Alternative 2 – Modernization of Fallon Range Training Complex with Managed Access

Alternative 2 would have the same withdrawals, acquisitions, and SUA changes as proposed in Alternative 1. Alternative 2 would continue to allow certain public uses within specified areas of B-16, B-17, and B-20 (ceremonial, cultural, or academic research visits, land management activities) when the ranges are not operational and compatible with military training activities (typically weekends, holidays, and when closed for maintenance). Alternative 2 would also continue to allow grazing, hunting, off-highway vehicle (OHV) usage, camping, hiking, site and ceremonial visits, and large event off-road races at the DVTA. Additionally under Alternative 2, hunting would be conditionally allowed on designated portions of B-17, and geothermal and salable mineral exploration would be conditionally allowed on the DVTA. Large event off-road races would be allowable on all ranges subject to coordination with the Navy and compatible with military training activities.

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

Alternative 3 differs from Alternative 1 and 2 with respect to the orientation, size, and location of B-16, B-17, B-20 and the DVTA, and is similar to Alternative 2 in terms of managed access. Alternative 3 places the proposed B-17 farther to the southeast and rotates it slightly counter-clockwise. In conjunction with shifting B-17 in this manner, the expanded range would leave State Route 839 in its current configuration along the western boundary of B-17 and would expand eastward across State Route 361 potentially requiring the reroute of State Route 361. The Navy proposes designation of the area south of U.S. Route 50 as a Special Land Management Overlay rather than proposing it for withdrawal as the DVTA. This Special Land Management Overlay would define two areas, one east and one west of the existing B-17 range. These two areas, which are currently public lands under the jurisdiction of BLM, would not be withdrawn by the Navy and would not directly be used for land-based military training or managed by the Navy.

Environmental Impact Statement

Fallon Range Training Complex Modernization

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3.14 Public Health and Safety and Protection of Children

This discussion of public health and safety and the protection of children includes consideration of any activities, occurrences, or operations that have the potential to affect the safety, well-being, or health of members of the public. A safe environment is one in which there is either no potential for death, serious bodily injury, illness, or property damage; or an optimally reduced and ultimately minimal potential for death, serious bodily injury, illness, or property damage.

3.14.1 Methodology

Public health and safety is an interdisciplinary issue, and its aspects intertwine with other environmental topics. Section 3.8 (Air Quality) addresses hazardous air pollutants, Section 3.9 (Water Resources) addresses hazardous water pollutants, and Section 3.7 (Noise) addresses human impacts and community noise levels resulting from training noise. The following sections evaluate each proposed alternative's potential effect on public health and safety within the Bravo (B)-16, B-17, B-19, and B-20 ranges, the Dixie Valley Training Area (DVTA), and Special Use Airspace (SUA).

3.14.1.1 Region of Influence

The region of influence for public health and safety concerns covers the entire Fallon Range Training Complex (FRTC) (including both SUA and United States [U.S.] Department of the Navy [Navy]-controlled lands) and the immediately adjacent lands. Areas of heightened sensitivity to public health and safety concerns within the region of influence include areas where large groups of people may gather; for example, recreational areas and parks.

3.14.1.2 Regulatory Framework

Laws, regulations, and policies pertaining to public health and safety are listed below:

- Abandoned Mine Lands public safety program (Nevada Revised Statutes 513 [2])
- Clean Air Act (42 United States Code [U.S.C.] section 7401)
- Clean Water Act (33 U.S.C. section 1251 et seq.)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. section 9601 et seq.)
- Council on Environmental Quality Memorandum on Pollution Prevention and the National Environmental Policy Act (NEPA) (42 U.S.C. section 4331[b])
- Defense Environmental Restoration Program (10 U.S.C. section 2701)
- Emergency Planning and Community Right to Know Act (42 U.S.C. section 11001 et seq.)
- Excavations and High-Voltage Lines; Erection of fence or other safeguard around excavation, hole or shaft required (Nevada Revised Statutes 455.010).
- Federal Aviation Regulations Part 91, General Operating and Flight Rules
- Liability of Owner, Lessee, or Occupant of Premises to Trespassers; Trespassing Child (Nevada Revised Statutes 41.515)
- Pollution Prevention Act (42 U.S.C. section 13101 et seq.)
- Resource Conservation and Recovery Act (42 U.S.C. section 6901 et seq.) as amended by the Hazardous and Solid Waste Amendments (40 Code of Federal Regulations [CFR] part 273) and Hazardous materials (49 CFR part 171.8 Hazardous Materials Table)

- Safe Drinking Water Act (42 U.S.C. section 300f et seq.)
- Safe, Efficient Use and Preservation of the Navigable Airspace, 49 CFR part 77.
- The Military Munitions Rule (40 CFR Part 266, Subpart M) as amended by the Federal Facility Compliance Act of 1992 (42 U.S.C. section 6901) and Department of Defense (DoD) Manual 4715.26, DoD Military Munitions Rule Implementation Procedures
- Toxic Substances Control Act (15 U.S.C. section 2601 et seq.)
- Executive Order (EO) 12088, *Federal Compliance with Pollution Control Standards*
- EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*
- EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*

3.14.1.3 Approach to Analysis

The public health and safety and protection of children analysis contained in the following sections addresses issues related to the health and well-being of military personnel and civilians working, recreating, or living in the vicinity of the FRTC. Specifically, this section addresses the following:

- Emergency services (Section 3.14.2.1.1)
- Wildfire management (Section 3.14.2.1.2, and chaff and flares)
- Aircraft accident potential (Section 3.14.2.1.3, including Bird/Animal Aircraft Strike Hazard [BASH]), Range Compatibility Zones (RCZs) (Section 3.14.2.1.4, including Surface Danger Zones [SDZs]), and Weapons Danger Zones (WDZs)
- Unexploded ordnance (Section 3.14.2.1.5)
- Electromagnetic energy safety (Section 3.14.2.1.6)
- Lasers (Section 3.14.2.1.7)
- Abandoned mine lands (Section 3.14.2.1.8)
- Hazardous waste (Section 3.14.2.1.9, i.e., special hazards [asbestos containing materials, lead-based paint, polychlorinated biphenyls])
- Contaminated site management (Section 3.14.2.1.10, Range Sustainability Environmental Program Assessment)
- Protection of children (Section 3.14.2.1.11)

The analysis of impacts on public health and safety includes impacts on children in each section listed above, notwithstanding whether activities or safety procedures discussed specifically reference the protection of children. There is also a stand-alone section titled Protection of Children (Section 3.14.2.1.11), which discusses the protection of children in the region of influence specifically. The hazardous materials and wastes analysis contained in the following sections addresses issues related to their use and management generally, as well as the presence and management of specific cleanup sites in the region of influence.

Factors considered in determining the potential significance of the alternatives' impacts on public health and safety and protection of children include

- the proximity of the training activities to public areas
- access control
- schedule (time of day, the day of the week)

- frequency, duration, and intensity of training activities
- range safety procedures
- operational control of hazardous activities or events
- safety history
- the probability that members of the public would come into contact with or otherwise be affected by a training activity, hazardous material, or waste
- the degree to which such training activities or hazardous material and waste would affect public health and safety

The likelihood that the public would be near a training activity determines the potential for exposure to the activity. If the potential for exposure exists, the degree of the potential effects on public health and safety, including increased risk of injury or loss of life, is determined. If the potential for exposure were zero, then public health and safety would not be affected. Types of activities that raise public safety concerns are those where members of the public are near to or within the footprint of a potentially hazardous training activity, hazardous material, or waste. Land detonations of explosives in a controlled training environment on Navy managed/controlled property, where a substantial buffer exists between the training site and adjacent public areas (i.e., outside of a WDZ), are deemed not to be a risk to public safety.

The Navy reviewed available literature and worked with land management agencies to identify existing public health and safety actions and concerns. Some of the documents used to inform this section include:

- *2015 Nevada Abandoned Mine Lands Report* (2016)
- *Administrative Guide for Military Activities On and Over the Public Lands* (2012)
- *Churchill County, Nevada Volunteer Fire Department Information* (2017)
- *Electromagnetic Environmental Effects: Requirements for Systems* (2002)
- *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada Final Environmental Impact Statement* (2015)
- *Final Environmental Assessment of Airfield Operations at Naval Air Station (NAS) Fallon, Nevada* (2013)
- *Final FRTC Encroachment Action Plan* (2012)
- *NAS Fallon Hazardous Waste Management Plan* (2014)
- Chief of Naval Operations Instruction (OPNAVINST) 3550.1A: Marine Corps Order 2550.11
- Department of Defense Instruction 6055.11 Protecting Personnel from Electromagnetic Fields
- *Range Air Installations Compatible Use Zones Study for B-17, B-19, and B-20 FRTC, Nevada* (2011a)
- *U.S. Navy Range Sustainability Environmental Program Assessment Policy Implementation Manual* (2006)

Range users are required to communicate planned activities with the range scheduler before conducting any activities. Current range control procedures at the FRTC limit unanticipated interactions with the public. Fences and gates restrict access to controlled training areas within the FRTC, and posted signs

warn the public of potentially hazardous activities. Trainers and exercise participants are responsible for ensuring that nonparticipants are not at risk during all training activities. Military access to all ranges at the FRTC must be scheduled through the Naval Aviation Warfare Development Center (NAWDC). All exercise participants on the FRTC ranges are required to contact the Range Operations Center for authorization before proceeding onto any range. A range training area safety officer is assigned for all live-fire exercises. All personnel involved with a ground event are required to view a ground access brief and sign an acknowledgement form before using the scheduled range.

The NAWDC also manages and schedules airspace for the FRTC. Fallon Air Traffic Control (Desert Control) is the range coordinator for airspace. The Range Operations Center is the range coordinator for the ground/bombing ranges (U.S. Department of the Navy, 2015). Aircrew and Range Operations Center personnel are jointly responsible for air safety. Aircrews visually verify target areas prior to firing ammunition or dropping munitions to ensure that targets are clearly identified and that the target area is clear of nonparticipating aircraft, personnel, ground vehicles, and livestock, as discussed in Section 3.6 (Airspace).

3.14.1.4 Public Concerns

Generally, the public is concerned with the health and safety of their communities as a result of the Proposed Action by the Navy. Some of these general issues include effects to children, water quality, air quality, noise effects to humans, wildfires, and the possibility of explosion or accidental harm to the public from training and testing activities. Water quality is discussed in Section 3.9 (Water Resources), air quality is discussed in Section 3.8 (Air Quality), noise effects to humans are discussed in Section 3.7 (Noise), and effects to children as well as Accident Potential Zones are discussed in this section.

Other concerns raised during public scoping and the public comment period on the Draft Environmental Impact Statement (EIS) included the following:

- Emergency services (e.g., effects to medical emergency flight paths in and out of Eureka during NAS Fallon military exercises, and the potential removal of cell towers from Fairview Peak, and any resulting loss of phone communication)
- Wildfire management (e.g., fires caused by military operations and lack of grazing)
- Aircraft accident potential (e.g., jet crash concerns in areas outside of the FRTC and associated clean up)
- Weapons safety and unexploded ordnance (e.g., the potential for off-range munitions, bombing hazards, unexploded ordnance potential presence in areas that are open for public access for part of the year and closed for training during other parts of the year)
- Electromagnetic energy and laser safety (e.g., potential electromagnetic warfare hazards)
- Hazardous materials and waste (e.g., chemicals and radiation affecting soil and air quality; ingestion and inhalation of chaff; red phosphorous, perchlorate, lead, and depleted uranium; clean up and disposal)
- Noise (e.g., loud jet noise over the area east of Fallon, sonic boom noise, and explosive noise causing injury)
- Geological resources concerns (e.g., Navy activities causing earthquakes)
- General aviation flight paths into and out of airports in and around the FRTC SUA (e.g., recreational pilots, non-commercial pilots, and gliders).

For further information regarding comments received during the public scoping process and the public comment period on the Draft EIS, please refer to Appendix E (Public Participation) and Appendix F (Public Comments and Responses).

3.14.2 Affected Environment

This section begins with an overview of the requirements and practices within the current FRTC ranges and the general region prior to identifying particular public health and safety issues by range or training area. These respective ranges and lands are proposed to be withdrawn or acquired for or by the Navy (which are made up of the existing FRTC ranges as well as Bureau of Land Management [BLM], other federal lands, and with privately owned lands).

3.14.2.1 Current Requirements and Practices

NAS Fallon has a variety of range safety procedures in place to ensure public health and safety, and manages public access and proximity.

3.14.2.1.1 Emergency Services

The three main emergency service functions include police, fire and rescue service, and emergency medical service. Police protection and emergency response on the FRTC is provided by the NAS Fallon Security Department. The Security Department works in conjunction with other local law enforcement branches, such as the Fallon Police Department or Churchill County Sheriff, as necessary. The NAS Fallon Fire Department provides fire protection on NAS Fallon and the FRTC. The Fallon/Churchill Volunteer Fire Department, which currently averages 400 fire and extrication calls per year and has an average response time of less than six minutes per call, provides fire protection in surrounding areas, including the FRTC (Churchill County, 2017).

Navy emergency services such as the NAS Fallon Security Department and the NAS Fallon Fire Department handle emergencies on the ranges on any land that is restricted to public access and controlled by the Navy. On the FRTC lands controlled by the BLM, like the DVTA, emergencies are handled jointly with the County emergency services, BLM services, Nevada Department of Emergency Management, and the Navy security department.

Emergencies that require aerial transportation for medical-evacuations (e.g., Care Flights) take precedence over training activities (discussed in detail in Section 3.6, Airspace). When emergencies that require airborne transportation do occur, the Federal Aviation Administration (FAA) makes an immediate airspace request with NAS Fallon Air Traffic Control, and all training is terminated or relocated to other areas in order to make the required airspace available immediately. Emergency aircraft are permitted to pass through restricted airspace when necessary (Churchill County, 2016).

Emergency Flights

FAA Order 7110.65J, (Air Traffic Control Handbook), provides for “operational priority” of civilian air ambulance flights. FAA Order 7110.65J, Section 2–1–4, OPERATIONAL PRIORITY, states “Provide priority to civilian air ambulance flights (call sign “MEDEVAC”). Use of the MEDEVAC call sign indicates that operational priority is requested.” When the FRTC air traffic control entity (Desert Control) is notified of an inbound MEDEVAC flight, that aircraft is provided priority routing through the SUA as required/requested, and military aircraft are re-routed as required to avoid conflict. The Navy does not have a separate procedure because the FRTC is part of the national airspace system and, as such, complies with FAA directives. The term re-routing can include de-confliction through the use of altitude blocks, which allow for continued training by keeping the military aircraft in blocks above or below the ambulance aircraft.

3.14.2.1.2 Wildfire Management

In response to the severity of the wildfires of 2000, President Clinton had the Secretary of Agriculture and Secretary of the Interior compile a report outlining how the nation can better respond to wildfire risks and emergencies; this report became the National Fire Plan. The Nevada Fire Safe Council was focused on reducing the fire risk and increasing the survivability of at-risk communities in Nevada. The Nevada Fire Safe Council administered a project, which is no longer active, funded by the National Fire Plan to complete Community Wildfire Protection Plans for all counties in Nevada. Communities identified in the Federal Register (66 Federal Register 751) as communities at risk within the vicinity of federal lands to the threat of wildfire also had assessments completed for them. Many of the counties underlying the FRTC, including Churchill, Lander, Lyon, Mineral, Nye, and Pershing, are considered to be at risk of wildfires. Between 2007 and 2009 the Wildland Fire Associates completed assessments for these counties (Wildland Fire Associates, 2007). Figure 3.14-1 shows the wildfire potential assessment results on the Regional Fire-Risk Index. Results of the assessments are presented in the range-by-range analysis in this section.

An unintended potential effect of training activities is the ignition of wildfires. From 1992 to 2017, there were 11 suspected or verified fires started by activities in the FRTC. The fires that were verified to have been started by the Navy (Hoyt, Big Chief, Little Den, and Bravo 17) accounted for 37,760 acres burned. Because wildfires are so destructive to the environment, the Navy has implemented and would continue to implement operational and administrative controls to reduce the occurrence of wildfires. Within range boundaries, the Navy prevents fires by implementing weed abatement programs and removing dry vegetative fuel sources near targets. Outside of range boundaries, the Navy implements control measures to ensure that airborne training activities do not start fires. For example, regarding the use of airborne flares, the Navy has established minimum flare release heights to prevent wildfire occurrence. During the fire season (typically between May and October of each year), the Navy raises these minimum flare release heights to 2,000 feet Above Ground Level (AGL) to further reduce a flare ignition source. While flare training is very important in terms of training realism and value, the Navy eliminates the use of airborne flares during severe drought conditions.

Fires that have occurred in the past were due primarily to a combination of aircrew error and flare equipment malfunctions. In these cases, the Navy has attempted to learn from and to correct any historical deficiencies. In the case of flare malfunction, the Navy will issue a Conventional Ordnance Deficiency Report to the Naval Safety Center, and temporarily remove from the training inventory the flare type(s) believed to operate unreliably. If required by the outcome the Conventional Ordnance Deficiency Report investigation, the Navy would permanently remove from training, any known defective flares or flare types. For example, SM-875 flares were temporarily taken out of service as of July 2016 because components from this type of flare were found in the vicinity of two fires on the FRTC, which occurred on June 20 and 21, 2016. The Navy discontinued use of the SM-875 flare while it attempted to ascertain whether the flares may have caused the two fires due to some ordnance defect.

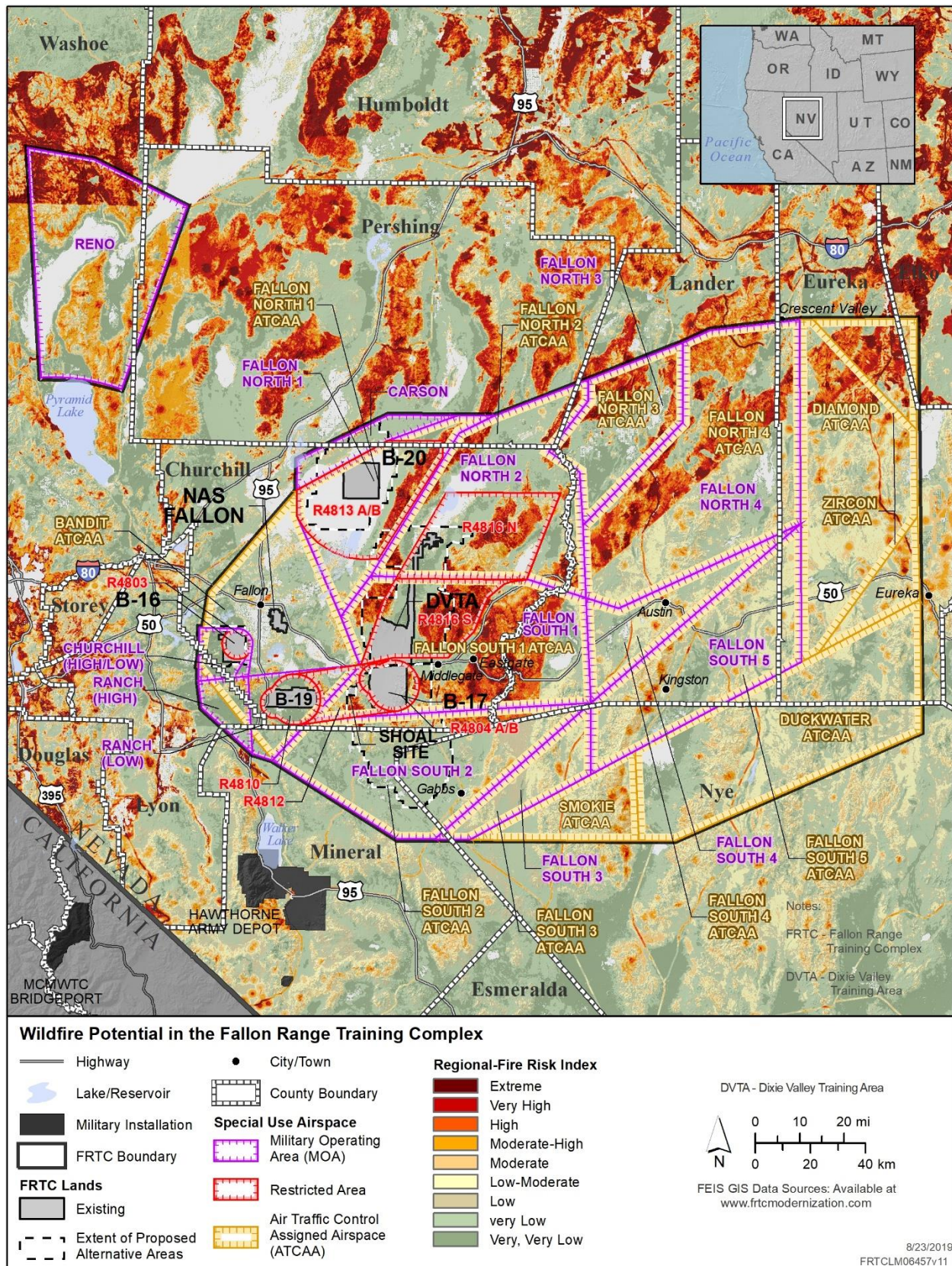


Figure 3.14-1: Wildfire Potential in the Fallon Range Training Complex

However, the Navy has not been able to make such a determination, and recent information—including an instance of similar flare components having been found in the vicinity of another fire, where that fire was known to have been started by a lightning strike—has led the Navy to believe that there is no basis for concluding at this time that the flare in question was defective or was otherwise the cause of any fire. Accordingly, the Navy plans to resume use of the SM-875 flare, subject to monitoring and in accordance with the previously established range safety procedures and doctrine.

The Navy maintains fire prevention activities for Navy-withdrawn lands, and the BLM maintains fire prevention activities for BLM-administered lands. The Navy manages firefighting within the bombing ranges, while the BLM manages this function for all other BLM-administered lands, including the DVTA lands withdrawn to the Navy but open to the public. The BLM and Navy signed the *Cooperative Fire Protection Agreement between the Naval Air Station Fallon, Nevada and Bureau of Land Management Carson City District*, on June 10, 1998.

According to the BLM's *Administrative Guide for Military Activities On and Over Public Lands*, BLM and the Navy mutually support each other in the prevention, suppression, and rehabilitation of wildfires—both on withdrawn lands that are closed to public access and on lands that are in close proximity to such closed withdrawn lands but that are open to public access (Bureau of Land Management, 2012). Under this agreement, supporting agencies deploy aerial fire-fighting in the event of a wildfire, while the mutual aid agreement between the BLM and Navy would address resource protection, suppression of the fire, and rehabilitation of any environmental damage that may occur (Bureau of Land Management, 2012).

Chaff and Flares

Chaff and flares are passive, defensive countermeasures deployed by military aircraft to confuse and divert radar-guided or infrared-guided anti-aircraft missiles fired by other aircraft or from ground installations. Chaff and flares are used during training on the FRTC to validate the tactics, techniques, and procedures used by the Navy combat aircrews in avoiding or neutralizing these threats.

The FAA and Federal Communications Commission regulate chaff and flare use over public lands. When it is not fire season, flares are authorized for deployment below 2,000 feet AGL. During standard fire season restrictions, the minimum safe altitude for deploying decoy flares outside of the boundaries of the FRTC bombing ranges is 2,000 feet AGL.

Chaff consists of aluminum-coated fiber similar in size to human hair and when dispensed in accordance with applicable military policy and procedures has minimal to no impact. Chaff is normally dropped from altitudes of above 12,000 feet and below 35,000 feet Mean Sea Level and carried aloft in upper-level winds for great distances. Use of chaff does leave a small end cap that falls to the ground and degrades slowly over time. The chaff's end cap is biodegradable, and chaff fibers are tiny. Fibers disperse at altitude; therefore, their impact on humans or wildlife on the ground is minimal. Properly dispensed chaff is non-detectable on the ground apart from the small end cap, and there are no known negative environmental or health effects from the use of chaff (Arfsten et al., 2001).

Current training on all of the ranges (i.e., B-16, B-17, B-19, B-20) and the DVTA includes the use of flares. When properly dispensed, flares travel less distance than chaff on the wind and burn out before hitting the ground. If procedures are followed (such as release altitude), and restrictions are applied during fire seasons, flares are not expected to cause wildfires. Rarely, if they are dispensed from unauthorized low-level use (below 12,000 feet), flares may leave small amounts of debris on the ground, and these instances have started wildfires. Strict Navy operational policies govern chaff and flare employment.

During fire season, flare use is restricted. When there is a severe fire season, the use of flares is prohibited by strict Navy operational policies.

3.14.2.1.3 Aircraft Accident Potential

During aviation training activities, pilots avoid towns, noise-sensitive areas, and wilderness areas at prescribed vertical or horizontal distances whenever possible. For example, the Navy requires a 5-nautical-mile buffer around the Yomba Tribal Settlement. Pilots also avoid areas where obstructions to air navigation have been identified, such as areas with powerlines. Potential aircraft mishaps are the primary safety concern for military training flights. NAS Fallon maintains detailed emergency and mishap response plans to react to an aircraft accident, should one occur. NAS Fallon has three runways with associated clear zones (i.e., takeoff safety zones) and accident potential zones (e.g., areas that extend beyond the clear zones at military airfields for purposes of safety clearance). The clear zones lie within NAS Fallon boundaries, and the accident potential zones extend to agricultural outlease areas. The Navy has recommendations for compatible land uses within accident potential zones.

Helicopter activities require the designation of clear zones but not accident potential zones. The clear zone for visual flight rules (VFR) is the same as the takeoff safety zone. The takeoff safety zone constitutes the area under the approach/departure surface until that surface is 50–100 feet above the landing zone elevation; this zone must be free of obstructions.

Unmanned aircraft systems (UAS) follow the same safety regulations as aircraft. If Navy or other DoD UAS are operating inside restricted airspace, they are required to operate under similar aircraft regulations. If operating outside of restricted airspace, the Navy and other DoD UAS need to operate under FAA requirements, may require Certificates or Waivers of Authorization, and generally require either a chase plane or constant visual contact from the ground controller. Additionally, if a Navy or other DoD UAS loses radio or other contact, it is designed to circle in place until it can reacquire the signal. If it cannot, it is pre-programmed to return to a specific point.

Bird/Animal Aircraft Strike Hazard

Bird strikes can cause extensive mechanical and structural damage to aircraft, and collisions can represent a significant hazard to flight operations, occasionally resulting in crashes. The Navy Safety Center began keeping bird strike records in 1980 and has reported that approximately 20,000 bird strikes have been recorded since then, resulting in two deaths and the loss of 25 aircraft and hundreds of millions of dollars of damage. To reduce the BASH, NAS Fallon developed a BASH management plan in accordance with Chief of Naval Operations Instruction 3750.21 (U.S. Department of the Navy, 2017) to identify and eliminate or minimize hazards to aircraft and ground operations. Although birds may be present on or above all of the ranges and at the DVTA, the BASH management plan states that relatively few birds would be expected at B-17 due to lack of vegetation, while B-20 may have more birds in the vicinity due to the Stillwater National Wildlife Refuge one mile southeast of B-20. Incidents for military aircraft primarily occur below 2,000 feet, and aircraft at FRTC are required to stay above 3,000 feet when overflying wildlife refuges. However, migratory birds flying at higher altitudes are still hazardous, as well as birds flying at night (U.S. Department of Defense, 2010). As discussed in Section 3.10 (Biological Resources), there would be no change in the BASH potential with implementation of the Proposed Action, and the Navy would continue to adhere to the NAS Fallon BASH Plan.

3.14.2.1.4 Range Compatibility Zones

The Navy develops RCZs for all targets in order to provide recommendations for land use around ranges for compatibility with training and safety for public use and discusses these in a Range Air Installation Compatible Use Zone (RAICUZ) program. RCZs represent aviation and ordnance delivery safety concerns in areas based on degrees of safety that can be reasonably attained on the ground. There are three RCZs designated for Air-to-Ground ranges, RCZ-I, RCZ-II, and RCZ-III. RCZs are activated and deactivated according to training activities, but unexploded ordnance is potentially present in RCZ-I zones at all times. The RCZ-I is the minimum range surface area needed to contain ordnance employed in Air-to-Ground training, including the initial impact and ricochet. RCZ-I zones are a combination of the individual WDZs and SDZs and are not accessible to the public as they are the areas of highest safety risk.

- A WDZ represents the minimum safety requirements designed for aviation weapons training on DoD ranges. A WDZ encompasses the ground and airspace for lateral and vertical containment of projectiles, fragments, debris, and components resulting from the firing, launching, or detonation of aviation delivered munitions. This three-dimensional zone accounts for weapons accuracy, failures, and ricochets based on weapon type delivered by a specific aircraft type. The Navy must control the land under the WDZ (U.S. Department of the Navy, 2015).
- SDZs are areas associated with training ranges and designed to protect military personnel and the public from projectile impacts resulting from direct fire, including misdirected and accidental discharges and ricochets. When a range is in active use, the SDZ is an exclusion area that is strictly controlled and could contain projectiles, fragments, or components from firing, launching, or detonating weapons and explosives. An SDZ serves as a buffer for human safety downrange from a firing point and must be controlled by the Navy.

The RCZ-II is considered an intermediate level for safety hazard concern. The length of the RCZ-II zone begins when a pilot prepares for weapons delivery to the target. Release of weapons occurs only over restricted areas and are restricted to WDZs for any bombing range at the FRTC.

The RCZ-III is the minimum level of safety hazard concern and recognizes airspace that is restricted for safety of flight. RCZ-III areas in the FRTC include Military Operating Areas (MOAs) and Air Traffic Control Assigned Airspaces (ATCAAs). MOAs and ATCAAs are required to provide the range user tactical maneuvering room as a three-dimensional concept setting restrictions both vertically and laterally (U.S. Department of the Navy, 2011a). RCZ-IIIs are discussed in Section 3.6 (Airspace) and are not discussed further here.

3.14.2.1.5 Unexploded Ordnance

Unexploded ordnance may be present within the areas currently restricted to public access on the ranges. Unexploded ordnance may remain capable of detonation, thereby posing a physical risk to individuals in its vicinity. Any Unexploded Ordnance that is found on range is disposed of by Navy Explosives Ordnance Demolition teams stationed at NAS Fallon. On land ranges controlled by the Navy, this risk is limited to military personnel who are trained in unexploded ordnance avoidance and hunters or other members of the public who are authorized and briefed on safety protocols prior to entering the ranges. Unexploded ordnance remains capable of detonation, thereby posing a physical risk to individuals in its vicinity. On land ranges controlled by the Navy, this risk is limited to military personnel who are trained in unexploded ordnance avoidance. Explosive Ordnance Disposal personnel periodically

survey and remove any unexploded ordnance from the range. However, any unexploded ordnance not immediately recovered and removed from the range could pose a risk. The OPNAVINST 3550.1 series covers a portion of the Navy's doctrine for weapons safety (Range Air Installations Compatible Use Zones). The Navy uses the DoD WZ analysis tools and SDZ tools in the development of Navy ranges to ensure that ordnance is employed on the range and remains on the range to a very high degree (99.99 percent certainty).

Prior to development of the WZ tool, training on the FRTC resulted in an average of one off-range ordnance incident every 2.5 years. Since WZ has been used as a range management and planning tool, more restrictive delivery patterns have been developed to better ensure containment of all weapon footprints, resulting in a current average of only one off-range ordnance incident in six years. However, these more restrictive delivery patterns require that many of the training weapons are dropped in non-tactical scenarios that could not be used in actual combat, resulting in unrealistic training. Per Navy policy (OPNAVINST 3710.7 [Series]), the release of any air-to-surface ordnance should be accomplished within Restricted Airspace and all such releases should impact on Navy land. As required by the Department of Defense Military Munitions Rule Implementation Procedures (April, 2017), ordnance that inadvertently lands outside Navy property would be retrieved as soon as possible once the Navy learns that it has landed off range. While there is always a risk that ordnance may land off range, the potential for such incidents is actually as low as 1 in 10,000 occurrences. In the rare case that ordnance lands off range, pilots or other range users are instructed to inform NAS Fallon of the incident immediately. NAS Fallon is part of a MOA with the BLM and a MOA with the Walker River Paiute Tribe, both of which detail the procedures implemented if an incident were to occur (depending on which entity's land the ordnance fell). These MOAs outline the point of contacts, notification procedure, entry procedure, imminent threat procedure, fire incident response, coordination for any appropriate remediation, and other cleanup activities in compliance with applicable state and federal laws, including but not limited to the CERCLA and Resource Conservation and Recovery Act. Any off-range ordnance would be collected by military personnel in accordance with the respective MOAs and best management practices and standard operating procedures.

Explosive Ordnance Disposal personnel periodically survey and remove any unexploded ordnance from these ranges. Ranges B-16, B-17, B-19, and B-20 all potentially contain unexploded ordnance, but all such ordnance is expected to be within the range, where restricted access prevents civilians from coming into contact with ordnance.

The southern boundary of B-19 shares a 9-mile border with the 339,181-acre Walker River Paiute Indian Reservation. The Walker River Paiute Tribe is a federally recognized Indian Tribe of Northern Paiute. As a result of historical training practices (prior to 1989), a portion of the Reservation adjacent to B-19 was accidentally impacted with off-range ordnance. An effort to locate and clear historic ordnance was conducted and the Navy implemented measures that seek to eliminate (or at least dramatically reduce) the possibility of off-range ordnance near the southern boundary of training range B-19. In 1989, the Navy changed run-in lines, began using safety observation aircraft during live fire events, and provided additional briefings to aircrews regarding sensitive areas surrounding the ranges. A Memorandum of Understanding between NAS Fallon and the Walker River Paiute Tribe establishing protocols for both the Indian Tribe and the Navy to follow in responding to potential future off-range ordnance incidents (e.g., notification and coordinating access to reservation lands) was signed on May 14, 2007. A Memorandum of Agreement between the Indian Tribe and Navy was signed on May 24, 2017, updating and clarifying procedures for addressing any future off-range ordnance incidents on the Reservation.

The Navy is actively working with the Indian Tribe to seek a mutually-agreeable resolution for the issue of historical off-range ordnance present on the Reservation.

3.14.2.1.6 Electromagnetic Energy Safety

The electromagnetic spectrum is made up of all frequencies (or wavelengths) of electromagnetic energy including radio frequency radiation. Radar, electronic warfare devices, navigational aids, two-way radios, cell phones, radio transmitters, and other communications and electronic devices produce electromagnetic radiation. This electromagnetic energy is comparable to civilian navigational aids and radars at airports and television weather stations. Transmitting antennas emit radiation as radio waves and microwaves. Exposure to radio frequency energy of sufficient intensity at frequencies between 3 kilohertz and 300 gigahertz can adversely affect people, munitions, or fuel (U.S. Department of the Navy, 2011b). The Federal Communications Commission strictly regulates the use of electromagnetic energy for training to prevent damage or injury to personnel.

Thresholds based on frequency and power output have been determined for electromagnetic energy sources to determine hazardous levels of electromagnetic energy to humans, munitions, and fuel (U.S. Department of Defense, 2002, 2009). Physical reactions to electromagnetic radiation are subject to the power and energy of the emitted electromagnetic wave. Human tissue is directly susceptible to shock or burns when metallic objects, which have absorbed high electromagnetic radiation, are touched. This type of burn would be similar to the type of burn produced inside a microwave oven. The heating effect varies with the power and the frequency of the electromagnetic energy.

Standard operating procedures to avoid excessive exposures of electromagnetic energy from military aircraft establish minimum separation distances between electromagnetic energy emitters and people, munitions, and fuels (U.S. Department of Defense, 2009). Practices are in place to protect the public from electromagnetic radiation hazards. The U.S. Navy Hazards of Electromagnetic Radiation to Personnel Ship Survey and Certification Process and Basic Hazards of Electromagnetic Radiation to Ordnance are two of the programs that personnel must complete to participate in training and testing involving electromagnetic devices. These practices include procedures to protect the public such as setting the heights and angles of electromagnetic energy transmissions to avoid direct exposure of humans, munitions, or fuel; posting warning signs; and establishing safe operating levels when radar systems are operational. Interference with cell phone signals and Global Positioning System (GPS) devices can occasionally occur during operations (e.g., during Ground Maneuver Tactics, Tactical Ground Mobility, and Convoy Operations).

The Navy is not authorized to intentionally jam civil communications bands, and continually acts to responsibly use the DoD authorized spectrum for testing and training while avoiding significant impact on other spectrum users. Operations on the FRTC purposely avoid broad conflict with civilian systems. NAWDC and NAS Fallon coordinate and will continue to coordinate with infrastructure providers and spectrum users to avoid conflicts.

3.14.2.1.7 Lasers

The Navy employs laser systems as a critical part of realistic tactical training including precision range (distance) finding, as target designation/illumination devices, for engagement with laser-guided weapons, for mine detection, mine countermeasures, and as a non-lethal deterrent. Laser use is not authorized on land that is open to the public. All laser systems require a safety designation from the Naval Laser Safety Review Board and a local range safety certification from the Navy's Executive Agent for laser programs. Fallon ranges are certified laser safe as a part of these processes. The OPNAVINST

5100.27B/Marine Corps Order 5104.1C, *Navy LASER Hazards Control Program*, provides Navy and Marine Corps policy and guidance in the identification and control of laser hazards. The Navy observes strict precautions and has written instructions in place for laser users to ensure that nonparticipants are not exposed to intense light energy. Laser safety procedures (*OPNAVINST 3550.1A, Marine Corps Order 2550.11*) for aircraft require:

- An initial pass over the target before laser activation to ensure that target areas are clear.
- During actual laser use, aircraft run-in headings are also restricted to avoid unintentional contact with personnel or nonparticipants.
- Personnel participating in laser training activities are required to complete a laser safety course (U.S. Department of the Navy, 2008a).

In the FRTC Bravo ranges, ground laser targeting training is conducted using lasers as aiming devices for small arms, as target scoring systems instead of live rounds, for range finding, to illuminate targets at night, and to mark targets for identification by aircraft.

3.14.2.1.8 Abandoned Mine Lands

In 1987, the Nevada Legislature tasked the Commission on Mineral Resources with creating an Abandoned Mine Lands public safety program (Nevada Legislature, 1987). Nevada Revised Statutes 455.010 requires an owner to erect a fence or other safeguard around any excavation, hole, or shaft. Nevada Revised Statutes 41.510 (3) explains the owner's duty to keep the premises safe or to warn of danger for persons who participate in recreational activities. Nevada Administrative Code 513.270 defines an owner as: "the owner of real property who is shown to be the owner on records located in the courthouse of the county in which the real property is located." While the Navy (as a federal agency) is not formally subject to these state law requirements, the Navy does and would continue to substantively comply with such requirements as a matter of policy. Abandoned mine lands have been discovered within Pershing, Churchill, Lyon, and Mineral Counties. According to a 2016 report by the Commission on Mineral Resources, in 2016 there were 1,196 hazards discovered and 1,191 hazards secured (Ghiglieri, 2017). Between 1986 and 2013, there were 43 reported incidents (e.g., a person falling into a mine shaft, person falling down a winze [a connection between different levels in an underground mine], dog falling down a shaft, off-highway vehicle [OHV] rolling into a pit, person drowning in open pit lake) related to abandoned mine lands. There were no reported incidents from 2014–2016 (Ghiglieri, 2017).

3.14.2.1.9 Hazardous Waste

The Navy has implemented a strict Hazardous Material Control and Management Program and a Hazardous Waste Minimization Program for all activities. These programs are governed Navy-wide by applicable OPNAVINSTs, state laws, and at the installation by specific instructions issued by the Base Commander (Integrated Contingency Plan) (in conjunction with the Navy's compliance with applicable federal, state, and local laws and regulations pertaining to hazardous wastes generally). The Navy continuously monitors its operations to find ways to minimize the use of hazardous materials and to reduce the generation of hazardous wastes.

Any spills would be managed and cleaned up in accordance with applicable state and federal regulatory requirements. If any such spill were to exceed reportable quantities as defined by the U.S. Environmental Protection Agency for regulated material, the event would be immediately reported to

the NAS Fallon Environmental Division per the Integrated Contingency Plan (U.S. Department of the Navy, 2009).

3.14.2.1.10 Range Sustainability Environmental Program Assessment

A critical aspect in ensuring the long-term sustainability of military ranges is to understand the environmental conditions at each range and to manage these resources in an environmentally sound manner. The Navy's Range Sustainability Environmental Program Assessment (RSEPA) describes the Navy's approach for assessing and addressing the environmental condition of land-based operational ranges where munitions are used or were used, within the United States and its territories. RSEPA implements the requirements of DoD Directive 4715.14 Operational Range Assessments by directing; (1) how to evaluate the regulatory compliance status of each operational range including ways to maintain compliance; and (2) how to evaluate the potential for adverse impacts on human health and the environment from munitions constituents, including identification and implementation of protective measures to minimize any such risk. DoD Directive 4715.11, *Environmental and Explosives Safety on Operational Ranges in the United States*, is addressed on operational Navy ranges by regularly clearing unexploded ordnance.

The Navy's RSEPA policy implementation manual provides requirements, procedures, and protective measures necessary for implementing range assessments under the RSEPA Program (U.S. Department of the Navy, 2006). The range assessment process may consist of two phases: a range condition assessment conducted every five years and, if necessary, a more comprehensive range evaluation (U.S. Department of the Navy, 2015). Protective measures can be implemented at any point in the assessment process to maintain range sustainability and address specific environmental concerns.

One of the purposes of sustainable range oversight is to address any off-range releases of munitions constituents of potential concern that might potentially occur, through the CERCLA process. If munitions constituents were to migrate off-range and present an unacceptable risk to human health and the environment, the Navy would strive to control the on-range portion of any such source through appropriate range management techniques. In accordance with the requirements of CERCLA, the Navy would assess, identify, and execute the appropriate environmental response action for any off-range area affected by such a release. Any action taken would include coordinating with the appropriate regulators and stakeholders.

The Navy has prepared a Range Condition Assessment report and subsequent updates for the FRTC as part of Chief of Naval Operations' RSEPA process. The latest report for the FRTC was completed in 2015. Goals of the range condition assessment are to determine whether (1) munitions constituents are migrating off range and presenting unacceptable risk to human health and the environment, and (2) the range complies with environmental laws and regulations. The process includes the following three main steps, although not all ranges require all three steps: the Range Condition Assessment, the Comprehensive Range Evaluation, and Sustainable Range Oversight (U.S. Department of the Navy, 2008b).

Operational Range Clearance Program

The Operational Range Clearance Program maintains the ranges by collecting and removing ordnance and ordnance related debris and materials continuously throughout the year. OPNAVINST 3571.4, *Operational Range Clearance Policy for Navy Ranges*, establishes the policy and requirements for performing operational range clearance on Navy ranges. The purpose of the operational range clearance is to sustain readiness and ensure the safety of aircrews, range operations, maintenance personnel,

range clearance personnel, and the public. Operational range clearance also provides secondary benefits to the Navy by reducing the amount of expended military munitions that accumulate in the environment. Completion of the *Fallon Operational Range Clearance Plan* (NAS Fallon Instruction 4790 Series) occurred in 2013 for NAS Fallon and the FRTC. The plan is updated every five years, or sooner if training operations, operational frequency, or range characteristics change significantly. Clearance activities are accomplished to meet range-specific needs based on the following range clearance categories specified in the Commander U.S. Fleet Forces Command and Commander Pacific Fleet *Operational Range Clearance Guidance Document for Implementing OPNAVINST 3571.4*: laser training events, target fidelity, maintenance personnel safety, and long-term range sustainment (U.S. Department of the Navy, 2015).

Defense Installation Restoration Program

The DoD created the Installation Restoration Program to identify, evaluate, and clean up contamination from past operations on military bases. The program was designed to ensure DoD compliance with federal and state environmental laws and regulations. Active sites are those that require additional action to clean them up to the level(s) required by applicable federal and state laws and regulations, before they can be closed as “No Further Action.” No Installation Restoration Program sites occur in the FRTC; therefore, they are not discussed further.

3.14.2.1.11 Protection of Children

This section presents or describes the presence of children that could be at risk as a result of the Proposed Action in the region of influence. Table 3.14-1 compares the percentage of the population that is less than 18 years of age within the region of influence to that of the State of Nevada and the nation. The percentage of children in Churchill County is similar to that of the State of Nevada and only slightly higher than that of the nation. Underlying the FRTC airspace are the towns of Austin (population of 192 according to the 2010 census), Crescent Valley (392), Fallon (8,606), and Gabbs (269) (U.S. Census Bureau, 2017). Beyond the boundaries of NAS Fallon, overall population numbers are lower under the FRTC airspace compared to the surrounding area outside of the FRTC airspace (U.S. Department of the Navy, 2015).

Section 3.7 (Noise) identifies public schools within the region of influence. Enrollment at schools in the districts within the region of influence is shown in Table 3.14-2. Children are also present in the housing and personnel support areas of NAS Fallon.

Table 3.14-1: Population of Children in the Region of Influence

U.S., State, or Selected Counties under Special Use Airspace	Population		Percentage of the Population Less than 18 Years of Age		Average Family Size
	2010	2017	2010	2017	2012–2016
United States	308,758,105	325,719,178	24.0	22.6	2.64
Nevada	2,700,691	2,998,039	24.6	22.9	2.72
Churchill County*	24,877	24,230	25.2	22.8	2.49
Elko County*	48,942	52,649	29.1	27.5	2.91
Eureka County*	1,987	1,961	24.2	23.4	2.25
Lander County*	5,775	5,693	27.6	26.4	2.78
Lyon County*	51,980	54,122	24.9	21.7	2.64
Mineral County*	4,771	4,457	18.3	19.1	2.15
Nye County*	42,477	44,202	20.7	16.7	2.45
Pershing County*	6,753	6,508	19.6	16.4	2.31
Washoe County*	421,427	460,587	23.6	21.9	2.57

*Data was only available for the year 2017, not 2018.

Source: United States Census Bureau (2018)

Table 3.14-2: Enrollment of Children at Public Schools Within the Region of Influence

School District	Enrollment (number of students)	Number of Elementary Schools	Number of Secondary Schools
Churchill County ¹	3,424	6*	6*
Elko County	9,935	15	16
Eureka County	291	3 ²	1
Lander County	1,027	4*	4*
Lyon County	8,986	18*	18*
Mineral County	587	4*	4*
Nye County	5,442	10	14
Pershing County	700	4*	4*
Washoe County	67,569	65	28 ³

¹ The school district includes a distance learning program that operates through an online-based curriculum and a homeschooling program (Churchill County School District, 2015).

² There are two elementary schools in the unincorporated town of Eureka and one elementary school in Crescent Valley (Nevada Department of Education, 2016).

³ The Washoe County School District also has a few special education schools (Nevada Department of Education, 2016)

*Churchill County, Lander County, Lyon County, Mineral County, Pershing County School Districts have combined elementary and secondary schools. Source: (State of Nevada Department of Education, 2017)

3.14.2.2 Bravo-16

The B-16 range is located within five miles of the City of Fallon, directly to the southwest of NAS Fallon. A portion of B-16 that includes and is north of Sand Canyon Road is currently open to the public. The rest of the range is closed to the public and is currently used primarily for Naval Special Warfare Activities. Controlling public access to B-16 is necessary in order to protect the public and military personnel from harm. The use of fences and posted signs ensures public access restrictions to the range. All range access gates are closed and locked at all times, other than to allow the passage of authorized users. Standard operating procedures require that the range safety officer makes sure that a range and the associated SDZ are clear of trespassers before starting training activities (U.S. Department of the Navy, 2015). The current RCZ-I area (SDZs and WDCs) is within the current boundaries of the B-16 range. The RCZ-II falls primarily over B-16 but extends over compatible use undeveloped federal land (U.S. Department of the Navy, 2011a).

The regional fire risk index in B-16, including additional lands requested for withdrawal and proposed for acquisition to expand B-16, ranges from very, very low to moderate, as shown in Figure 3.14-2 and Figure 3.14-3. Figure 3.14-1 shows the wildfire potential in both Churchill and Lyon Counties. Wildfire risk hazard values were assessed on lands within Churchill County to protect human life, property, and resources from a catastrophic wildfire. Fuel treatment options presented in the study included mowing/mastication, livestock grazing, prescribed fire, chemical control (herbicides), seeding, greenstripping, hand thinning and brushing, mechanical treatment, biomass utilization, and combinations of these treatments. According to the study, the overall wildfire risk in Churchill County is a moderate-to-high threat to 81 percent of the values at risk (i.e., human life, property, resources, critical wildlife habitat, cultural concerns, and economically important infrastructure improvements) (Wildland Fire Associates, 2007). A similar study was conducted in Lyon County. According to the analysis, the overall wildfire risk in Lyon County is a moderate-to-high threat to 87 percent of the values at risk (Wildland Fire Associates, 2009a).

There are communication towers or electronic warfare emitters currently within the B-16 range. Practices are in place to protect the public from electromagnetic radiation hazards as described in Section 3.14.2.1.6 (Electromagnetic Energy Safety). Ground laser targeting training is conducted on B-16 as discussed in Section 3.14.2.1.7 (Lasers).

Abandoned mines with hazard ratings of low and moderate were found on the requested additional withdrawal lands for B-16 (to be closed to public access, as shown in Figure 3.14-4 and Figure 3.14-5). The abandoned mine features found are in the land requested for withdrawal and classified as abandoned shafts. One is rated as moderate and one is rated as low on the mine hazard rating, as shown in Table 3.14-3.

Table 3.14-3: Abandoned Mine Lands in the Existing B-16 and Lands Requested for Withdrawal and Proposed for Acquisition

Mine Feature Type	Hazard Rating								Total
	2	3	4	5	6	7	8	9	
B-16 Existing									
SHAFT									0
B-16 Proposed									
SHAFT				1	1				2
Total									2

Notes: Hazard ratings are established by the scoring system described in Nevada Administrative Code (NAC) 513.340 (Rating of Degree of Danger). After scoring a mine feature, the mine is ranked according to NAC 513.360. A hazard rating of 2 or 3 points is minimal, 4 or 5 points is low, 6 or 7 points is moderate, and 8 points or above is a high hazard.

Rarely is hazardous material and waste generated in B-16. Maintenance on backup generators produces used petroleum, oils, lubricants, antifreeze, and spent batteries (U.S. Department of the Navy, 2014). Any spills would be handled as discussed in Section 3.14.2.1.9 (Hazardous Waste). Certified Hazardous Material/Hazardous Waste personnel handle all hazardous material and waste in accordance with applicable federal, state, and local regulations to ensure environmental health and safety.

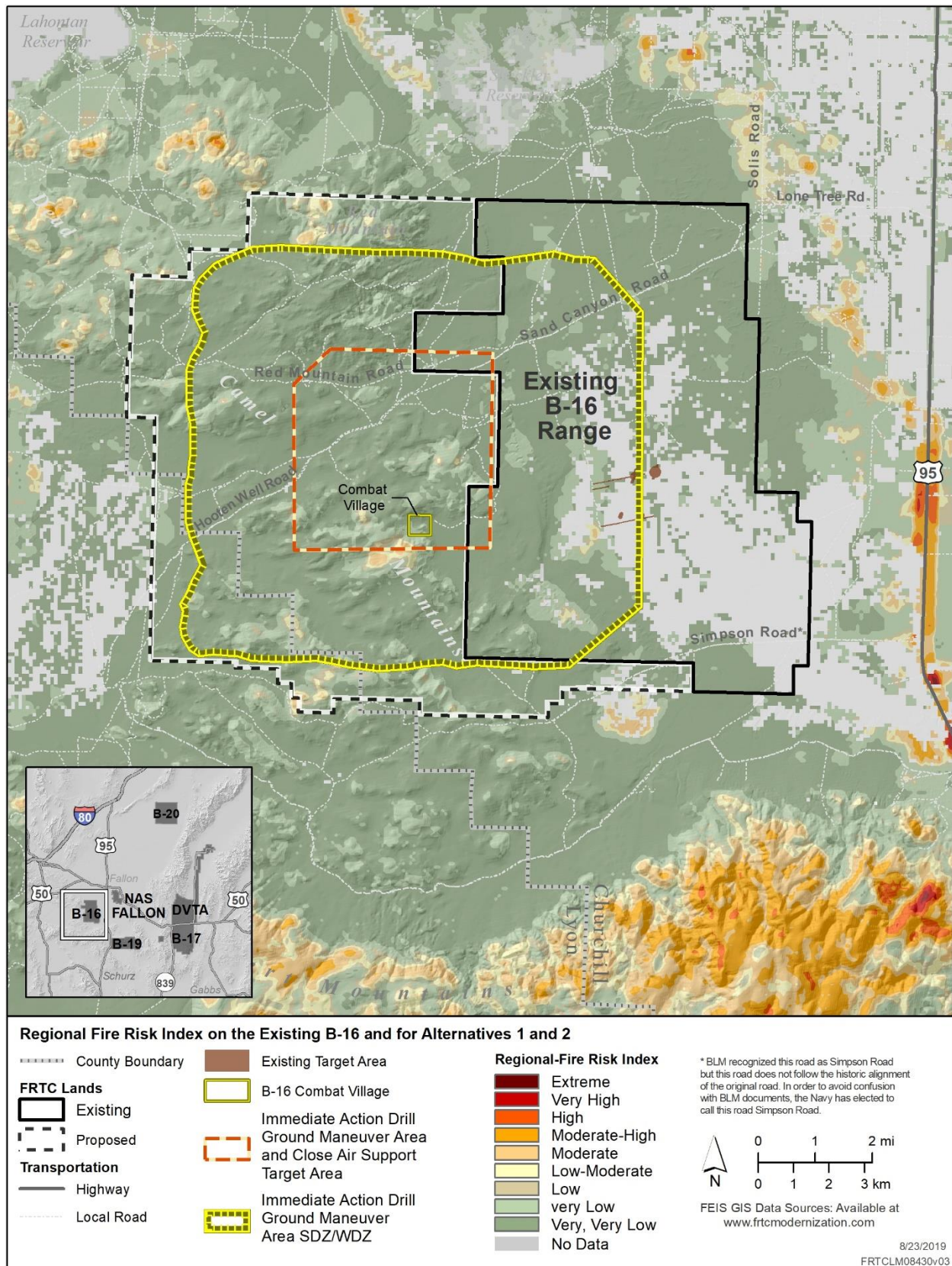


Figure 3.14-2: Regional Fire Risk Index on the Existing B-16 and for Alternatives 1 and 2

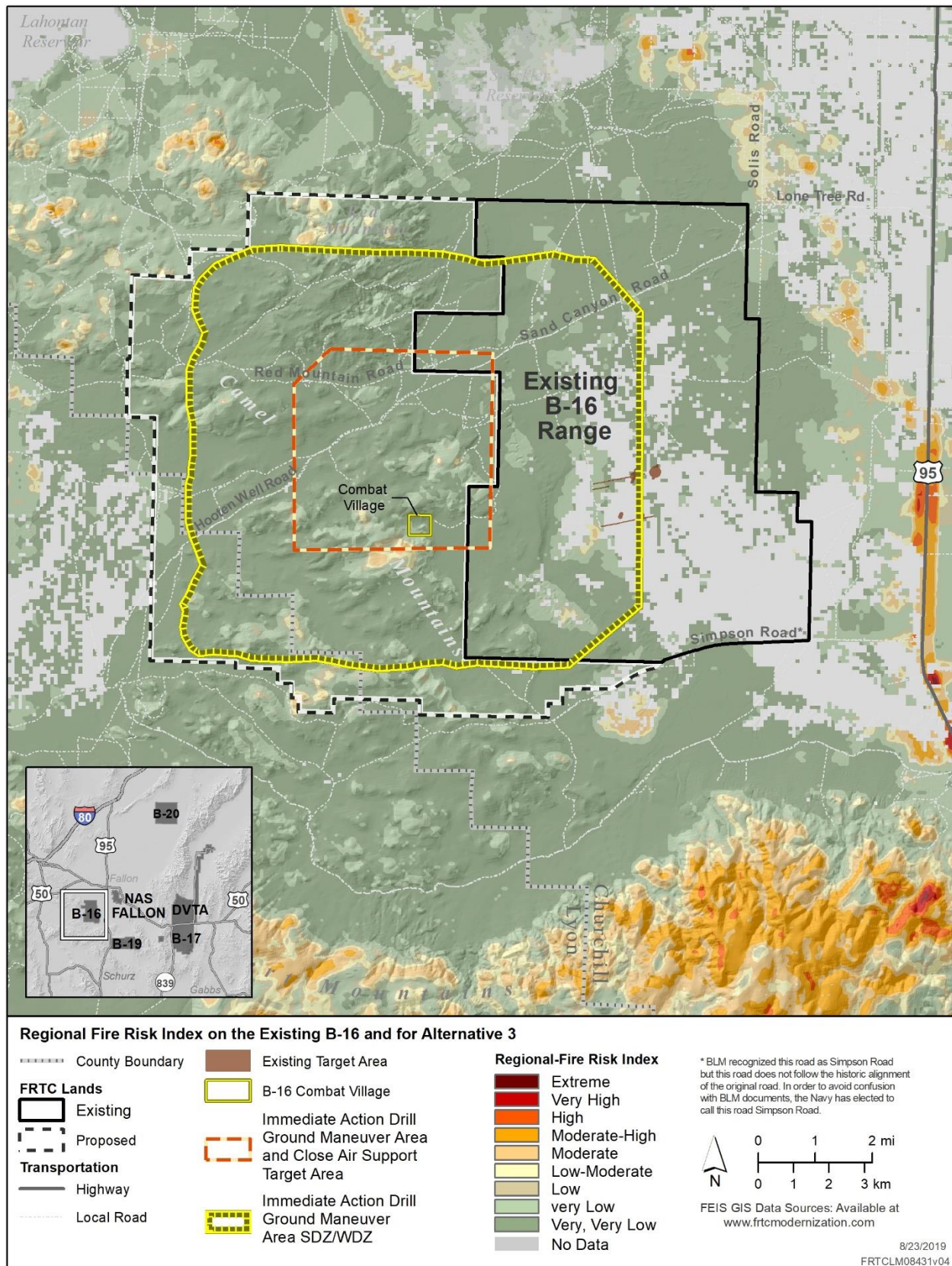


Figure 3.14-3: Regional Fire Risk Index on the Existing B-16 and for Alternative 3

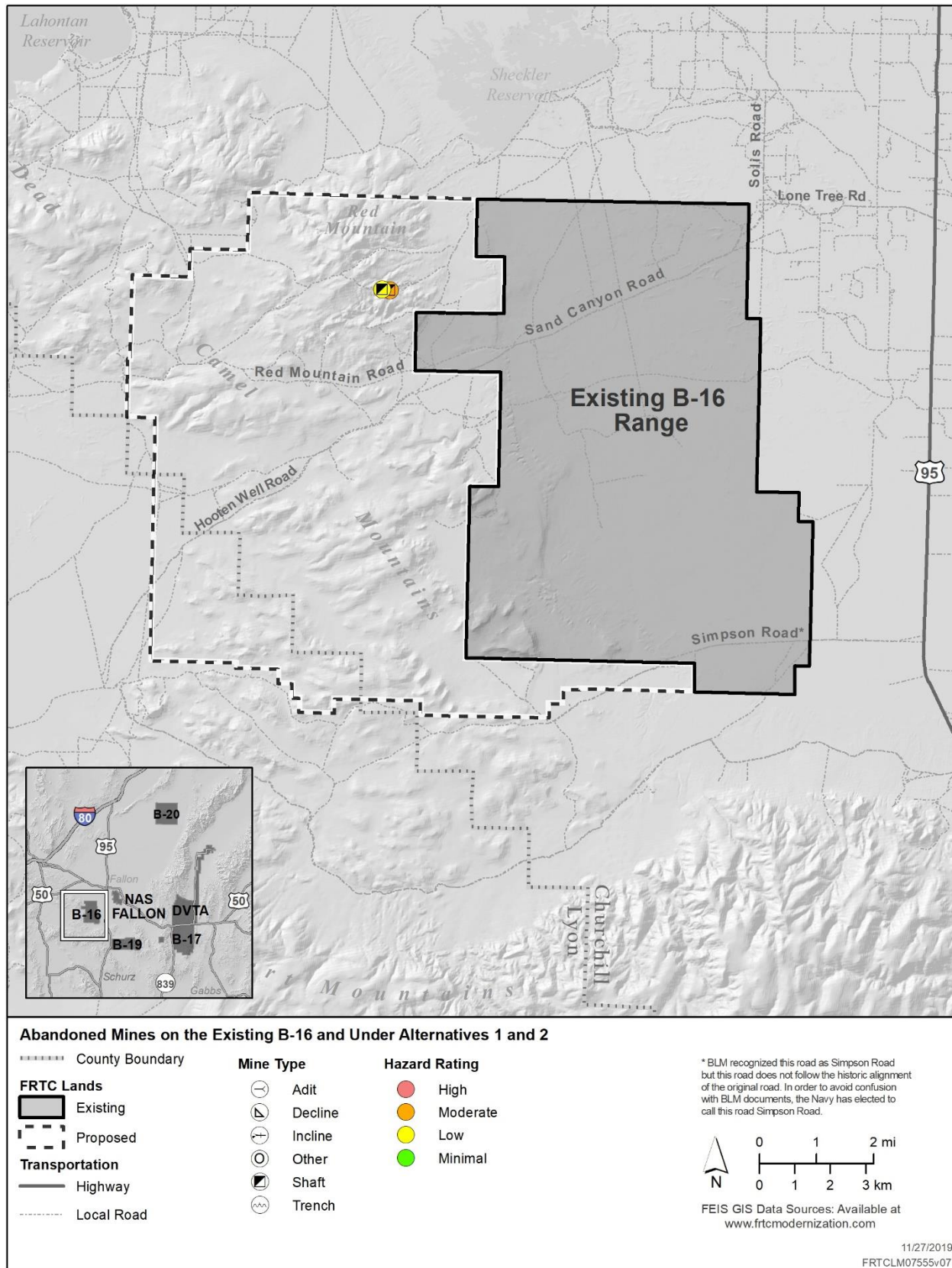


Figure 3.14-4: Abandoned Mines on the Existing B-16 and Under Alternatives 1 and 2

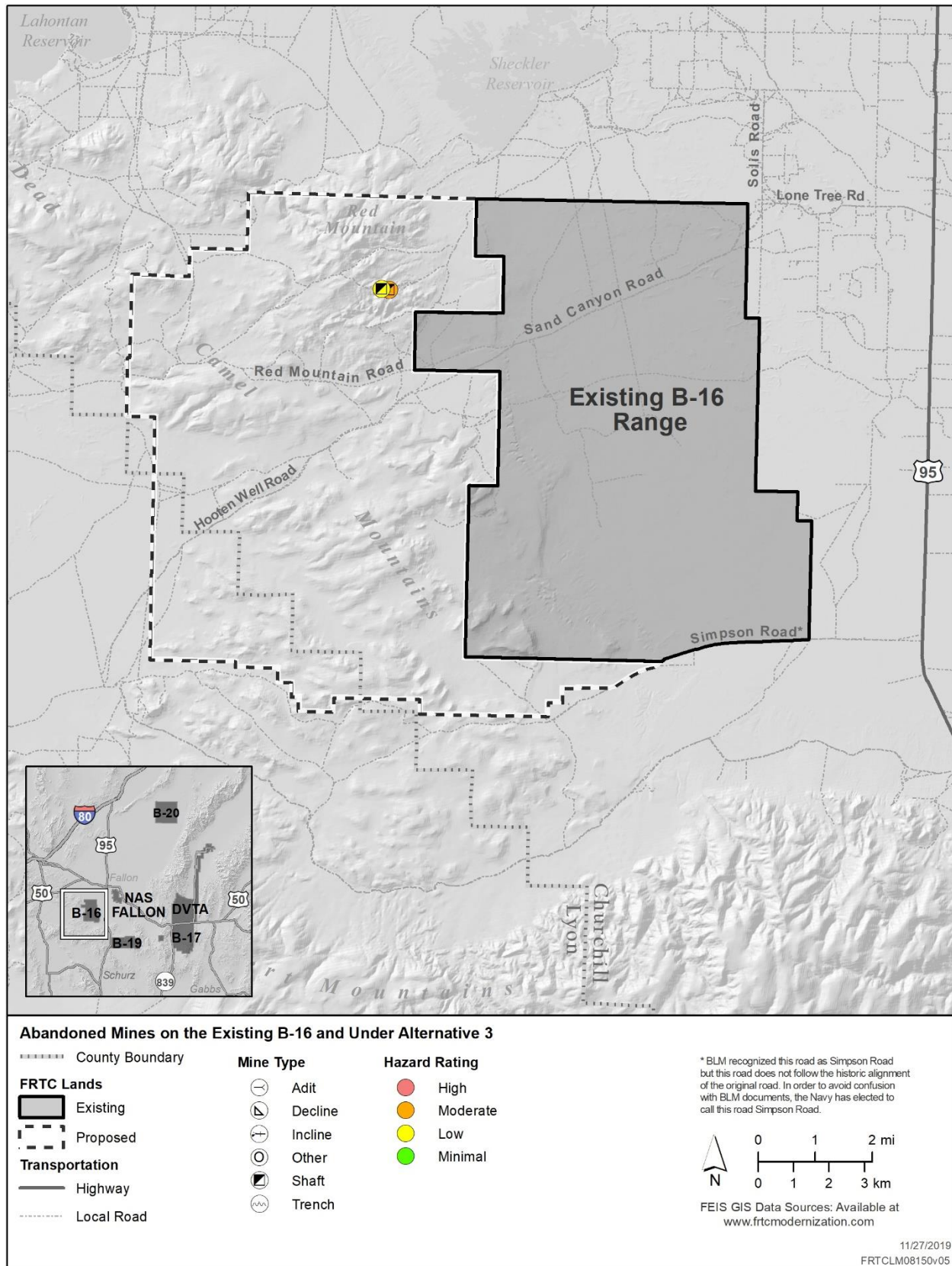


Figure 3.14-5: Abandoned Mines on the Existing B-16 and Under Alternative 3

3.14.2.3 Bravo-17

B-17 is an aerial bombing range where public access is restricted. Signs and fences are in place to prevent civilians from entering B-17 when the range is operating to prevent accidental entry of non-participants for public safety. The current RCZ-I areas (SDZs and WDCs) are within the current boundaries of the existing B-17 range. The RCZ-II on B-17 extends beyond the current boundaries, primarily over compatible use area RR-20 Rural Resource District with no agricultural or residential districts (see Section 3.2, Land Use, for more information).

The regional fire risk index near B-17 ranges from very, very low to extreme, as shown in Figure 3.14-6 and Figure 3.14-7. Figure 3.14-1 shows the wildfire potential in Churchill, Mineral, and Nye counties. As discussed for B-16, the overall wildfire risk in Churchill County, Mineral County, and Nye County is a moderate-to-high threat to 81 percent (Wildland Fire Associates, 2007), 94 percent (Wildland Fire Associates, 2009b), and 98 percent of the values at risk respectively (Wildland Fire Associates, 2008).

There are communication towers currently within the B-17 range, including one on Fairview Peak. The communication towers are built to aim away from the public in order to avoid public health and safety hazards from electromagnetic radiation. The communication towers are also fenced to prevent the public from approaching the towers. Practices are in place to protect the public from electromagnetic radiation hazards that may occur from training activities as described in Section 3.14.2.1.6 (Electromagnetic Energy Safety). Training activities in B-17 use lasers, however, all laser use is contained within the range, and measures are taken to protect the public from operational hazards as discussed in Section 3.14.2.1.7 (Lasers).

Abandoned mines were found within the existing and additional B-17 lands as shown in Figure 3.14-8 and Figure 3.14-9 and range from high hazard to no hazard ratings. Seven hazardous abandoned mine features were found in the existing B-17 range, 105 hazardous abandoned mine features were found in the lands requested for withdrawal and proposed for acquisition under Alternatives 1 and 2, and 124 hazardous abandoned mine features were found in lands requested for withdrawal and proposed for acquisition under Alternative 3. These hazardous abandoned mine features include adits, declines, inclines, other, shafts, and trenches and are listed in Table 3.14-4. Mine features are various entryways into a mine. Adits are horizontal entrances while shafts are vertical entrances. Declines are sloping underground openings typically used for machine access. An incline is often a steep entrance, so hoisting is used for transporting equipment in and out of a mine. Finally, trenches are dug to expose mining resources.

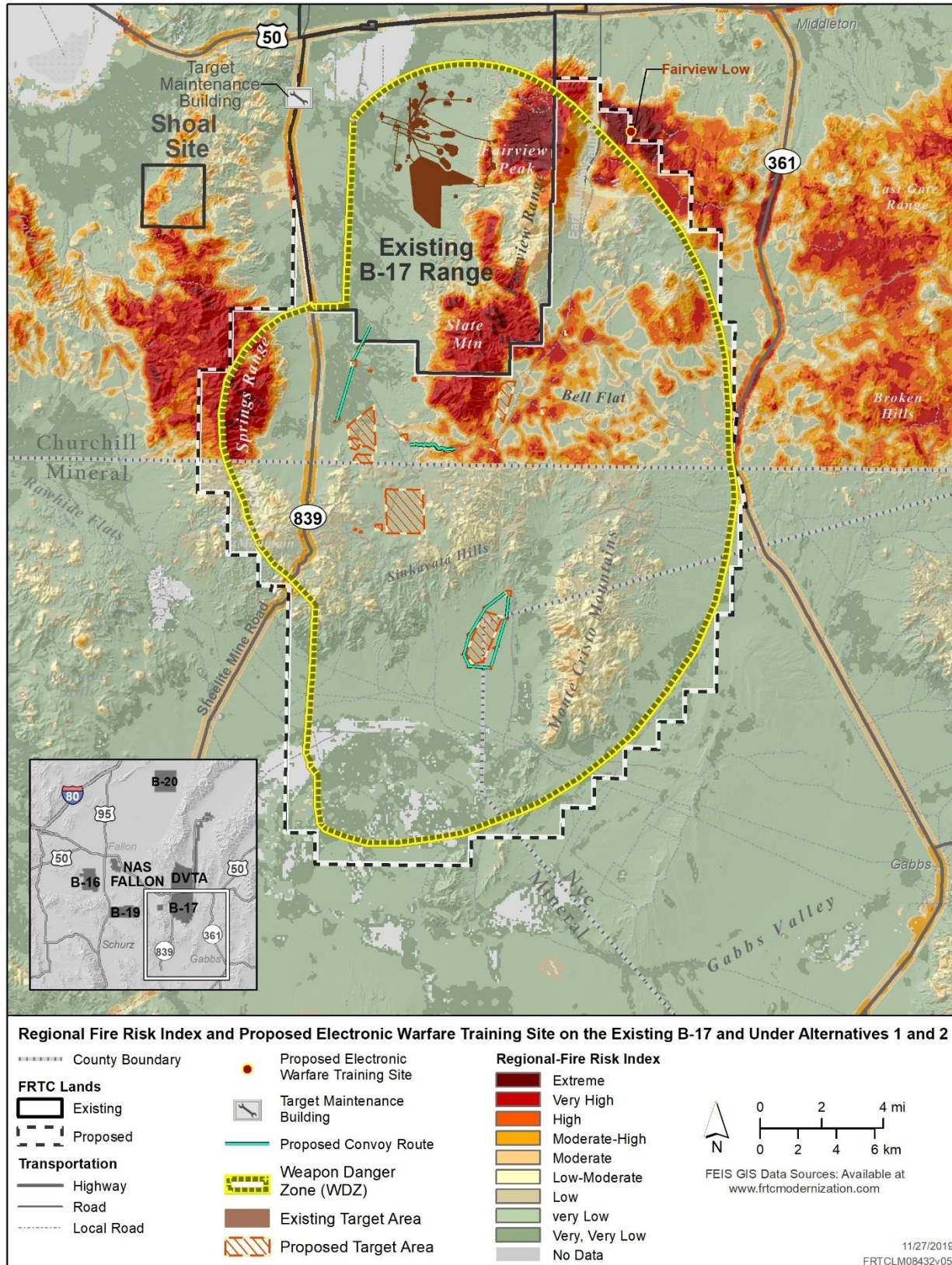


Figure 3.14-6: Regional Fire Risk Index and Proposed Electronic Warfare Training Site on the Existing B-17 and under Alternatives 1 and 2

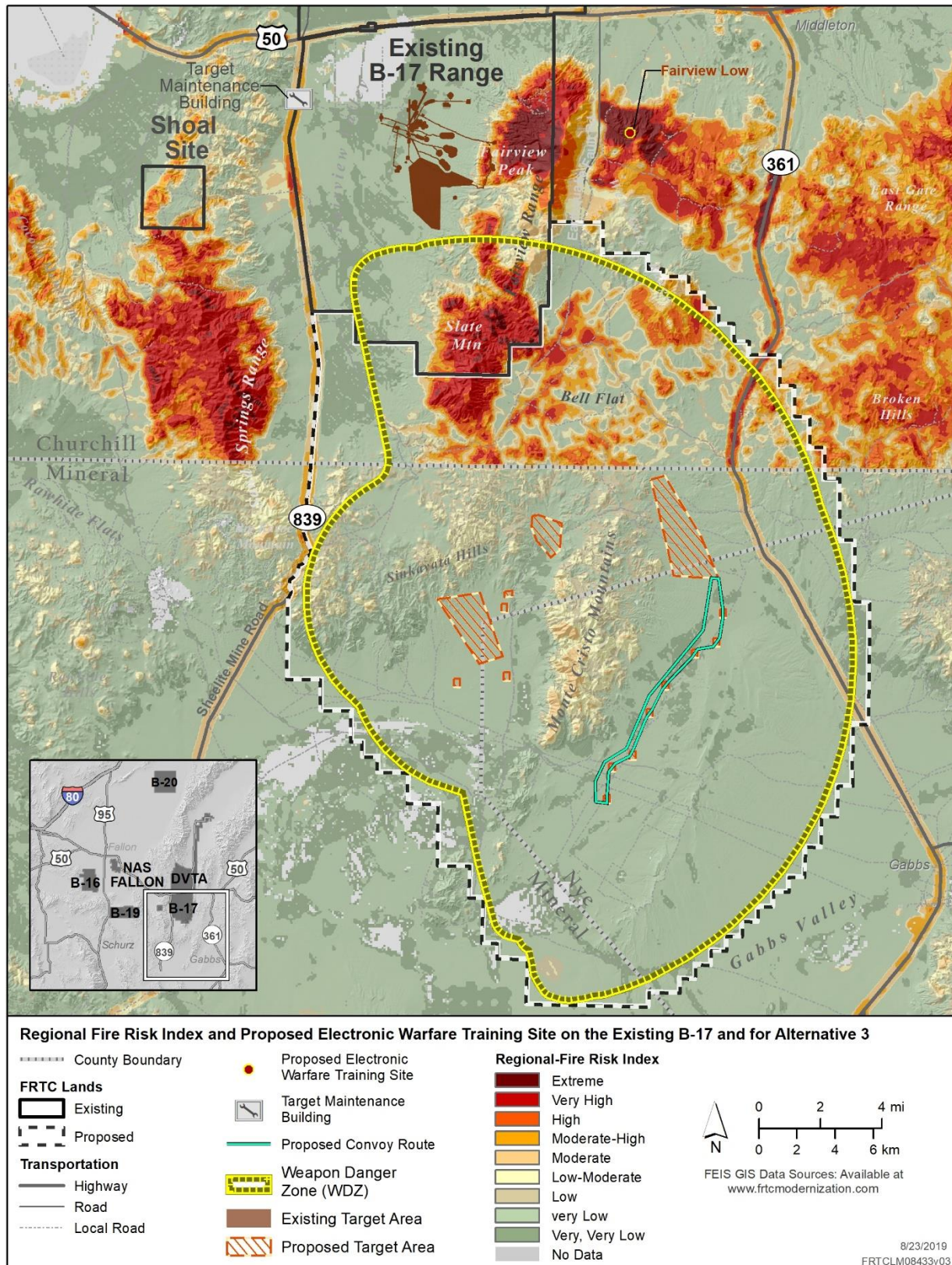


Figure 3.14-7: Regional Fire Risk Index and Proposed Electronic Warfare Training Site on the Existing B-17 and for Alternative 3

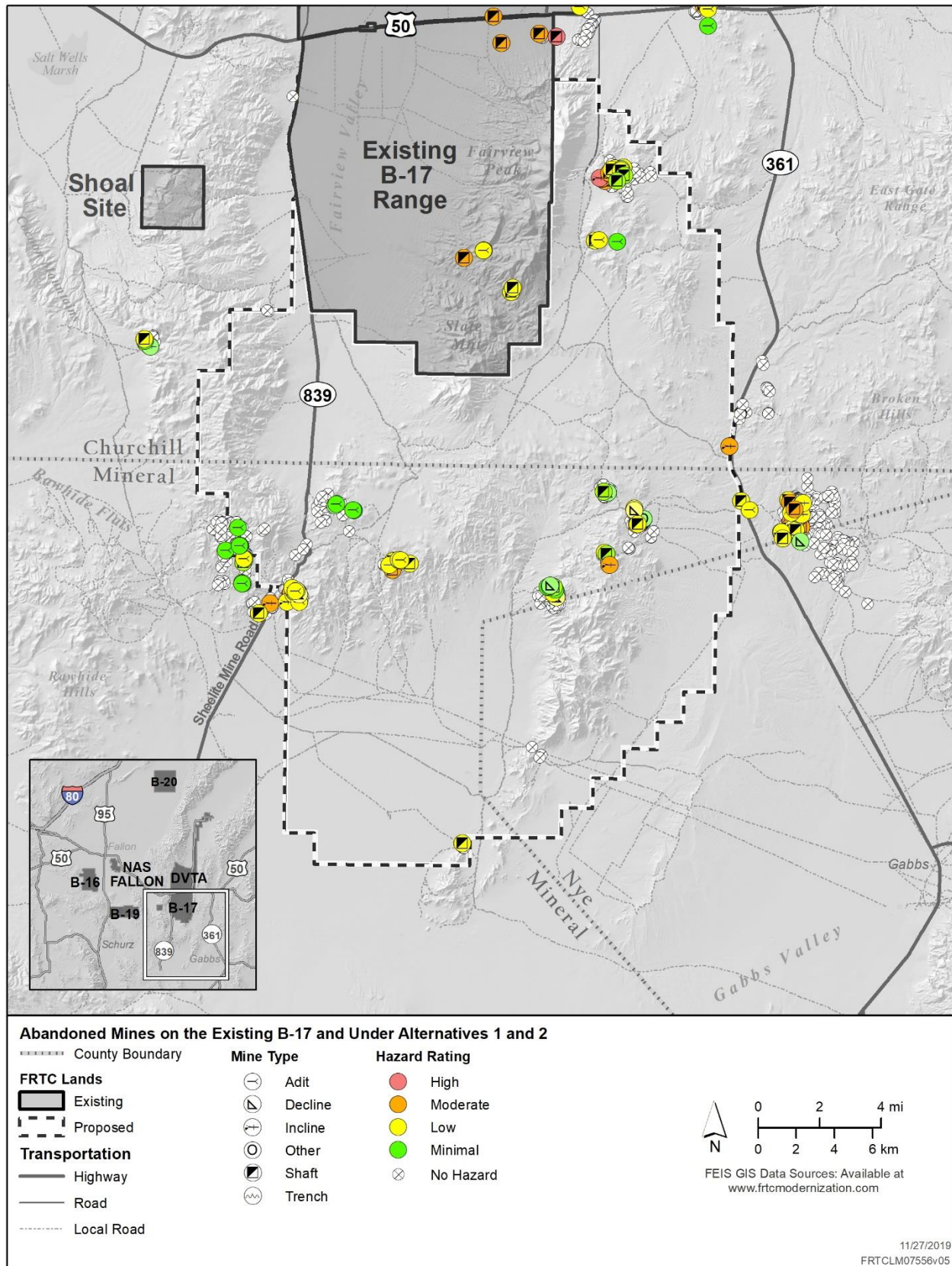


Figure 3.14-8: Abandoned Mines on the Existing B-17 and Under Alternatives 1 and 2

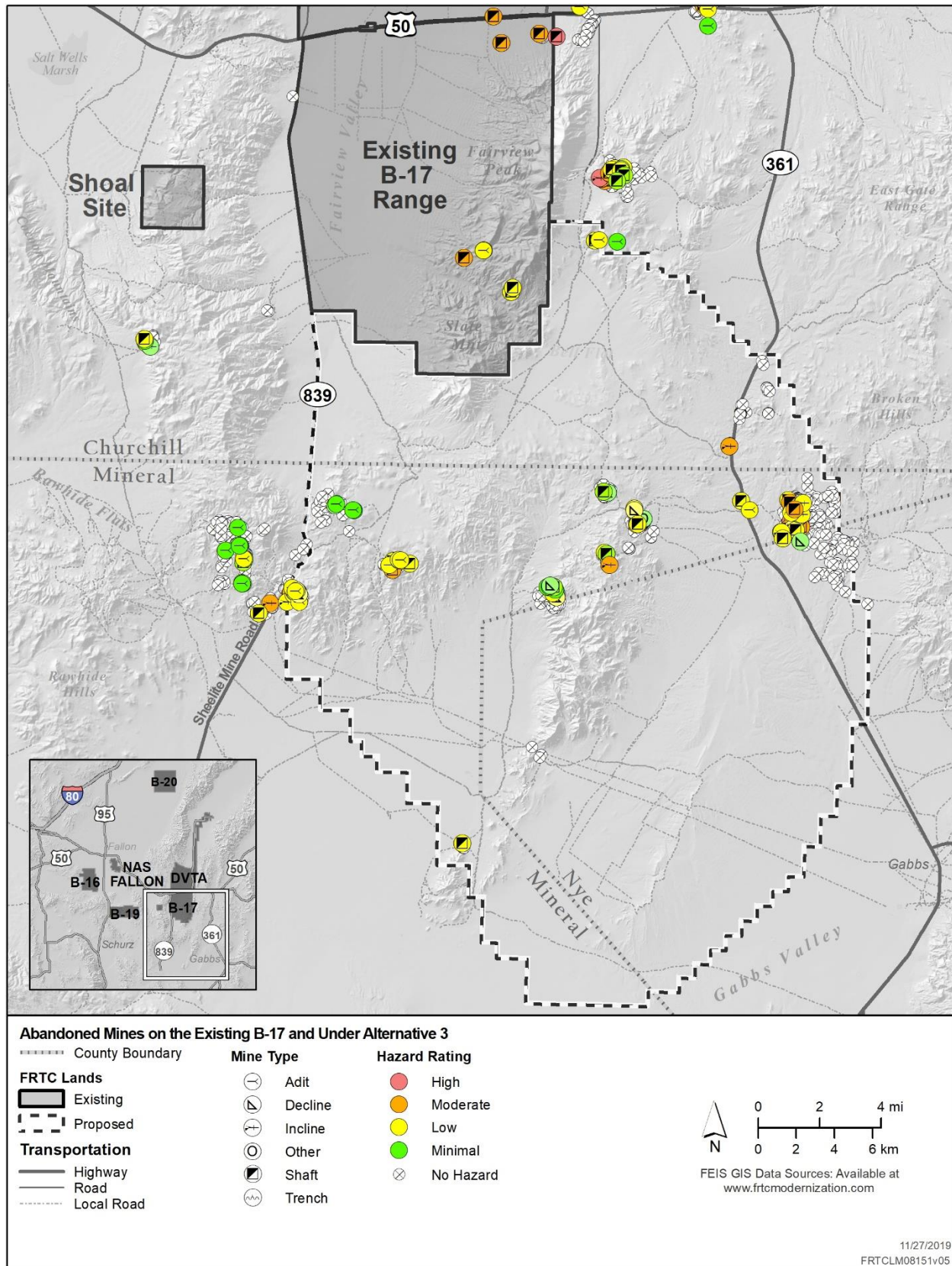


Figure 3.14-9: Abandoned Mines on the Existing B-17 and Under Alternative 3

Table 3.14-4: Abandoned Mine Lands in the Existing B-17 and Lands Requested for Withdrawal and Proposed for Acquisition

Mine Feature Type	Hazard Rating								Total
	2	3	4	5	6	7	8	9	
B-17 Existing									
ADIT			1						1
SHAFT			1	2	3				6
Total									7
B-17 Proposed (Alternatives 1 and 2)									
ADIT	6	7	16	7					36
DECLINE		3	5	1					9
INCLINE		1	1	2	6	2	1		13
OTHER		4	1						5
SHAFT	1	7	14	11	9				42
Total									105
B-17 Proposed (Alternative 3)									
ADIT	5	4	15	8					32
DECLINE		4	5	2					11
INCLINE			3	2	6	1	2		14
OTHER		4	1						5
SHAFT	1	4	13	14	14	7	6	2	61
TRENCH				1					1
Total									124

Notes: Hazard ratings are established by the scoring system described in Nevada Administrative Code (NAC) 513.340 (Rating of Degree of Danger). After scoring a mine feature, the mine is ranked according to NAC 513.360. A hazard rating of 2 or 3 points is minimal, 4 or 5 points is low, 6 or 7 points is moderate, and 8 points or above is a high hazard.

Generation of hazardous materials and wastes could occur in B-17 because of vehicle and generator maintenance activities (generating used petroleum, oils, lubricants, antifreeze, and spent batteries). Other special hazards include asbestos when removed from vehicles and other equipment before their use as targets. Other wastes include Low-Level Radiation Waste such as radium dials (found in the dials of clocks within some vehicle targets) that are removed from targets and placed in a locker located in the target storage area. A NAS Fallon Safety Manager acts as Radiological Safety Officer and arranges the appropriate shipment and disposal of this waste (U.S. Department of the Navy, 2014). Certified Hazardous Material/Hazardous Waste personnel handle all hazardous material and waste in accordance with applicable federal, state, and local regulations to ensure environmental health and safety.

3.14.2.4 Bravo-19

Public access to the majority of the current B-19 range is restricted, and fences and signs are used to prevent the public from entering hazardous areas. NAS Fallon and the Walker River Paiute Tribe are located under SUA between B-19 and B-17 and recently signed a Memorandum of Agreement establishing protocols between those on the reservation lands and the Navy for response and coordination with respect to any potential future incidences involving off-range ordnance. Military

operating areas provide the minimum SUA for the safe maneuvering of aircraft on the FRTC. The Navy avoids population centers by 1,500 feet AGL and noise-sensitive areas by 3,000 feet AGL, as per current Navy and FAA regulations (Federal Aviation Administration, 2017).

The current RCZ-I area is within the existing range boundaries of B-19. The land uses outside of the B-19 boundaries are all compatible with the RCZ-II due to overflight restrictions (weapons systems are not permitted to be armed until the aircraft have crossed eastbound over U.S. Route 95 into the target area, and aircraft are not allowed to fly armed over the spotting towers along the south boundary of B-19) mandated by the Navy when operating in these areas.

The regional fire risk index for B-19 ranges from very, very low to moderate-high. Figure 3.14-1 shows the wildfire potential in Churchill County. As discussed for B-16 and B-17, within Churchill County the overall wildfire risk is a moderate-to-high threat to 81 percent of the values at risk (Wildland Fire Associates, 2007).

Training activities in B-19 use lasers; however, all laser use is contained within the range, and measures discussed under Section 3.14.2.1.7 (Lasers) are taken to protect the public from operational hazards.

Seven abandoned mines were found on B-19. They range in hazard risk from low to moderate, as shown in Section 3.14.2.6 (Dixie Valley Training Area), Figure 3.14-15, and Figure 3.14-16; and discussed in Section 3.14.2.1.8 (Abandoned Mine Lands). As shown in Table 3.14-5, three of the abandoned mines are adits, and the other four are shafts.

Table 3.14-5: Abandoned Mine Lands in the Existing B-19

Mine Feature Type	Hazard Rating								Total
	2	3	4	5	6	7	8	9	
B-19 Existing									
ADIT		2	1						3
SHAFT			1	1	2				4
Total									7

Notes: Hazard ratings are established by the scoring system described in Nevada Administrative Code (NAC) 513.340 (Rating of Degree of Danger). After scoring a mine feature, the mine is ranked according to NAC 513.360. A hazard rating of 2 or 3 points is minimal, 4 or 5 points is low, 6 or 7 points is moderate, and 8 points or above is a high hazard.

B-19 rarely generates hazardous materials and waste. Any spills would be handled as discussed in Section 3.14.2.1.9 (Hazardous Waste). Certified Hazardous Material/Hazardous Waste personnel handle all hazardous material and waste in accordance with applicable federal, state, and local regulations to ensure environmental health and safety.

3.14.2.5 Bravo-20

Public access to the current B-20 range is restricted, and fences and signs are used to prevent the public from entering the range and encountering hazardous areas. The current RCZ-I area is within the existing range boundaries of B-20. The Stillwater Wildlife Refuge, the Fallon National Wildlife Refuge, and the Stillwater Wilderness Study Area (WSA) land uses are compatible with the RCZ-II due to overflight restrictions (airspace is not available for use below 3,000 feet AGL) suggested by the Navy when operating in these areas.

The regional fire risk index for B-20 and nearby areas ranges from very, very low to extreme, as shown in Figure 3.14-10 and Figure 3.14-11. Figure 3.14-1 shows the wildfire potential in Churchill and Pershing Counties. As discussed for B-16 and B-17, within Churchill County the overall wildfire risk is a moderate-to-high threat to 81 percent of the values at risk (Wildland Fire Associates, 2007). In Pershing County wildfire poses a moderate-to-high threat to 91 percent of the values at risk (Wildland Fire Associates, 2009c).

There are communication towers and a radar van target currently within the B-20 range. Practices are in place to protect the public from electromagnetic radiation hazards as described in Section 3.14.2.1.6 (Electromagnetic Energy Safety). Training activities in B-20 use lasers; however, all laser use is contained within the range and measures discussed under Section 3.14.2.1.7 (Lasers) are taken to protect the public from operational hazards.

Abandoned mines were found on lands requested for withdrawal and proposed for acquisition as part of the proposed expansion of B-20. They range in hazard risk from minimal to no hazard, as shown in Figure 3.14-12 and Figure 3.14-13. The land requested for withdrawal near the Navy B-20 Access road has over 20 non-hazardous features near it. Two abandoned mines, classified as “other,” are low on the hazard rating and are in the northern portion of the land requested for withdrawal, while there are six adits in other parts of the area that range from low to no hazard as shown in Table 3.14-6.

Table 3.14-6: Abandoned Mine Lands in the Existing B-20 and Lands Requested for Withdrawal and Proposed for Acquisition

Mine Feature Type	Hazard Rating								Total
	2	3	4	5	6	7	8	9	
B-20 Existing									
ADIT									0
OTHER									0
B-20 Proposed									
ADIT	4		2						6
OTHER			2						2
Total									8

Notes: Hazard ratings are established by the scoring system described in Nevada Administrative Code (NAC) 513.340 (Rating of Degree of Danger). After scoring a mine feature, the mine is ranked according to NAC 513.360. A hazard rating of 2 or 3 points is minimal, 4 or 5 points is low, 6 or 7 points is moderate, and 8 points or above is a high hazard.

B-20 rarely generates hazardous materials and waste. Maintenance on heavy equipment and backup generators produces used petroleum, oils, lubricants, antifreeze, and spent batteries (U.S. Department of the Navy, 2014). Any spills would be handled as discussed in Section 3.14.2.1.9 (Hazardous Waste). Certified Hazardous Material/Hazardous Waste personnel handle all hazardous material and waste in accordance with applicable federal, state, and local regulations to ensure environmental health and safety.

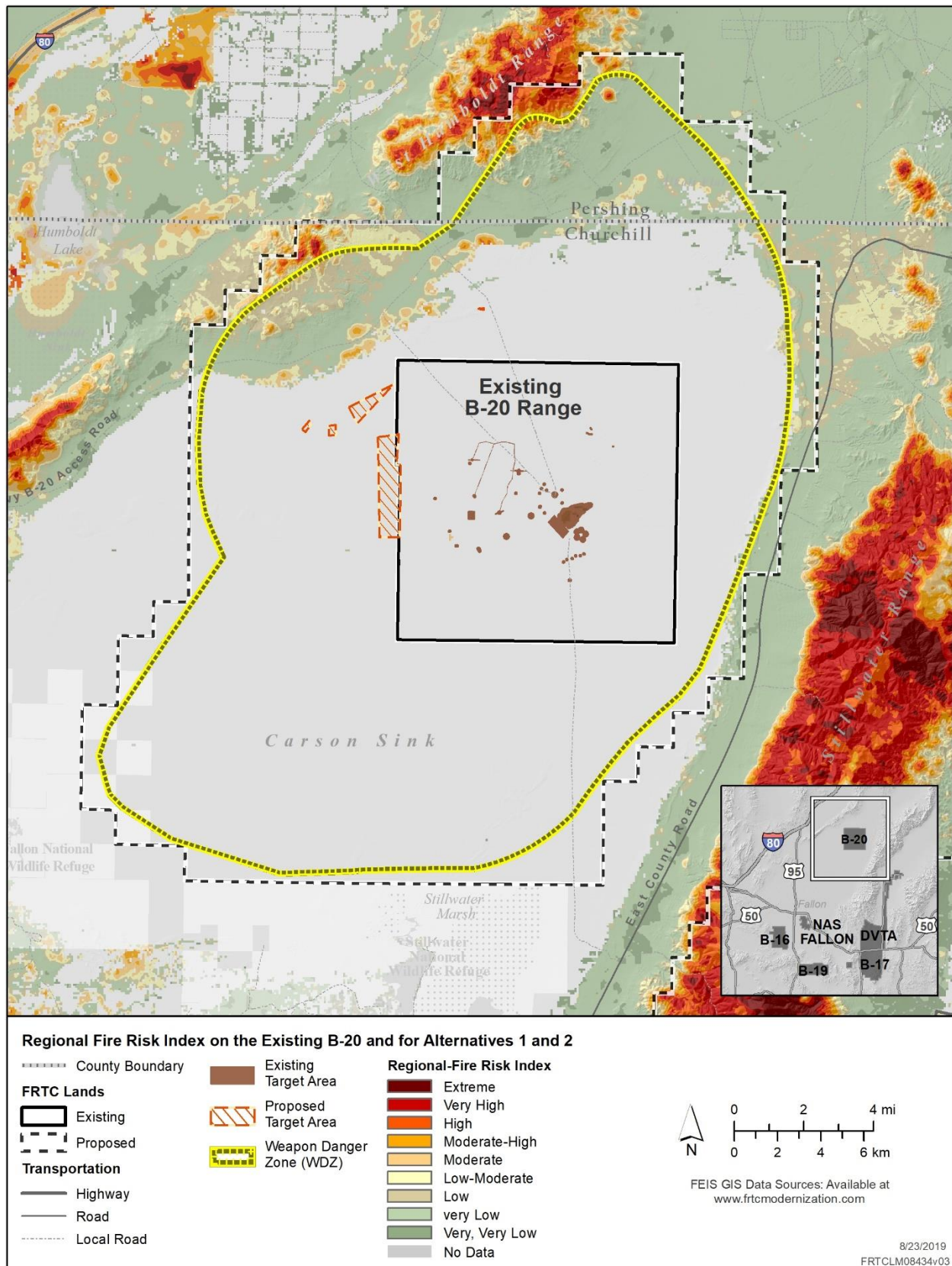


Figure 3.14-10: Regional Fire Risk Index on the Existing B-20 and for Alternatives 1 and 2

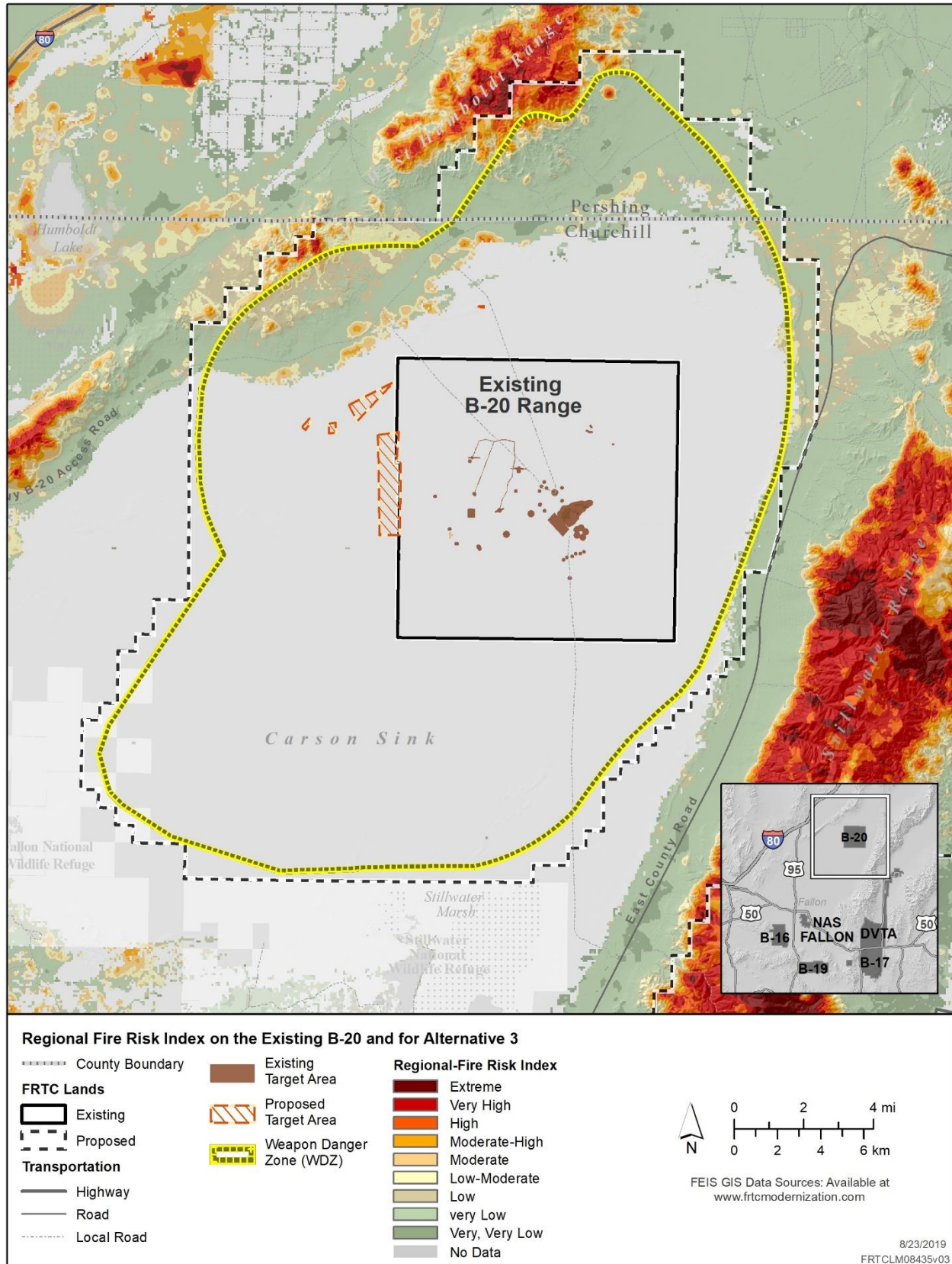


Figure 3.14-11: Regional Fire Risk Index on the Existing B-20 and for Alternative 3

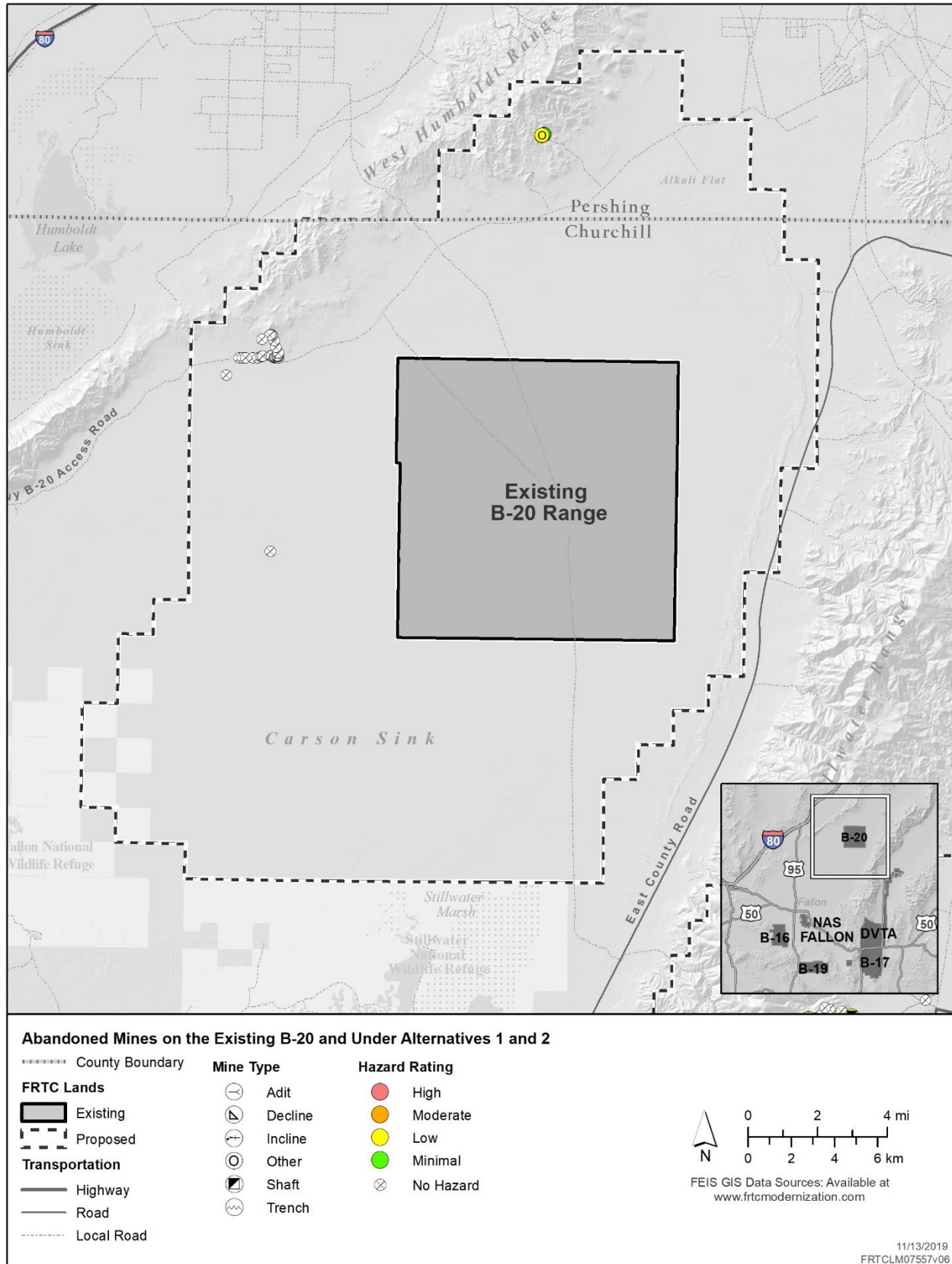


Figure 3.14-12: Abandoned Mines on the Existing B-20 and Under Alternatives 1 and 2

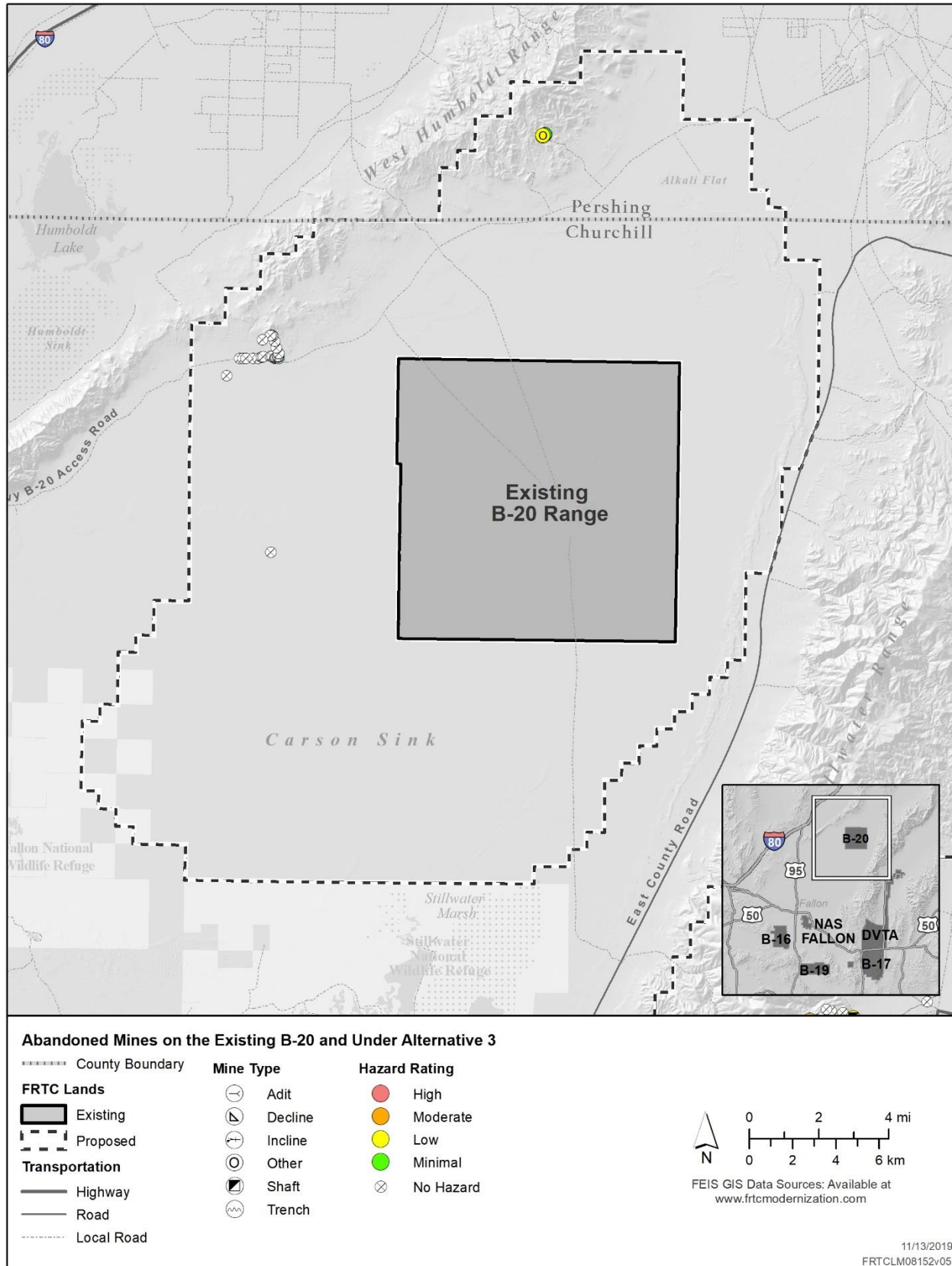


Figure 3.14-13: Abandoned Mines on the Existing B-20 and Under Alternative 3

3.14.2.6 Dixie Valley Training Area

Public access is permitted in the majority, but not all (e.g., Centroid [Figure 3.14-14, Figure 3.14-15, and Figure 3.14-16], Electronic Warfare sites) of the DVTA, and standard operating procedures are in place to ensure that training personnel maintain safe distances between activities and non-participants (U.S. Department of the Navy, 2012). The DVTA training activities do not use live munitions; therefore, there are no WZDs, or RCZs in the area. The regional fire risk index in the DVTA ranges from very, very low to extreme, as shown in Figure 3.14-14. Figure 3.14-1 shows the wildfire potential in the DVTA, which is in Churchill County. The overall wildfire risk in Churchill County is a moderate-to-high threat to 81 percent of the values at risk (Wildland Fire Associates, 2007). The DVTA contains a system of electromagnetic energy emitters on lands accessible to the public that are designed for electronic warfare training, shown in Figure 3.14-14. Fixed emitters are fenced off to keep the public at a safe distance, while mobile emitters maintain a safe separation distance between the emitter and any civilians on the range. All sources of electromagnetic radiation follow the procedures and protocols outlined in Section 3.14.2.1.6 (Electromagnetic Energy Safety) to avoid and minimize impacts on public health and safety. Interference with cell phone signals and GPS devices can occasionally occur during operations (e.g., during Ground Maneuver Tactics, Tactical Ground Mobility, and Convoy Operations). The Navy is not authorized to intentionally jam civil communications bands, and continually acts to responsibly use the DoD-authorized spectrum for testing and training while avoiding significant impact on other spectrum users. Operations on the FRTC purposely avoid broad conflict with civilian systems. NAWDC and NAS Fallon coordinate and will continue to coordinate with infrastructure providers and spectrum users to avoid conflicts. Training activities at the DVTA do not use lasers.

The BLM has secured hazardous abandoned mines in the DVTA in a manner similar to what is required under the Nevada abandoned mine lands public safety program (see Section 3.14.2.1.9, Hazardous Waste). Abandoned mines found on the existing DVTA and on the additional lands requested for withdrawal and proposed for acquisition range from high to no hazard ratings (see Figure 3.14-15 and Figure 3.14-16). On the existing DVTA there are two shafts and one adit that range from moderate to high hazard risk. In the land requested for withdrawal or proposed for acquisition there are 259 mine features and 279 mine features under the different Alternative configurations. The abandoned mine features and their ratings are shown in Table 3.14-7. The majority of the hazardous sites have shafts that present a potentially fatal fall hazard. The next-most common hazards in and near abandoned mines are adits, inclines, and declines, all of which present a potential for serious injury or death.

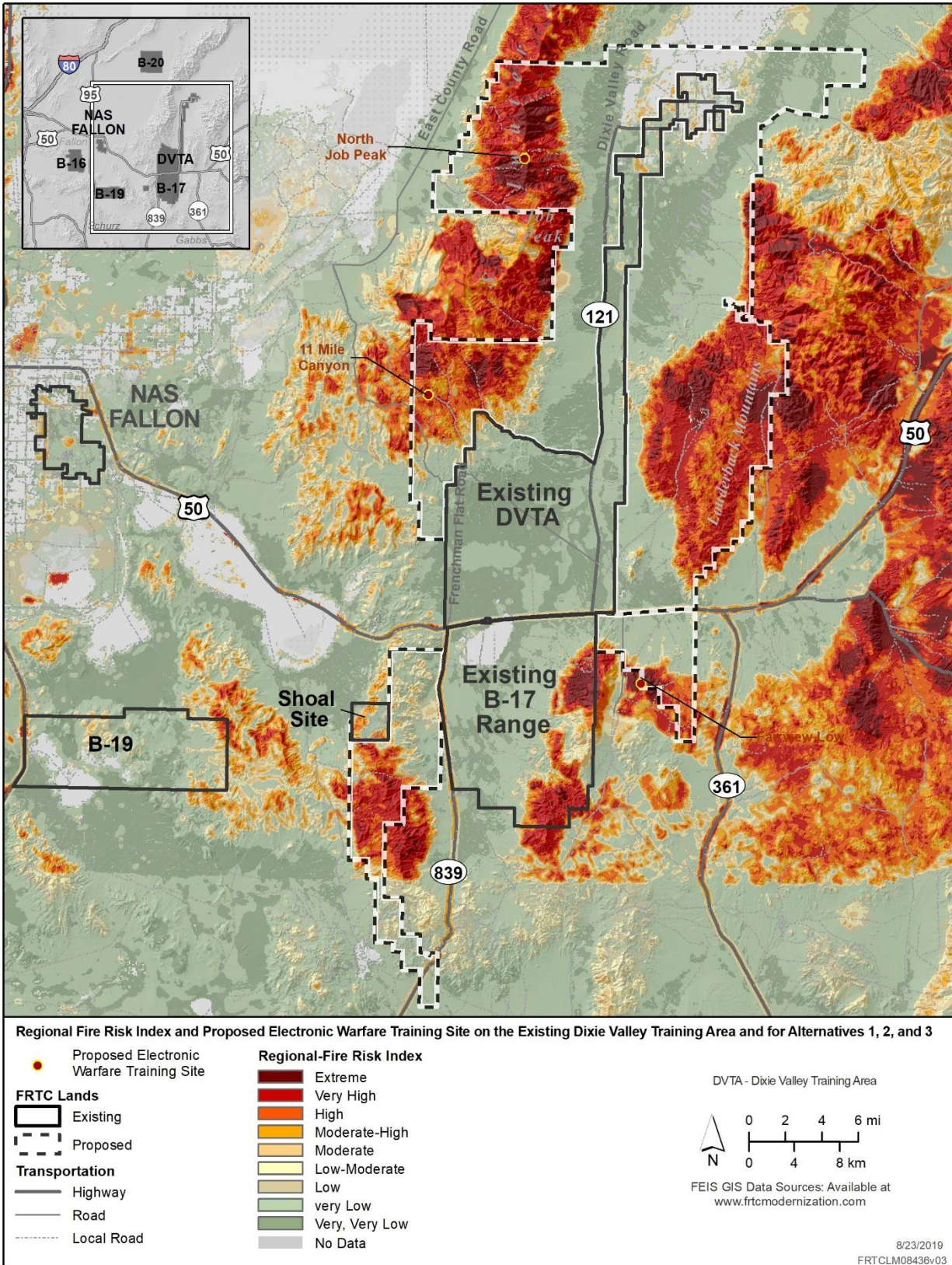


Figure 3.14-14: Regional Fire Risk Index and Proposed Electronic Warfare Training Site on the Existing Dixie Valley Training Area and for Alternatives 1, 2, and 3

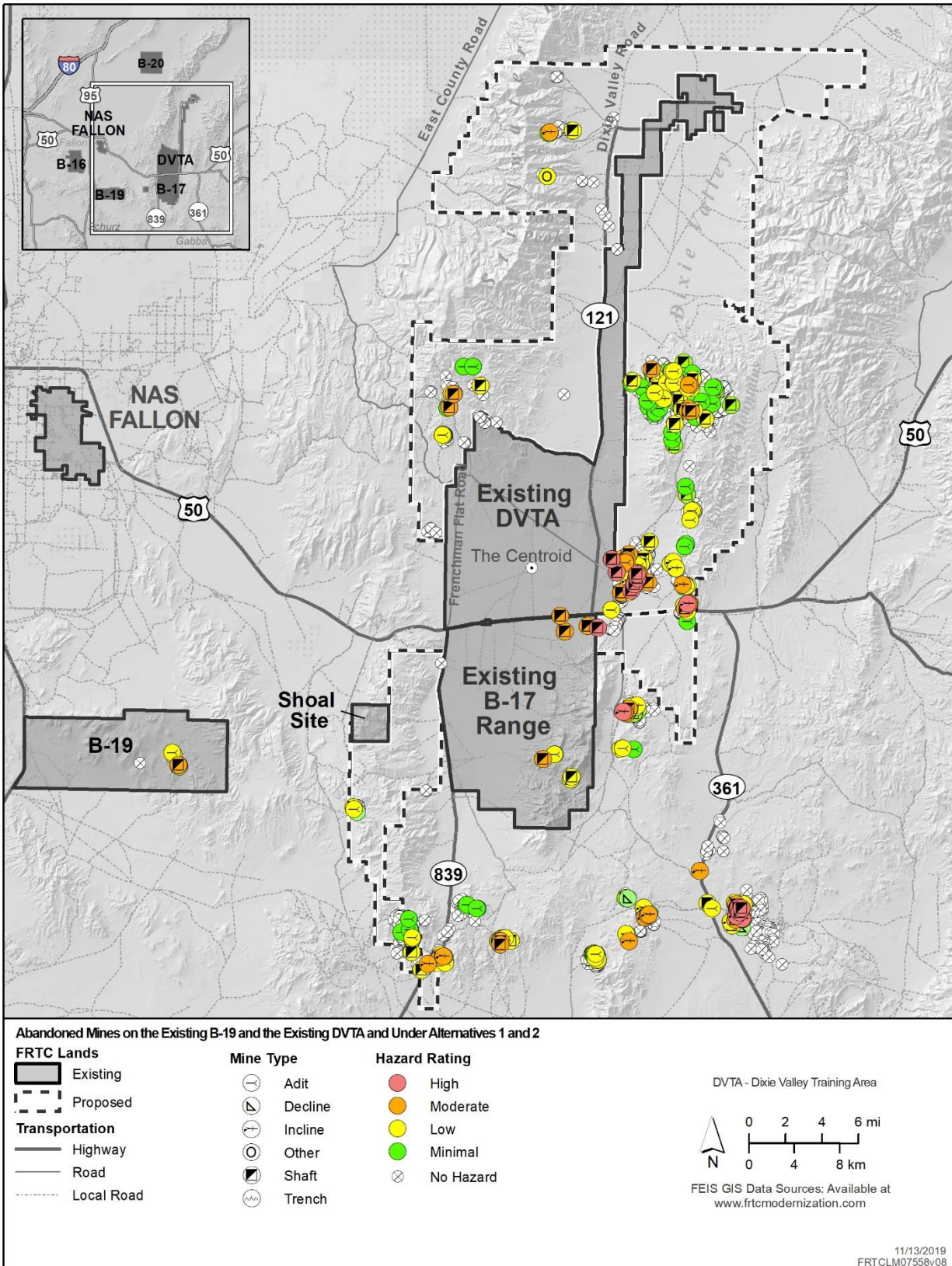


Figure 3.14-15: Abandoned Mines on the Existing B-19 and the Existing DVTA and Under Alternatives 1 and 2

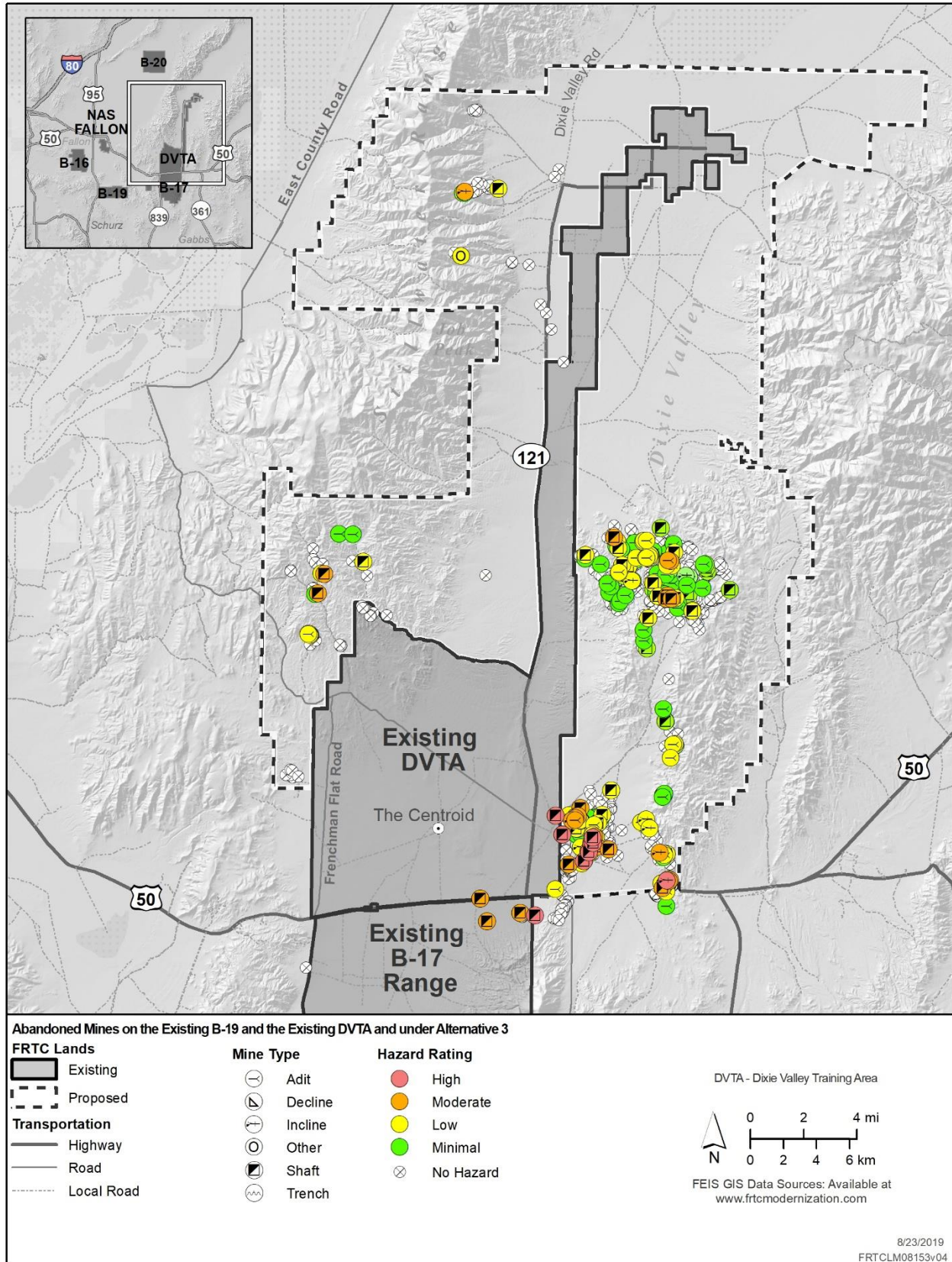


Figure 3.14-16: Abandoned Mines on the Existing B-19 and the Existing DVTA and Under Alternative 3

Table 3.14-7: Abandoned Mine Lands in the Existing DVTA and Requested for Withdrawal or Proposed for Acquisition

Mine Feature Type	Hazard Rating								Total
	2	3	4	5	6	7	8	9	
DVTA Existing									
ADIT				1					1
SHAFT						1	1		2
Total									3
DVTA Proposed (Alternatives 1 and 2)									
ADIT	14	52	17	25	2	2		1	113
DECLINE		1							1
INCLINE		6	9	10	4	4	1		34
OTHER			3	4		1			8
SHAFT	2	31	31	14	11	7	3	3	102
TRENCH			1						1
Total									259
DVTA Proposed (Alternative 3)									
ADIT	15	55	18	25	2	2		1	118
DECLINE		1							1
INCLINE		7	9	11	4	5	2		38
OTHER			3	4		1			8
SHAFT	2	34	33	16	15	7	3	3	113
TRENCH			1						1
Total									279

Notes: Hazard ratings are established by the scoring system described in Nevada Administrative Code (NAC) 513.340 (Rating of Degree of Danger). After scoring a mine feature, the mine is ranked according to NAC 513.360. A hazard rating of 2 or 3 points is minimal, 4 or 5 points is low, 6 or 7 points is moderate, and 8 points or above is a high hazard.

The DVTA generates hazardous materials and wastes from the Centroid located 35 miles east of NAS Fallon and directly north of U.S. Route 50. The Centroid provides electronic warfare training, as well as support, operation, and maintenance of electronic warfare sites in the DVTA. Vehicle and generator maintenance produces used petroleum, oils, lubricants, and antifreeze. Parts washers in the Maintenance Shop at the Centroid generate used breakthrough and millennium solvent on a periodic basis. Spent lead-acid batteries are picked up when the battery supplier delivers new batteries, and oil/water separator waste is generated by a gravity differential oil/water separator that services the vehicle wash rack and discharges its water to a leach field located east of the Centroid facility. Oily waste does not discharge to the leach field, as the oil-water separator is inspected frequently and oily waste pumped and disposed of according to all applicable regulations (U.S. Department of the Navy, 2014). Certified Hazardous Material/Hazardous Waste personnel handle all hazardous material and waste in accordance with applicable federal, state, and local regulations to ensure environmental health and safety.

3.14.2.7 Special Use Airspace

The following nine counties partially underlie the FRTC SUA: Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe. The FRTC SUA includes 9 restricted areas, 15 MOAs, 15 ATCAAs, 2 supersonic operating areas, and a Civilian VFR corridor. Restricted areas are not permanently closed to general aviation, but are activated for purposes of military aviation as necessary in order to support safe range operations. The restricted areas are used for activities that are hazardous to commercial and general aviation traffic, and are closed to that traffic. The MOAs and ATCAAs contain non-hazardous activities and are open to commercial as well as General Aviation traffic. The VFR corridor for civilian and military transit through the FRTC airspace follows U.S. Route 50 from Sand Mountain to Austin, Nevada. The types of training that produce chaff emissions (e.g., combat search and rescue activities) take place throughout the SUA.

3.14.3 Environmental Consequences

The following provides an analysis of environmental effects of the No Action Alternative and Alternatives 1 through 3 against the environmental baseline as described in Section 2.4 (Environmental Baseline [Current Training Activities]). The potential effects on public health and safety and protection of children were evaluated assuming the continued implementation of the Navy's current safety procedures for all activities in the FRTC, as proposed for modernization and expansion.

This analysis focuses on potential impacts on public health and safety and protection of children arising from movement of training activities, changes to public access on withdrawn or acquired land, and construction. 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 (see Section 3.14.3.6, Summary of Effects and Conclusions).

3.14.3.1 No Action Alternative

The No Action Alternative is not the environmental baseline to which Alternative 1, 2, or 3 are compared in this analysis. See Section 2.4 (Environmental Baseline [Current Training Activities]) of this EIS for a detailed description of the baseline. Under the No Action Alternative, the renewal of the current land withdrawal would not occur, additional land would not be withdrawn, and training exercises that require ground ranges or restricted airspace would likely cease at the FRTC following the expiration of the Public Law 106-65 withdrawal in November 2021. Upon the expiration of this withdrawal, the Navy would work with stakeholders to prioritize and address any environmental remediation needed on these lands, in anticipation of potential relinquishment to the BLM or other potential disposal options. Training infrastructure and instrumentation would likely be removed, including those that are part of the Electronic Warfare Complex. No public access would occur at these ranges during the decontamination process. Also, those areas where live, high-explosive munitions were used may be contaminated to the point where future public access would not be possible. Assuming B-16, B-17, B-19, and B-20 could be rendered safe, these areas could potentially be made available to the public following the decontamination process.

Areas that could not be rendered safe during the decontamination process would not be publicly available as they would be unsafe for people to access. Fire management would be covered by the BLM on lands being remediated in conjunction with relinquishment at a time agreed upon with the Navy. Therefore, so long as any necessary access restrictions would be maintained, these areas would have no significant impacts on public health and safety. Pending the reevaluation of the mission of NAS Fallon, the Navy could take steps to coordinate with the FAA to return all of the FRTC airspace to the FAA for

integration into the commercial national airspace. The Class Delta airspace above the NAS Fallon airfield would remain active. Some range activities that only require MOAs (e.g., non-firing air combat maneuvers, search and rescue, close air support) could still occur in all of the FRTC.

Based on the above, there would be no known environmental health or safety risks associated with the No Action Alternative that would disproportionately affect children. Therefore, implementation of the No Action Alternative would not result in environmental health or safety risks that would disproportionately affect children. Therefore, no significant impacts would occur to public health and safety and protection of children with the implementation of the No Action Alternative.

3.14.3.2 Alternative 1: Modernization of the Fallon Range Training Complex

This section first analyzes public health and safety issues that are applicable to all the ranges with the implementation of Alternative 1, followed by a range-by-range analysis of specific issues with greater potential to vary in terms of impacts at a given range.

3.14.3.2.1 Emergency Services

Under Alternative 1, emergency environmental response on the ranges would continue to be handled by the NAS Fallon Security Department and NAS Fallon Fire Department. The NAS Fallon Environmental Department would ensure cleanup occurs according to applicable regulations. When needed, both departments would continue to work in conjunction with other local law enforcement branches. Emergencies would be handled in the same manner as they are currently and no changes in service would be required because the expanded land areas would be covered under the same emergency response plans.

Based on these considerations, impacts on public health and safety and protection of children associated with emergency services would not be significant and a range-by-range analysis is not required. Therefore, there would be no significant impact on public health and safety and protection of children due to emergency services under Alternative 1.

3.14.3.2.2 Fire Risk and Wildfire Management

The Navy would continue to work diligently to reduce the risk of wildfires due to Navy training activities under Alternative 1. Training activities on the ranges would not change in type or quantity under Alternative 1; however, there would be changes in target location. Flares have the potential to cause wildfires but, due to standard military procedures for their release above 2,000 feet during fire season and their proper dispensing protocol (as discussed above in the Chaff and Flare section of the Affected Environment), they do not pose a threat to public health and safety.

The FRTC is actively developing a Wildland Fire Management Plan. A draft outline of the document can be found in Appendix D (Memoranda, Agreements, and Plans). The relative success of any wildfire suppression effort is contingent upon many factors including the location of the fire, fuel loading, weather conditions, distance from fire-fighting assets, timing of fire incident notification, response times for fire-fighting assets, and the accessibility of the terrain where the fire occurs. As such, fires are themselves largely unpredictable, and the particular factors present for a given fire are likewise unpredictable, making an overall assessment of impacts associated with such fires difficult. Because fires are unpredictable (e.g., improper chaff and flare deployment), the effects cannot be definitively assessed. The effectiveness of the Wildland Fire Management Plan would continue to be reviewed on an ongoing basis in accordance with adaptive fire management procedures that would be contained in the

Wildland Fire Management Plan. The measures would be refined as necessary to ensure they remain effective to sustain the Installation's mission, and protect and conserve natural resources.

The Navy's goal is to suppress all fires to minimize fire-related effects while maintaining operational requirements, and the safety of all personnel involved in fire management operations. The fire management measures and safety protocols, are expected to reduce the effects of uncontrolled wildfires. Based on these considerations, impacts on public health and safety associated with wildfires would not be significant and a range-by-range analysis is not required. Therefore, there would be no significant impact on public health and safety and protection of children due to fire risk and wildfire management under Alternative 1.

3.14.3.2.3 Aircraft-Related Accidents

Flight-related mishaps can include emergency landings, aircraft crashes, mid-air collisions with other aircraft or birds, or accidental release of ordnance. These types of accidents would not have an increased potential for occurring under Alternative 1 because additional flight operations are not proposed. Therefore, the risks of such accidents occurring and the potential for impacts on public health and safety under Alternative 1 would not significantly change from baseline conditions. Bird and bat strikes may occur during any phase of flight, but are most likely during the take-off, initial climb, approach, and landing phases because of the greater numbers of animals in flight at lower levels. While all aircraft strikes are considered serious and dangerous events, the number of related mortalities is small considering Navy-wide aircraft activities. Most would be expected to occur during take-off and landings, but would have a potential to occur if low altitude flights co-occurred with wildlife aggregating features, such as water features, riparian corridors, forests, and ridge lines. Birds and bats would co-occur with low-altitude training activities and therefore be subject to airstrike. The potential for incidental mortality from aircraft strikes exists in the proposed modified airspace. The Naval Safety Center reported that, from 1981 to 2010, there were 116 strike incidents at Fallon (see Section 3.10, Biological Resources, for more information). Therefore, military training activities would continue to impact individual birds, but expected incident rates would continue to be low. While BASH can be a serious threat to aircraft in many operating environments, there would be no changes to flight operations in areas with known bird habitats, such as B-20 over the Fallon National Wildlife Refuge, where a 3,000 foot AGL buffer would be maintained.

Based on these considerations, impacts on public health and safety and protection of children associated with aircraft-related accidents would not be significant and a range-by-range analysis is not required. Therefore, there would be no significant impact on public health and safety and protection of children due to aircraft related accidents under Alternative 1.

3.14.3.2.4 Aircraft-Delivered and Ground-Based Ordnance

Ordnance use associated with air-to-ground activities would occur within B-16, B-17, B-19, and B-20, but no new procedures would need to be established for aircraft-delivered ordnance within the modified airspace. Aircraft-delivered ordnance would be contained within the ranges requested for withdrawal or proposed for acquisition, and would not pose a risk to the public. In addition, no new procedures for ordnance use with ground-based weapons firing and maneuvering activities would need to be established. No new procedures are required because there are no proposed increases or changes in types of ordnance used. Existing procedures identified in Section 3.14.2.1.4 (Range Compatibility Zones) would be followed for proposed aircraft-delivered ordnance and munitions within the proposed target and ground-based activities areas. In addition, all target areas (and associated WDZs) would be located

within military range control boundaries and ground-based fire and maneuver activities would be fully contained within the associated SDZs for a 360-degree field of fire.

For any unexploded ordnance generated as part of aircraft-delivered ordnance operations or ground-based operations, range clearance procedures would be followed as identified in Section 3.14.2.1.9 (Hazardous Waste).

Based on these considerations, impacts on public health and safety and protection of children associated with aircraft-delivered and ground-based ordnance use would not be significant and a range-by-range analysis is not required. Therefore, there would be no significant impact on public health and safety and protection of children due to aircraft delivered and ground based ordnance under Alternative 1.

3.14.3.2.5 Electromagnetic Energy Safety

All sources of electromagnetic energy used in expanded lands would follow the same procedures and protocols that are currently implemented and outlined in Section 3.14.2.1.6 (Electromagnetic Energy Safety) to avoid or minimize impacts on public health and safety.

Strong electromagnetic radiation can cause fire if an electromagnetic wave were to create a spark near explosives or ordnance. Strong electromagnetic waves can also induce an electric current capable of overloading or destroying electrical equipment, while less strong radiation waves can interfere with electromagnetic signals, such as radio, television, and telephone. Any transmitter sites or areas where electronic training activities occur would be located on property owned and controlled by the Navy, to which the general public would not have access (i.e., sites or areas would be fenced off). Standard operating procedures to protect the general public to the maximum extent practicable would be followed as described in Section 3.14.2.1.6 (Electromagnetic Energy Safety) in all areas where this training would occur. NAWDC and NAS Fallon have, and will continue to coordinate with infrastructure providers and spectrum users to avoid conflicts with broad civilian systems. Based on these considerations, impacts on public health and safety and protection of children associated with electromagnetic energy would not be significant and a range-by-range analysis is not required. Therefore, there would be no significant impact on public health and safety and protection of children due to electromagnetic energy use under Alternative 1.

3.14.3.2.6 Lasers

Since there would be no change in the type or tempo of training activities under Alternative 1, the use of lasers would remain the same. Lasers would only be used on lands with restricted access, and laser use would be in accordance with procedures that are already in place to protect personnel and civilians.

Based on these considerations, impacts on public health and safety and protection of children from lasers would not be significant and a range-by-range analysis is not required. Therefore, there would be no significant impact on public health and safety and protection of children due to laser use under Alternative 1.

3.14.3.2.7 Abandoned Mine Lands

As shown in Figure 3.14-4, Figure 3.14-5, Figure 3.14-8, Figure 3.14-9, Figure 3.14-12, Figure 3.14-13, Figure 3.14-15, and Figure 3.14-16, there are abandoned mines and mining facilities such as mine shafts and tunnels present within the lands requested for withdrawal and proposed for acquisition. The Navy would be responsible for the inventory, monitoring, and the proper handling of any Abandoned Mine

Land features on Navy property under Alternative 1. Abandoned mines found within lands with public access such as the DVTAs would be secured in accordance with applicable abandoned mine land program policies. Securing abandoned mines would involve fencing, backfilling, sealing, or bat compatible closures as applicable (Nevada Commission on Mineral Resources, 2016). All management of abandoned mines would be coordinated with the Nevada Department of Minerals Abandoned Mines Program Office.

In ranges that are restricted to public access, the public would not be able to access abandoned mines. Because the withdrawn or acquired land areas would be designated for military use and fenced on the Bravo ranges and the abandoned mines found on the DVTAs and other areas open to public access would be secured in accordance with all applicable legal requirements, and Navy policies and protocols, Alternative 1 would not increase the risk to public health and safety as a result of abandoned mine lands. The Navy will follow the Nevada Bureau of Mines and Geology procedures for management of abandoned mine land on the DVTAs. Based on these considerations, impacts on public health and safety and protection of children from abandoned mine lands would not be significant and a range-by-range analysis is not required.

Therefore, there would be no significant impact on public health and safety and protection of children due to abandoned mine lands under Alternative 1.

3.14.3.2.8 Hazardous Waste

Under Alternative 1, hazardous materials and waste would not increase or change in type from those currently used or produced on the bombing ranges or at the DVTAs. Based on these considerations, impacts on public health and safety and protection of children from hazardous waste would not be significant and a range-by-range analysis is not required. Therefore, there would be no significant impact on public health and safety and protection of children as a result of hazardous waste production under Alternative 1.

3.14.3.2.9 Protection of Children

No schools, parks, residences, or other areas typically associated with the aggregation of children are located within or near proposed training range expansion areas. No known environmental health or safety risks associated with Alternative 1 would occur that would disproportionately affect children. Proposed construction at B-16, B-17, B-20, and the DVTAs would not occur at locations where children are prevalent. Based on these considerations, impacts on children would not be significant and a range-by-range analysis is not required. Therefore, implementation of Alternative 1 would not result in environmental public health or safety risks that would disproportionately affect children.

3.14.3.2.10 Bravo-16

Land Withdrawal and Acquisition

Under Alternative 1, the B-16 range would expand to the west by virtue of the Navy withdrawing approximately 32,201 additional acres of federal BLM-administered land (see Table 2-1, Figure 2-2), increasing the range's total area to approximately 59,560 acres. These new lands would be fenced and managed in accordance with all applicable legal requirements and Navy policies and protocols. The Navy would expand their fence line patrol and maintenance procedures to include fences that are on withdrawn lands. The Navy proposes to establish two Conservation Law Enforcement Officers at NAS Fallon. Part of the duties of these officers would include patrolling of the added fence line for trespass issues and reporting to the Navy any broken or downed fences for maintenance repair. This would

reduce the risk to public health and safety and provide protection of children. Therefore, there would be no significant impact on public health and safety as a result of the withdrawal and acquisition under Alternative 1.

Training Activities

Under Alternative 1, there would be no change to the types of training activities at B-16. Range procedures would be followed for unexploded ordnance and training activities would be contained on the range. While these activities would be conducted over a larger area, the similarity of the terrain in the proposed expansion area and the consistent application of the same safety practices ensure there would be no significant impact on public health and safety as a result of training activities under Alternative 1.

Public Accessibility

Under Alternative 1, no public access to B-16 would be allowed except for Navy-authorized activities, such as tribal ceremonial or cultural site visits, academic research, and regulatory or management activities (e.g., BLM or Nevada Department of Wildlife [NDOW] activities or flood management activities). The Navy would allow land managers to continue coordinating access to the ranges for flood management purposes. This includes the northern portion of the existing range, which is currently open for public access. For ceremonial or cultural site visits or academic research on B-16, current procedures would remain in effect and would include the following:

- site visits would need to be compatible with mission training activities and operate on a not-to-interfere basis
- bombing range scheduling and access procedures would remain in effect as per Navy range management doctrine
- for safety purposes, site visit personnel would be escorted by Navy range personnel

These policies would reduce public health and safety risks. Security fencing would restrict access to the range and the public would not interact with any training activities. Because the withdrawn land areas would be designated for military use and fenced on the B-16, Alternative 1 would not increase the risk to public health and safety and protection of children. Therefore, there would be no significant impact on public health and safety as a result of public access under Alternative 1.

Construction

During proposed construction and improvement activities at B-16, standard safety measures such as construction fencing, signs, and security would be implemented to minimize safety risks and unauthorized access. Perimeter fencing and access gates would also be constructed. Installation of the fencing would follow recommendations described in the BLM's Handbook 1741-1 (Fencing) which includes avoiding bulldozer clearing, or other major soil disturbing methods. Any proposed fencing and maintenance roads would be evaluated further in follow-on NEPA documentation after any ultimate Congressional decision is made.

Section 3.8 (Air Quality) provides a detailed analysis on emissions and fugitive dust associated with construction activities. Noise and fugitive dust associated with construction activities would be temporary and would occur only for short periods (on a daily basis for only limited periods of time, and only for certain daylight hours during such times), and would not pose a health and safety risk to the

public. Therefore, there would be no significant impact on public health and safety as a result of construction under Alternative 1.

3.14.3.2.11 Bravo-17

Land Withdrawal and Acquisition

Under Alternative 1, approximately 178,013 additional acres (176,977 acres of BLM-administered lands and 1,036 acres of non-federally owned lands) would be withdrawn or acquired to expand the B-17 range to the south (see Figure 2-3), increasing its total area to approximately 232,799 acres. These new lands would be fenced and managed in accordance with all applicable legal requirements and Navy policies and protocols. The Navy would expand their fence line patrol and maintenance procedures to include fences that are on withdrawn lands. The Navy proposes to establish two Conservation Law Enforcement Officers at NAS Fallon. Part of the duties of these officers would include patrolling of the added fence line for trespass issues and reporting to the Navy any broken or downed fences for maintenance repair. This would not increase the risk to public health and safety and protection of children in B-17. Therefore, there would be no significant impact on public health and safety as a result of the withdrawal and acquisition under Alternative 1.

Training Activities

Under Alternative 1, B-17 targets would be moved farther away from U.S. Route 50. The B-17 expansion would keep targets farther from public access as the expansion would add more distance between the public on U.S Route 50 and training activities, thus decreasing risks to public health and safety. Although the expansion would decrease the distance between the public in Gabbs and the training activities, the activities would be contained on the range and would not impact the public health and safety of the town of Gabbs. Under Alternative 1, there would be no change to training activities at B-17. Range procedures would be followed for unexploded ordnance and training activities would be contained on the range. While these activities would be conducted over a larger area, the similarity of the terrain in the proposed expansion area and the consistent application of the same safety practices ensure there would be no significant impact on public health and safety as a result of training activities under Alternative 1.

Public Accessibility

Under Alternative 1, no public access to B-17 would be allowed except for Navy-authorized activities such as ceremonial or cultural site visits, academic research, and regulatory or management activities. For ceremonial or cultural site visits, or academic research on B-17, current procedures would be the same as those listed for B-16. Because security fencing would restrict access to the range and the public would not interact with any training activities, there would be no increased risk to public health and safety. The withdrawn or acquired land would be designated for military use and fenced, as a result there would be no increased risk to public health and safety and protection of children. Therefore, there would be no significant impact on public health and safety as a result of public access under Alternative 1.

Construction

During proposed construction and improvement activities at B-17, standard safety measures such as construction fencing, signs, and security would be implemented to minimize safety risks and unauthorized access. The Navy would also construct perimeter fencing and access gates. Installation of the fencing would follow recommendations described in the BLM's Handbook 1741-1 (Fencing) which

includes avoiding bulldozer clearing, or other major soil disturbing methods. Any proposed fencing and maintenance roads would be evaluated further in follow-on NEPA documentation after any ultimate Congressional decision is made.

Section 3.8 (Air Quality) provides a detailed analysis on emissions and fugitive dust associated with construction activities. Noise and fugitive dust associated with construction activities would be temporary and would occur only for short periods (on a daily basis for only limited periods of time, and only for certain daylight hours during such times), and would not pose a health and safety risk to the public. Therefore, there would be no significant impact on public health and safety as a result of construction under Alternative 1.

Road and Infrastructure Improvements to Support Alternative 1

State Route 839

Under Alternative 1, the WDZ proposed for training activities at B-17 would extend over approximately 24 miles of State Route 839. As a result, (for public safety purposes), under Alternative 1, a portion of State Route 839 that would overlap with the proposed expansion area would need to be rerouted. Using funding provided by the Navy, the Federal Highway Administration, in cooperation with the Nevada Department of Transportation, would be responsible for planning, design, permitting, and constructing any realignment of State Route 839. The Navy has submitted a Needs Report to the Surface Deployment and Distribution Command requesting authority to utilize funding through the Defense Access Roads program. If approved, the Navy would coordinate construction execution through the Federal Highway Administration. NDOT would ensure that construction of any new route is complete before closing any portion of the existing State Route 839, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing State Route 839 unless and until any such new route has been completed and made available to the public.

Paiute Pipeline

Under Alternative 1, the Navy would purchase the impacted portion of the Paiute Pipeline and then would pay for relocation of the existing Paiute Pipeline south of the proposed B-17 range. Using funding provided by the Navy, the Paiute Pipeline Company would be responsible for planning, designing, permitting, funding, and constructing any realignment of the pipeline. A Right-of-Way (ROW) application submitted to the BLM by the pipeline owner would formally identify any proposed reroute. Site-specific environmental analysis and NEPA planning would be required before any potential relocation of the pipeline could occur, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing pipeline unless and until any such re-routing of the pipeline has been completed and made available to the pipeline owner. The BLM would have decision authority with respect to any proposed final routing subsequent to completion of site-specific environmental analysis.

3.14.3.2.12 Bravo-19

Land Withdrawal and Acquisition

Under Alternative 1, B-19 would not change (see Table 2-1) in size or function. In addition, target areas for Naval Aviation Advanced Strike Warfare and Large Force Exercise training would not change. B-19 would be managed in accordance with all applicable legal requirements and Navy policies and protocols and would not increase the risk to public health and safety and protection of children near B-19.

Therefore, there would be no significant impact on public health and safety as a result of the withdrawal and acquisition under Alternative 1.

Training Activities

Under Alternative 1, there would be no change to training activities at B-19. Range procedures would be followed for unexploded ordnance and training activities would be contained on the range. Therefore, there would be no significant impact on public health and safety as a result of training activities under Alternative 1.

Public Accessibility

Under Alternative 1, no public access to B-19 would be allowed except for Navy-authorized activities such as ceremonial or cultural site visits, academic research, and regulatory or management activities. For ceremonial or cultural site visits, or academic research on B-19, current procedures would be the same as those listed for B-16. Because security fencing would restrict access to the range and the public would not interact with any training activities, there would be no increased risk to public health and safety. Therefore, there would be no significant impact on public health and safety as a result of public access under Alternative 1.

Construction

No construction is proposed at B-19. Therefore, there would be no significant impact on public health and safety as a result of construction at B-19 under Alternative 1.

3.14.3.2.13 Bravo-20

Land Withdrawal and Acquisition

Under Alternative 1, B-20 would expand in all directions by approximately 180,329 acres (118,564 acres of federal land and 61,765 acres of non-federally owned land) (see Table 2-1) and increase in total size to approximately 221,334 acres. This expansion would include approximately 3,200 acres of land currently withdrawn by the U.S. Fish and Wildlife Service (USFWS) as a portion of the Fallon National Wildlife Refuge. The Navy is not proposing to develop targets in the refuge. Due to the safety concerns associated with being within a WDZ, the Navy and the USFWS would close the refuge lands within the WDZ to the public. The USFWS would continue to manage the land under a Memorandum of Understanding (MOU) with the Navy and BLM.

B-20 would be fenced and managed in accordance with all applicable legal requirements and Navy policies and protocols. The Navy would expand their fence line patrol and maintenance procedures to include fences that are on withdrawn lands. The Navy proposes to establish two Conservation Law Enforcement Officers at NAS Fallon. Part of the duties of these officers would include patrolling of the added fence line for trespass issues and reporting to the Navy any broken or downed fences for maintenance repair. This would not increase the risk to public health and safety and protection of children. Therefore, there would be no significant impact on public health and safety as a result of the withdrawal and acquisition under Alternative 1.

Training Activities

Under Alternative 1, there would be no change to training activities at B-20. Range procedures would be followed for unexploded ordnance and training activities would be contained on the range. While these activities would be conducted over a larger area, the similarity of the terrain in the proposed expansion

area and the consistent application of the same safety practices ensure there would be no significant impact on public health and safety as a result of training activities under Alternative 1.

Public Accessibility

Under Alternative 1, no public access to B-20 would be allowed except for Navy-authorized activities such as ceremonial or cultural site visits, academic research, and regulatory or management activities (e.g., BLM or NDOW activities or flood management activities). The Navy would allow land managers to continue coordinating access to the ranges for flood management purposes. For ceremonial or cultural site visits, or academic research on B-20, current procedures would be the same as those listed for B-16. Because security fencing would restrict access to the range and the public would not interact with any training activities, there would be no increased risk to public health and safety. The withdrawn land areas would be designated for military use and fenced on the B-20, therefore, Alternative 1 would not increase the risk to public health and safety and protection of children. Therefore, there would be no significant impact on public health and safety as a result of public access under Alternative 1.

Construction

During proposed construction and improvement activities at B-20, standard safety measures such as construction fencing, signs, and security would be implemented to minimize safety risks and unauthorized access. The Navy would also construct perimeter fencing and access gates. Installation of the fencing would follow recommendations described in the BLM's Handbook 1741-1 (Fencing) which includes avoiding bulldozer clearing, or other major soil disturbing methods. Any proposed fencing and maintenance roads would be evaluated further in follow-on NEPA documentation after any ultimate Congressional decision is made.

Section 3.8 (Air Quality) provides a detailed analysis on emissions and fugitive dust associated with construction activities. Noise and fugitive dust associated with construction activities would be temporary and would occur only for short periods (on a daily basis for only limited periods of time, and only for certain daylight hours during such times), and would not pose a public health and safety risk. Therefore, there would be no significant impact on public health and safety as a result of construction under Alternative 1.

3.14.3.2.14 Dixie Valley Training Area

Land Withdrawal and Acquisition

Under Alternative 1, the DVTa would expand in all directions (see Figure 2-5), increasing its total size to approximately 370,903 acres. The proposed expansion would overlap portions of the Clan Alpine Mountain WSA, the Job Peak WSA, the Stillwater Range WSA, and the BLM-proposed Fox Peak Areas of Critical Environmental Concern (ACEC) (proposed under Alternative E of the Carson City District Draft Resource Management Plan). Under Alternative 1, Congressional withdrawal legislation would remove the WSA designation from those portions of the Clan Alpine WSA, Job Peak WSA, and Stillwater WSA proposed for use in ground training activities within the DVTa. Alternative 1 would also remove a portion of the ACEC designation that is proposed in the Carson City Draft Resource Management Plan 2014 (Preferred Alternative E of the Carson City Draft Resource Management Plan) of the proposed Fox Peak ACEC within the DVTa. The BLM would change the boundaries of the proposed Fox Peak ACEC to remove those areas within the DVTa. The BLM would continue managing the remaining WSA portions of Clan Alpine WSA, Job Peak WSA, and Stillwater Range WSAs. These additional withdrawn or acquired lands would be managed in accordance with all applicable regulations as the rest of the DVTa, and

would not increase the risk to public health and safety and protection of children. Therefore, there would be no significant impact on public health and safety as a result of the withdrawal and acquisition under Alternative 1.

Training Activities

Under Alternative 1, there would be no change to training activities at the DVTA. While these activities would be conducted over a larger area, the similarity of the terrain in the proposed expansion area and the consistent application of the same safety practices ensure there would be no significant impact on public health and safety as a result of training activities under Alternative 1.

Public Accessibility

The public would continue to be able to access the DVTA for recreational activities include hunting, camping, hiking, OHV use, site visits, and grazing. Under Alternative 1, three electronic warfare sites would be constructed; however, security fencing would be installed along the perimeter of each site to restrict public access. Because security fencing would restrict access to these areas and the public would not be exposed, there would be no increased risk to public health and safety. The abandoned mines found on the DVTA would be secured in accordance with all applicable laws and regulations, therefore, Alternative 1 would not increase the risk to public health and safety and protection of children. Therefore, there would be no significant impact on public health and safety as a result of public access under Alternative 1.

Construction

During proposed construction activities at the DVTA, standard safety measures such as construction fencing, signs, and security would be implemented for the Electronic Warfare sites to minimize safety risks and unauthorized access. Noise and fugitive dust associated with construction activities would be temporary, contained within a small area (no more than 5 acres), and would occur only for short periods (on a daily basis for only limited periods of time, and only for certain daylight hours during such times), and would not pose a public health and safety risk. Therefore, there would be no significant impact on public health and safety as a result of construction under Alternative 1.

3.14.3.2.15 Special Use Airspace

Proposed airspace changes under Alternative 1 are primarily within the existing SUA of the FRTC. Airspace changes are described in Section 2.3.4.7 (Special Use Airspace Modifications). All airspace changes would follow FAA regulations as designated for each component of the implementation of Alternative 1 to ensure public health and safety. Some of the airspace above requested land withdrawal areas would need to be kept free of any air and ground infrastructure hazards that would be a threat to aviation safety, in order to provide adequate room for the safe operation of multiple aircraft. The airspace changes would allow for more efficient use of the airspace for Large Force Exercises and allow for as much public and commercial access as reasonably practicable, while being compatible with operational requirements (see Section 3.6, Airspace, for impact analysis).

Following the NEPA process, the Navy would prepare a formal RAICUZ update. A RAICUZ does not drive compatibility, but rather provides suggestions to the Navy about development and formalizes any recommendations for new and existing safety and noise zones within RAICUZ areas. The Navy would continue to work with the local counties and municipalities as well as federal property land managers (e.g., the BLM, USFWS, Bureau of Reclamation, and Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye,

Pershing, and Washoe Counties) to provide suggestions for compatible land use development near Bravo ranges.

Compliance with FAA regulations would ensure public health and safety in and under the SUA. Therefore, there would be no significant impact on public health and safety as a result of changes to SUA under Alternative 1.

3.14.3.2.16 Summary of Effects and Conclusions

Under Alternative 1, current plans and procedures for emergency services, wildfire management, aircraft and ground operations, range clearance procedures, electromagnetic energy, use of lasers, and abandoned mine lands would continue to be in effect and would be applied to any expanded range areas. B-16, B-17, B-19, and B-20 would be fenced and the public would be restricted from accessing the ranges except for allowable uses. The DVTAs would continue to be accessible to the public. Safety issues while driving, bicycling, or hiking on roads near or within the area remaining open to the public would not result in increased risks to health and safety or to children because of Navy standard operating procedures and management practices that are in place to maintain safety while training. Construction and improvement activities would follow standard safety measures to include construction fencing, signs, and security to minimize safety risks and unauthorized access. Therefore, implementation of Alternative 1 would not result in significant impacts on public health and safety. Because children are included in the overall population evaluated for public health and safety risks, and no significant impacts on public health and safety have been identified, the Navy has determined that no disproportionate health or safety risks to children would occur under Alternative 1.

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

Impacts associated with public health and safety issues that apply to all the ranges, training activities, public accessibility, and construction under Alternative 2 would be the same as discussed under Alternative 1. However, under Alternative 2, certain public uses within specified areas of B-16, B-17, B-19, and B-20 would be allowed when the ranges are not in operation, with prior coordination (refer to Table 2-5). Areas open for certain public uses would be specified, and targets and other training activities would not occur or would be compatible with uses of these specific areas following standard operating procedures and management practices to maintain public health and safety. The concept of allowing such uses was developed in coordination with the BLM as the Draft EIS was prepared based in part on input from the public and various public agencies during the scoping process.

3.14.3.3.1 Bravo-16

Land Withdrawal and Acquisition

Alternative 2 would involve the same withdrawals and acquisitions as requested and proposed in Alternative 1. Range procedures would be followed for unexploded ordnance and training activities would be contained on the range. Therefore, there would be no significant impact on public health and safety as a result of the withdrawal and acquisition under Alternative 2.

Training Activities

Under Alternative 2, there would be no change to training activities at B-16. For any unexploded ordnance generated as part of aircraft-delivered ordnance operations or ground-based operations, range clearance procedures would be followed as identified in Section 3.14.2.1.9 (Hazardous Waste). Range procedures would be followed for unexploded ordnance and training activities would be

contained on the range. While these activities would be conducted over a larger area, the similarity of the terrain in the proposed expansion area and the consistent application of the same safety practices ensure there would be no significant impact on public health and safety as a result of training activities under Alternative 2.

Public Accessibility

Under Alternative 2, B-16 would be closed to the majority of public access as described under Alternative 1, with the exception of Navy-authorized activities, such as tribal ceremonial or cultural site visits, academic research, and regulatory or management activities (e.g., BLM or NDOW activities or flood management activities). The Navy would allow land managers to continue coordinating access to the ranges for flood management purposes. Under Alternative 2, the Navy would also allow access for special events (racing events). Races within B-16 would be permitted and managed by the BLM, the State of Nevada, or the Navy in accordance with a MOU. Race scheduling and training de-confliction would be performed between the BLM, the State of Nevada, and the Navy. The BLM would manage those portions of races occurring on BLM-managed lands, and the Navy would manage those portions of races occurring on B-16. These programs would require safety training and a signed MOU. A range sweep would be conducted prior to the race or event using government provided ground transportation. After all race participants have exited the restricted area on Navy property, the Navy would conduct a final sweep with the designated race or event officials. The implementation of the actions and restrictions required based on the MOU would reduce the safety risk to the public by defining standard operating procedures, management practices, and impact minimization measures. There would be no increased risk to public health and safety with the implementation of Alternative 2 because security fencing would restrict access to the range, the public would not interact with any training activities, and procedures would be in place for allowable use access. The withdrawn land areas would be designated for military use and fenced on the B-16, reducing risks to public health and safety. Therefore, there would be no significant impact on public health and safety in B-16 under Alternative 2.

Construction

Construction activities proposed under Alternative 2 would be the same as those proposed under Alternative 1. Therefore, as discussed under Alternative 1, there would be no significant impact on public health and safety as a result of construction under Alternative 2.

3.14.3.3.2 Bravo-17

Land Withdrawal and Acquisition

Alternative 2 would involve the same withdrawals and acquisitions as requested and proposed in Alternative 1. Therefore, as discussed under Alternative 1, there would be no significant impact on public health and safety as a result of the withdrawal and acquisition under Alternative 2.

Training Activities

Under Alternative 2, there would be no change to training activities at B-17. For any unexploded ordnance generated as part of aircraft-delivered ordnance operations or ground-based operations, range clearance procedures would be followed as identified in Section 3.14.2.1.9 (Hazardous Waste). Range procedures would be followed for unexploded ordnance and training activities would be contained on the range. While these activities would be conducted over a larger area, the similarity of the terrain in the proposed expansion area and the consistent application of the same safety practices

ensure there would be no significant impact on public health and safety as a result of training activities under Alternative 2.

Public Accessibility

Under Alternative 2, B-17 would be closed to public access as described under Alternative 1, with the exception of special events (racing events), and hunting. Race protocols within B-17 would be the same as those described above under B-16. The Navy would accommodate hunting in the B-17 range to the maximum extent practicable. The bighorn sheep hunting program on B-17 would need to remain compatible with mission training activities and operate on a not-to-interfere basis with operational training requirements. Hunting activities would be implemented in accordance with applicable NDOW rules and regulations along with the Navy's standard operating procedures and protective measures to keep public health and safety risks low. NDOW would manage the hunting program and coordinate with the Navy for policies and guidelines on controlled range access.

A Hunt Program Work Plan would manage range access with procedures as discussed in the Draft Memorandum of Agreement located in Appendix D (Memoranda, Agreements, and Plans). For example, hunters must complete ground safety training; heed hunting avoidance areas that would be designated on a map (such as abandoned mine lands, target areas, etc.); hunters must sign a waiver agreement releasing the Navy of any liability for death or personal injury suffered by any program participant(s) or other individual(s) accompanying such participant(s), or for any loss of or damage to the property of any such participants or individuals accompanying such participants; hunters and other participants must be 18 years or older; bombing range scheduling and access procedures would be implemented in accordance with Navy range policies; and prior scheduling would be required. Tag holders would remain in designated hunting areas that would be open to the hunters as described in Section 3.12 (Recreation). These proposed policies would not entirely eliminate the risk of hunting on a bombing range, but would minimize such risk to the greatest extent practical and would be considered acceptable by the Navy.

There would be a minimal increased risk to public health and safety with the implementation of Alternative 2 due to the inherent risk of hunting on the bombing range that cannot be fully mitigated to no risk. However, risks to non-hunters would not increase under Alternative 2 because security fencing would restrict access to the range, the public would not interact with any training activities, the public with access would complete ground safety training, and procedures are in place for allowable use access. Therefore, there would be no significant impact on public health and safety in B-17 under Alternative 2.

Construction

Construction activities proposed under Alternative 2 would be the same as those proposed under Alternative 1. Therefore, as discussed under Alternative 1, there would be no significant impact on public health and safety as a result of construction under Alternative 2.

Road and Infrastructure Improvements to Support Alternative 2

The additional infrastructure improvements that would potentially be implemented after Alternative 2 would be the same as those described under Alternative 1. Prior to implementation of any potential action involving relocation of State Route 839 or relocation of the Paiute Pipeline, additional site-specific NEPA analysis would be performed.

3.14.3.3.3 Bravo-19

Land Withdrawal and Acquisition

The area of B-19 would not change under Alternative 2. The target areas for Naval Aviation Advanced Strike Warfare and Large Force Exercise training would not change. B-19 would be managed in accordance with all applicable legal requirements and Navy policies and protocols and would not increase the risk to public health and safety and protection of children. Therefore, there would be no significant impact on public health and safety as a result of the withdrawal and acquisition under Alternative 2.

Training Activities

Under Alternative 2, there would be no change to training activities at B-19. Range procedures would be followed for unexploded ordnance and training activities would be contained on the range. Therefore, there would be no significant impact on public health and safety as a result of training activities under Alternative 2.

Public Accessibility

Under Alternative 2, B-19 would be closed to public access as described under Alternative 1, with the exception of special events (racing events). Race protocols within B-19 would be the same as those described for B-16. There would be no increased risk to public health and safety with the implementation of Alternative 2 because security fencing would restrict access to the range, the public would not interact with any training activities, and procedures would be in place for allowable use access. Therefore, there would be no significant impact on public health and safety as a result of public access under Alternative 2.

Construction

No construction is proposed at B-19. Therefore, there would be no significant impact on public health and safety as a result of construction under Alternative 2.

3.14.3.3.4 Bravo-20

Land Withdrawal and Acquisition

Alternative 2 would involve the same withdrawals and acquisitions as requested and proposed in Alternative 1. Therefore, as discussed under Alternative 1, there would be no significant impact on public health and safety as a result of the withdrawal and acquisition under Alternative 2.

Training Activities

Under Alternative 2, there would be no change to training activities at B-20. For any unexploded ordnance generated as part of aircraft-delivered ordnance operations or ground-based operations, range clearance procedures would be followed as identified in Section 3.14.2.1.9 (Hazardous Waste). Range procedures would be followed for unexploded ordnance and training activities would be contained on the range. While these activities would be conducted over a larger area, the similarity of the terrain in the proposed expansion area and the consistent application of the same safety practices ensure there would be no significant impact on public health and safety as a result of training activities under Alternative 2.

Public Accessibility

Under Alternative 2, B-20 would be closed to the majority of public access as described under Alternative 1, with the exception of Navy-authorized activities, such as tribal ceremonial or cultural site visits, academic research, and regulatory or management activities (e.g., BLM or NDOW activities or flood management activities). The Navy would allow land managers to continue coordinating access to the ranges for flood management purposes. Under Alternative 2, the Navy would also allow access for special events (racing events). Race protocols within B-20 would be the same as those described for B-16. There would be no increased risk to public health and safety with the implementation of Alternative 2 because security fencing would restrict access to the range, the public would not interact with any training activities, and procedures would be in place for allowable use access. Therefore, there would be no significant impact on public health and safety in B-20 under Alternative 2.

Construction

Construction activities proposed under Alternative 2 would be the same as those proposed under Alternative 1. Therefore, as discussed under Alternative 1, there would be no significant impact on public health and safety as a result of construction under Alternative 2.

3.14.3.3.5 Dixie Valley Training Area

Land Withdrawal and Acquisition

Alternative 2 would have the same withdrawals and acquisitions as requested proposed in Alternative 1. Therefore, as discussed under Alternative 1, there would be no significant impact on public health and safety as a result of the withdrawal and acquisition under Alternative 2.

Training Activities

Under Alternative 2, there would be no change to training activities at the DVTA. While these activities would be conducted over a larger area, the similarity of the terrain in the proposed expansion area and the consistent application of the same safety practices ensure there would be no significant impact on public health and safety as a result of training activities under Alternative 2.

Public Accessibility

Under Alternative 2, the DVTA range would be open and have no public access restrictions (except for the fenced areas) for grazing, hunting, OHVs, camping, hiking, site visits (ceremonial and cultural), management access and events such as races, and would allow access for mineral resource development (geothermal development [managed under the Geothermal Steam Act of 1970 where compatible], subject to conditions in leases imposing conditions on such development) and salable mining activities. Impacts under Alternative 2 would be the same as Alternative 1 for the DVTA range, with the exception of allowing limited mineral resource development as referenced herein above.

All land uses in the DVTA would continue to be managed by the BLM. The management of domestic livestock grazing activities within the proposed DVTA would continue to be permitted by the BLM. Hunting seasons within the DVTA would continue as identified by the NDOW annual Hunting Guide. Compliance with the policies in the Hunting Guide would reduce public health and safety risks. OHV use currently occurs and would continue to be allowed under Alternative 2 on Navy withdrawn or acquired lands within the DVTA, as long as users follow the BLM OHV protocols, such as remaining on current roads and trails and using vehicles equipped with spark arrestors during fire season. Recreational activities, such as camping and hiking, currently occur and would continue to be allowed within any

Navy withdrawn lands in the DVTA. Ceremonial and cultural site visits would be allowed on the DVTA with no additional access restrictions.

The proposed geothermal development and salable mining activities would be permitted through the BLM and would not impact public health and safety in the DVTA range because they would be subject to all applicable public health and safety requirements and all conditions required for operation by the BLM and the Navy. Under Alternative 2, utility corridors, utilities, and ROW would be allowed in the DVTA. Because these activities are currently allowed on the DVTA, they would not impact public health and safety in the DVTA range, relative to current baseline conditions. The BLM and Navy Range Office would coordinate notification protocols for large race activities (which would not be restricted) in the DVTA. The BLM would manage any such races as appropriate to avoid or minimize any impacts of the races to public health and safety on the DVTA. Any abandoned mines found would be secured in accordance with all applicable laws and regulations on the DVTA. Therefore, there would be no increased risk to public health and safety as a result of public access changes under Alternative 2.

Construction

Construction activities proposed under Alternative 2 in the DVTA would be the same as those proposed under Alternative 1. Therefore, as discussed under Alternative 1, there would be no significant impact on public health and safety as a result of construction under Alternative 2.

3.14.3.3.6 Special Use Airspace

Impacts associated with Alternative 2 would be the same as defined under Alternative 1 for SUA. Following the NEPA process, the Navy would prepare a formal RAICUZ update. A RAICUZ does not drive compatibility, but rather provides suggestions to the Navy about development and formalizes any recommendations for new and existing safety and noise zones within RAICUZ areas. The Navy would continue to work with the local counties and municipalities as well as federal property land managers (e.g., the BLM, USFWS, Bureau of Reclamation, and Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe Counties) to provide suggestions for compatible land use development near Bravo ranges. Therefore, as discussed under Alternative 1, there would be no significant impact on public health and safety in or under SUA under Alternative 2.

3.14.3.3.7 Summary of Effects and Conclusions

Under Alternative 2, current plans and procedures for emergency services, wildfire management, aircraft and ground operations, range clearance procedures, electromagnetic energy, and use of lasers would continue to be in effect and would be applied to any expanded range areas. B-16, B-17, B-19, and B-20 would be fenced, and the public would be restricted from accessing the ranges except for allowable uses. The current plans and procedures for the DVTA would continue to be in place for abandoned mine lands and the training area would remain accessible to the public. Safety issues while driving, bicycling, or hiking on roads near or within the area remaining open to the public would not result in increased risks to health and safety or to children because of Navy standard operating procedures and management practices that are in place to maintain safety while training. Construction and improvement activities would follow standard safety measures to include construction fencing, signs, and security to minimize safety risks and unauthorized access. Therefore, implementation of Alternative 2 would not result in significant impacts on public health and safety. Because children are included in the overall population evaluated for public health and safety risks, and no significant impacts on public health and safety have been identified, the Navy has determined that no disproportionate health or safety risks to children would occur under Alternative 2.

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

Impacts associated with public health and safety issues that apply to all the ranges, training activities, public accessibility, and construction under Alternative 3 would be the same as discussed under Alternatives 1 and 2 with the exception of the shift of B-17, and change in withdrawal areas for B-16 and B-20. Under Alternative 3, B-17 would be shifted farther to the southeast, and it would be rotated slightly counter-clockwise. The shift of B-17 would impact more of Nye County than would be impacted under Alternative 1 or 2. Unlike Alternative 1, the Navy would not withdraw land south of U.S. Route 50 as the DVTA. Rather, the Navy proposes that Congress categorizes this area as a Special Land Management Overlay. This Special Land Management Overlay, two areas east and west of the B-17 range, as shown in Figure 2-13, would be defined as Military Electromagnetic Spectrum Special Use Zones. This definition means that prior to issuing any decisions on projects involving installation or use of mobile or stationary equipment used to transmit and receive electromagnetic signals in the two special use zones, the BLM would be required to consult with NAS Fallon regarding these permits, leases, studies, and other land uses. This requirement to obtain Navy permission for the use of this equipment would afford the Navy an opportunity to ensure military and civilian use of the electromagnetic spectrum does not interfere with their respective activities. BLM and the Navy would also enter into an MOU to manage the details of the consultation and approval process.

These two areas, which are public lands under the jurisdiction of BLM, would not be withdrawn by the Navy, and would not directly be used for land-based military training or managed by the Navy. They would remain open to public access and would be available for all appropriate uses, including mining for locatable and leasable mineral resources. However, as stated earlier, prior to issuing any decisions on projects, permits, leases, studies, and other land uses within the two special use zones, the BLM would be required to consult with NAS Fallon. This consultation would inform the Navy of proposed projects, permits, leases, studies, and other land uses and afford the Navy an opportunity to collaborate with the BLM to preserve the training environment.

The Bravo ranges would only allow certain public uses as specified through managed access. When the public is on a Bravo range for any reason, targets and other training activities would not occur or would only occur if compatible with these managed access uses, following standard operating procedures and management practices to maintain public health and safety.

3.14.3.4.1 Bravo-16

Land Withdrawal and Acquisition

Under Alternative 3, the B-16 range would expand to the west by approximately 31,875 acres (see Figure 2-2), increasing the total area to approximately 58,155 acres. Unlike Alternatives 1 and 2, the lands south of Simpson Road (and Simpson Road itself) would not be withdrawn; and the currently withdrawn lands would be relinquished by the Navy back to the BLM. Although these lands south of Simpson Road represent lands that are being relinquished by the Navy to the BLM for public use, they are already open to the public and therefore would not represent a significant change from current conditions. Therefore, as discussed under Alternatives 1 and 2, there would be no significant impact on public health and safety as a result of the withdrawal and acquisition under Alternative 3.

Training Activities

Under Alternative 3, there would be no change to training activities at B-16. Range procedures would be followed for unexploded ordnance and training activities would be contained on the range. While these

activities would be conducted over a larger area, the similarity of the terrain in the proposed expansion area and the consistent application of the same safety practices ensure there would be no significant impact on public health and safety as a result of training activities under Alternative 3.

Public Accessibility

Visits requiring access to the Bravo ranges would be coordinated with the Navy and allowed if compatible with Navy training activities and range safety. The Navy would allow land managers to continue coordinating access to the ranges for flood management purposes. Under Alternative 3, the same public access would be allowed on B-16 as described under Alternative 2. There would be no increased risk to public health and safety with the implementation of Alternative 3 because security fencing would restrict access to the range, the public would not interact with any training activities, and procedures are in place for allowable use access. Therefore, as discussed under Alternative 2, there would be no significant impact on public health and safety in B-16 under Alternative 3.

Construction

Construction activities proposed under Alternative 3 would be the same as those proposed under Alternatives 1 and 2. Therefore as discussed under Alternatives 1 and 2, there would be no significant impact on public health and safety as a result of construction under Alternative 3.

3.14.3.4.2 Bravo-17

Land Withdrawal and Acquisition

Under Alternative 3, B-17 would expand to the southeast by approximately 212,016 acres and be rotated counterclockwise (see Figure 2-13). This requested withdrawal would avoid any overlap of State Route 839 (which would be overlapped under Alternatives 1 and 2). The shift of B-17 would impact more of Nye County than would be impacted under Alternative 1 or 2. Under Alternative 3, in addition to new targets and target areas, the Navy would continue to use existing targets and target areas. These new lands would be fenced and managed in accordance with all applicable legal requirements and Navy policies and protocols. The Navy would expand their fence line patrol and maintenance procedures to include fences that are on withdrawn lands. The Navy proposes to establish two Conservation Law Enforcement Officers at NAS Fallon. Part of the duties of these officers would include patrolling of the added fence line for trespass issues and reporting to the Navy any broken or downed fences for maintenance repair. The additional gates that would be added to the B-17 fence line under Alternative 3 would be monitored and maintained by the Navy, not by civilians of Nye County. Therefore, there would be no significant impact on the Nye County emergency response volunteer corps as a result of the fence line or gates on B-17. This would not increase the risk to public health and safety and protection of children in B-17. Therefore, there would be no significant impact on public health and safety as a result of the withdrawal and acquisition under Alternative 3.

Training Activities

Under Alternative 3, there would be no change to training activities at B-17. Range procedures would be followed for unexploded ordnance and training activities would be contained on the range. While these activities would be conducted over a larger area, the similarity of the terrain in the proposed expansion area and the consistent application of the same safety practices ensure there would be no significant impact on public health and safety as a result of training activities under Alternative 3.

Public Accessibility

Visits requiring access to the Bravo ranges would be coordinated with the Navy and allowed if compatible with Navy training activities and range safety. With the shift of B-17 under Alternative 3, the hunting avoidance areas (such as target areas) would shift as discussed in Section 3.12 (Recreation). Alternative 3 would have the same public access allowances and the same impacts on public health and safety in B-17 as described under Alternative 2. There would be a minimal increased risk to public health and safety (in terms of low-level residual risk to hunting parties) with the implementation of Alternative 3, as discussed under Alternative 2. Therefore, there would be no significant impact on public health and safety in B-17 under Alternative 3.

Construction

Construction activities proposed under Alternative 3 would be the same as those proposed under Alternatives 1 and 2. Therefore as discussed under Alternatives 1 and 2, there would be no significant impact on public health and safety as a result of construction under Alternative 3.

Road and Infrastructure Improvements to Support Alternative 3

State Route 361 Notional Relocation Corridor

With the shift and rotation of B-17, approximately 12 miles of State Route 361 that currently traverses BLM-administered lands would no longer be available for public use. Using funding provided by the Navy, the Federal Highway Administration, in cooperation with the Nevada Department of Transportation, would be responsible for planning, design, permitting, and constructing any realignment of State Route 361. The Navy has submitted a Needs Report to the Surface Deployment and Distribution Command requesting authority to utilize funding through the Defense Access Roads program. If approved, the Navy would coordinate construction execution through the Federal Highway Administration. NDOT would ensure that construction of any new route is complete before closing any portion of the existing State Route 361, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing State Route 361 unless and until any such new route has been completed and made available to the public.

Paiute Pipeline

Additional lands requested to be withdrawn or proposed for acquisition to expand B-17 would overlap with a section of the Paiute Pipeline, resulting in the need to re-locate approximately 18 miles of the pipeline. The Navy would purchase the approximately 18 miles of the Paiute Pipeline and then would pay for relocation of the existing Paiute Pipeline south of the proposed B-17 range. Using funding provided by the Navy, the Paiute Pipeline Company would be responsible for planning, designing, permitting, funding, and constructing any realignment of the pipeline. A ROW application submitted to the BLM by the pipeline owner would formally identify any proposed reroute. Site-specific environmental analysis and NEPA planning would be required before any potential relocation of the pipeline could occur, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing pipeline unless and until any such re-routing of the pipeline has been completed and made available to the pipeline owner. The BLM would have decision authority with respect to any proposed final routing subsequent to completion of site-specific environmental analysis.

3.14.3.4.3 Bravo-19

Land Withdrawal and Acquisition

The area of B-19 would not change under Alternative 3 (see Table 2-7). The target areas for Naval Aviation Advanced Strike Warfare and Large Force Exercise training would not change. B-19 would be managed in accordance with all applicable legal requirements and Navy policies and protocols and would not increase the risk to public health and safety and protection of children. Therefore, there would be no significant impact on public health and safety as a result of the withdrawal and acquisition under Alternative 3.

Training Activities

Under Alternative 3, there would be no change to training activities at B-19. Range procedures would be followed for unexploded ordnance and training activities would be contained on the range. Therefore, there would be no significant impact on public health and safety as a result of training activities under Alternative 3.

Public Accessibility

Visits requiring access to the Bravo ranges would be coordinated with the Navy and allowed if compatible with Navy training activities and range safety. Under Alternative 3, B-19 would be closed to public access as described under Alternative 2, with the exception of special events (racing events). Race protocols within B-19 would be the same as those described for B-16. There would be no increased risk to public health and safety with the implementation of Alternative 3 because security fencing would restrict access to the range, the public would not interact with any training activities, and procedures would be in place for allowable use access. Therefore, there would be no significant impact on public health and safety as a result of public access under Alternative 3.

Construction

No construction is proposed at B-19. Therefore, there would be no significant impact on public health and safety as a result of construction under Alternative 3.

3.14.3.4.4 Bravo-20

Land Withdrawal and Acquisition

Under Alternative 3, B-20 would expand in all directions, growing by approximately 177,114 acres (see Table 2-7) and increasing in total size to approximately 218,119 acres. This expansion includes approximately 2,720 acres of land currently withdrawn by the USFWS as a portion of the Fallon National Wildlife Refuge and 1,920 acres of Lyon County Conservation Easements. As discussed under Alternative 1, the Navy is not proposing to develop targets in the refuge. Unlike Alternatives 1 and 2, the Navy would not request for withdrawal lands east of East County Road and the road itself. The Navy would leave the areas east of East County Road and the road itself open under Alternatives 1 and 2; therefore, the impacts on public health and safety under Alternative 3 are the same as discussed under Alternatives 1 and 2. Therefore, there would be no significant impact on public health and safety as a result of the withdrawal and acquisition under Alternative 3.

Training Activities

Under Alternative 3, there would be no change to training activities at B-20. Range procedures would be followed for unexploded ordnance and training activities would be contained on the range. While these

activities would be conducted over a larger area, the similarity of the terrain in the proposed expansion area and the consistent application of the same safety practices ensure there would be no significant impact on public health and safety as a result of training activities under Alternative 3.

Public Accessibility

Visits requiring access to the Bravo ranges would be coordinated with the Navy and allowed if compatible with Navy training activities and range safety. The Navy would allow land managers to continue coordinating access to the ranges for flood management purposes. Under Alternative 3, the same public access would be allowed on B-20 as described under Alternative 2 for the B-20 range. There would be no increased risk to public health and safety with the implementation of Alternative 3 because security fencing would restrict access to the range, the public would not interact with any training activities, and procedures are in place for allowable use access. Therefore, there would be no significant impact on public health and safety in B-20 under Alternative 3.

Construction

Construction activities proposed under Alternative 3 would be the same as those proposed under Alternatives 1 and 2. Therefore as discussed under Alternatives 1 and 2, there would be no significant impact on public health and safety as a result of construction under Alternative 3.

3.14.3.4.5 Dixie Valley Training Area

Land Withdrawal and Acquisition

Under Alternative 3, the land requested for withdrawal would decrease compared to Alternatives 1 and 2 by 77,010 acres with the creation of the Special Land Management Overlay. With the shift of B-17, the BLM would create a Special Land Management Overlay along the western side of State Route 839 south of U.S. Route 50 and around Earthquake Fault Road. The requested withdrawal and proposed acquisition for the DVTA would total approximately 247,762 acres (see Figure 2-12) and would increase the total training area size to 325,322 acres. These new lands would be managed in the same way as the DVTA, would be open for public use, would be managed in accordance with all applicable regulations, and would not increase the risk to public health and safety and protection of children in the DVTA. Therefore, there would be no significant impact on public health and safety as a result of the withdrawal and acquisition under Alternative 3.

Training Activities

Under Alternative 3, there would be no change to training activities at the DVTA. While these activities would be conducted over a larger area, the similarity of the terrain in the proposed expansion area and the consistent application of the same safety practices ensure there would be no significant impact on public health and safety as a result of training activities under Alternative 3.

Public Accessibility

Under Alternative 3, the land requested for withdrawal for the DVTA would decrease compared to Alternatives 1 and 2 by 77,010 acres with the creation of the Special Land Management Overlay. Under Alternative 3, the BLM Special Land Management Overlay would be open to the public and allow for public uses through the BLM. The Special Land Management Overlay would be created via the withdrawal legislation and would require that BLM obtain approval from the Navy for installation of any fixed or mobile equipment used for transmitting and receiving radio signals, and consult with the Navy for any uses in this area requiring a permit from BLM. Impacts on public health and safety in the DVTA

would be the same under Alternative 3 as described under Alternative 2 for public access. All public health and safety policies would continue to cover lands requested for withdrawal and proposed for acquisition. The abandoned mines found would be secured in accordance with all applicable laws and regulations. Because public access activities are currently allowed on the DVTa, they would not increase the risk to public health and safety in the DVTa range. Therefore, there would be no significant impact on public health and safety as a result of public access under Alternative 3.

Construction

Construction activities in the DVTa, proposed under Alternative 3, would be the same as those proposed under Alternatives 1 and 2. Therefore as discussed under Alternatives 1 and 2, there would be no significant impact on public health and safety as a result of construction under Alternative 3.

3.14.3.4.6 Special Use Airspace

Under Alternative 3, airspace changes would have the same impacts on public health and safety as discussed under Alternatives 1 and 2. Restricted Airspace would need to be established to overlay the shifted and rotated withdrawal of B-17 lands. No new safety procedures would need to be established for aircraft activities due to the shift in airspace and FAA protocols would continue to be in effect. Because airspace changes would be implemented with the same safety protocols that are currently in place, there would be no increased risk to public health and safety. Following the NEPA process, the Navy would prepare a formal RAICUZ update. A RAICUZ does not drive compatibility, but rather provides suggestions to the Navy about development and formalizes any recommendations for new and existing safety and noise zones within RAICUZ areas. The Navy would continue to work with the local counties and municipalities as well as federal property land managers (e.g., the BLM, USFWS, Bureau of Reclamation, and Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe Counties) to provide suggestions for compatible land use development near Bravo ranges. Therefore, there would be no significant impact on public health and safety under Alternative 3.

3.14.3.4.7 Summary of Effects and Conclusions

Under Alternative 3, current plans and procedures for emergency services, wildfire management, aircraft and ground operations, range clearance procedures, electromagnetic energy, use of lasers, and abandoned mine lands would continue to be implemented and include expanded range areas. B-16, B-17, B-19, and B-20 would be fenced, and the public would be restricted from accessing the ranges except for allowable uses. The DVTa would remain accessible to the public. Safety issues while driving, bicycling, or hiking on roads near or within the area remaining open to the public would not result in increased risks to health and safety or to children because of Navy standard operating procedures and management practices that are in place to maintain safety while training. Construction and improvement activities would follow standard safety measures to include construction fencing, signs, and security to minimize safety risks and unauthorized access. Therefore, implementation of Alternative 3 would not result in significant impacts on public health and safety. Because children are included in the overall population evaluated for public health and safety risks, and no impacts on public health and safety have been identified, the Navy has determined that no disproportionate health or safety risks to children would occur under Alternative 3.

3.14.3.5 Proposed Management Practices, Monitoring, and Mitigation

3.14.3.5.1 Proposed Management Practices

Current measures are in place to ensure that nonparticipants are not endangered by actions at the FRTC, and they would remain in effect with the implementation of any of the Alternatives. The FRTC is actively developing a Wildland Fire Management Plan to reduce the risk of wildlife in the region of influence; a draft outline can be found in Appendix D (Memoranda, Agreements, and Plans). Standard Operating Procedures and range clearance procedures would remain in place to ensure that training areas are clear of nonparticipants before an activity commences. The following management practices would continue to be implemented to reduce hazards associated with unexploded ordnance:

- Post signs warning of areas where unexploded ordnance clearance has not been confirmed.
- For public access, there would be procedures in place (e.g., escorts, range clearance, explosive ordnance disposal sweeps) to protect the public if authorized to enter the ranges.
- Maintain the RSEPA discussed under Section 3.14.2.1.10 (Range Sustainability Environmental Program Assessment).
- Continue Operational Range Clearance activities which remove unexploded ordnance and other materials to reduce munitions constituent loading.

With the implementation of existing management practices on proposed withdrawn or acquired lands, no additional management practices would be warranted for public health and safety and protection of children based on the analysis presented in Section 3.14.3 (Environmental Consequences).

3.14.3.5.2 Proposed Monitoring

Monitoring of training events serves to identify potential public health and safety risks and avoid them. The Navy would continue to monitor training events to identify public health and safety risks and avoid them.

3.14.3.5.3 Proposed Mitigation

No mitigation measures would be warranted for public health and safety based on the analysis presented in Section 3.14.3 (Environmental Consequences).

3.14.3.6 Summary of Effects and Conclusions

Table 3.14-8 summarizes the effects of the alternatives on public health and safety and protection of children.

Table 3.14-8: Summary of Effects and Conclusions on Public Health and Safety and Protection of Children

Summary of Effects and National Environmental Policy Act Determinations	
No Action Alternative	
Summary	<ul style="list-style-type: none"> • No public access would occur at the ranges during the decontamination process. Areas that cannot be rendered safe for public access would remain off limits. • The airspace of the FRTC might no longer support Navy training as it exists today. • Pending the reevaluation of the mission of NAS Fallon, the Navy could take steps to coordinate with the FAA to return all of the FRTC airspace to the FAA for integration into the commercial national airspace. • The Class Delta airspace above the NAS Fallon airfield would remain active. • Some range activities that only require MOAs (e.g., non-firing air combat maneuvers, search and rescue, close air support) could still occur in all of the FRTC.
Impact Conclusion	The No Action Alternative would not significantly impact public health and safety, and there would be no disproportionate environmental health or safety risks to children.
Alternative 1	
Summary	<ul style="list-style-type: none"> • Current plans and procedures for emergency services, wildfire management, aircraft and ground operations, range clearance procedures, electromagnetic energy, use of lasers, abandoned mine lands, hazardous waste management, and the protection of children would continue to be implemented on expanded range areas. • The public would not be able to access B-16, B-17, B-19, or B-20 ranges except for and in accordance with specified allowable uses. • The public would continue to access the DVTA. Safety procedures would be in place to minimize the risk to the public. • Construction and improvement activities would follow standard safety measures to include construction fencing, signs, and security to minimize public health and safety risks from unauthorized access.
Impact Conclusion	Alternative 1 would not significantly impact public health and safety, and there would be no disproportionate environmental health or safety risks to children.

**Table 3.14-8: Summary of Effects and Conclusions on Public Health and Safety and Protection of Children
(continued)**

Summary of Effects and National Environmental Policy Act Determinations	
Alternative 2	
Summary	<ul style="list-style-type: none"> • Current plans and procedures for emergency services, wildfire management, aircraft and ground operations, range clearance procedures, electromagnetic energy, use of lasers, abandoned mine lands, hazardous waste management, and the protection of the children would continue and include expanded range areas. • There would be limited access to specified areas of B-16, B-17, B-19, and B-20 when the ranges are not active. Safety procedures would be in place to minimize the risk to the public. • The public would continue to access the DVTA. Safety procedures would be in place to minimize the risk to the public. • Construction and improvement activities would follow standard safety measures to include construction fencing, signs, and security to minimize safety risks and unauthorized access.
Impact Conclusion	Alternative 2 would not significantly impact public health and safety, and there would be no disproportionate environmental health or safety risks to children.
Alternative 3	
Summary	<ul style="list-style-type: none"> • Current plans and procedures for emergency services, wildfire management, aircraft and ground operations, range clearance procedures, electromagnetic energy, use of lasers, abandoned mine lands, hazardous waste management, and the protection of the children would continue to be implemented on expanded range areas. • There would be limited access to specified areas of B-16, B-17, B-19, and B-20 when the ranges are not active. Safety procedures would be in place to minimize the risk to the public. • The public would continue to access the DVTA. Safety procedures would be in place to minimize the risk to the public. • Construction and improvement activities would follow standard safety measures to include construction fencing, signs, and security to minimize safety risks and unauthorized access.
Impact Conclusion	Alternative 3 would not significantly impact public health and safety, and there would be no disproportionate environmental health or safety risks to children.

Notes: B- = Bravo, DVTA = Dixie Valley Training Area, FAA = Federal Aviation Administration, FRTC = Fallon Range Training Complex, MOA = Military Operations Area, NAS = Naval Air Station

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3.15 Environmental Justice

No Action Alternative

Under the No Action Alternative, the 1999 Congressional land withdrawal of 201,933 acres from public domain (Public Law 106-65) would expire on November 5, 2021, and military training activities requiring the use of these public lands would cease. Expiration of the land withdrawal would terminate the Navy's authority to use nearly all of the Fallon Range Training Complex's (FRTC's) bombing ranges, affecting nearly 62 percent of the land area currently available for military aviation and ground training activities in the FRTC.

Alternative 1 – Modernization of the Fallon Range Training Complex

Under Alternative 1, the Navy would request Congressional renewal of the 1999 Public Land Withdrawal of 202,864 acres, which is scheduled to expire in November 2021. The Navy would request that Congress withdraw and reserve for military use approximately 618,727 acres of additional Federal land and acquire approximately 65,157 acres of non-federal land. Range infrastructure would be constructed to support modernization, including new target areas, and expand and reconfigured existing Special Use Airspace (SUA) to accommodate the expanded bombing ranges. Implementation of Alternative 1 would potentially require the reroute of State Route 839 and the relocation of a portion of the Paiute Pipeline. Public access to B-16, B-17, and B-20 would be restricted for security and to safeguard against potential hazards associated with military activities. The Navy would not allow mining or geothermal development within the proposed bombing ranges or the Dixie Valley Training Area (DVTA). Under Alternative 1, the Navy would use the modernized FRTC to conduct aviation and ground training of the same general types and at the same tempos as analyzed in Alternative 2 of the *2015 Military Readiness Activities at Fallon Range Training Complex, Nevada, Final Environmental Impact Statement* (EIS). The Navy is not proposing to increase the number of training activities under this or any of the alternatives in this EIS.

Alternative 2 – Modernization of Fallon Range Training Complex with Managed Access

Alternative 2 would have the same withdrawals, acquisitions, and SUA changes as proposed in Alternative 1. Alternative 2 would continue to allow certain public uses within specified areas of B-16, B-17, and B-20 (ceremonial, cultural, or academic research visits, land management activities) when the ranges are not operational and compatible with military training activities (typically weekends, holidays, and when closed for maintenance). Alternative 2 would also continue to allow grazing, hunting, off-highway vehicle (OHV) usage, camping, hiking, site and ceremonial visits, and large event off-road races at the DVTA. Additionally under Alternative 2, hunting would be conditionally allowed on designated portions of B-17, and geothermal and salable mineral exploration would be conditionally allowed on the DVTA. Large event off-road races would be allowable on all ranges subject to coordination with the Navy and compatible with military training activities.

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

Alternative 3 differs from Alternative 1 and 2 with respect to the orientation, size, and location of B-16, B-17, B-20 and the DVTA, and is similar to Alternative 2 in terms of managed access. Alternative 3 places the proposed B-17 farther to the southeast and rotates it slightly counter-clockwise. In conjunction with shifting B-17 in this manner, the expanded range would leave State Route 839 in its current configuration along the western boundary of B-17 and would expand eastward across State Route 361 potentially requiring the reroute of State Route 361. The Navy proposes designation of the area south of U.S. Route 50 as a Special Land Management Overlay rather than proposing it for withdrawal as the DVTA. This Special Land Management Overlay would define two areas, one east and one west of the existing B-17 range. These two areas, which are currently public lands under the jurisdiction of BLM, would not be withdrawn by the Navy and would not directly be used for land-based military training or managed by the Navy.

Environmental Impact Statement

Fallon Range Training Complex Modernization

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3.15 Environmental Justice

The United States (U.S.) Environmental Protection Agency defines environmental justice as the “fair treatment” and “meaningful involvement” of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (U.S. Environmental Protection Agency, 2016). “Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies” (Federal Aviation Administration, 2015). Meaningful involvement means that

- people have an opportunity to participate in decisions about activities that may affect their environment or health,
- the public’s contribution can influence the regulatory agency’s decision,
- their concerns will be considered in the decision-making process, and
- the decision makers seek out and facilitate the involvement of those potentially affected (Federal Aviation Administration, 2015).

3.15.1 Methodology

The methodology for analyzing potential environmental justice impacts considers the region of influence, regulatory framework, identification of minority and low-income populations, and identification of any disproportionately high and adverse impacts. This analysis focuses on the potential for a disproportionate and adverse exposure of specific population groups to the projected adverse consequences discussed in Sections 3.1 through 3.14 of this Environmental Impact Statement (EIS).

3.15.1.1 Region of Influence

The region of influence (also referred to as the Study Area) for environmental justice includes Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe counties. Environmental justice refers to any minority or low-income population that could be exposed to a disproportionately high and adverse human health or environmental effect of implementing the Proposed Action. This includes census block groups that overlap or are adjacent to existing Fallon Range Training Complex (FRTC) Bravo ranges and training areas (also known as fenceline communities) and any other community that could experience day-night level (DNL) noise of 65 decibels A-weighted (dBA) or above as a result of FRTC training activities (Section 3.7, Noise). Communities that would not experience noise levels of 65 dBA or above include Elko, Eureka, and Washoe; therefore, they are not analyzed further. Those communities that could experience noise levels of 65 dBA or greater include Churchill, Lander, Lyon, Mineral, Nye, and Pershing counties; therefore, they are considered for this analysis.

3.15.1.2 Regulatory Framework

Consistent with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 11, 1994), U.S. Department of the Navy (Navy) policy is to identify and address any disproportionately high and adverse human health or environmental effects of its actions on minority and low-income populations.

3.15.1.3 Approach to Analysis

To determine whether there would be any disproportionately high and adverse human health or environmental effect to a minority or low-income population, the Navy must first identify whether there would be any minority or low-income population that may be exposed to disproportionately high and

adverse environmental impacts (see Section 3.15.1.3.1, Identifying Minority or Low-income Populations). For any identified populations, the Navy assesses the impacts and identifies whether the action would result in disproportionately high and adverse human health or environmental effects. For purposes of this analysis, 2010 and 2016 population data was used for determining existing conditions in addition to forecast data for total population density out to 2021 (when the Proposed Action, if approved, would be implemented).

The identification of a disproportionately high and adverse impact on minority and low-income populations does not preclude a proposed agency action from going forward, nor does it necessarily compel a conclusion that a proposed action is environmentally unsatisfactory. If an agency determines there would be a disproportionately high and adverse impact on minority and low-income populations, an agency may consider heightening its focus on meaningful public engagement regarding community preferences, considering an appropriate range of alternatives (including alternative sites), and mitigation and monitoring measures (U.S. Environmental Protection Agency, 2016).

3.15.1.3.1 Identifying Minority or Low-income Populations

To assess the impacts on minority and low-income populations, the Navy first identifies whether there are any areas of minority or low-income populations that may experience disproportionately high and adverse impacts from the Proposed Action. Minority and low-income populations are determined by analyzing the demographic and economic characteristics of the affected area and comparing those to the characteristics of the larger community as a whole. This larger community is known as the community of comparison.

The Environmental Protection Agency's Environmental Justice Screening and Mapping Tool (EJSCREEN) was used to initially screen for areas with minority and low-income populations, potential environmental quality issues, and environmental and demographic indicators. Data was also pulled from the U.S. Census Bureau's 2010 Census and 2012-2016 American Community Survey for the analysis to characterize minority and Hispanic or Latino populations and to define low-income populations. Populations associated with Indian Tribes are included in the county populations. Tribal communities located within the Study Area (specifically, the Fallon Paiute Shoshone Tribe) identify themselves as an environmental justice community of concern. Low-income populations in this analysis are defined using the percent of all individuals with determined poverty status, as defined by the U.S. Census Bureau, for each specific geographic area. In this analysis, U.S. Census statistics provided poverty estimates down to the census tract level only for this portion of Nevada. A census tract is a small, relatively permanent statistical subdivision of a county. A census block group is a geographic unit that is smaller than a census tract but larger than a census block. A census block group generally consists of between 600 and 3,000 people and is usually a contiguous area. Census-designated places are delineated on figures to provide data for settled concentrations of populations that are identifiable by name but not legally incorporated under the laws of the state.

Minority populations¹ are individuals who are members of the following population groups: American Indian or Alaska Native, Asian, Native Hawaiian or Pacific Islander, or Black or African American. The methodology used for identification of minority populations considered the Federal Interagency

¹ These are the exact categories as enumerated by the census bureau and guidance. People who identify their origin as Hispanic, Latino, or Spanish may be of any race, so they are also included in applicable race categories.

Working Group on Environmental Justice and National Environmental Policy Act (NEPA) Report (U.S. Environmental Protection Agency, 2016). While the identification of minority populations can be conducted a number of ways, the report provides two approaches that include conducting either a *No-Threshold* analysis or both the *Fifty Percent* analysis and the *Meaningfully Greater* analysis in concert. For this EIS, the analysis conducted used the *Fifty Percent* and the *Meaningfully Greater* analyses. The following steps were adapted from the report.

Conducting the *Fifty Percent* analysis entails the following steps:

- Step 1: Determine the total number of individuals within the affected environment. The number of individuals within the affected environment was determined using the 2010 Census Bureau data.
- Step 2: Determine the total number of minority individuals (all individuals white alone, not Hispanic or Latino) residing within the affected environment. *The number of minorities within the affected environment was determined using the 2010 and 2016 Census Bureau data.*
- Step 3: Select the appropriate geographic units of analysis within the affected environment. Since minority population data was not available for census block groups within the Study Area, the census tract was the appropriate geographic unit used.
- Step 4: Determine the percentage of minority individuals (including Hispanics) residing with the geographic unit of analysis. Data provided later in the section in table format reflect the percentage of minority individuals (including Hispanics) within the Study Area.
- Step 5: If the percentage of minorities residing in the geographic unit of analysis meets or exceeds 50 percent, note the existence of a minority population. *Minority populations that exceed 50 percent or higher are identified and noted in the appropriate tables below.*
- Step 6: Compare the total number of minorities residing within the affected environment against the total number of individuals residing within the affected environment, in order to determine the percentage of minority individuals residing with the affected environment. *The percentage of minority individuals residing in the affected environment is provided in appropriate tables below.*
- Step 7: If the percentage of minorities residing in the affect environment exceeds 50 percent, consider noting the need for a heightened focus. *Provided in this analysis is a higher focus on minority populations over 50 percent.*
- Step 8: After completion of the *Fifty Percent* analysis, conduct the *Meaningfully Greater* analysis.

The following is the *Meaningfully Greater* analysis conducted in concert with the *Fifty Percent* analysis.

Conducting the *Meaningfully Greater* analysis entails the following steps:

- Step 1: Select the appropriate geographic unit of analysis for the affected environment. Since minority population data was not available for census block groups within the Study Area, the census tract was the appropriate geographic unit for analysis.
- Step 2: Select the appropriate reference community. The reference community is Churchill, Lander, Lyon, Mineral, Nye, and Pershing counties.
- Step 3: Select the appropriate meaningfully greater threshold for comparison. The *Meaningfully Greater* analysis requires use of a reasonable, subjective threshold (e.g., 10 or 20 percent greater than the reference community). What constitutes “meaningfully greater” varies by agency, with some agencies considering any percentage in the selected geographic unit of analysis that is greater than the percentage in the appropriate reference community to qualify as being meaningfully greater. *For this analysis, “meaningfully greater” was defined as*

demographic statistics that differ by more than 15 percent from those of the communities of comparison.

- Step 4: Compare the percentages of minority individuals residing within the selected geographic units of analysis to the percentage of minority individuals residing within the reference community. *Identification of minority populations were compared to population characteristics from the affected census tracts to that of Churchill, Lander, Lyon, Mineral, Nye, and Pershing counties.*
- Step 5: If the percentage of minorities residing within the geographic unit of analysis is meaningfully greater (based on the established threshold), either individually or in the aggregate than the percentage of minorities residing within the reference community, disclose the existence of a minority population. *Tables present the existence of minority populations within the affected environment.*
- Step 6: Display identified minority populations in a map and table format, as appropriate. *Figures illustrate the location of minority populations within the affected environment.*
- Step 7: Provide written rationale that explains the selection of the geographic unit of analysis, the reference community, the meaningfully greater threshold, and other methods used to identify minority populations. *Methods used to identify minority populations are identified above. Section 3.15.2 (Affected Environment) provides the data needed to support the analysis as presented in Section 3.15.3 (Environmental Consequences). Incorporated places and census-designated places were also included in this analysis to accurately reflect the existence of any minority population in the geographic unit of analysis (U.S. Environmental Protection Agency, 2016).*

Low-income populations are defined as census tracts where the percentage of the population considered to be low income is greater than or equal to the percentage of the general population with low incomes in the community of comparison. The methodology used for identification of low-income populations considered the Federal Interagency Working Group on Environmental Justice and NEPA Report (U.S. Environmental Protection Agency, 2016). While the identification of low-income populations can be conducted a number of ways, the report provides two approaches that include conducting either an Alternative Criteria Analysis or a Low-Income Threshold Criteria Analysis. For this EIS, the analysis conducted used the Low-Income Threshold Criteria Analysis, and the following steps adapted from the report were included:

- Step 1: Select and disclose the appropriate poverty thresholds as defined by the Census Bureau, the poverty guidelines as defined by the Department of Health and Human Services, or other appropriate source. *This analysis uses the 2010 and 2016 Census Bureau data.*
- Step 2: Select an appropriate geographic unit of analysis (e.g., block group, census tract) for identifying low-income populations in the affected environment. *Since low-income population data was not available for census block groups within the Study Area, the census tract is the appropriate geographic unit to use.*
- Step 3: Select the appropriate reference community to compare against the geographic units of analysis. Reference communities evaluated for this step included Churchill, Lander, Lyon, Mineral, and Nye counties. The community of comparison for Pershing and Lander counties is the State of Nevada because these counties each have only one census tract.
- Step 4: Select an appropriate measure (individuals, median household income, or families below the poverty level) for comparing the poverty level in the geographic unit of analysis to the reference community. *For this step, individuals below the poverty line was the measure used for purposes of comparison.*

- Step 5: Select an appropriate threshold for determining whether a particular geographic unit of analysis is identified as low-income. *The threshold for this analysis is if the geographic unit is greater or equal to the community comparison.*
- Step 6: Determine the percentage of individuals at or below the selected low-income threshold for the reference community and in each geographic unit of analysis. *Appropriate tables are provided later in the section that reflect the percentage of individuals at or below the low-income threshold.*
- Step 7: Compare the percentage (from Step 6) in each geographic unit of analysis to the percentage in the reference community. Tables are provided later in this section that present the comparison of minority or low-income populations affected against the projected county totals for all action alternatives.
- Step 8: If the percentage in the geographic unit of analysis is equal to or greater than that of the reference community, disclose the existence of a low-income population. *Low-income populations exist in Lyon County, Mineral County, Nye County, and Pershing County. Figures and tables presented later in this section identify potential low-income census tracts affected by the Proposed Action.*
- Step 9: Display in the NEPA document low-income populations identified within the affected environment in a meaningful way. Low-income populations are presented in this section through a number of figures and tables (Table 3.15-1 and Table 3.15-2, and Figure 3.15-1 through Figure 3.15-3).
- Step 10: Provide written rationale to explain the selection of data sources and other methods used to identify low-income populations. *Since census block group data was not available in the Study Area, census tract data was used. For circumstances where the county consisted of a single census tract, a low-income minority or low-income community was defined as any county where the percentage of the population with low incomes is greater than or equal to that of the corresponding state.*

3.15.1.3.2 Identifying Disproportionately High and Adverse Impacts

The Council on Environmental Quality (CEQ) guidance on environmental justice analysis requires that any disproportionately high and adverse human health or environmental effects on minority and low-income populations are identified and analyzed. A disproportionate effect is an adverse effect that either is

1. predominately borne by a minority population and/or low-income population, or
2. is an effect that will be suffered by the minority and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the nonminority or non-low-income population (Federal Highway Administration Order 6640.23A [2012]).

Once the presence or absence of a minority or low-income population is determined, the Navy then assesses the impacts from the Proposed Action and determines whether these impacts would have a disproportionately high and adverse effect on these populations. This analysis involves comparing the impacts on the identified minority or low-income population to the general population within the affected environment. In determining whether there are potentially disproportionately high and adverse impacts, the Navy also considers the significance of the impacts under NEPA.

As informed by CEQ's *Environmental Justice Guidance under the National Environmental Policy Act* (Council on Environmental Quality, 1997) and the Report of the Federal Interagency Working Group on Environmental Justice and NEPA Committee, *Promising Practices for EJ Methodologies in NEPA Reviews*

(U.S. Environmental Protection Agency, 2016), disproportionately high and adverse impacts are typically determined based on the impacts in one or more resource topics analyzed in NEPA documents. Any identified impact on human health or the environment (e.g., impacts on noise, biota, air quality, traffic/congestion, or land use) that potentially affects minority or low-income populations in the affected environment might result in disproportionately high and adverse impacts.

According to the CEQ guidance mentioned above (Council on Environmental Quality, 1997), when determining whether environmental effects are disproportionately high and adverse, agencies consider the following three factors to the extent practicable:

1. Whether there is, or would be, an impact on the natural or physical environment that significantly and adversely affects a minority or low-income population.
2. Whether environmental effects are significant (as defined by NEPA) and are, or may be, having an adverse impact on minority or low-income populations that appreciably exceeds or is likely to exceed those on the general population or other appropriate comparison group.
3. Whether the environmental effects occur, or would occur, in a minority or low-income population affected by cumulative or multiple adverse exposures from environmental hazards.

Similar factors considered in determining whether there are disproportionately high and adverse human health effects include the significance of measured (in risk and rates) health effects of hazard exposure, and whether this hazard exposure exceeds the risk or rate to the general population or appropriate comparison groups.

The Report from the Federal Interagency Working Group on Environmental Justice and NEPA U.S. Environmental Protection Agency (2016) provides guiding principles for the determination of whether the impacts on minority or low-income populations may be disproportionately high and adverse.

In the disproportionately high and adverse impact analysis, agencies compare impacts on minority and low-income populations in the affected environment with an appropriate comparison group within the affected environment. Relevant and appropriate comparison groups are selected based on the nature and scope of the project. Using the Environmental Protection Agency's EJSCREEN, environmental indicators that can potentially amplify an impact on minority and low-income populations and warrant further considerations were evaluated for Churchill, Lander, Lyon, Mineral, Nye, and Pershing counties. Environmental indicators generally include air toxics cancer risk, respiratory hazard index, diesel, particulate matter, ozone, lead paint, traffic proximity and volume, proximity to risk management plan sites, proximity to treatment storage and disposal facilities, proximity to national priorities list sites, and proximity to major direct water discharges (U.S. Environmental Protection Agency, 2017). EJSCREEN was used to identify any existing environmental indicators that would result in disproportionately high and adverse impacts associated with minority and low-income populations.

3.15.1.4 Public Concerns

Issues and questions brought up by the public indicate that the public is concerned about potential impacts on tribal communities and low-income individuals. Concerns include potential impacts from aircraft overflight noise on rural, low-income, and minority communities. For further information regarding comments received during the public scoping process, please refer to Section 1.9.1 (Public Scoping), Section 1.10 (Draft Environmental Impact Study Public Participation: Comment Themes), and Appendix E (Public Participation).

3.15.2 Affected Environment

For purposes of this EIS, the environmental justice analysis identifies and concentrates on the communities most likely affected by actions at the FRTC. As described in the Navy's *Military Readiness Activities at Fallon Range Training Complex Environmental Impact Statement*, noise is the primary issue associated with current FRTC operations, and it is not likely that current air emission or water quality impacts are affecting communities outside the Bravo ranges (i.e., B-16, B-17, B-19, or B-20) (U.S. Department of the Navy, 2015).

Identified minority or low-income populations include all census block groups or tracts that overlap or are adjacent to existing FRTC Bravo ranges and training areas (also known as fenceline communities) and any other community that would experience DNL noise of 65 dBA or above as a result of current FRTC training activities (see Section 3.7, Noise). No incorporated places or census-designated places overlap or are adjacent to existing FRTC lands.

3.15.2.1 Minority Populations

Demographic and economic data minority populations and communities of comparison as a whole are presented in Table 3.15-1. In the table, blue highlighting identifies census block groups that would qualify as minority populations based on the indicated thresholds. Churchill, Lander, Lyon, Mineral, Nye, and Pershing counties are the communities of comparison for minority populations and are shaded grey in the table. These counties are the smallest geographic units that incorporate the affected population.

Based on the methodology presented in Section 3.15.1.3.1 (Identifying Minority or Low-income Populations), minority populations are located in Mineral County (Block Group 1, Census Tract 9708) and the Yomba Tribal Reservation (located in Nye County) and are shown on Figure 3.15-1. These areas qualify as minority populations because the percentage of minorities in these areas is meaningfully greater than it is in the community of comparison (Table 3.15-1).

3.15.2.2 Low-income Populations

Demographic and economic data low-income populations and communities of comparison as a whole are presented in Table 3.15-1. In the table, blue highlighting identifies census block groups that would qualify as low-income population based on the indicated thresholds. Churchill, Lyon, Mineral, and Nye counties are the communities of comparison for low-income populations and are shaded grey in the table. The State of Nevada was used as the community of comparison for Pershing and Lander counties because these counties each have only one census tract.

Based on the methodology presented in Section 3.15.1.3.1 (Identifying Minority or Low-income Populations), low-income populations are located in Lyon County (Block Group 1, Census Tract 9602.02), Mineral County (Block Group 1, Census Tract 9708), and Pershing County (Block Group 1, Census Tract 9601). These census tracts qualify as low-income populations because they have a low-income population equal to or greater than that of their respective communities of comparison (Table 3.15-1).

Table 3.15-1: Comparison of Environmental Justice Population Currently Affected by the Fallon Range Training Complex to County Totals

Census Block Group/County	Total Population 2010 ¹	Total Population 2016 ²	Percent Minority ³	Percent Hispanic or Latino Origin ⁴	Percent Low Income ⁵	Population Density (per sq. mile) ⁶
Nevada – State Total	2,700,551	2,839,172	32	28	15	26
Churchill County – County Total	24,877	24,148	18	13	16	5
Block Group 1, Census Tract 9501	1,027	823	5	2	10	<1
Block Group 2, Census Tract 9501	1,536	1,593	14	13	10	6
Block Group 1, Census Tract 9507	1,534	1,340	2	5	7	4
Lander County – County Total	5,775	5,907	12	26	13	1
Block Group 3, Census Tract 3	1,158	1,819	3	19	13	1
Lyon County – County Total	51,980	51,897	14	16	15	26
Block Group 1, Census Tract 9602.02	1,085	1,196	12	2	19	6
Mineral County – County Total	4,722	4,519	37	13	21	1
Block Group 1, Census Tract 9708	1,337	1,686	61	10	31	<1
Nye County – County Total	43,946	43,198	15	14	17	2
Block Group 1, Census Tract 9601	956	635	15	0	5	<1
Yomba Tribal Reservation T001 TBG-A	95	101	84	3	11	14
Pershing County – County Total	6,753	6,690	15	24	16	1
Block Group 1, Census Tract 9601 ⁷	1,651	1,187	13	13	16	1

Table 3.15-1: Comparison of Environmental Justice Population Currently Affected by the Fallon Range Training Complex to County Totals (continued)

Census Block Group/County	Total Population 2010 ¹	Total Population 2016 ²	Percent Minority ³	Percent Hispanic or Latino Origin ⁴	Percent Low Income ⁵	Population Density (per sq. mile) ⁶
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¹Total population 2010 is the total estimated population for the entire census block group as reported by the U.S. Census Bureau for 2010. These figures may be greater than the total number of residents affected because in most instances only a portion of the census block group would be affected.

²Total population 2016 is the total estimated population for the entire census block group as estimated by the U.S. Census Bureau in the 2012–2016 American Community Survey (5-Year Estimates) (U.S. Census Bureau, 2017a).

³Minority is individuals who are members of the following population groups: American Indian or Alaska Native, Asian, Native Hawaiian or Pacific Islander, or Black or African American. Percent minority was estimated as the percentage of the population that did not identify as White in the 2012–2016 American Community Survey (5 Year Estimates) (U.S. Census Bureau, 2017a).

⁴Hispanic or Latino consists of individuals who self-identify as belonging to this ethnic group (based on ethnicity, not race) in U.S. Census Bureau surveys (U.S. Census Bureau, 2017b).

⁵Percent low income is the percent of all residents identified as having incomes placing them below the U.S.-Census-defined poverty level in the past 12 months according to data published by the U.S. Census Bureau in the 2012–2016 American Community Survey (5-Year Estimates) (U.S. Census Bureau, 2017c). The American Community Survey does not estimate income data at the census block group level; therefore, the income data displayed in this table are from the census tract level. Census block groups within the same census tract are estimated to have the same percent of low-income residents.

⁶Population densities per square mile were estimated by taking the projected number of individuals residing within the census area and dividing by the total land area of each census area. This estimate assumes a uniform density within each census area. EJSCREEN was used to calculate the amount of land area within each census block group (U.S. Environmental Protection Agency, 2017).

⁷2012–2016 American Community Survey (5-Year Estimates) used the same census tract population as that of the county population; therefore, low-income populations were identified by comparing the percentage of low income (i.e., below the poverty level) within the county to that of the State.

Notes: Grey shading identifies communities of comparison. Blue highlighting identifies census block groups or tracts that qualify as minority or low-income population. There are no incorporated places or census-designated places that overlap or are adjacent to existing FRTC lands or are within the modeled 65 dBA DNL noise contours for FRTC's existing operations.

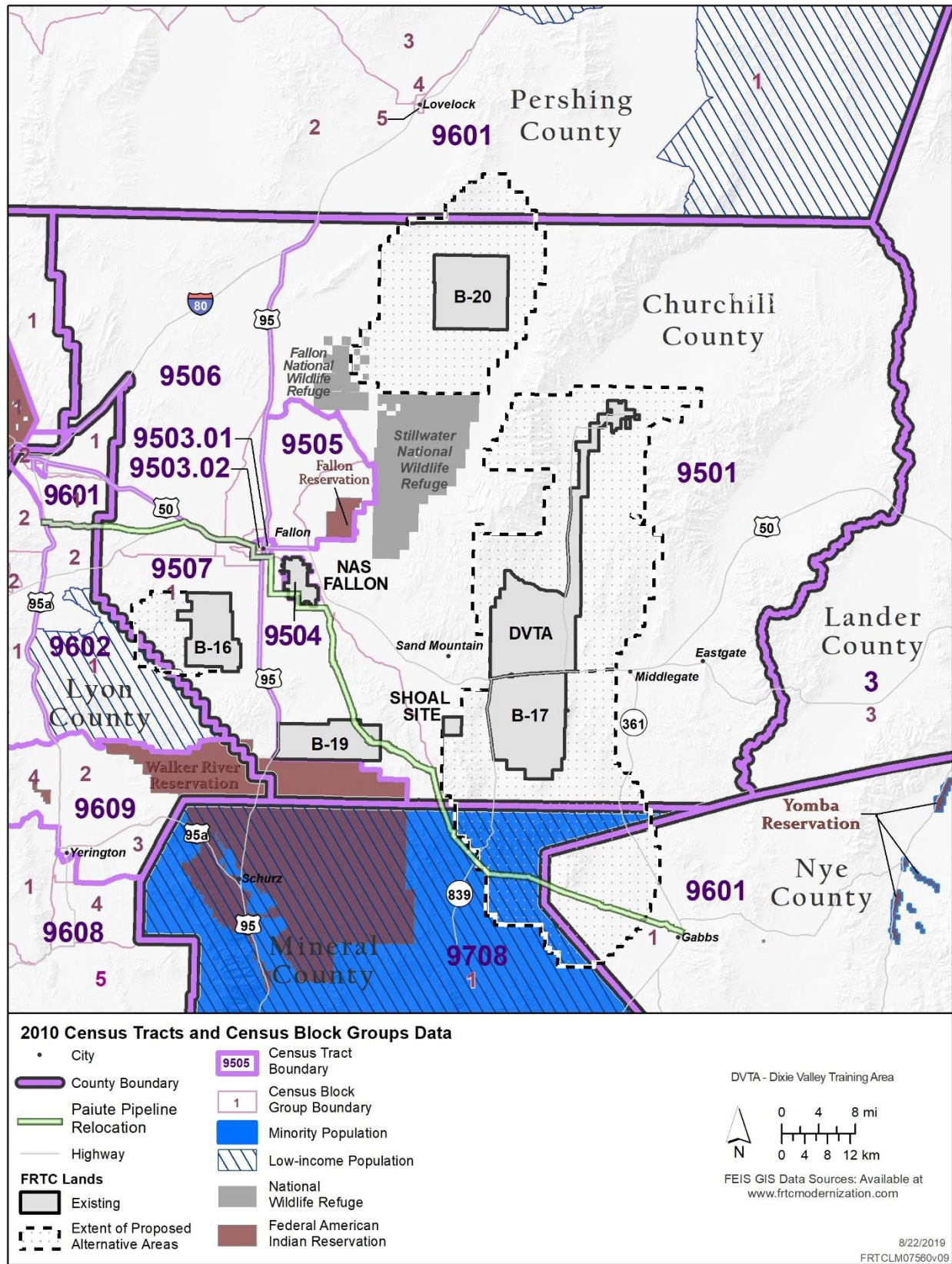


Figure 3.15-1: 2010 Census Tracts and Census Block Groups Data

3.15.3 Environmental Consequences

This section identifies minority or low-income populations affected by the Proposed Action and determines whether impacts on these populations are disproportionately high and adverse as required by Executive Order 12898.

This analysis focuses on the potential for a disproportionate and adverse exposure of specific population groups to the projected adverse consequences discussed in Sections 3.1 to 3.14 of this EIS. Noise impacts are the primary negative environmental and human health impact associated with the Proposed Action. As described in previous sections, any minority or low-income population that is adjacent to FRTC land or falls beneath the modeled 65 dBA DNL or above noise contours may be disproportionately and adversely affected by the action (Section 3.7, Noise). Other factors that could affect populations include activities that impact water quality and air quality, as well as an increased safety risk associated with any reconfigured weapon danger zones (WDZs) or surface danger zones (SDZs).

This analysis builds on that of the previous resource sections in this EIS. However, unlike those sections, which examine how activities at each Bravo range/training area would affect a specific resource, this analysis first identifies minority and low-income populations that could be affected by the Proposed Action, and then analyzes whether these populations would be subjected to a disproportionately high and adverse human health or environmental effects.

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 3.15.3.6, Summary of Effects and Conclusions).

3.15.3.1 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. The exact extent of any potential reduction in training activities is not known; however, current FRTC operations were recently determined to not have a disproportionately high and adverse human health or environmental effect on any minority or low-income population (U.S. Department of the Navy, 2015). Therefore, the No Action Alternative would not cause disproportionately high and adverse human health or environmental effects on any minority or low-income populations.

3.15.3.2 Alternative 1: Modernization of the Fallon Range Training Complex

3.15.3.2.1 Identifying Minority or Low-income Populations

The Alternative 1 study area for the environmental justice analysis is defined as any minority or low-income community that overlaps or is adjacent to proposed FRTC land or falls beneath the modeled 65 dBA DNL noise contours described in Section 3.7 (Noise).

Demographic and economic data for census block groups either wholly or partially within the study area is shown in Table 3.15-2. Blue highlighting identifies census block groups that would qualify as minority or low-income population based on the indicated thresholds. Communities of comparison are shaded grey in the table. As previously stated, Churchill, Lander, Lyon, Mineral, Nye, and Pershing counties have been identified as the communities of comparison for minority populations. These counties are the smallest geographic units that incorporate the affected population. Also as previously stated, Churchill, Lyon, Mineral, and Nye counties are the communities of comparison for low-income populations, and the State of Nevada was used as the community of comparison for low-income populations within

Pershing and Lander counties because these counties each have only one census tract. There are no incorporated places or census-designated places that overlap or are adjacent to proposed FRTC lands or are within the modeled 65 dBA DNL contours. However, Gabbs is considered a census-designated place and is located to the southeast of the proposed B-17 expansion area.

For purposes of this analysis, Table 3.15-2 forecasts the total population density out to 2021 (year of alternative implementation). Forecast data for 2021 reflect two new areas that would be classified as low-income populations (Gabbs Census Designated Place and Pershing County, Block Group 2, Census Tract 9601) as compared to 2016. Population growth projections depend on a variety of factors, including trends and policy in international migration, potential impacts from automation, climate change, and funding and changes to healthcare (Nevada Department of Taxation, 2017). The Nevada State Demographer's *Nevada County Population Projections from 2017 to 2036* was used to identify estimated total populations for the communities of comparison (Nevada Department of Taxation, 2017). Data from the Nevada Department of Taxation was used to estimate growth factors for each county from the U.S. Census Bureau's American Community Survey (5-Year Estimates), which was then uniformly distributed among the census tracts and census block groups within each county (Nevada Department of Taxation, 2015). Figure 3.15-2 shows the location of the 2021 census tracts, census block groups, incorporated places, and census-designated places within these study areas. U.S. Census Bureau's TIGERweb application was used to identify census tracts, block groups, and American Indian reservations within the study area (U.S. Census Bureau, 2017d).

As depicted in Table 3.15-2, which provides forecasted 2021 data, greater than 50 percent of the Yomba Tribal Reservation is a minority population. Mineral County Block Group 1 Census Tract 9708 has a minority population that is meaningfully greater than the community of comparison (i.e., 15 percent greater than the corresponding counties). Also, Lyon County Census Tract 9602.02, Mineral County Census Tract 9708, Gabbs Census Designated Place located in Nye County, and Pershing County Census Tract 9601 would qualify as low-income populations per the indicated thresholds.

3.15.3.2.2 Identifying Disproportionately High and Adverse Effects

The following analysis compares whether any adverse human health and environmental effects on the minority or low-income populations located in Lyon County, Mineral County, Nye County, and Pershing County would be disproportionately high when compared to the general population and the comparison groups (Table 3.15-2). Based on the Census Bureau data, there are no minority or low-income populations in Churchill County or Lander County as defined above, so no further analysis is required. This section identifies any potential human health or environmental effect to populations within each of these communities and then compares these impacts to those of the comparison groups and the general population.

Table 3.15-2: Comparison of Minority and Low-Income Populations Affected to Projected County Totals for All Action Alternatives

Census Block Group/County	Estimated Total Population 2021 ¹	Percent Minority ² 2021	Percent Hispanic or Latino Origin ³ 2021	Percent Low income ⁴ 2021	Population Density ⁵ (per sq. mile) 2021
Nevada – State Total	3,120,711	32	28	15	28
Churchill County – County Total	26,452	18	13	16	5
Block Group 1, Census Tract 9501	1,092	5	2	10	<1
Block Group 2, Census Tract 9501	1,633	14	13	10	7
Block Group 1, Census Tract 9507	1,631	2	5	7	5
Lander County – County Total	6,231	12	26	13	1
Block Group 3, Census Tract 3 ⁶	1,919	3	19	13	1
Lyon County – County Total	56,384	14	16	15	28
Block Group 1, Census Tract 9602.02	1,299	12	2	19	6
Mineral County – County Total	4,349	37	13	21	1
Block Group 1, Census Tract 9708	1,623	61	10	31	<1
Nye County – County Total	46,741	15	14	17	3
Block Group 1, Census Tract 9601	687	15	0	5	<1
Gabbs Census Designated Place	120	12	0	26	128
Yomba Tribal Reservation T001 TBG-A	109	84	3	11	21
Pershing County – County Total	6,553	15	24	16	1
Block Group 1, Census Tract 9601 ⁶	1,163	13	13	16	1
Block Group 2, Census Tract 9601 ⁶	2,738	22	29	16	1

Table 3.15-2: Comparison of Minority and Low-Income Populations Affected to Projected County Totals for All Action Alternatives (continued)

Census Block Group/County	Estimated Total Population 2021 ¹	Percent Minority ²	Percent Hispanic or Latino Origin ³	Percent Low income ⁴	Population Density ⁵ (per sq. mile) 2021
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¹Total population for 2021 is estimated based on Nevada Department of Taxation projections for the county (Nevada Department of Taxation, 2017). This assumes a uniform growth for the entire county. The growth factors from the U.S. Census Bureau's estimates for 2012–2016 were 10 percent for Churchill County, 5 percent for Lander County, 9 percent for Lyon County, -4 percent for Mineral County, 8 percent for Nye County, and -2 percent for Pershing County (Nevada Department of Taxation, 2017; U.S. Census Bureau, 2017a).

²Minority is defined as individuals who are members of the following population groups: American Indian or Alaska Native, Asian, Native Hawaiian or Pacific Islander, or Black or African American. Percent minority was estimated as the percentage of the population that did not identify as White in the 2012–2016 American Community Survey (5 Year Estimates) (U.S. Census Bureau, 2017c). It is assumed for purposes of this EIS that these percentages would not change substantially from 2016 to 2021.

³Hispanic or Latino population is defined as individuals who self-identify as belonging to this ethnic group in U.S. Census Bureau surveys (U.S. Census Bureau, 2017e). This population definition is based on ethnicity and not race. It is assumed for purposes of this EIS that these percentages would not change substantially from 2016 to 2021.

⁴Percent low income is defined as the percent of all residents identified as having incomes below the U.S.-Census-defined poverty level according to data published by the U.S. Census Bureau in the 2012–2016 American Community Survey (5-Year Estimates) (U.S. Census Bureau, 2017a). The American Community Survey does not estimate income data at the census block group level; therefore, the income data displayed in this table are from the census tract level. Census block groups within the same census tract are estimated to have the same percent of low-income residents. It is assumed for purposes of this EIS that these percentages would not change substantially from 2016 to 2021.

⁵Population densities per square mile were estimated by taking the projected number of individuals residing within the census area and dividing by the total land area of each census area. This estimate assumes a uniform density within each census area.

⁶The 2012–2016 American Community Survey (5-Year Estimates) used the same census tract population as that of the county population; therefore, low-income populations were identified by comparing the percentage of low income (i.e., below the poverty level) within the county to that of the State.

Notes: Grey shading identifies communities of comparison. Blue highlighting identifies census block groups or tracts that qualify as minority or low-income populations. There are no incorporated places or census-designated places that overlap or are adjacent to existing FRTC lands, or are within the modeled 65 dBA DNL noise contours for proposed operations.

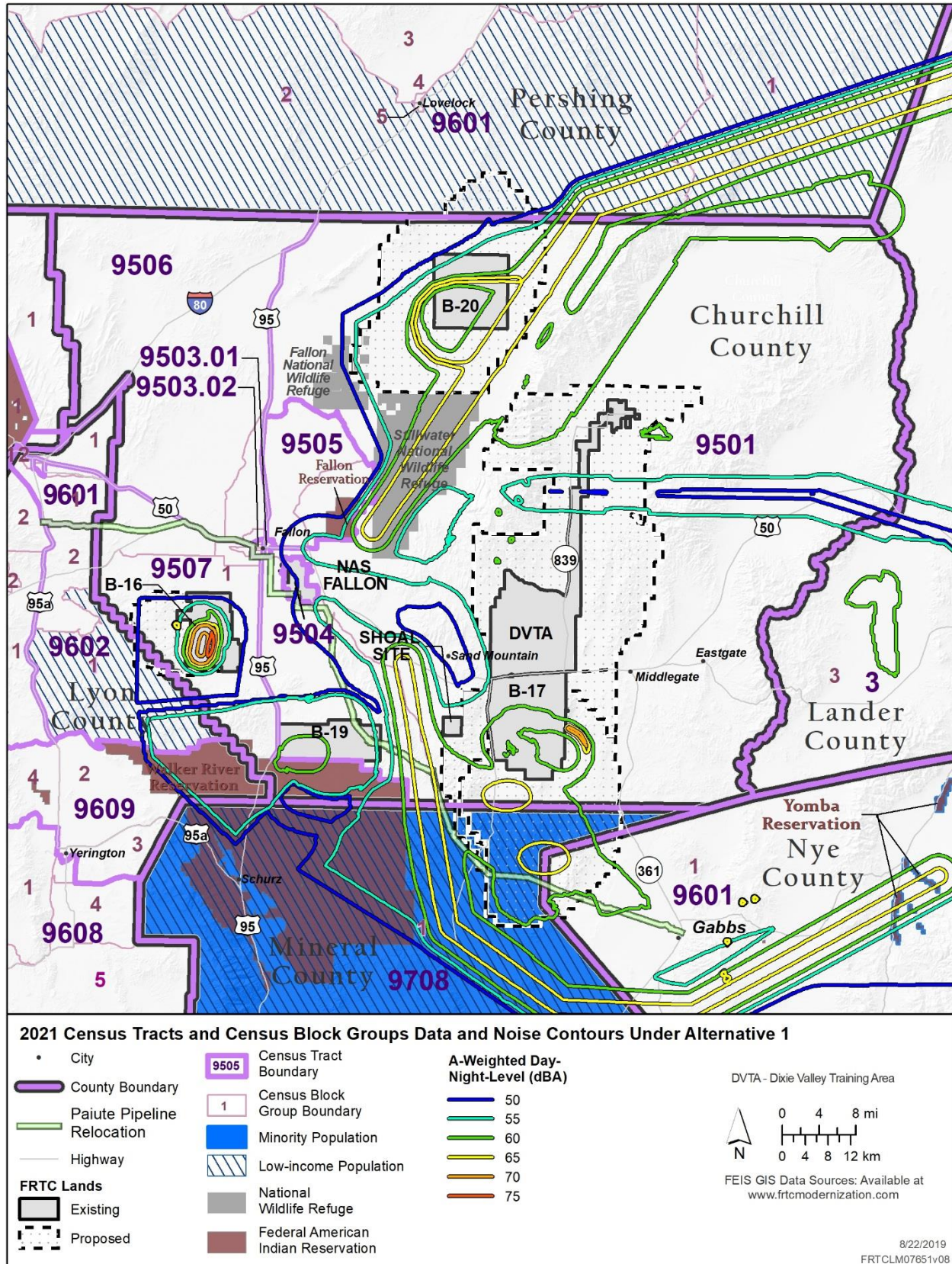


Figure 3.15-2: 2021 Census Tracts and Census Block Groups Data and Noise Contours Under Alternative 1

Lyon County Census Tract 9602.02 Block Group 1

Alternative 1 would expand B-16 west into the eastern portion of Lyon County Census Tract 9602.02 Block Group 1 and withdraw Bureau of Land Management (BLM)-administered land from this census block group (Table 3.15-2, Figure 3.15-2). This census block group is primarily composed of BLM-administered land in the eastern and southern portions with some private land in the northwest near Silver Springs. The Navy would not acquire any private property within this census block group. The proposed B-16 expansion area does not overlap any private residential land use or any sensitive receptors where minority or low-income populations may congregate (e.g., churches, schools). Alternative 1 would not result in noise outside the perimeter of B-16 in excess of 65 dBA DNL (Figure 3.15-2). Operational noise would be expected to be commensurate with baseline conditions because this alternative would not increase tempo or otherwise change the use of this corridor. As described in Section 3.8 (Air Quality), although there would be an increase in criteria pollutant emissions from Alternative 1 due to construction activities, these emissions would not pose human health or environmental risks to surrounding communities. Also, any hazardous air pollutant emissions or fugitive dust emissions would be minimal. Likewise, the results of the water quality analysis (Section 3.9, Water Resources) determined that there is little chance for groundwater or surface water contamination to result from Alternative 1. Further, as described in Section 3.14 (Public Health and Safety and Protection of Children), although the B-16 SDZ would be within this census block group, this SDZ would be fully contained within the proposed B-16 boundary, which would be fenced with posted warnings. Therefore, any human health or environmental effect on this community would be considered less than significant.

Mineral County Census Tract 9708 Block Group 1

Alternative 1 would expand B-17 and the Dixie Valley Training Area (DVTA) into Mineral County Census Tract 9708 Block Group 1 (Table 3.15-2, Figure 3.15-2). This census block group is largely composed of BLM-administered land and the Walker River Paiute Reservation, the main population center of which is the Schurz Census Designated Place, located approximately 20 miles west of the proposed B-17 expansion. This alternative would withdraw BLM-administered land and acquire private land within this census block group. However, the proposed B-17 and DVTA expansion areas would not include any private residential land use or any sensitive receptors where minority and low-income populations may congregate (e.g., churches, schools). The southern aircraft approach corridor and target approach area is over the northeastern portion of Mineral County Census Tract 9708 Block Group 1 (Figure 3.15-2). This corridor and target approach area would generate a 65 dBA DNL contour but would not go above 70 dBA DNL. This alternative would not increase tempo or otherwise change the use of this corridor and operational noise would be expected to be commensurate with baseline conditions.

As described in Section 3.8 (Air Quality), although there would be an increase in criteria pollutant emissions from Alternative 1 due to construction activities, these emissions would be temporary (lasting only until construction is complete) and would not pose human health or environmental risks to surrounding communities. Also, any hazardous air pollutant emissions or fugitive dust emissions would be minimal and are not expected to adversely impact the census block group. Likewise, the results of the water quality analysis (Section 3.9, Water Resources) determined that there is little chance for groundwater or surface water contamination to result from Alternative 1. Further, as described in Section 3.14 (Public Health and Safety and Protection of Children), although portions of the B-17 WDZ would overlap this census block group, the WDZ would be fully contained within the proposed B-17 boundary, which would be fenced with posted warnings.

The Navy would potentially relocate State Route 839 and State Route 361. All three of the Navy's notional road relocation options include constructing a new county road through Mineral County Census Tract 9708 Block Group 1. One of these notional corridors includes constructing a new county road replacing route 839 that would bisect the Walker River Paiute Reservation. State Route 361 crosses a narrow area of the eastern portion of Census Tract 9708.

Using funding provided by the Navy, the Federal Highway Administration, in cooperation with the Nevada Department of Transportation, would be responsible for planning, design, permitting, and constructing any realignment of State Route 839 or 361. The Navy has submitted a Needs Report to the Surface Deployment and Distribution Command requesting authority to utilize funding through the Defense Access Roads program. If approved, the Navy would coordinate construction execution through the Federal Highway Administration. The Nevada Department of Transportation would ensure that construction of any new route is complete before closing any portion of the existing State Route 839 or 361, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing State Route 839 or 361 unless and until any such new route has been completed and made available to the public. A follow-on, site-specific NEPA document would be required to analyze the impacts of any feasible relocation of State Route 839 or 361, which would include analyzing any potential impacts on minority and low-income populations.

The Navy would also assist with the potential relocation of the Paiute Pipeline, potentially to within Mineral County Census Tract 9708 Block Group 1, to minimize socioeconomic and public health and safety risks. The Navy would purchase the impacted portion of the Paiute Pipeline and then would pay for relocation of the existing Paiute Pipeline south of the proposed B-17 range. Using funding provided by the Navy, the Paiute Pipeline Company would be responsible for planning, designing, permitting, funding, and constructing any realignment of the pipeline. A right-of-way application submitted to the BLM by the pipeline owner would formally identify any proposed reroute. Site-specific environmental analysis and NEPA planning would be required before any potential relocation of the pipeline could occur, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing pipeline unless and until any such re-routing of the pipeline has been completed and made available to the pipeline owner. The BLM would have decision authority with respect to any proposed final routing subsequent to completion of site-specific environmental analysis. The site-specific NEPA document would be required to analyze the impacts of any feasible options for this pipeline, which would include analyzing any potential impacts on minority and low-income populations.

Nye County, Block Group 1, Census Tract 9601 Yomba Reservation T001 TBGA

Alternative 1 would not withdraw or acquire any land within the Yomba Reservation. Alternative 1 would include special use airspace over the Yomba Reservation that would extend below 500 feet above ground level (AGL). The three special use airspaces extending over the Yomba Reservation are Fallon South 2, Fallon South 3, and the proposed Duckwater Military Operations Areas. The floor of the Fallon South 2 and Fallon South 3 airspaces would not change from existing baseline conditions (see Table 2-4 in Chapter 2, Description of Proposed Action and Alternatives). The floor of the proposed Duckwater Military Operations Area would be 200 feet AGL and would underlie the existing air traffic-controlled Duckwater special use airspace. The U.S. Census Bureau estimates that there are 48 households on the 4,718-acre Yomba Reservation, with less than one dwelling unit per acre and the majority of dwellings located in the Yomba Tribal Settlement (U.S. Census Bureau, 2017f). The Navy has implemented a

5-nautical-mile buffer around the Yomba Tribal Settlement; under Alternative 1 Navy aircraft would not be allowed to fly below 3,000 feet AGL within this buffer.

Under Alternative 1, a portion of the south approach corridor to Naval Air Station (NAS) Fallon would be over Yomba Reservation. This corridor would generate a 65 dBA DNL contour but would not go above 70 dBA DNL (Figure 3.15-2). This alternative would not increase tempo or otherwise change the use of this corridor and operational noise would be expected to be commensurate with baseline conditions. Likewise, any air emissions or risks to this minority and low-income population would be commensurate to existing baseline conditions. Therefore, any human health or environmental effect on this community would be the same as under baseline conditions and would be anticipated to be less than significant.

Pershing County Block Group 1, Census Tract 9601

Alternative 1 would not withdraw or acquire any land within Pershing County Census Tract 9601 Block Group 1. Under Alternative 1, a portion of the north approach corridor to NAS Fallon would be over this block group. This corridor would generate a 65 dBA DNL contour but would not go above 70 dBA DNL (Table 3.15-2). This alternative would not increase tempo or otherwise change the use of this corridor and operational noise would be expected to be commensurate with baseline conditions. Additionally, any air emissions or risks to this low-income population would be commensurate to existing baseline conditions. Therefore, any human health or environmental effect on this community would be the same as under baseline conditions and would be anticipated to be less than significant.

Pershing County Block Group 2, Census Tract 9601

Alternative 1 would expand B-20 into Pershing County Census Tract 9601 Block Group 2. This expansion area includes all or portions of 17 checkerboard private land blocks within this census block. Alternative 1 would acquire private land and withdraw public land within this census block. However, there are no private residences or sensitive receptors where minority or low-income populations may congregate (e.g., churches, schools) within this area.

Alternative 1 would not produce noise in excess of 65 dBA DNL within this block group. As described in Section 3.8 (Air Quality), although there would be an increase in criteria pollutant emissions from Alternative 1, these emissions would not pose human health or environmental risks to surrounding communities. Also, any hazardous air pollutant emissions or fugitive dust emissions would be minimal and would not be anticipated to adversely impact the census block group. Likewise, the results of the water quality analysis (Section 3.9, Water Resources) determined that there is little chance for groundwater or surface water contamination to result from Alternative 1. Further as described in Section 3.14 (Public Health and Safety and Protection of Children), although the B-20 WDZ would be within this census block group, the WDZ would be fully contained within the proposed B-20 boundary, which would be fenced with posted warnings. Therefore, any human health or environmental effect on this community would be considered less than significant.

Comparing Minority and Low-Income Populations to Comparison Groups and the General Public

As described in Section 3.15.1.3.2 (Identifying Disproportionately High and Adverse Impacts), the identification of a comparison group is required to determine whether any adverse human health or environmental effect on any minority or low-income community would be disproportionately high and adverse. A comparison group is required to be distinct from the community of comparison (or reference community), which was used to identify the existence of minority and low-income populations (U.S. Environmental Protection Agency, 2016).

The following comparison groups were used for this analysis: Nye County Census Tract 9601 Block Group 1, and Churchill County Census Tract 9501 Block Groups 1 and 2 and Census Tract 9507 Block Group 1. These census block groups were selected because these areas would all include land that would be withdrawn or acquired as part of FRTC modernization and they all contain areas within the 65 dBA DNL or greater contours.

The identified minority and low-income communities and the comparison groups are sparsely populated rural areas (Table 3.15-2). Several of these census block groups have densities of less than one person per square mile (Table 3.15-2) (U.S. Environmental Protection Agency, 2017) as compared to the State average of 28 individuals per square mile. Lyon County Block Group 1 Census Tract 9602.02 has the highest projected density of any of the relevant census block groups at six individuals per square mile (U.S. Environmental Protection Agency, 2017) (Table 3.15-2).

Under Alternative 1, noise in excess of 65 dBA DNL occurs over minority populations in Mineral County and over low-income populations in Mineral and Pershing counties (Figure 3.15-2).

Alternative 1 would include the acquisition of private parcels within Mineral County Block Group 1 Census Tract 9708 associated with the proposed B-17 expansion area and Pershing County Block Group 1 Census Tract 9601 associated with the proposed B-20 expansion area. Mineral County Block Group 1 Census Tract 9708 is an area designated as a minority and low-income population. Pershing County Census Tract 9601 is an area designated as a low-income population. Although census block groups in Churchill, Mineral, Nye, and Pershing counties may have private residences affected by noise in excess of 65 dBA DNL from aircraft approaching NAS Fallon, Alternative 1 would not change these approach corridors. As such, aircraft noise would be commensurate to existing baseline conditions, which were previously determined to not have a disproportionately high effect on any minority or low-income population (see Section 3.15.2, Affected Environment). Also, aircraft noise from the approach corridors is not considered disproportionately high because these corridors overlap the comparison groups. For example, Churchill County Census Tract 9501 Block Group 1 would be beneath a larger portion of both of these corridors than affected minority and low-income populations. Further, Alternative 1 would not result in any air emissions or water discharges that would adversely affect these communities in a manner that would be greater than the comparison groups. Therefore, although there are minority and low-income populations within the affected area and there are significant impacts outlined within the EIS, implementation of Alternative 1 would not cause disproportionately high and adverse human health or environmental effects on any minority or low-income populations.

Although Alternative 1 would not result in disproportionately high and adverse human health or environmental impacts on minority or low-income populations, the Navy has embarked on robust community outreach and tribal engagement programs as part of this EIS process and engaged with affected communities throughout the public comment period. As detailed in Section 1.9 (Public and Agency Participation and Intergovernmental Coordination), the Navy held seven public scoping meetings and has kept residents informed throughout the process with mailings (both letters and postcards), newspaper advertisements, press releases, and a project website. Project documents have been made available at local public libraries as well as online at the project's website. Public outreach efforts continued throughout the public comment period to inform and provide meaningful involvement to impacted environmental justice populations in the decision-making process. In the preparation of this EIS, the Navy engaged with 14 cooperating agencies, including 6 local counties; and 13 affected federally recognized Indian Tribes and the Inter-Tribal Council of Nevada (refer to Appendix E, Public Participation).

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

The Alternative 2 study area for environmental justice analysis is defined the same as under Alternative 1. Table 3.15-2 provides demographic and economic data for all of the census block groups either wholly or partially within this area. Census tracts, census block groups, incorporated places, and census-designated places are shown on Figure 3.15-2.

The only differences between Alternative 1 and Alternative 2 are that Alternative 2 would allow additional public land uses within the Bravo ranges and restricted mineral resources development in the DVTA. Since all members of the public would be affected equally by these differences, Alternative 2 would have the same impacts on minority and low-income populations as Alternative 1 (Section 3.15.3.2, Alternative 1: Modernization of the Fallon Range Training Complex). Therefore, although there are minority and low-income populations within the affected area and there are significant impacts outlined within this EIS, implementation of Alternative 2 would not cause disproportionately high and adverse human health or environmental effects on any minority or low-income populations. As described in Section 3.15.3.2 (Alternative 1: Modernization of the Fallon Range Training Complex) and Section 1.9 (Public and Agency Participation and Intergovernmental Coordination), the Navy has embarked on a robust community outreach program as part of this EIS process and engaged with affected communities throughout the public comment period.

3.15.3.4 Alternative 3: B-17 Shift and Managed Access (Preferred Alternative)

The Alternative 3 study area for environmental justice analysis is defined as any minority or low-income community that overlaps or is adjacent to proposed FRTC land or falls beneath the modeled 65 dBA DNL noise contours described in Section 3.7 (Noise). The Alternative 3 study area is similar to that of Alternatives 1 and 2; however, B-17 would have a different land and airspace configuration than Alternatives 1 and 2 because Alternative 3 shifts B-17 farther southeast than Alternatives 1 and 2 (Figure 3.15-3). Alternative 3 would also use the same north and south approach corridors as Alternatives 1 and 2. It is anticipated that any resulting operational noise from using these corridors would be commensurate to baseline conditions because, as with Alternatives 1 and 2, this alternative would not increase the tempo or otherwise change the use of this corridor. Unlike Alternative 1, the Navy would not withdraw land south of U.S. Route 50 as the DVTA. Rather, the Navy proposes that Congress categorizes this area of approximately 77,010 acres as a Special Land Management Overlay. This Special Land Management Overlay would define two areas (one east and one west of the B-17 range) as Military Electromagnetic Spectrum Special Use Zones. These two areas, which are public lands under the management of BLM, would not be withdrawn by the Navy and would not directly be used for land-based military training or managed by the Navy.

Table 3.15-2 provides demographic and economic data for all of the census block groups and other census areas that were identified as being either wholly or partially within the environmental justice study area (U.S. Census Bureau, 2017d). Alternative 3 would have the same impacts on Lyon County Block Group 1 Census Tract 9602.02, Mineral County Block Group 1 Census Tract 9708, Yomba Tribal Reservation in Nye County, and Pershing County Block Groups 1 and 2 Census Tract 9601, as Alternative 1. Therefore, as with Alternatives 1 and 2, Alternative 3 would not cause disproportionately high and adverse human health or environmental effects on minority or low-income populations within these census areas.

As with Alternative 1, Alternative 3 would include the acquisition of private parcels within Mineral County Block Group 1 Census Tract 9708 associated with the proposed B-17 expansion area, which is an

area designated as a minority and low-income population. However, implementation of Alternative 3 would not be considered disproportionately high when compared to other affected areas. For example, the expansion of the DVTa within Churchill County Census Tract 9501 Block Group 1 would also include the acquisition of private land that is currently being used as a private residence. Like Alternatives 1 and 2, there are no sensitive receptors where minority and low-income populations may congregate (e.g., churches, schools) within the proposed B-17 expansion area. Also, Alternative 3 would not result in any air emissions or water discharges that would adversely affect Mineral County Block Group 1 Census Tract 9708 in a manner that would be considered disproportionately high when compared to the comparison groups.

Alternative 3 would not involve the potential relocation of State Route 839. Under this alternative, the Navy would potentially relocate approximately 12 miles of State Route 361 and approximately 18 miles of the Paiute Pipeline outside B-17. The exact routing of the relocation efforts is not yet known. These efforts could potentially have disproportionately high and adverse human health or environmental effects on Mineral County Census Tract 9708 Block Group 1 and the Gabbs Census Designated Place. However, any adverse impacts could be short term and low level, and could be offset by beneficial economic impacts on minority and low-income populations because of the need for local labor, materials, and supplies during the estimated one-year construction phase.

Using funding provided by the Navy, the Federal Highway Administration, in cooperation with the Nevada Department of Transportation, would be responsible for planning, design, permitting, and constructing any realignment of State Route 361. The Navy has submitted a Needs Report to the Surface Deployment and Distribution Command requesting authority to utilize funding through the Defense Access Roads program. If approved, the Navy would coordinate construction execution through the Federal Highway Administration. The Nevada Department of Transportation would ensure that construction of any new route is complete before closing any portion of the existing State Route 361, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing State Route 361 unless and until any such new route has been completed and made available to the public. Follow-on, site-specific NEPA document(s) would be required to analyze the impacts of any feasible options, which would include analyzing any potential impacts on minority and low-income populations.

The Navy would purchase the impacted portion of the Paiute Pipeline and then would pay for relocation of the existing Paiute Pipeline south of the proposed B-17 range. Using funding provided by the Navy, the Paiute Pipeline Company would be responsible for planning, designing, permitting, funding, and constructing any realignment of the pipeline. A right-of-way application submitted to the BLM by the pipeline owner would formally identify any proposed reroute. Site-specific environmental analysis and NEPA planning would be required before any potential relocation of the pipeline could occur, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing pipeline unless and until any such re-routing of the pipeline has been completed and made available to the pipeline owner. The BLM would have decision authority with respect to any proposed final routing subsequent to completion of site-specific environmental analysis. The site-specific NEPA document would be required to analyze the impacts of any feasible options for this pipeline, which would include analyzing any potential impacts on minority and low-income populations.

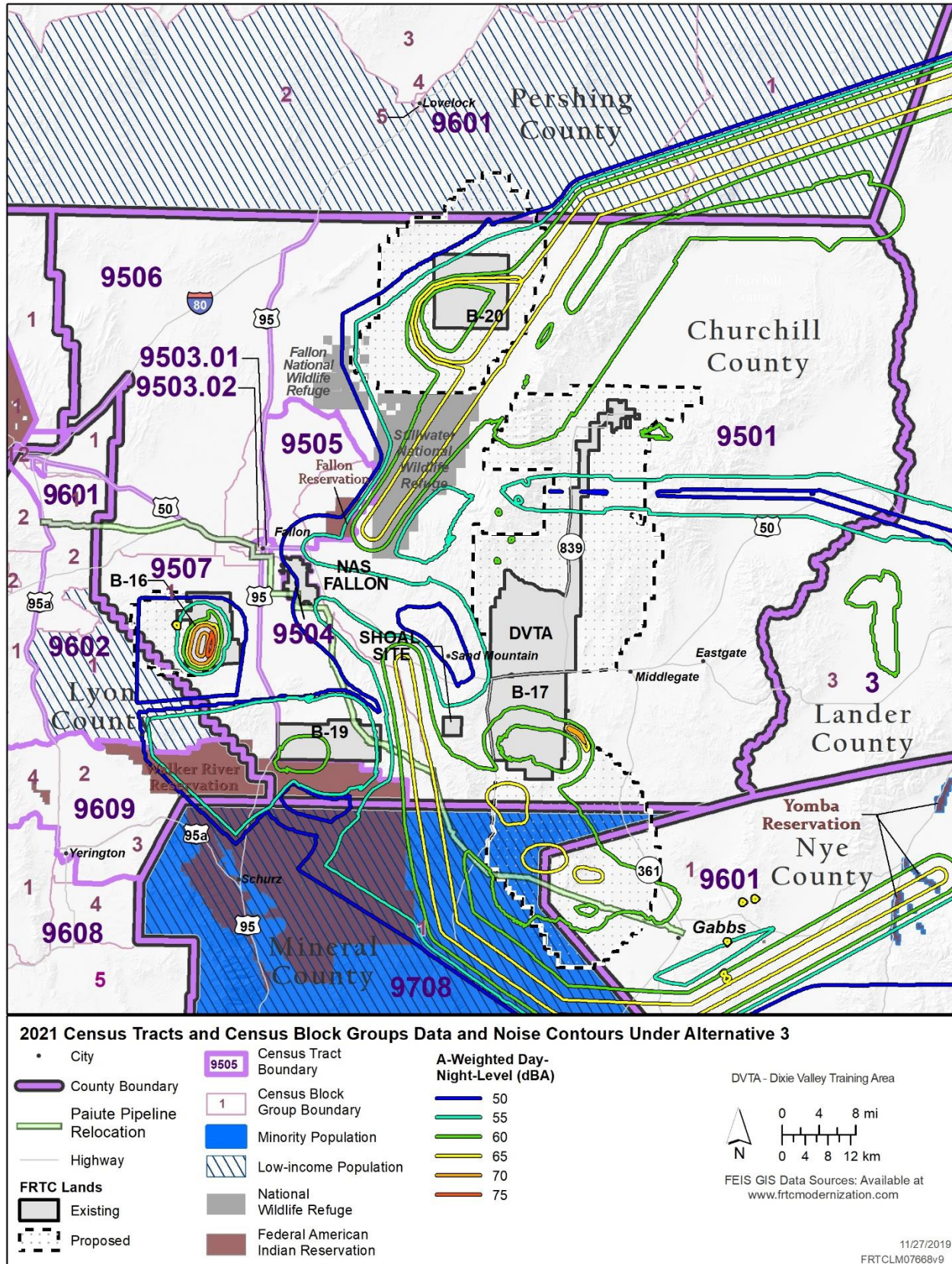


Figure 3.15-3: 2021 Census Tracts and Census Block Groups Data and Noise Contours Under Alternative 3

Although there are minority and low-income populations within the affected area and significant impacts outlined within this EIS, implementation of Alternative 3 would not cause disproportionately high and adverse human health or environmental effects on any minority or low-income populations. As described in Section 3.15.3.2 (Alternative 1: Modernization of the Fallon Range Training Complex) and Section 1.9 (Public and Agency Participation and Intergovernmental Coordination), the Navy embarked on a robust community outreach program as part of this EIS process and engaged with affected communities throughout the public comment period.

3.15.3.5 Proposed Management Practices, Monitoring, and Mitigation

Consistent with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994), the Navy's policy is to identify and address any disproportionately high and adverse human health or environmental effects of its actions on minority and low-income populations.

3.15.3.5.1 Proposed Management Practices

No management practices would be warranted for environmental justice based on the analysis presented in Section 3.15.3 (Environmental Consequences).

3.15.3.5.2 Proposed Monitoring

No monitoring measures would be warranted for environmental justice based on the analysis presented in Section 3.15.3 (Environmental Consequences).

3.15.3.5.3 Proposed Mitigation

No mitigation measures would be warranted for environmental justice based on the analysis presented in Section 3.15.3 (Environmental Consequences). The Navy acknowledges that there may be impacts that have yet to be defined and would develop and incorporate mitigation measures as necessary after any ultimate Congressional decision.

3.15.3.6 Summary of Effects and Conclusions

Table 3.15-3 summarizes the effects of the alternatives on environmental justice.

Table 3.15-3: Summary of Effects and Conclusions for Environmental Justice

Summary of Effects and National Environmental Policy Act Determinations	
No Action Alternative	
Summary	<ul style="list-style-type: none">• The Proposed Action would not occur and the existing legislative withdrawals would expire on November 5, 2021.• Minority and low-income populations are located within the Study Area; however, naval activities would generate less noise at B-16, B17, or B-20 than current conditions.
Impact Conclusion	The No Action Alternative would not cause disproportionately high and adverse human health or environmental effects on any minority or low-income populations. Therefore, no significant environmental justice impacts would occur.

Table 3.15-3: Summary of Effects and Conclusions for Environmental Justice (continued)

Summary of Effects and National Environmental Policy Act Determinations	
Alternative 1	
Summary	<ul style="list-style-type: none"> • Minority and low-income populations have been identified in the Study Area. Aircraft noise is not considered disproportionately high because aircraft noise also overlaps the comparison groups. • Would not result in any air emissions or water discharges that would adversely affect minority or low-income communities in a manner that would be greater than the comparison groups. • Although there are minority and low-income populations within the affected area, implementation of Alternative 1 would not cause disproportionately high and adverse human health or environmental effects on any minority or low-income populations.
Impact Conclusion	Alternative 1 would not cause disproportionately high and adverse human health or environmental effects on any minority or low-income populations. Therefore, no significant environmental justice impacts would occur.
Alternative 2	
Summary	<ul style="list-style-type: none"> • Minority and low-income populations have been identified in the Study Area. Aircraft noise is not considered disproportionately high because aircraft noise also overlaps the comparison groups. • Would not result in any air emissions or water discharges that would adversely affect minority or low-income communities in a manner that would be greater than the comparison groups. • Although there are minority and low-income populations within the affected area, implementation of Alternative 2 would not cause disproportionately high and adverse human health or environmental effects on any minority or low-income populations.
Impact Conclusion	Alternative 2 would not cause disproportionately high and adverse human health or environmental effects on any minority or low-income populations. Therefore, no significant environmental justice impacts would occur.

Table 3.15-3: Summary of Effects and Conclusions for Environmental Justice (continued)

Summary of Effects and National Environmental Policy Act Determinations	
Alternative 3	
Summary	<ul style="list-style-type: none">• Minority and low-income populations have been identified in the Study Area. Aircraft noise is not considered disproportionately high because aircraft noise also overlaps the comparison groups.• Would not result in any air emissions or water discharges that would adversely affect minority or low-income communities in a manner that would be greater than the comparison groups.• Although there are minority and low-income populations within the affected area, implementation of Alternative 3 would not cause disproportionately high and adverse human health or environmental effects on any minority or low-income populations.
Impact Conclusion	Alternative 3 would not cause disproportionately high and adverse human health or environmental effects on any minority or low-income populations. Therefore, no significant environmental justice impacts would occur.

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4.0 Cumulative Impacts

Environmental Impact Statement

Fallon Range Training Complex Modernization

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4 Cumulative Impacts

4.1 Introduction

A cumulative impact is an impact on the environment that results after adding the incremental impact of the Proposed Action to other past, present, and reasonably foreseeable future actions. The cumulative impacts analysis considers other actions regardless of which agency (federal or non-federal) or person undertakes the actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 Code of Federal Regulations [CFR] part 1508.7). The goal of the analysis is to provide the decision makers with a “big picture” view of the cumulative effects on the future sustainability of important resources, not only of the Proposed Action and alternatives, but all other relevant actions occurring within the same geographic region.

Similar to the resource-specific combined effects analysis, the cumulative impact analysis considers additive, synergistic, and antagonistic effects in relation to past, present, and reasonably foreseeable actions. The United States (U.S.) Department of the Navy (Navy) identified the cumulative impacts of the Proposed Action and alternatives following the process described below.

1. The Navy used the scoping process, communications with other agencies, a review of other military activities, literature review, and previous National Environmental Policy Act (NEPA) analyses to identify other past, present, and reasonably foreseeable future actions that have affected, or will affect, the same resources as the Proposed Action. The Navy grouped individual actions to the extent possible so that the cumulative impacts analysis could focus on aggregate effects of the actions.
2. The analysis identifies and summarizes the effects of those past, present, and reasonably foreseeable future actions on each resource analyzed in Sections 3.1 through 3.15.
3. The analysis assesses the incremental effects of each alternative to determine if a significant cumulative effect would occur when the alternative is added to the effects of past, present, and reasonably foreseeable actions.

This section (1) defines cumulative impacts; (2) describes past, present, and reasonably foreseeable future actions relevant to cumulative impacts; (3) analyzes the incremental interaction the Proposed Action may have with other actions; and (4) evaluates cumulative impacts potentially resulting from these interactions.

4.2 Approach to Analysis

The approach taken in the analysis of cumulative impacts follows the objectives of the NEPA, Council on Environmental Quality (CEQ) regulations, and CEQ guidance. Cumulative impacts are defined in 40 CFR part 1508.7 as “the impact on the environment that results from the incremental impact of the action when added to the other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” To determine the scope of environmental impact analyses, agencies shall consider cumulative actions, which when viewed with other Proposed Actions have cumulatively significant impacts and should therefore be discussed in the same impact analysis document.

In addition, CEQ and the U.S. Environmental Protection Agency (USEPA) have published guidance addressing implementation of cumulative impact analyses—Guidance on the Consideration of Past Actions in Cumulative Effects Analysis (Council on Environmental Quality, 2005) and Consideration of

Cumulative Impacts in Environmental Protection Act (EPA) Review of NEPA Documents (U.S. Environmental Protection Agency, 1999). CEQ guidance entitled *Considering Cumulative Impacts Under NEPA* (1997) states that cumulative impact analyses should

“...determine the magnitude and significance of the environmental consequences of the Proposed Action in the context of the cumulative impacts of other past, present, and future actions...identify significant cumulative impacts...[and]...focus on truly meaningful impacts.”

Cumulative impacts are most likely to arise when a relationship or synergism exists between a Proposed Action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in close proximity to the Proposed Action would be expected to have more potential for a relationship than those more geographically separated. Similarly, relatively concurrent actions would tend to offer a higher potential for cumulative impacts. To identify cumulative impacts, the analysis needs to address the following three fundamental questions.

1. Does a relationship exist such that affected resource areas of the Proposed Action might interact with the affected resource areas of past, present, or reasonably foreseeable actions?
2. If one or more of the affected resource areas of the Proposed Action and another action could be expected to interact, would the Proposed Action affect or be affected by impacts of the other action?
3. If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the Proposed Action is considered alone?

4.2.1 Overview

The scope of the cumulative impacts analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. For this Environmental Impact Statement (EIS), Western and central Nevada, within the following counties – Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe – delimit the geographic extent of the cumulative impacts analysis. In general, the geographic boundaries will include those areas (or regions of influence) previously identified for the respective resource areas. The time frame for cumulative impacts centers on the timing of the Proposed Action, which would begin in 2020.

Another factor influencing the scope of cumulative impacts analysis involves identifying other actions to consider. Beyond determining the geographic scope and time frame for the actions interrelated to the Proposed Action, the analysis employs the measure of “reasonably foreseeable” in determining whether to include or exclude future actions. For the purposes of this analysis, public documents prepared by federal, state, and local government agencies form the primary sources of information regarding reasonably foreseeable actions. Documents used to identify other actions include notices of intent for EISs and Environmental Assessments (EAs), management plans, land use plans, and other planning related studies.

4.2.2 Identify Appropriate Level of Analysis for Each Resource

The cumulative impacts analysis focused on meaningful impacts from past, present, and reasonably foreseeable future actions. The Navy sought to make its level of analysis for each resource commensurate with the intensity of the impacts identified in the Environmental Consequences sections of Sections 3.1 through 3.15. The rationale for the level of analysis applied to each resource is described in the resource-specific sections below.

4.2.3 Define the Geographic Boundaries and Timeframe for Analysis

The geographic boundaries for the cumulative impacts analysis included the Fallon Range Training Complex (FRTC), which include the existing and proposed ranges and associated special use airspace (SUA) which is over Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe Counties, generally factoring in relevant impacts in surrounding land areas and airspace outward from the boundaries of the FRTC to a distance of up to 30 miles. The boundaries for migratory species were expanded to include land and airspace where activities might impact these species throughout their ranges, as discussed in the description of the region of influence in Section 4.4.10 (Biological Resources). Primary considerations from outside the FRTC ranges include impacts associated with geological resources, land use, mineral resources and mining, livestock grazing, transportation, airspace, noise, air quality, water resources, biological resources, cultural resources, recreation, socioeconomic resources, public health and safety, and environmental justice.

Determining the timeframe for the cumulative impacts analysis requires estimating the length of time the impacts of the Proposed Action would last and considering the specific resource in terms of its history of degradation (Council on Environmental Quality, 1997). The Proposed Action includes ongoing and future military readiness activities on existing ranges and in expanded range areas. While Navy training requirements change over time in response to world events and several other factors, the general types of activities addressed by this EIS are expected to continue indefinitely, and the associated impacts would occur indefinitely. Therefore, the cumulative impacts analysis is not bound by a specific future timeframe. For past actions, the cumulative impacts analysis only considers those actions or activities that have ongoing impacts. While the cumulative impacts analysis is not limited by a specific timeframe, it should be recognized that available information, uncertainties, and other practical constraints limit the ability to analyze cumulative impacts into the indefinite future. Future actions that are speculative are not considered.

4.2.4 Describe Current Resource Conditions and Trends

The Affected Environment sections of each resource section (Sections 3.1 through 3.15) describe current resource conditions and trends and discuss how past and present human activities influence each resource. The current aggregate impacts of past and present actions are reflected in the baseline information presented in that chapter. This information is used in the cumulative impacts analysis to understand how past and present actions are currently impacting each resource and to provide the context for the cumulative impacts analysis.

4.2.5 Identify Potential Impacts of Alternatives 1, 2, or 3 that Might Contribute to Cumulative Impacts

The impacts of the alternatives, presented in the Environmental Consequences sections of each resource section (Sections 3.1 through 3.15), were used to identify impacts that are relevant to the cumulative impact analysis. Key factors considered include the current status and sensitivity of the resource and the intensity, duration, and spatial extent of the impacts for each part of the Proposed Action. In general, long-term rather than short-term impacts and widespread rather than localized impacts were considered more likely to contribute to cumulative impacts. For example, for biological resources, population-level impacts were considered more likely to contribute to cumulative impacts than were individual-level impacts. Negligible impacts were not considered further in the cumulative impacts analysis.

4.2.6 Identify Other Actions and Environmental Considerations that Affect Each Resource

A list of other reasonably foreseeable future actions was compiled for the FRTC and surrounding areas. These actions were reviewed to determine if they should be considered further in the cumulative impact analysis. Factors considered when identifying other actions to be included in the cumulative impacts analysis included the following:

- Whether the action is likely or probable (i.e., reasonably foreseeable), rather than merely possible or speculative.
- The timing and location of the other action in relation to components of the Proposed Action.
- Whether the other action and each alternative would affect the same resources.
- The current conditions, trends, and vulnerability of resources affected by the other action.
- The duration and intensity of the impacts of the other action, and whether the impacts have been truly meaningful, historically significant, or identified previously as a cumulative impact concern.

4.2.7 Analyze Potential Cumulative Impacts

The combined impacts of all other actions, including the current aggregate impacts of past and present actions described in the baseline, were characterized and summarized. The incremental impacts of the Proposed Action were then “added to” the combined impacts of all other actions to describe the cumulative impacts that would result if the Proposed Action were implemented. The cumulative impact analysis considered additive, synergistic, and antagonistic impacts. A qualitative analysis was conducted in most cases based on the available information. The analysis in each resource section indicates that the impacts of the Proposed Action would not be materially different under each alternative. Therefore, the cumulative impacts discussions below apply to all alternatives.

4.3 Past, Present, and Reasonably Foreseeable Actions

This section lists past, present, and reasonably foreseeable future actions that have had or are expected to have impacts either within, or within distances of up to 30 miles from, the FRTC. This includes the counties of Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe. In determining which projects to include in the cumulative impacts analysis, a preliminary determination was made regarding each past, present, or reasonably foreseeable action. Specifically, using the first fundamental question included in Section 4.2 (Approach to Analysis), it was determined whether a relationship exists such that the affected resource areas of the Proposed Action (included in this EIS) might interact with the affected resource area of a past, present, or reasonably foreseeable action. If no such potential relationship existed, the project was not carried forward into the cumulative impacts analysis. In accordance with CEQ guidance (Council on Environmental Quality, 2005), those actions considered but excluded from further cumulative effects analysis are not catalogued here because the intent is to focus the analysis on the meaningful actions relevant to inform decision making.

The following past, present, and reasonably foreseeable future actions have been identified based on a review of planning documents, agency records, existing and formal proposals, actions that are highly probable based on known trends; a review of federal Bureau of Land Management (BLM) actions; and non-federal actions, such as actions by private, federal, local, tribal, and state proponents. The list also includes actions and projects provided by Cooperating Agencies and Tribal Participants to get a comprehensive project list and validate our regions of influence during fall of 2017. The resulting project list in this analysis is based on a refinement of the 2017 fall endeavor and other suggestions from

Cooperating Agencies and Tribal Participants that were given in 2018. The projects were refined based on their region of influence, scale, timing, and locations.

This list generally includes actions and projects within the following categories: climate change; invasive non-native species and noxious weed treatments; land and realty (industrial, agricultural, commercial, and residential development on private lands and infrastructure developments); livestock grazing; military training operations; minerals (exploration and development); renewable energy (exploration and development); recreation (off-highway vehicle travel, management and hunting); vegetation management; wildlife and special status species management; wild horse and burros management; transportation and traffic management; and wildland fire management (suppression, fuels management, and emergency stabilization and rehabilitation).

Specific projects and actions identified as having the greatest likelihood to generate potential cumulative impacts when added to the Proposed Action are shown visually in Figure 4-1, Figure 4-2, and Figure 4-3, and are listed in the following tables: Table 4-1, Table 4-2, Table 4-3, Table 4-4, Table 4-5, Table 4-6, Table 4-7, and Table 4-8. The tables are organized by actions in and near Naval Air Station (NAS) Fallon, then actions by county (Churchill, Eureka, Lander, Lyon, Mineral, Nye, and Pershing Counties). These tables are organized by timeframe, topic, and project. Figure 4-1 shows the state of Nevada and larger-scale projects that may have a cumulative impact on the Counties. Figure 4-2 shows the FRTC and projects under SUA. Finally, Figure 4-3 shows projects within and near the requested withdrawals and proposed acquisitions for Alternatives 1, 2, and 3. Resource areas presenting potential cumulative impacts are checked next to each project in the tables. Details on these listed projects can be found in the tables at the end of the section (Table 4-9, Table 4-10, Table 4-11, Table 4-12, Table 4-13, Table 4-14, Table 4-15, Table 4-16, and Table 4-17).

Table 4-17 outlines actions as proposed by the *Carson City District, Nevada Draft Resource Management Plan and Environmental Impact Statement* by the BLM for all of the counties of concern. Table 4-17 is structured by resource rather than by project.

Projects and actions that were identified during the review but were not reasonably foreseeable are not included in the tables. Any project that is still in the initial stages of planning, has no reasonably foreseeable actions associated with it, and does not have a timeline for activities is considered too speculative to be cumulatively analyzed at this time.

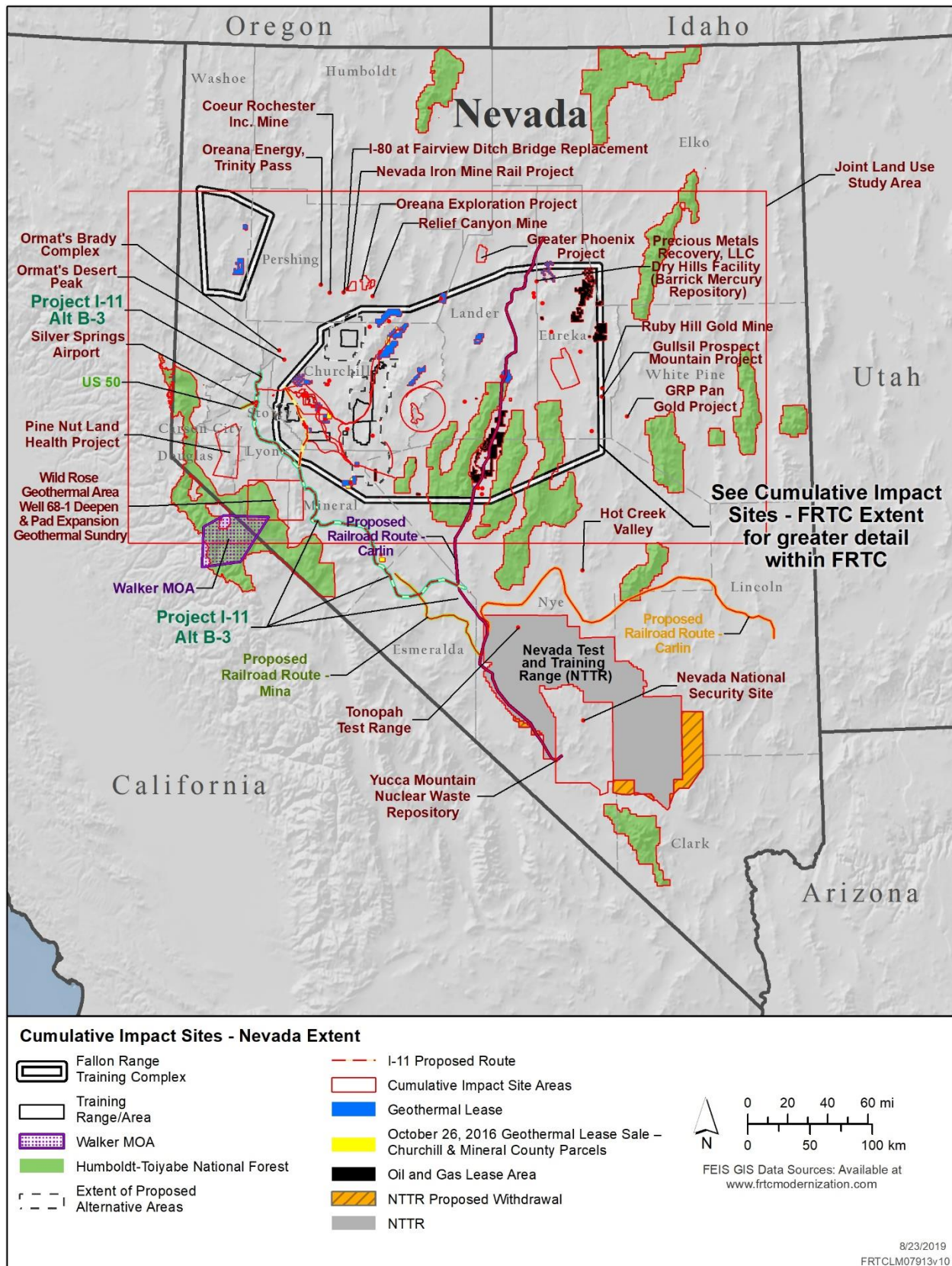


Figure 4-1: Cumulative Impact Sites – Nevada Extent

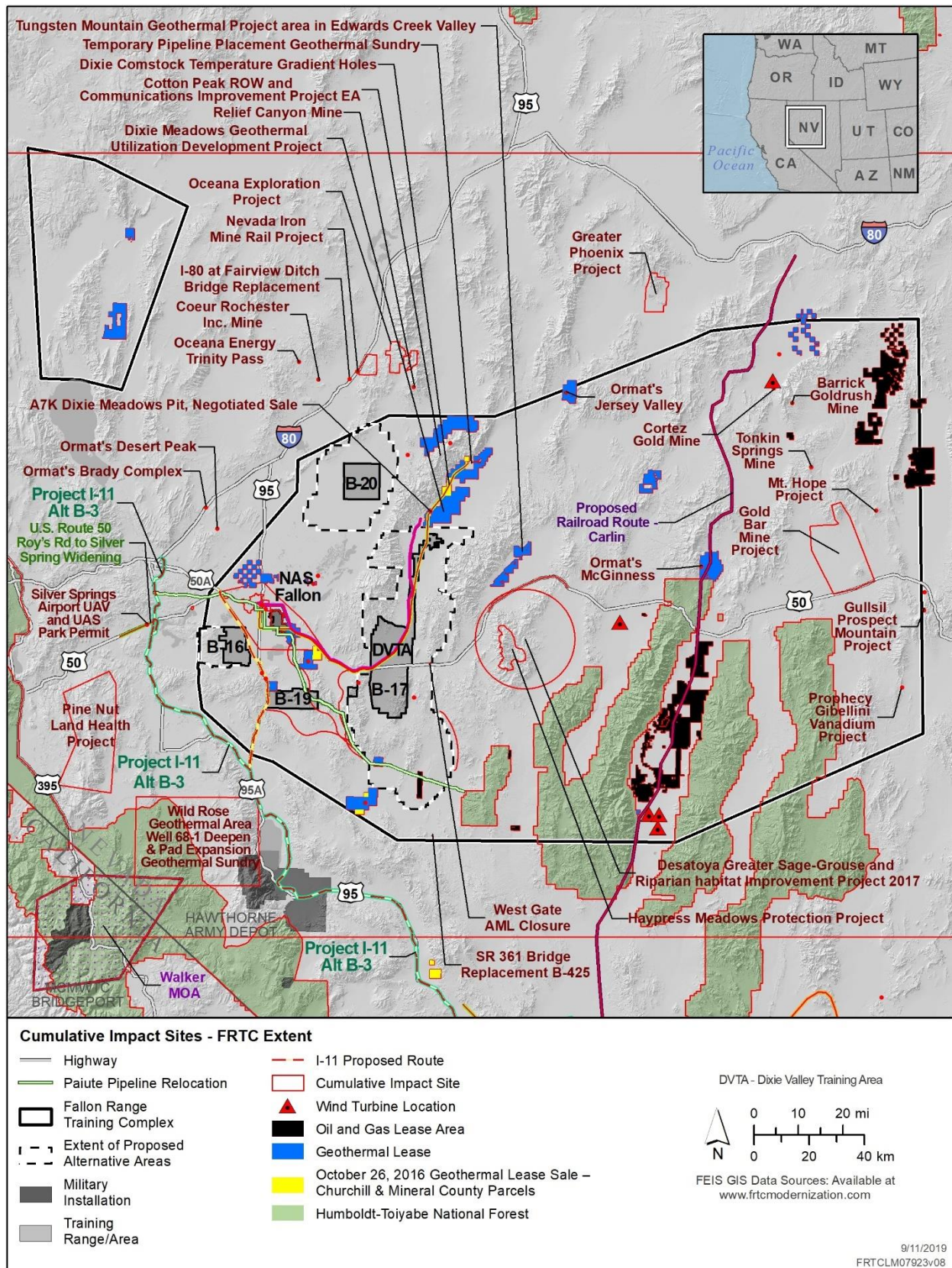


Figure 4-2: Cumulative Impact Sites – FRTC Extent

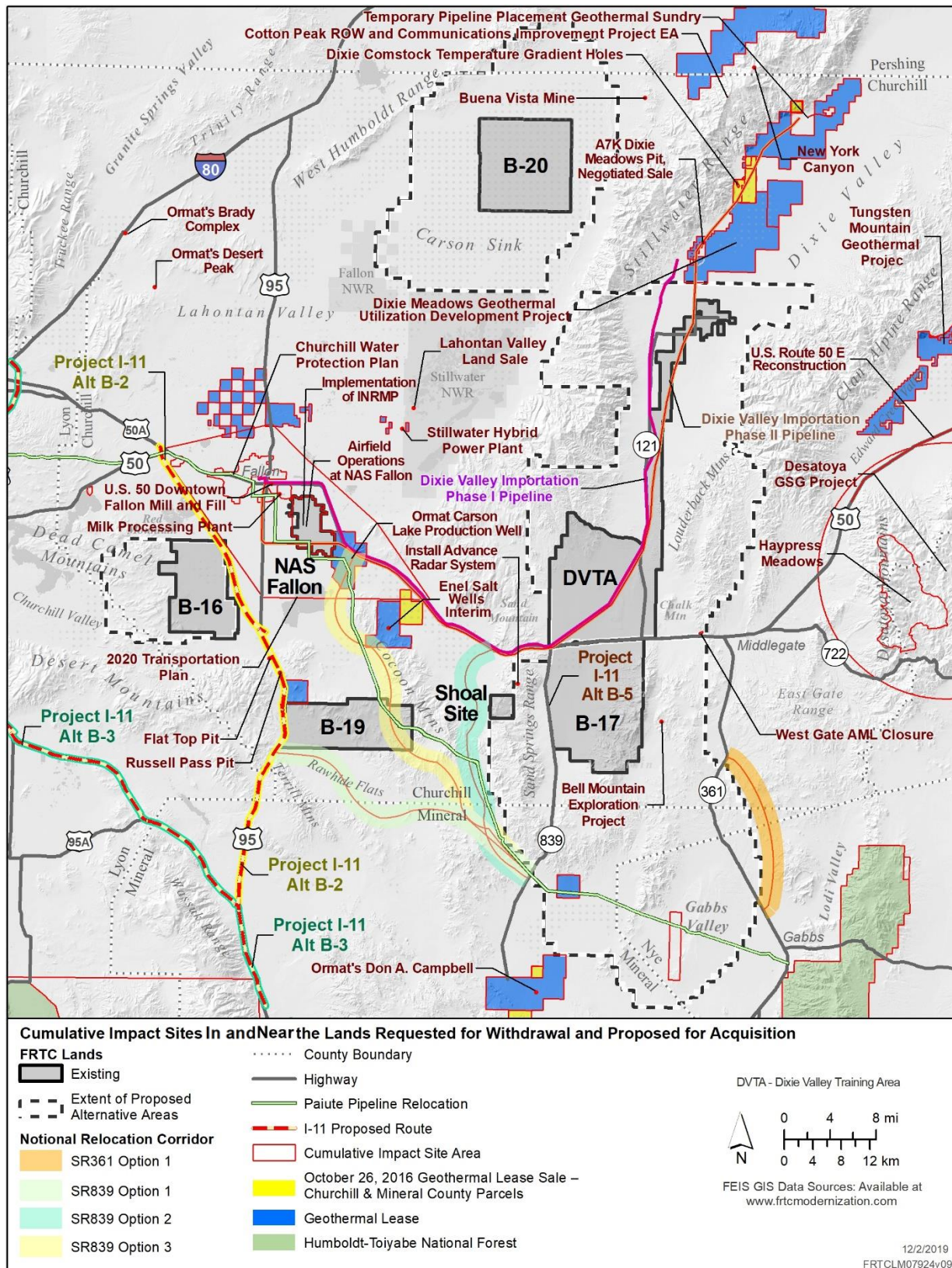


Figure 4-3: Cumulative Impact Sites In and Near the Lands Requested for Withdrawal and Proposed for Acquisition

Table 4-1: Other Actions Near or Cumulatively Applicable to Naval Air Station Fallon and the Fallon Range Training Complex

Project Title	Resource Areas Assessed for Cumulative Impact ¹														
	Geological Resources	Land Use	Mining and Mineral Resources	Livestock Grazing	Transportation	Airspace	Noise	Air Quality	Water Resources	Biological Resources	Cultural Resources	Recreation	Socioeconomics	Public Health and Safety and Protection	Environmental Justice
Past – Planning															
Carson City District Drought Management	✓	✓		✓					✓	✓			✓	✓	
Humboldt-Toiyabe National Forest Management	✓	✓				✓			✓	✓		✓			
Carson City District Office Consolidated Resource Management Plan	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓		
Past – Construction															
Milk Processing Plant in Fallon, Nevada		✓		✓					✓				✓		
Past – Operations															
Airfield Operations at NAS Fallon	✓			✓	✓	✓	✓	✓		✓	✓		✓		
Past – Conservation															
Implementation of Integrated Natural Resources Management Plan (INRMP)	✓			✓				✓	✓	✓	✓	✓			
Past – Telecommunications															
Electronic Warfare/Communication Site Improvements		✓													
U.S. Navy Communications Site Expansion		✓			✓							✓			
Present and Reasonably Foreseeable – Conservation															
Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓		✓
Present and Reasonably Foreseeable - Alternative Energy															
Wind Energy Projects		✓		✓		✓	✓	✓		✓		✓		✓	
Solar Projects		✓		✓			✓	✓	✓	✓	✓	✓			
Stillwater Hybrid Power Plant			✓					✓					✓		

Table 4-1: Other Actions Near or Cumulatively Applicable to Naval Air Station Fallon and the Fallon Range Training Complex (continued)

Project Title	Resource Areas Assessed for Cumulative Impact ¹														
	Geological Resources	Land Use	Mining and Mineral Resources	Livestock Grazing	Transportation	Airspace	Noise	Air Quality	Water Resources	Biological Resources	Cultural Resources	Recreation	Socioeconomics	Public Health and Safety and Protection	Environmental Justice
Past – Lands and Realty															
Naval Air Station Fallon Land Conveyance		✓										✓			
Present and Reasonably Foreseeable - Lands and Realty															
Lahontan Valley Land Sale	✓	✓						✓	✓	✓	✓		✓		
Present and Reasonably Foreseeable - Planning															
Bureau of Land Management Grazing Program		✓		✓					✓	✓			✓		
U.S. Marine Corps Walker Military Operations Area		✓				✓	✓	✓		✓				✓	
Bureau of Land Management Resource Management Plan (see Table 4-17)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Carson City District Office Resource Management Plan (Draft)	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓		
Churchill County Water Resources Plan: Dixie Valley Importation Project	✓	✓							✓	✓		✓	✓	✓	✓
Wildfire Rehabilitation	✓								✓	✓				✓	
Present and Reasonably Foreseeable - Construction															
State Route 839 Notional Relocation Corridor	✓	✓			✓		✓	✓				✓			
State Route 361 Notional Relocation Corridor	✓	✓			✓		✓	✓				✓			
Paiute Pipeline Relocation		✓			✓								✓		
Install Advance Radar System	✓							✓							
Present and Reasonably Foreseeable - Alternative Energy															
BLM Nevada Solar Programmatic EIS and Variance Areas		✓			✓			✓		✓			✓		
Environmental Impact Statement on the Proposed Airspace Optimization for Readiness for Mountain Home Air Force Base						✓	✓	✓		✓	✓			✓	✓

¹The resources are checked based on past published documentation. These documents include EISs, Environmental Assessments, and other documents.

Table 4-2: Other Actions in Churchill County

Project Title	Resource Areas Assessed for Cumulative Impact ¹														
	Geological Resources	Land Use	Mining and Mineral Resources	Livestock Grazing	Transportation	Airspace	Noise	Air Quality	Water Resources	Biological Resources	Cultural Resources	Recreation	Socioeconomics	Public Health and Safety and Protection of Children	Environmental Justice
Past – Geothermal Projects															
Geothermal Lease Sale Sept. 2014 - 40 acres	✓	✓	✓						✓			✓	✓		
Ormat Nevada Inc. Geothermal Drilling Permits	✓	✓	✓	✓			✓	✓		✓			✓		
Ormat Tungsten Mountain Production Wells	✓	✓	✓	✓			✓	✓		✓			✓		
Ormat Temperature Gradient Well 31-8	✓	✓	✓	✓			✓	✓	✓	✓			✓		
Terra-Gen Dixie Valley, LLC Dixie Valley Power Plant Well 73B-7 Existing Sump Expansion	✓	✓	✓						✓			✓		✓	
Well 24-8 Sundry Notice to Move Location and Directional Drill	✓	✓	✓				✓	✓				✓			
Past – Mining															
Rawhide Mine – Northwest Heap Leach Pad Extension	✓	✓	✓				✓	✓	✓			✓		✓	
Bell Mountain Exploration	✓	✓	✓									✓	✓		
Past – Telecommunications															
Fairview Peak Communications Site – NV Energy		✓										✓			
Cotton Peak ROW and Communications Improvement Project EA	✓						✓			✓					
Past – Lands and Realty															
Stillwater National Wildlife Refuge Complex Comprehensive Conservation Plan and Boundary Revision	✓	✓		✓					✓	✓	✓	✓	✓		
Water Rights Acquisition for Lahontan Valley Wetlands		✓		✓				✓	✓	✓	✓	✓	✓	✓	

Table 4-2: Other Actions in Churchill County (continued)

Project Title	Resource Areas Assessed for Cumulative Impact ¹														
	Geological Resources	Land Use	Mining and Mineral Resources	Livestock Grazing	Transportation	Airspace	Noise	Air Quality	Water Resources	Biological Resources	Cultural Resources	Recreation	Socioeconomics	Public Health and Safety and Protection of Children	Environmental Justice
Past – Conservation															
Haypress Area Habitat Improvement Project		✓								✓					
Past – Transportation															
Southern Alternate Access Route to the Bravo-16 Bombing Range Right-of-Way	✓	✓			✓				✓	✓				✓	
Present and Reasonably Foreseeable – Planning															
Churchill County 2015 Master Plan	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Water Resources Plan	✓	✓		✓					✓			✓	✓	✓	
Water Conservation Plan							✓	✓	✓					✓	
Community Source Water Protection Plan (Draft)		✓							✓				✓	✓	
NAS Fallon: Joint Land Use Study		✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	
Cow Canyon, Clan Alpine and Dixie Valley Allotments Landscape Project EA	✓	✓		✓			✓		✓	✓	✓	✓	✓		
Present and Reasonably Foreseeable – Conservation															
Desatoya Greater Sage-Grouse and Riparian Habitat Improvement Project 2017		✓						✓		✓					
Haypress Meadows Protection Project		✓								✓	✓	✓			
Desatoya Mountains Habitat Resiliency, Health, and Restoration Project EA	✓	✓		✓			✓		✓	✓	✓		✓		
Conservation Easement Program (transfer of development rights)		✓		✓					✓	✓		✓	✓		

Table 4-2: Other Actions in Churchill County (continued)

Project Title	Resource Areas Assessed for Cumulative Impact ¹														
	Geological Resources	Land Use	Mining and Mineral Resources	Livestock Grazing	Transportation	Airspace	Noise	Air Quality	Water Resources	Biological Resources	Cultural Resources	Recreation	Socioeconomics	Public Health and Safety and Protection of Children	Environmental Justice
Present and Reasonably Foreseeable – Geothermal Projects															
Temporary Pipeline Placement Geothermal Sundry	✓	✓			✓					✓					
Enel Salt Wells Interim Reclamation 11-36, 86-26, & 88-26	✓	✓	✓							✓		✓			
Ormat Carson Lake Production Well 81(86-6)-7 GDP	✓	✓	✓						✓			✓			
Tungsten Mountain Geothermal Development Project	✓	✓	✓	✓			✓	✓	✓	✓			✓		
Ormat Tungsten Mountain Observation Well 24-23	✓	✓	✓				✓	✓		✓		✓			
Ormat Tungsten Mountain Injection Well 27-22 GDP	✓	✓	✓				✓	✓		✓		✓			
Dixie Comstock Temperature Gradient Holes	✓	✓	✓		✓		✓	✓		✓		✓			
October 26, 2016 Geothermal Lease Sale – Churchill & Mineral County Parcels	✓	✓	✓									✓			
Ormat’s Brady Complex	✓	✓	✓						✓			✓	✓		
Oil and Gas Leasing of approximately 960 acres	✓	✓	✓									✓			

Table 4-2: Other Actions in Churchill County (continued)

Project Title	Resource Areas Assessed for Cumulative Impact ¹														
	Geological Resources	Land Use	Mining and Mineral Resources	Livestock Grazing	Transportation	Airspace	Noise	Air Quality	Water Resources	Biological Resources	Cultural Resources	Recreation	Socioeconomics	Public Health and Safety and Protection of Children	Environmental Justice
Present and Reasonably Foreseeable – Mining															
Flat Top Pit, Hiskett & Sons Negotiated Sale	✓	✓	✓		✓		✓			✓		✓			
Russell Pass Pit, Hiskett & Sons Negotiated Sale	✓	✓	✓									✓			
Russell Pass Pit Exploration Permit I & Permit II	✓	✓	✓									✓			
West Gate abandoned mine land closure		✓	✓							✓	✓	✓		✓	
A&K Dixie Meadows Pit, Negotiated Sale	✓	✓	✓						✓	✓	✓				
Nevada Iron Mine Rail Project	✓	✓	✓		✓							✓			
Buena Vista Mine	✓	✓	✓					✓	✓	✓			✓		
Barrick Cortez Mining: Deep South	✓	✓	✓					✓	✓	✓		✓	✓		
Present and Reasonably Foreseeable – Transportation															
U.S. Route 50 E of Alpine Rd to the CH/LA County Line Mill, Reconstruction		✓			✓		✓	✓							
U.S. Route 50 Downtown Fallon Mill and Fill		✓			✓		✓	✓							
SR 361 Bridge Replacement B-425					✓		✓	✓							
2020 Transportation Plan		✓			✓		✓						✓	✓	

¹The resources are checked based on past published documentation. These documents include Environmental Impact Statements, Environmental Assessments, and other documents.

Table 4-3: Other Actions in Eureka County

Project Title	Resource Areas Assessed for Cumulative Impact ¹														
	Geological Resources	Land Use	Mining and Mineral Resources	Livestock Grazing	Transportation	Airspace	Noise	Air Quality	Water Resources	Biological Resources	Cultural Resources	Recreation	Socioeconomics	Public Health and Safety and Protection of Children	Environmental Justice
Past – Mining															
Tonkin Springs Mine	✓	✓	✓		✓		✓	✓	✓	✓				✓	
Present and Reasonably Foreseeable – Conservation															
The 3 Bars Ecosystem and Landscape Restoration Project	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓
Present and Reasonably Foreseeable – Mining															
Gold Bar Mine Project	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓
Barrick Goldrush	✓	✓	✓				✓	✓	✓	✓		✓	✓	✓	
Mt. Hope Project	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Gullsil Prospect Mountain Project	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	
Prophecy Gibellini Project	✓	✓	✓				✓	✓	✓	✓		✓	✓		
GRP Pan Gold Project	✓		✓	✓			✓	✓	✓	✓	✓	✓	✓		
Ruby Hill Gold Mine	✓		✓			✓	✓	✓	✓				✓		
Present and Reasonably Foreseeable – Operations															
Precious Metals Recovery, LLC Dry Hills Facility (Barrick Mercury Repository)	✓		✓			✓	✓	✓	✓			✓	✓	✓	
Yucca Mountain Project: Carlin Route	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

¹The resources are checked based on past published documentation. These documents include Environmental Impact Statements, Environmental Assessments, and other documents.

Table 4-4: Other Actions in Lander County

Project Title	Resource Areas Assessed for Cumulative Impact ¹														
	Geological Resources	Land Use	Mining and Mineral Resources	Livestock Grazing	Transportation	Airspace	Noise	Air Quality	Water Resources	Biological Resources	Cultural Resources	Recreation	Socioeconomics	Public Health and Safety and Protection of Children	Environmental Justice
Past – Mining															
Cove Helen Underground Mine Project	✓		✓		✓		✓	✓	✓	✓	✓		✓	✓	✓
Present and Reasonably Foreseeable – Mining															
Greater Phoenix Project	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓		
Present and Reasonably Foreseeable – Geothermal															
Ormat’s McGinness Hills Geothermal Facility	✓	✓	✓	✓			✓	✓	✓	✓	✓		✓		✓

¹The resources are checked based on past published documentation. These documents include Environmental Impact Statements, Environmental Assessments, and other documents.

Table 4-5: Other Actions in Lyon County

Project Title	Resource Areas Assessed for Cumulative Impact ¹													
	Geological Resources	Land Use	Mining and Mineral Resources	Livestock Grazing	Transportation	Airspace	Noise	Air Quality	Water Resources	Biological Resources	Cultural Resources	Recreation	Socioeconomics	Public Health and Safety and Protection of Children
Past – Geothermal														
Ann Mason Project, Plan of Operations Amendment	✓	✓	✓					✓	✓			✓		
Past – Transportation														
U.S.A. Parkway Right-of-way Project		✓			✓		✓	✓		✓			✓	
Past – Lands and Realty														
Yerington Land Conveyance	✓	✓		✓						✓	✓	✓	✓	
Past – Conservation														
Livestock Change on Gray Hills Allotment				✓						✓				
Present and Reasonably Foreseeable – Geothermal														
Ormat's Desert Peak Geothermal Field	✓	✓	✓				✓		✓				✓	
Present and Reasonably Foreseeable – Conservation														
Pine Nut Land Health Project								✓		✓	✓			
Present and Reasonably Foreseeable – Transportation														
U.S. Route 50 Roy's Rd to Silver Spring Widening					✓		✓	✓						
Present and Reasonably Foreseeable – Lands and Realty														
Silver Springs Airport UAV and UAS Park Permit						✓								

¹The resources are checked based on past published documentation. These documents include Environmental Impact Statements, Environmental Assessments, and other documents.

Table 4-6: Other Actions in Mineral County

Project Title	Resource Areas Assessed for Cumulative Impact ¹														
	Geological Resources	Land Use	Mining and Mineral Resources	Livestock Grazing	Transportation	Airspace	Noise	Air Quality	Water Resources	Biological Resources	Cultural Resources	Recreation	Socioeconomics	Public Health and Safety and Protection of Children	Environmental Justice
Past – Geothermal															
Ormat Wild Rose Stormwater Control Sundry Notice	✓						✓	✓	✓			✓			
Ormat Wild Rose Geothermal Project	✓	✓	✓	✓			✓	✓	✓	✓		✓			
Wild Rose II Utilization	✓	✓	✓	✓			✓	✓	✓	✓		✓			
Past – Mining															
Kaiser Mine abandoned mine land		✓	✓							✓		✓		✓	
Rawhide Mine Minor Mod Western Extension Phase 4 HLP & Crazy Hill South Pit	✓	✓	✓					✓	✓			✓	✓	✓	
Diamond A	✓		✓		✓			✓	✓			✓			
Past – Utilities															
Yerington Water Tank, Utility Line, and Road Right-of-Way Project		✓			✓				✓	✓				✓	
Yerington Utility Line Right-of-Way Amendment		✓							✓			✓		✓	
Present and Reasonably Foreseeable – Geothermal															
October 26, 2016 Geothermal Lease Sale – Churchill & Mineral County Parcels	✓	✓	✓									✓			
Ormat’s Don A. Campbell Phase Three	✓	✓	✓				✓	✓	✓				✓		
Well 68-1 Deepen & Pad Expansion Geothermal Sundry	✓	✓	✓	✓					✓	✓					
Present and Reasonably Foreseeable – Mining															
Rawhide Mining Regent Expansion	✓		✓					✓	✓	✓			✓	✓	

¹The resources are checked based on past published documentation. These documents include Environmental Impact Statements, Environmental Assessments, and other documents.

Table 4-7: Other Actions in Nye County

Project Title	Resource Areas Assessed for Cumulative Impact ¹														
	Geological Resources	Land Use	Mining and Mineral Resources	Livestock Grazing	Transportation	Airspace	Noise	Air Quality	Water Resources	Biological Resources	Cultural Resources	Recreation	Socioeconomics	Public Health and Safety and Protection of Children	Environmental Justice
Present and Reasonably Foreseeable – Operations															
Nevada Test and Training Range Military Land Withdrawal	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Central Nevada Test Area	✓					✓			✓						
Nevada National Security Site	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Tonopah Test Range	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Yucca Mountain Project: Mina Route	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Yucca Mountain Project: Caliente Route	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Department of interior and Department of Agriculture Projects/Land Withdrawals and Segregation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Present and Reasonably Foreseeable – Conservation															
Eastern Nevada Economic Development and Land Management Improvement Act	✓	✓								✓	✓		✓		

¹The resources are checked based on past published documentation. These documents include Environmental Impact Statements, Environmental Assessments, and other documents.

Table 4-8: Other Actions in Pershing County

Project Title	Resource Areas Assessed for Cumulative Impact ¹														
	Geological Resources	Land Use	Mining and Mineral Resources	Livestock Grazing	Transportation	Airspace	Noise	Air Quality	Water Resources	Biological Resources	Cultural Resources	Recreation	Socioeconomics	Public Health and Safety and Protection of Children	Environmental Justice
Past – Geothermal															
2014 Geothermal Lease Sales in the Winnemucca District	✓	✓	✓						✓			✓			
Ormat’s Jersey Valley Geothermal Power Plant			✓						✓			✓	✓		
Past – Telecommunications															
Coeur Rochester Inc. ROW N-50235		✓										✓			
Past – Conservation															
East Pershing Complex Gather Plan	✓	✓		✓					✓	✓	✓	✓		✓	
Present and Reasonably Foreseeable – Conservation															
Pershing County Lands Bill (Pershing County Economic Development and Conservation Act)		✓				✓				✓		✓	✓		
Present and Reasonably Foreseeable – Geothermal															
New York Canyon TG Core Holes 88(18-11)-10 & 88(82-11)-2	✓		✓										✓		
Dixie Meadows Geothermal Utilization Development Project	✓	✓	✓					✓	✓	✓	✓		✓		
Oreana Energy LLC Land Use Plan N-94836	✓	✓	✓					✓	✓	✓		✓	✓		
Oreana Exploration Project	✓	✓										✓			
Present and Reasonably Foreseeable – Mining															
Coeur Rochester Plan of Operations Amendment 10 and 11	✓	✓	✓		✓					✓			✓	✓	
Relief Canyon Expansion	✓	✓	✓				✓	✓		✓		✓			

Table 4-8: Other Actions in Pershing County (continued)

Project Title	Resource Areas Assessed for Cumulative Impact ¹														
	Geological Resources	Land Use	Mining and Mineral Resources	Livestock Grazing	Transportation	Airspace	Noise	Air Quality	Water Resources	Biological Resources	Cultural Resources	Recreation	Socioeconomics	Public Health and Safety and Protection of Children	Environmental Justice
Present and Reasonably Foreseeable – Transportation															
I-80 at Fairview Ditch Bridge Replacement					✓		✓	✓							
G-29 Bridge					✓		✓	✓							
Project I-11	✓	✓			✓		✓	✓	✓	✓			✓		

¹The resources are checked based on past published documentation. These documents include Environmental Impact Statements, Environmental Assessments, and other documents.

4.4 Cumulative Impact Analysis

Where feasible, the cumulative impacts were assessed using quantifiable data; however, for many of the resources included for analysis, quantifiable data is not available, and a qualitative analysis was done. In addition, where an analysis of potential environmental effects for future actions has not been completed, assumptions were made regarding cumulative impacts related to this EIS where possible. The analytical methodology presented in each resource section (Sections 3.1 through 3.15), which was used to determine potential impacts on the various resources analyzed in this document, was also used to determine cumulative impacts.

4.4.1 Geological Resources

4.4.1.1 Description of Geographic Region of Influence

The region of influence for geological resources is limited to the project footprint and the areas in very close proximity. This region is within the western portion of the Great Basin Geomorphic Province of the Basin and Range Physiographic Province.

4.4.1.2 Relevant Past, Present, and Future Actions

A majority of the projects listed in Tables 4-1 to 4-8 would involve ground disturbance or vegetation removal. As such, they have the potential to cumulatively impact geological resources by disrupting soil surfaces and causing compaction and erosion in the region of influence. For example, any road construction projects, such as the potential relocation of State Route 839 or State Route 361 or Project I-11, have the potential to impact geological resources through ground disturbance leading to the development of new roadways. Other applicable projects include military and nonmilitary construction projects as well as livestock grazing, agriculture, mining, renewable energy development, forestry, wildfire management/rehabilitation, invasive species management, habitat management/conservation, and recreation activities.

4.4.1.3 Cumulative Impact Analysis

The analysis in Section 3.1 (Geological Resources) indicates that Alternatives 1, 2, and 3 would not result in significant impacts on geological resources. Impacts associated with geological resources have the tendency to be site-specific and do not usually accumulate. However, erosion and sediment deposition could potentially accumulate. Ground-disturbing activities during the Navy's proposed construction and training activities, along with the Nevada Department of Transportation's I-11 project and others using construction methods, would increase soil susceptibility to erosion, compaction, and displacement. The Navy would avoid or minimize impacts by using standard soil erosion- and sedimentation-control techniques at the construction site such as a silt barrier (filter fabric) and appropriate revegetation techniques upon completion of construction. The effects of lead or explosive contaminants on soils from the use of high-explosive munitions would be long term but localized on Bravo ranges. Grazing, agricultural use, mining, and other recreation projects that involve ground disturbance would also have a cumulative impact on the susceptibility to erosion, compaction, and displacement of geological resources in the region of influence. Any cumulative impacts specific to minerals and mining are discussed in Section 4.4.3 (Mining and Mineral Resources).

Updating and implementing regional conservation plans, such as the resource management plans, drought management plans, wildfire management plans and rehabilitation plans, invasive species management plans, forest management plans, allotment management plans, and resource management plans would contribute to the minimization of cumulative impacts on geological resources over the

long-term through certain habitat modifications (e.g., prescribed burning and water management), annual unit monitoring, and stream stabilization. Soil disturbance is associated with implementation of certain drought response actions (e.g., implement water conservation plans and/or contingency plan for drought that ensures a supply of potable water), invasive species control, and wildfire management programs (including rehabilitation); however, the overall effects of these types of actions is beneficial on the whole, and the soil disturbance they cause is short-term and generally negligible. Resource management plans and other federally sponsored projects in the FRTC each undergo separate environmental review, which would ensure that significant impacts related to geological resources would be avoided, minimized, or mitigated to the maximum extent practicable. Therefore, when combined with past, present, and reasonably foreseeable future projects, implementation of the Proposed Action would not result in significant cumulative impacts on geological resources in any of the counties within the region of influence.

4.4.2 Land Use

4.4.2.1 Description of Geographic Region of Influence

The region of influence for land use includes the lands on and within approximately 5 miles of FRTC ranges and SUA. The region of influence is within western and central Nevada and includes all or portions of the following counties: Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe Counties.

4.4.2.2 Relevant Past, Present, and Future Actions

Tables 4-1 to 4-8 list the reasonably foreseeable cumulative actions for the FRTC. The past, present, or reasonably foreseeable actions that have a potential to interact with the action alternatives and cumulatively affect land use within the region of influence include military and nonmilitary construction and development projects as well as livestock grazing, agriculture, mining, renewable energy development, forestry, wildfire management and rehabilitation, invasive species management, habitat management/conservation, and recreation activities. Management plans such as the NAS Fallon: Joint Land Use Study or the BLM Resource Management Plan have the potential to shift land use. Construction projects, such as the development of the Yucca Mountain railway to transport nuclear waste, or any geothermal plants built in the area would also alter land use. The proposed expansion and upgrades to the Rawhide-Denton Mine include a potential eastern boundary similar to the proposed Dixie Valley Training Area (DVTA) western boundary, with no buffer area included. However, any mining activities and expansions that are proposed to occur would take place at least one mile away from the boundary.

4.4.2.3 Cumulative Impact Analysis

The analysis in Section 3.2 (Land Use) indicates that Alternatives 1, 2, and 3 could result in long-term impacts on land use that may in themselves constitute significant impacts. Alternatives 1, 2, and 3 include closing or restricting access to large areas of public and private land. Congressional legislation could potentially remove the Wilderness Study Area (WSA) designation of withdrawn portions of WSAs in order to make such areas available for ground training use, and close off portions of a national wildlife refuge, a proposed special recreation management area, and two proposed extensive recreation management areas. Combined with other actions in the area such as the NAS Fallon Joint Land Use Study and BLM Resource Management Plans, the Proposed Action may result in changes to the land uses and management of lands in the region of influence. Land use changes could occur due to the construction of the Yucca Mountain Railway to transport nuclear waste, as that construction would

require safety zones around the railway and necessitate land use and management changes of the land. Therefore, the Navy's Proposed Action alternatives for the FRTC Modernization EIS would further limit public access to and the multiple use of public land in the region of influence beyond the significant impacts of the Proposed Action viewed in isolation. Therefore, there would be a significant cumulative impact on land use resources from the implementation of the alternatives in the counties of Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe.

The Navy would continue to work with the local counties and municipalities as well as federal property land managers to plan for compatible land use development, which includes the BLM, U.S. Fish and Wildlife Service (USFWS), Bureau of Reclamation, and Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe Counties.

4.4.3 Mining and Mineral Resources

4.4.3.1 Description of Geographic Region of Influence

The region of influence for mining and mineral resources includes the mineral resources within the requested FRTC land withdrawal areas as well as any mining claim or historic mining district that may be affected by the alternatives carried forward for analysis. For example, if any alternative removes access to any portion of a mining district, the region of influence would extend to the entire mining district.

4.4.3.2 Relevant Past, Present, and Future Actions

Tables 4-1 to 4-8 list the reasonably foreseeable cumulative actions for the FRTC. The past, present, or reasonably foreseeable actions that have the potential to affect mining and mineral resources include those projects that would remove public land from mineral resource development or would otherwise be incompatible with mineral resource development. Many mining projects, such as Buena Vista Mine, Gold Bar Mine, Bell Mountain Mine, Nevada Iron Mine Rail, Cortez Hills Mine, Barrick Goldrush Mine, and others are currently under construction or are in the exploration phases. These soon-to-be-operational mines would have an impact on mining resources in the region of influence. Bell Mountain Exploration Corporation (BMEC) is currently involved in permitting the mining operation and the completion of the BLM EA is expected in 2020. The Navy is working with the BMEC to identify ways in which the Navy's proposed action and BMEC's valid existing mining right and proposed mining operations can be de-conflicted, both for purposes of public safety and so as to leave BMEC's operations and interests unaffected by the proposed withdrawal to the maximum extent achievable consistent with training requirements.

Geothermal resource exploration and development is anticipated to continue in the region of influence, particularly within the Dixie Valley and Gabbs Valley. Mid- to long-term local exploration and production of locatable minerals would not likely experience significant increases in the region of influence in the foreseeable future. More detail on these mining and geothermal projects can be found in Table 4-9 through Table 4-16.

4.4.3.3 Cumulative Impact Analysis

The analysis in Section 3.3 (Mining and Mineral Resources) indicates that Alternatives 1, 2, and 3 would result in significant impacts on mining and mineral resources. Subject to valid existing rights, Alternatives 1, 2, and 3 would close areas with high resource potential from appropriation, including the mining laws, the mineral leasing laws, and the geothermal leasing laws. Combined with other actions in the area, the action alternatives would further limit the development of mining and mineral resources in the region of influence.

Mineral exploration and development is expected to continue to occur for locatable minerals, fluid mineral leasing, and mineral materials (i.e., salable) in the region of influence. No increase in exploration and development is expected for locatable minerals and interest remains about the same as it has been in the recent past in the region of interest. Interest in geothermal is projected to increase, though interest in other leasables remains the same. Interest in salable material exploration and development is expected to remain the same as in the recent past. Although geothermal energy development would continue to increase, mid- to long-term local exploration and production of locatable minerals would not likely experience significant increases in the region of influence regardless of the impacts of the Proposed Action.

Potential opportunities for economic development, royalty, rentals, pre/post-leasing fee revenue, and tax revenue to all levels of the government could be lost if areas with high resource potential were closed. The Proposed Action closes areas with high resource potential for locatable minerals, as discussed in Section 3.3 (Mining and Mineral Resources). This is a long-term impact but Navy would work with mining operators to minimize impacts to the maximum extent possible. The Proposed Action closes some areas with leasable potential (e.g. geothermal). This is a long-term impact. Nevertheless, the Navy has created required design features for geothermal development in the DVTA, as well as worked with mining operators on a case-by-case basis to decrease impacts on geothermal operations if compatible with the Proposed Action. Finally, the Proposed Action closes some areas with salable potential (e.g. borrow pits). To reduce the potential impact, the Navy is allowing salable exploration and development (production facility design must be approved by the Navy) in the DVTA. In addition, most salable minerals are broadly available outside of the Region of Influence.

Activities that prohibit or restrict surface occupancy or disturbance overlying mineral resource deposits would further impact the potential development of mineral resources by restricting the potential availability of mineral resources to be developed or extracted. Designating areas as WSAs, wildlife refuges, or areas of critical environmental concern would further limit or forbid the development of mineral resources in those areas. Overall, the Proposed Action would have a negative cumulatively significant impact on potential mining and mineral resource development as fewer public lands would be available for use in the expanded FRTC and the surrounding lands discussed in the Carson City BLM Resource Management Plan. This would result in a significant cumulative impact on mining and mineral resources in Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe Counties beyond the significant impacts of the Proposed Action viewed in isolation. The Navy would continue to work with the local counties and municipalities as well as federal property land managers to plan for compatible land use development, which includes the BLM, USFWS, Bureau of Reclamation, and Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe Counties.

4.4.4 Livestock Grazing

4.4.4.1 Description of Geographic Region of Influence

The region of influence for livestock grazing includes the agricultural land and livestock grazing areas within or adjacent to the requested FRTC withdrawal areas and below the FRTC special use airspace.

4.4.4.2 Relevant Past, Present, and Future Actions

Table 4-1 to Table 4-8 list the reasonably foreseeable cumulative actions for the FRTC. The past, present, or reasonably foreseeable actions that have the potential to affect livestock grazing include construction activities, such as mineral, renewable energy, and lands and realty development; vegetation treatment; recreation; and habitat management for special status species. In addition, grazing on private lands is

anticipated to remain stable or may slightly decrease as residential development increases to meet population growth. Management plans such as the Churchill County 2015 Master Plan and the BLM Grazing Program have the potential to change any existing livestock grazing patterns.

4.4.4.3 Cumulative Impact Analysis

The analysis in Section 3.4 (Livestock Grazing) indicates that Alternatives 1, 2, and 3 would result in significant impacts on livestock grazing. Alternatives 1, 2, and 3 would close livestock grazing allotments resulting in the loss of between 6,394 and 8,602 animal unit months (AUMs) under Alternatives 1 and 2, or a loss of between 7,920 and 10,992 AUMs under Alternative 3. The maximum AUM loss would be equivalent to approximately 1 percent of authorized AUMs for all livestock in Nevada (Bureau of Land Management, 2017).

Construction activities from the Proposed Action could have minor impacts on livestock grazing by causing a loss of AUMs (see Section 3.13.1.3.1, Determining Loss of Animal Unit Months) and a closure of Bureau of Reclamation pasturelands. Construction areas and larger facilities may be fenced or include wildfire buffers to protect structures and infrastructure, which has the potential to further reduce available forage for livestock. Recreation activities in the area may affect grazing and grazing management by opening the area to disturbance, vandalism of critical range improvement infrastructure (i.e., tanks and fences), and negligent behavior such as leaving gates open. This would not only be inconvenient, but could also result in economic loss. These recreational activities may also compete with available land for livestock grazing wherever the two are incompatible. Any increase in population and prolonged droughts could increase competition for water and reduce the available water supply for livestock grazing.

Grazing could reduce the potential for wildfires. Wildfire management actions can include vegetation clearing, which reduces the number of acres to potentially be burned, thus reducing the impact that wildfires have on livestock or forage availability for livestock. Combined with these actions, the action alternatives would further limit the availability of public and private land for livestock grazing. Any activity that results in a loss of livestock grazing may increase the potential for wildfires. Projects in the region of influence that could result in a loss of livestock grazing include construction activities, such as mineral, renewable energy, and lands and realty development; vegetation treatment; recreation; and habitat management for special status species. These projects are proposed in the region of influence and therefore, there would be significant cumulative impacts on livestock grazing in Churchill, Eureka, and Pershing Counties as a result of the Proposed Action viewed in isolation. The Navy would continue to work with the local counties and municipalities as well as federal property land managers to plan for compatible land use development, which includes the BLM, USFWS, Bureau of Reclamation, and Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe Counties.

4.4.5 Transportation

4.4.5.1 Description of Geographic Region of Influence

The region of influence for transportation includes the U.S. Route 50 and U.S. Route 95 corridors and connecting state and local roads in Churchill County.

4.4.5.2 Relevant Past, Present, and Future Actions

The analysis in Section 3.5 (Transportation) indicates that the Proposed Action would result in a significant impact on transportation under all three action alternatives. Alternative 3 would result in the least significant impacts on transportation under the analysis.

Road closures in general, whether it be past, present, or future, have impacts on a variety of sectors. Closed roads may cut off access to future mines, future geothermal locations, and hunting opportunities, which could all have financial impacts on the community (Section 4.4.13, Socioeconomics). Other scheduled events, such as races or cultural affairs, may be impacted due to road closures as well. This could have negative financial impacts on the communities who provide race services (Section 3.5.1.4, Public Concerns) and negative impacts on the Tribal communities in the area who engage in cultural practices in the area, respectively.

The impacts on transportation under Alternative 1 or 2 in Churchill County would occur in the reasonably foreseeable future due to the potential closure and rerouting of State Route 839, and the potential relocation of a segment of the Paiute Pipeline. Site-specific NEPA analysis would need to be conducted at a later date for all projects; however, some information concerning the potential road relocation options is available at this time. According to the traffic study (see the Supporting Study: Transportation/Traffic Study for the Fallon Range Training Complex, available at <https://frtcmodernization.com>), completed in support of this EIS, travel distances would increase for travelers under all three options for the relocation of State Route 839 for trips originating on U.S. Route 50 to the east of State Route 839, creating relatively minor, but noteworthy, negative impacts in terms of extra driving time for travelers. Under Option 1, the redistribution of existing and projected future traffic from State Route 839 would result in a drop from Level of Service (LOS) C (acceptable performance standard in rural and undeveloped areas) to LOS D (acceptable in more urbanized areas) in the afternoon peak hour at the U.S. Route 95/Wildes Road/Scheckler Road intersection (for further detail on LOS scale, see Section 3.5.1.3, Approach to Analysis). Neither Option 2 nor Option 3 would change LOS at the U.S. Route 95/Wildes Road/Scheckler Road intersection. Overall, the Alternatives would have minimal transportation and access impacts on Churchill County, with only one change in LOS at one intersection projected to occur if the relocation of State Route 839 were to occur.

The impacts on transportation under Alternative 3 in Churchill County would occur in the reasonably foreseeable future due to the potential closure and rerouting of a portion of State Route 361, and the potential relocation of a segment of the Paiute Pipeline. Site-specific NEPA analysis would need to be conducted at a later date for both projects. The traffic study for this Alternative has been completed for the two potential routes within the notional corridor of State Route 361 in support of this EIS during the winter of 2018 (see the Supporting Study: Transportation/Traffic Study for the Fallon Range Training Complex, available at <https://frtcmodernization.com>). The Navy acknowledges that there may be impacts that have yet to be defined and will continue to develop and incorporate mitigation measures as necessary.

Based on Table 4-2 there was one past project that impacted transportation in Churchill County, and there are four listed as present and reasonably foreseeable projects that could impact transportation in the area. The *Final Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States* notes that local road systems and traffic flow could be adversely affected during the construction phase of this project, but that impacts would be minimized due to the required variance process. The Southern Alternate Access Route to the B-16 Bombing Range Right-of-Way caused impacts on transportation in the past that continue to the present. The project re-routed flood waters to the Navy's primary access route to the B-16 range. The Navy found an alternative route to access the training range and the Navy upgraded and maintains the access route from U.S. Route 95 to the southern gate on B-16. This impact, although continuous, is not adverse. Therefore, transportation in Churchill County was not significantly impacted by these two past projects.

Present and reasonably foreseeable projects in Churchill County include the Bureau of Land Management Resource Management Plan, Churchill County 2015 Master Plan, Temporary Pipeline Placement Geothermal Sundry, mining activities at Flat Top Pit, U.S. Route 50 E of Alpine Rd to the CH/LA County Line Mill project, U.S. Route 50 E Reconstruction project, U.S. Route 50 Downtown Fallon Mill and Fill project, Nevada Iron Mine Rail Project, the SR 361 Bridge Replacement B-425 project, Project I-11 and several other projects currently in operation. Operation of the regional energy and mineral extraction projects such as the Temporary Pipeline Placement Geothermal Sundry, Ormat Carson Lake Production Well, and Flat Top Pit would have minimal cumulative impacts on transportation because the projects are generally consistent with the land use patterns within the region and do not alter local transportation routes. New energy, industrial, agricultural, or mineral extraction projects within Churchill County are not likely to require substantial in-migration of workforce personnel, therefore traffic should not increase. The needed workforce most likely would be obtained from the existing pool of working-age individuals. Transportation systems are not expected to change substantially in the foreseeable future within Churchill County to accommodate commerce and county populations.

The U.S.A. Parkway Right-of-way Project was a past project that would not continue to cause impacts on transportation in the region of influence. Other past projects that would no longer contribute to cumulative impacts in the region of influence include Ormat Wild Rose Geothermal Project, the Yerington Utility Line Right-of-Way Amendment, and Coeur Rochester Inc. Right Of Way N-50235.

The three transportation construction projects would be likely to have minimal cumulative impacts on transportation and traffic because they will follow mitigation, minimization, and standard procedures to reduce impacts. The reconstruction, rehabilitation, and resurfacing of U.S. Route 50 in a portion east of Mount Augusta is planned to begin in 2019. The bridge at State Route 361 was replaced in 2018, and the portion of U.S. Route 50 running through the downtown Fallon area was resurfaced. Cumulatively, these projects would not negatively impact transportation in all of Churchill County as their impacts would be localized to small areas and would all be of short duration, and the improved roads would benefit the community overall.

The I-11 project is a proposed 4-lane highway that would develop a transportation corridor linking Mexico and Canada. Various sections through Nevada have already opened, while others are still under construction or in the planning phase. Construction of the approximated 450-mile I-11 corridor within Nevada could be phased over future decades as various environmental impact reviews are completed and funding is prioritized. The project may have the potential to cumulatively impact transportation and traffic at or in the vicinity of the B-16 range as one of the proposed routes, B-2, crosses the range's boundaries (see Figure 4-1, Figure 4-2, and Figure 4-3). The B-2 Alternative proposed route would present an overlap at the highway crossing near the entrance to the B-16 range, so the Navy has suggested that the Nevada Department of Transportation consider an overpass as a possible solution. Other solutions and suggestions would be discussed between the Navy and the Nevada Department of Transportation as this Proposed Action and the I-11 project progress.

The Nevada Test and Training Range (NTTR) Military Land Withdrawal EIS (U.S. Air Force, 2017) discusses impacts on transportation; all of their proposed alternatives but one have no interaction with existing transportation infrastructure, current LOS, or traffic patterns in the surrounding area. One alternative suggests new road construction within their withdrawal area as well as additional safety buffers which may require road closures. Although outside of the direct region of influence for transportation, other present and reasonably foreseeable projects that may add to the cumulative impacts on transportation

include Interstate 80 at Fairview Ditch Bridge Replacement and the G-29 Bridge. However, both of these projects are occurring in Pershing County, and do not overlap with impact areas of the Proposed Action.

4.4.5.3 Cumulative Impact Analysis

The incremental impacts of Alternatives 1 or 2 would change the LOS at U.S. Route 95/Wildes Road/Scheckler Road intersection if one of the notional relocation corridors is chosen, and the relocation of a portion of State Route 839 occurs. During construction, this would contribute additively to other projects in Churchill County, and when combined, would create significant cumulative impacts beyond the significant impacts of Alternative 1 or 2 viewed in isolation. Based on the Transportation Study results, road intersection and segment LOS is not expected to change as a result of the implementation of Alternative 3. Therefore, the relocation of a portion of State Route 361, when viewed in isolation, would not create significant cumulative impacts.

The proposed I-11 project has the potential to increase transportation and traffic through various counties in Nevada and near the Study Area as one of the proposed routes crosses the B-16 range, but the I-11 project is also expected to decrease travel time and distance when travelling cross-state. The Navy and the Nevada Department of Transportation would coordinate to ensure that the I-11 Project and B-16 changes are compatible.

The NTTR Military Land Withdrawal EIS determined that their Proposed Action would not result in significant adverse transportation impacts. However, in combination with the Navy's Proposed Action, the NTTR Land Withdrawal would result in significant cumulative impacts on transportation, though its own contribution to those cumulative impacts would only be minimal. Therefore, the Proposed Action would contribute to cumulative transportation impacts when added to other past, present, and reasonably foreseeable future actions, and cumulative impacts on transportation resources would be significant in Pershing and Churchill Counties. The Navy would continue to work with the local counties and municipalities as well as federal property land managers to plan for compatible land use development, which includes the BLM, USFWS, Bureau of Reclamation, and Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe Counties.

4.4.6 Airspace

4.4.6.1 Description of Geographic Region of Influence

The region of influence is the regional airspace surrounding the FRTC and the associated FRTC SUA.

4.4.6.2 Relevant Past, Present, and Future Actions

The restricted areas, military operations areas (MOAs), and air traffic control assigned airspace within the FRTC have operated in compatibility with nonmilitary commercial and general aviation activities since 1984 when integrated strike warfare tactical development and training was developed for deploying carrier air wings. Currently, flight publications and Notices to Airmen continue to allow general aviators the opportunity to plan around military readiness activities, and be allowed to operate under visual flight rules within the military operations areas. Impacts on nonmilitary commercial or general aviation activities are less than significant because the airspace continues to be available for use by nonparticipating aircraft when all or part of the airspace is not needed by the using agency. This current use practice in the future for Alternative 1, Alternative 2, or Alternative 3, would ensure the reconfiguration of the existing SUA would not significantly change the current lateral limits on the amount of commercial aviation traffic through the SUA, and the allowances for, and impacts on nonmilitary commercial or general aviation would be sustained.

4.4.6.3 Cumulative Impact Analysis

Commercial and civil aviation use of the FRTC airspace may either remain consistent, or may increase as future air traffic technology allows, under the respective alternatives. Cumulative impacts on airspace based on this coordination would not occur. The Proposed Action would essentially maintain the current status quo with respect to airspace. With the creation and utilization of the eastern MOAs, there is potential need for increased scheduling coordination between NAS Fallon, Nellis Range, and Salt Lake City Center for the areas between the eastern airspace of FRTC and the western airspaces of the Nevada Test and Training Range in support of specific airspace needs of the F-35.

Concurrent with the FRTC Modernization, regional identified cumulative projects or actions with impacts outside of the FRTC include wind energy projects, U.S. Marine Corps Walker MOA, NAS Fallon Joint Land Use Study, Silver Springs Airport unmanned aerial vehicle and unmanned aircraft system Park Permit, and the NTTR Military Land Withdrawal. Airfield Operations at NAS Fallon, while underneath the FRTC airspace, are independent of the Modernization effort. When associated with the other regional actions, the consolidated impacts on airspace from implementation of any of the FRTC Modernization alternatives would not add significant cumulative impact on airspace in any of the Counties.

4.4.7 Noise

4.4.7.1 Description of Geographic Region of Influence

The region of influence for noise includes all lands underlying the area proposed for the FRTC SUA expansion.

4.4.7.2 Relevant Past, Present, and Future Actions

The majority of the relevant, noise-related past, present, and reasonably foreseeable actions considered as part of the cumulative impacts in Section 4.3 (Past, Present, and Reasonably Foreseeable Actions) involve military activities or construction activities, such as development of a new facility, demolition or renovation existing facilities, or road construction/maintenance.

Military air readiness activities under the Proposed Action would traverse airspace above public and private lands in existing and proposed FRTC airspace, to include the proposed minor expansion between the Carson and Fallon North MOAs. Of note, the Proposed Action would lower the minimum altitude in portions of the available airspace to allow for more realistic training, while improving the safety of operations during the large force exercises. The creation of the eastern MOAs (Zircon, Ruby, Diamond, Duckwater, and Smokie) and associated increase aircraft overflights would create discrete brief noise events, noticeable because they would exceed the ambient background sound level. Under Alternative 1, aircraft overflights would occur in these new MOAs, and while intermittent and distributed throughout the day and night, the increased utilization of the eastern MOAs would result in Day-Night Levels (DNLs) increasing between 10-20 A-weighted decibels (dBA). The DNL in the eastern portion of the SUA would increase as a result of the creation of MOAs, with contours above 55 dBA, but not above 60 dBA. While the noise contours themselves would not exceed 65 dBA, a change in DNL of 10-20 dBA would be considered a significant change in the noise environment during busy months of activity at the FRTC.

The expansion of the B-16 range to the west results in an increase in DNL contours over the requested withdrawal lands. With the slight shift in activities to the west, the contours over the existing B-16 decrease. This change in DNL occurs at the B-17 and B-20 ranges as well, with DNLs increasing over new target areas, and slight decreases over existing target areas, as activities shift and redistribute to utilize

the new targets. For these three ranges, even though the DNLs increase in comparison with the environmental baseline, these elevated DNLs are contained within the proposed range boundaries.

Noise generating projects are identified in Section 4.3 (Past, Present, and Reasonably Foreseeable Actions) (and in Table 4-1 through Table 4-8) as occurring throughout the region, and in support of roads, mining operations, or other infrastructure. Present and reasonably foreseeable projects in Churchill County that could produce localized noise include, but are not limited to, the following projects: The Yucca Mountain Projects, I-80 at Fairview Ditch Bridge Replacement, mining activities at Flat Top Pit, U.S. Route 50 E of Alpine Rd to the CH/LA County Line Mill project, U.S. Route 50 E Reconstruction project, U.S. Route 50 Downtown Fallon Mill and Fill project, the State Route 361 Bridge Replacement B-425 project, and Project I-11. Operation of the regional energy and mineral extraction projects such as the Flat Top Pit would have minimal cumulative impacts on noise because the projects are geographically removed from sensitive receptors. New energy, industrial, agricultural, or mineral extraction projects within Churchill County would increase noise, but only in the immediate vicinity of the project. Noise attenuates, or decreases, with increasing distance from a project site. The amount of noise that may reach a sensitive receptor is both dependent on the equipment used (and the sound levels created by that equipment) and the distance to the sensitive receptor from the construction site. However, construction noise would be noticeable to persons living and working nearby and may cause additional annoyance. Construction related to new development of energy sources or industry would result in short-term increases in daytime sound levels near those projects. In rural portions of Churchill, Lander, Nye and Eureka Counties, in addition to noise from construction sites themselves, vehicle noise from increased traffic on local roads and regional highways would be the largest sources of increased noise. Daytime sound levels would likely increase more than nighttime sound levels.

4.4.7.3 Cumulative Impact Analysis

The analysis presented in Section 3.7 (Noise) indicates that there would be a significant impact on the acoustic environment. Visual inspection of aerial maps of impacted areas (regions where the DNL contours are in excess of 65 dBA) reveals small areas of overlap with sensitive receptors (e.g., residences, lodging, or medical facilities) or incompatibility with current land use. In these areas, during busy months of training activities at the FRTC, noise may interfere with normal activities. Other projects that would have the potential to create noise and impact the acoustic environment for sensitive receptors would have to do with construction, regional energy and mineral extraction projects, and road and highway work. Potential impacts include localized disturbances, which are brief events (overflights or ordnance noise) after which normal environmental conditions would return quickly (ambient). The impacts of Alternative 1, Alternative 2, or Alternative 3 would be cumulative with other actions that cause acoustic disturbances to sensitive receptors.

The training activities associated with the Proposed Action would not increase long-term sound levels above 65 dBA beyond the FRTC bombing range boundaries. Sound impacts from training activities at the Bravo ranges under all Alternatives are minor to negligible on lands outside of the range boundaries. It is assumed that construction- or operations-related noise impacts generated from other projects would be short in duration and limited in area that the sound would propagate to. The potential for the construction-related noise to overlap in both temporal and geographic extent of impact is remote.

Noise associated with NAS Fallon existing and future airfield operations was assessed in the 2013 Environmental Assessment. The results of that noise analysis show shrinkage of noise zones northeast of NAS Fallon because the F-35C climbs out faster than the FA-18C/D/E/F. The EA indicates that about

20 individuals would be exposed to noise levels greater than 80 dBA 24-hour equivalent continuous sound level. While living in areas that are subjected to elevated noise levels for long periods of time could induce hearing loss to people residing in those areas, no research results to date have definitively related permanent hearing impairment to aviation noise. The Environmental Assessment analysis also indicated that future changes in airfield operations at NAS Fallon would potentially result in minor increases in speech, classroom, and sleep disturbance. However, noise contours for the NAS Fallon airfield operations and training activities in the FRTC would not overlap under the Proposed Action.

Range complex noise issues are further ameliorated by cooperative agreements with county governments. For example, Churchill County range compatibility buffers are defined by Churchill County as 3 miles and 5 miles buffers within the official zoning maps (U.S. Department of the Navy, 2012). The range compatibility buffers for training ranges B-16 and B-19 are based on the boundary of withdrawal land closed to public access. The buffer for training range B-17 is based on the range boundary before the 1999 Military Land Withdrawal Act. These buffer zones delineate areas within which Churchill County will not implement proposed development without consulting NAS Fallon. These areas are identified by Churchill County for purchase of conservation or restrictive easement or other mechanism to minimize residential development within buffer zones. The Churchill County range compatibility buffers are considered important for protecting the training range assets from land use incompatible with current and future FRTC priority mission areas.

However, cumulative increases in long-term average sound levels in rural portions of Churchill, Lander, Nye, and Eureka Counties from planned and proposed projects such as the Yucca Mountain Projects; I-80 at Fairview Ditch Bridge Replacement; mining activities at Flat Top Pit; U.S. Route 50 E of Alpine Road to the CH/LA County Line Mill project; U.S. Route 50 E Reconstruction project; U.S. Route 50 Downtown Fallon Mill and Fill project; and Project I-11 and other new energy, industrial, agricultural, or mineral extraction projects would be significant. While intermittent and distributed throughout the day and night, the increased utilization of the eastern MOAs for military training would result in DNLs increasing between 10–20 dBA. Local projects in these areas would temporarily add to this increased noise level. If noise from local projects occurred at the same time as an aircraft overflight, the combined noise levels could impact sensitive receptors more than individual noise events.

Therefore, when past, present, and reasonably foreseeable future projects are analyzed together with the Proposed Action, significant cumulative impacts on the noise environment from the implementation of alternatives would occur, most notably on lands underneath newly established MOAs and under existing MOAs where the floor is being adjusted lower than it was, in some cases to ground level.

4.4.8 Air Quality

4.4.8.1 Description of Geographic Region of Influence

The region of influence for air quality is the area (or areas) potentially affected by criteria pollutant emissions from the Proposed Action or alternatives. These areas are in the Las Vegas Intrastate Air Quality Control Region and Northwest Nevada Intrastate Air Quality Control Region.

4.4.8.2 Relevant Past, Present, and Future Actions

As discussed in Section 3.8 (Air Quality), all of the Alternatives would result in air pollutant emissions, and emissions would increase under Alternatives 1, 2, or 3 (see Table 3.8-4), though not to the level of significant impacts. New criteria pollutant emissions associated with the Proposed Action would be generated from the combustion of fossil fuels during construction activities. While the airspace and

withdrawal area would change, the training activities occurring would remain the same and would only modestly increase pollutant emissions as a result of construction activities, rather than a change to training activities as a result of the Proposed Action. Construction activities would primarily produce nitrous oxides, carbon monoxide, and volatile organic compounds, but none of these pollutants would be generated in quantities of more than one ton.

Proposed activities that would occur in support of the Proposed Action include the potential relocation of either State Route 839 or State Route 361 (depending on which if any of the Navy's action alternatives might ultimately be implemented). These construction projects would be fairly large and could generate large amounts of emissions. However, these emissions would be temporary and would not have a lasting impact on the ambient air quality of the region.

Various types of projects result in the release of air pollutants including construction projects, such as energy development projects and infrastructure development projects, mining activities, and projects with ongoing operational sources of emissions.

Past projects include the drilling of various geothermal wells in multiple counties within the air basin, a solar energy development project, the construction of the Stillwater Hybrid Power Plant, the construction or improvement of roads in various locations, the 3 Bars Ecosystem and Landscape Restoration project, and various mining projects such as the Cove Helen Underground Mine Project. These projects contribute to pollutant emissions through ground disturbance and the combustion of fossil fuels from construction equipment, excavation, equipment, and transportation vehicles.

Present activities that would contribute to air quality impacts include ongoing road construction projects such as the widening of U.S. Route 50 between Roy's Road and Silver Springs, current mining activities such as the Greater Phoenix Project and Gold Bar Mine Project, and the construction and drilling of geothermal wells associated with various companies such as Hiskett & Sons and Ormat Nevada Inc., and ongoing training activities occurring at NAS Fallon. These projects contribute to pollutant emissions through ground disturbance and the combustion of fossil fuels from construction equipment, excavation equipment, aircraft, airfield support equipment, and ground vehicles.

Reasonably foreseeable projects include the potential relocations of the Paiute Pipeline and either State Route 839 or State Route 361, further geothermal activities such as the drilling of exploration or production wells, mining activities such as prospecting or excavation, and further infrastructure development. These projects would contribute to pollutant emissions through ground disturbance and the combustion of fossil fuels.

4.4.8.3 Cumulative Impact Analysis

The Proposed Action would have a very limited contribution to air pollutants within the air basin. Less than one ton of each criteria pollutant would be generated during any year in which construction would occur, which is considered to be within regulatory thresholds. The past projects that were described above were mostly construction projects or temporary mining excavations. Following their completion, they ceased to produce pollutant emissions, or produced only insignificant amounts of emissions going forward. Solar energy farms and geothermal wells produce such small amounts of emissions, if any at all, that they still meet clean air standards. Therefore, these projects no longer produce pollutants that impact the ambient air quality and are not considered further in this cumulative analysis.

The aspect of the Proposed Action that would lead to the most predominant impact on the ambient air quality of the region would be the potential relocations of the Paiute Pipeline and either State Route

839 or State Route 361. Although these would be rather large construction projects, their impacts on the ambient air quality would only persist for as long as construction. Following their completion, the ambient air quality would return to its former levels, with at most minor changes associated with potential slight increases in driving time to traverse the potential relocation portions of either of the roads. An accurate approximation of how much pollutants would be generated during these activities is not possible at this time, but specific NEPA documentation would be performed prior to any decision to proceed with the construction of any potential road relocation, or of any potential relocation of the pipeline. Future environmental analysis would determine the estimated impacts that these construction activities would have on ambient air quality. However, it is clear even in the absence of such analysis that air quality impacts associated with any such potential relocations would be construction-related and thus temporary. As to the Proposed Action as currently analyzed, it would not have the potential to meaningfully combine with other projects to result in a significant impact on ambient air quality. There would be no significant cumulative impact on air quality in any of the Counties in the region of influence as a result of the Proposed Action and other projects and actions in the area.

4.4.9 Water Resources

4.4.9.1 Description of Geographic Region of Influence

The region of influence for water resources includes surface water features (such as streams, drainage basins, wetlands) and groundwater features (such as aquifers and subsurface ground water movement) that would be directly or indirectly affected by the Proposed Action or alternatives. These include the Carson River hydrographic basin and Central Nevada hydrographic basin.

4.4.9.2 Relevant Past, Present, and Future Actions

The analysis presented in Section 3.9 (Water Resources) indicates that Alternatives 1, 2, and 3 would have negligible impacts on water resources. In no instances would military deposited materials have a significant impact on surface or ground water quality on the FRTC ranges. Current management practices would continue to be implemented, including spill prevention, control, and countermeasures. The Proposed Action carries the potential for incidental spills, primarily from refueling occurring on the ranges during certain training activities. The Proposed Action involves soil disturbance and compaction associated with ground training or munitions deliveries to B-16, B-17, B-20, and Dixie Valley. These activities can disturb or compact soils, thus increasing runoff intensity and sediment loads in local watercourses. The potential for these activities to substantially affect surface waters is low, however, because the areas of disturbance would be small, disturbance events would be infrequent, and intense rainfall capable of generating substantial surface flows is very infrequent. The potential for groundwater contamination on the FRTC region of influence ranges would continue to be evaluated through the Range Sustainability Environmental Program Assessment process and during five-year range condition assessment updates. Continued implementation of the operational range clearance plan would also substantially reduce potential impacts on groundwater.

Implementation of Alternatives 1, 2, or 3 would necessitate that the Navy acquire valid and existing water rights at fair market value, or that water right holders move “place of use” or “point of diversion” locations and that the Navy compensate them for that movement. This evaluation of water right acquisitions would occur on a case-by-case basis after any ultimate Congressional Decision on Alternative 1, 2, or 3. Public access in the DVTA would remain as is and would not be impacted under any of the alternatives analyzed in this EIS. However, any development associated with water rights in the DVTA would need to be compatible with military training activities. Although the acquisition of

water rights or movement of “place of use” or “point of diversion” locations by water right holders would result in an impact on the water rights holders, it would not result in a significant impact on the water resources in the region of influence.

The Churchill County Water Resources Plan, Water Conservation Plan, the BLM Resource Management Plan, and the Community Source Water Protection Plan all have the potential to impact water resources and allocation within the region of influence. Other actions listed in Table 4-1 through Table 4-8 that may impact water quality within the FRTC region of influence through erosion and sedimentation include military and nonmilitary construction projects, mineral extraction, the grazing allotment program, construction phases of energy development projects (e.g., geothermal, solar, and wind), and operational phases of geothermal energy projects. Water quality degradation is associated with implementation of certain drought response actions and restoration of the 3 Bars ecosystem (via accidental spills of petroleum products); however, any such potential degradation would be expected to be negligible. Resource management plans and other federally sponsored projects in the FRTC region of influence each undergo separate environmental review, which will ensure that significant impacts related to water quality impacts would be avoided, minimized, or compensated to the extent practicable.

4.4.9.3 Cumulative Impact Analysis

Many of these projects occur outside of drainage basins where ground disturbance by the Proposed Action would occur. Because of the lack of surface water connectivity and very limited subsurface water connectivity between lands requested for withdrawal and proposed for acquisition and other actions listed in Tables 4-1 through 4-8 would occur, there is very little potential for cumulative impacts on water resources. Generally restricted to the individual land range area targets and off-road networks, the Proposed Action would potentially impact only a small fraction of the FRTC region of influence in terms of surface or ground water quality. Other actions within the FRTC region of influence (e.g., livestock grazing and other multiple uses, including off-road vehicle use) would potentially impact water quality across much larger portions of the FRTC region of influence through land disturbance, soil erosion, and surface runoff. The Proposed Action would limit these activities to some degree (depending on the selected alternative) on lands requested for withdrawal and proposed for acquisition; therefore, limiting these activities would reduce ground-disturbing activities within the lands requested for withdrawal and proposed for acquisition, while localizing impacts associated with military training activities within the expanded Bravo ranges. The addition of the Proposed Action to past, present, and reasonably foreseeable actions would only minimally increase the cumulative impacts on water quality on the regional scale, and would necessitate that the Navy acquire valid and existing water rights or that water right holders move “place of use” or “point of diversion” locations, and the Navy would be required to make compensation for such acquisitions or relocations in accordance with applicable law. This would result in a cumulative impact on water resources in Churchill County.

When combined with past, present, and reasonably foreseeable future projects, implementation of the Proposed Action would result in significant cumulative impacts on water resources on a local or regional scale that would be minimized because of (1) the spatial separation (in terms of surface and groundwater connectivity) between potentially impacted areas within lands requested for withdrawal and proposed for acquisition, and regional surface and groundwater resources, and (2) the very limited impacts on surface or groundwater resources that would occur under the Proposed Action. This includes impacts on Nye County unappropriated groundwater resources as a result of land withdrawal due to Department of Defense actions and energy land withdrawals. The Navy would continue to work with the

local counties and municipalities as well as federal property land managers to plan for compatible water resource development, which includes the BLM; USFWS; Bureau of Reclamation; and Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe Counties.

4.4.10 Biological Resources

4.4.10.1 Description of Geographic Region of Influence

The region of influence for biological resources includes all land underlying the area proposed for the FRTC SUA airspace expansion and surrounding areas potentially exposed to a sonic boom.

4.4.10.2 Relevant Past, Present, and Future Actions

The analysis presented in Section 3.10 (Biological Resources) concluded that the combined effects of noise stressors, energy stressors, and physical disturbance and strike stressors under the Proposed Action would not have significant impacts on biological resources, including special-status species. Certain land-based training activities may result in minimal direct impacts on non-federally listed rare plant and wildlife species from habitat loss. However, the Proposed Action would not adversely affect sediments, water, or air quality and, therefore, would not have meaningful indirect impacts on terrestrial species or habitats.

Under the Proposed Action, noise from aircraft and weapons firing, launch, and impact (Section 3.7, Noise; and Section 3.10.3.1.1, Noise) as well as energy stressors like electromagnetic radiation and lasers (Section 3.10.3.1.2, Energy Stressors within the Proposed Expansion Area) may elicit short-term physiological and behavioral responses from wildlife species, including special-status species. Exposed individuals would be expected to quickly recover from these responses, and exposure would be intermittent and infrequent. The intensity of effects of disturbance and strike stressors on wildlife species may be considered minor. Although individual animals may be impacted by disturbance or strike, it is anticipated that population-level effects would not occur.

Other past, present, and reasonably foreseeable future actions that could impact biological resources include the geothermal energy projects, various wind and solar energy projects, and mineral extraction. The expected impacts may include temporary disturbance, habitat loss and degradation, habitat fragmentation, and incidental mortality. Although the wind turbine permitting process is designed to minimize avian mortality through choice of location and project design, estimates of annual avian mortality from wind turbines range from 140,000 to 328,000 (Loss et al., 2013) from the approximately 52,000 turbines in the United States. Even though the plant has done everything it can to reduce bird mortality, it's estimated that about 6,000 birds die every year at the Ivanpah Solar Plant alone via incineration by flying through concentrated beams of sunlight while chasing insects (Sahagun, 2016). Various species of birds and mammals have experienced toxic cyanide poisoning. These documented cases come from exposure to cyanide from the heap leach and carbon-in-pulp mill gold or silver mining process (Friend et al., 1999).

Mineral extraction projects result in localized habitat loss and can lead to more widespread habitat loss where surface or groundwater supplies are impacted by chemical runoff. Livestock overgrazing can denude the landscape of vegetative cover and contribute to soil erosion, sedimentation, and habitat degradation. Biological resources are also impacted over the short term through implementation of the vegetation maintenance procedures such as prescribed burns administered by the BLM and mechanical treatments. These maintenance procedures are always done in accordance with any state and federal regulations.

Certain ongoing and future actions listed in Table 4-1 through Table 4-8 that would provide long-term benefits for regional habitats would also benefit biological resources. These actions include the Lahontan Valley land sales, drought management, 3 Bars ecosystem and landscape restoration, BLM and USFS management plans, wilderness designations, Pine Nut Land Health Project, Haypress Meadows Protection Project, the greater sage-grouse and riparian habitat improvement plans, Conservation Easement Program (transfer of development rights), and implementation of NAS Fallon's Integrated Natural Resources Management Plan. These projects, plans, and programs offset certain short-term habitat degradation by establishing ecosystem alterations or changes to Management Plans that promote or restore a more natural or healthy ecosystem capable of sustaining a more diverse population of biological resources.

4.4.10.3 Cumulative Impact Analysis

Although no recent actions have been identified that have impacted populations or habitats of biological resources, historical actions such as agriculture, grazing, and other human uses have resulted in significant impacts on regional habitats. Wildfire and invasive plant infestations also impact vegetation communities and wildlife. Wildfires have the potential to change the ecology of large areas within and outside of the FRTC. The 3 Bars Ecosystem and Landscape Restoration Project, Pine Nut Land Health Project, 2019 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment, and regional state and county wildfire rehabilitation efforts all have the potential to reduce the risk of wildfire. Some projects also include prescribed burns to further balance the ecosystem when needed. Cumulative impacts of future actions on biological resources were considered in local and regional contexts. The Proposed Action would result in localized adverse effects on biological resources. As the Proposed Action would not impact any species listed under the Endangered Species Act, there would be no appreciable cumulative impacts on Endangered Species Act-listed species.

Ongoing and future natural resources management activities on Navy-owned lands, BLM-administered lands, and USFS lands would protect and benefit biological resources in the region, including the greater sage-grouse (*Centrocercus urophasianus*), birds protected under the Migratory Bird Treaty Act, and Nevada Species of Conservation Priority. For sage grouse in particular, noise could be a potential stressor. The Nevada Sage Grouse Conservation Plan focuses on land-based disturbance and noise impacts on sage grouse. The chronic land-based noise may impact sage grouse on a cumulative level if projects were to occur simultaneously and in the same space as sage grouse lekking areas. The Navy is proposing to fund a study that would be conducted by Nevada Department of Wildlife (in cooperation with the Navy) to monitor the behavior of sage grouse on leks during aircraft overflights.

Future actions within the FRTC region of influence, including geothermal, solar and wind energy, and transmission line projects, and mineral extraction would be expected to impact wildlife and wildlife habitat. Estimating the area of habitat that would be impacted by other actions is not possible based on available information. Future wind energy projects may not be built without sufficient transmission line infrastructure. Energy projects and mineral extraction projects have generally localized impacts on habitat and are often offset by the requirement for project mitigation. It is expected that given the rigorous process of site evaluation and mitigation measures or management practices, other future actions would affect a relatively small percent of habitat.

Restoration projects are ongoing and reasonably foreseeable, including those projects to restore the 3 Bars ecosystem in Eureka County and drought response actions (including grazing allotment management) to minimize habitat impacts during moderate or severe drought conditions. These

ambitious management plans across BLM districts and ecosystems have the potential to reverse past habitat losses on a regional scale.

Cumulatively, while individual plants and wildlife species may be affected by any project, the overall distribution or abundance of populations and habitats and ecosystem functions and values would not be significantly affected. Other ongoing and reasonably foreseeable construction projects are likely to result in localized habitat loss and minor impacts on biological resources, while regional projects are likely to offset some past habitat loss and improve habitat for biological resources. These projects include, but are not limited to, the Humboldt-Toiyabe National Forest Management Plan, Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment, ongoing implementation of the NAS Fallon Integrated Natural Resources Management Plan, BLM Grazing Program, BLM Resource Management Plans, Desatoya Greater Sage-Grouse and Riparian Habitat Improvement Project, Haypress Meadows Protection Project, and 3 Bars Ecosystem and Landscape Restoration Project. The Proposed Action may elicit behavioral responses in wildlife, and individual animals may be impacted by stressors as analyzed in this EIS (i.e., acoustic, energy, physical disturbance, and strike). However, species would not be impacted at a population level. The Proposed Action involves an increase in area used for training activities, but not an increase in the level or type of training activities that are currently being conducted on FRTC lands and within associated airspace. Therefore, the impacts on biological resources would be similar to those already occurring on biological resources within the FRTC region of influence.

Therefore, when added to the impacts from the identified cumulative projects, there would be no significant cumulative impacts on biological resources from implementation of any of the alternatives.

4.4.11 Cultural Resources

4.4.11.1 Description of Geographic Region of Influence

The region of influence for cultural resources includes the Potential Impact Areas, as described in Section 3.11 (Cultural Resources).

4.4.11.2 Relevant Past, Present, and Future Actions

The analysis in Section 3.11 (Cultural Resources) indicates the frequency of supersonic overflights would not change, and thus would remain within the parameters (500 supersonic sorties per month or 6,000 sorties per year) defined by Sutherland et al. (1990) as unlikely to damage cultural resources that are potentially sensitive to noise and vibrations. Although Alternatives 1, 2, and 3 may impact certain cultural resources, supersonic activities would be distributed over a larger area, thus decreasing the amount of exposure to any one site. Additionally, procedures would be in place for the identification, evaluation, and protection of such resources as defined in an amended 2011 Programmatic Agreement (PA). With regard to religious, ceremonial, and other traditional activities at potential TCPs within the SUA, including ceremonies conducted on non-Navy property, the Navy would continue discussions with the Tribes to try to identify opportunities to minimize impacts from supersonic overflights, to the maximum extent practicable consistent with training requirements. With implementation of these measures, accordingly, the Navy anticipates that potential impacts on cultural resources resulting from sonic booms would be less than significant.

New ground disturbance would be associated with Alternatives 1, 2 and 3. Continued use of high-impact explosives at designated target areas within the training ranges that have been used historically for this purpose would not be considered a source of new ground disturbance, as the areas have been

previously disturbed and intact archaeological sites would not occur. As with Alternative 1 and 2, munitions noise associated with Alternative 3 has the potential to impact cultural resources. Within the new 130 dB peak contours, five potentially noise-sensitive cultural sites could be impacted. Final assessments of eligibility and effect will be carried out in accordance with an amended 2011 PA. For purposes of this analysis, the Navy assumes that these sites would be impacted and would require mitigation, potentially in the form of data recovery. Additional archaeological sites located within the new 115 dB contour are not expected to be impacted.

When possible, targets and convoys would be placed away from eligible or unevaluated sites. If sites cannot be avoided, the Navy would consult with the State Historic Preservation Officer (SHPO) in accordance with an amended 2011 PA and 36 CFR 800.6 for resolution of adverse effects. Therefore, the Navy anticipates that impacts would be reduced to a level less than significant as a result of training activities under Alternative 3.

Demolition or alteration of architectural resources, would not occur under the Proposed Action. Protective measures for National Register of Historic Places-eligible cultural resources located in existing ground-based training areas have been previously implemented in accordance with the PA and the Integrated Cultural Resources Management Plan (ICRMP) (U.S. Department of the Navy, 2013a), and would continue to be implemented under Alternatives 1, 2, or 3.

The Navy has consulted with Indian Tribes and identified potential traditional cultural properties as discussed in Section 3.11 (Cultural Resources). The Navy will continue to engage with all interested Tribes to identify traditional cultural properties in the expanded range areas for B-16, B-17, B-20, and the DVTA to assess potential impacts from noise and physical disturbance to such resources, and develop mitigations as appropriate. This engagement will continue past the Record of Decision, as the modernization would be implemented over the coming years. The Navy will avoid and/or minimize impacts on cultural resources wherever possible and follow Section 106 requirements. The Navy is committed to providing access to Tribes to the closed ranges and pushing for funding to conduct surveys in range “buffer” areas. The Navy will work with the tribes to prioritize survey areas. The Navy is working with the Nevada SHPO and Advisory Council on Historic Preservation to amend the current 2011 PA they are under for withdrawn lands. The Navy would complete Section 106 consultation on impacts due to loss of access for Tribes prior to the fencing of the newly withdrawn and acquired lands after any ultimate Congressional decision.

Copies of Section 106 correspondence are provided in Appendix B (Agency Correspondence). In addition, the BLM will review the Section 106 finding as a cooperating agency to this EIS (Appendix B, Agency Correspondence). None of the alternatives would have a significant impact on known cultural resources. The Navy anticipates that impacts related to training activities, construction and aircraft overflights would be less than significant because: (1) proposed target and maneuver areas, to include munitions and aircraft noise, would be placed to avoid known cultural resources when mission and safety requirements allow. If they cannot be avoided, the Navy would consult with the Advisory Council on Historic Preservation, SHPO, Indian tribes, and interested parties in accordance with an amended 2011 PA and 36 CFR Section 800.6 to resolve adverse effects; (2) NAS Fallon has procedures and protocols in place for the identification, evaluation, and protection of cultural resources that may be impacted by training; (3) before training activities would be authorized in requested withdrawal or proposed acquisition areas, and all training locations would be reviewed in accordance with an amended 2011 PA to ensure adverse effects to historic properties are avoided, minimized, or mitigated, as appropriate; and (4) impacts to unidentified cultural resources would be unlikely to occur. Under the

alternatives, access to cultural resources within the FRTC would be managed and not eliminated. Given the proposed access Memorandum of Understanding (MOU) has not been finalized and the high degree of concern with respect to potential loss of access documented in comments received from Indian tribes, the Navy concludes limiting tribal access to cultural resources may result in significant impacts.

Construction of regional energy and mineral extraction projects have the potential to impact visual landscapes with any development in the area; if any such landscapes happened to be part of a cultural district, the impacts could be significant. However, a majority of the time these projects have minimal impacts on cultural resources because they generally require SHPO consultation and operator stipulations for the avoidance and minimization of cultural resource impacts. The Salt Wells Energy project was considered to result in indirect effects on the visual landscape and setting of the Newlands Project resources. However, treatment measures outlined in the PA for the Salt Wells Energy Projects were expected to mitigate adverse effects on these resources. As this project is not near the region of influence and has mitigation measures in place, it is not expected to add any significant cumulative impact on cultural resources.

The update and implementation of regional conservation plans, such as the BLM Carson City Consolidated Resource Management Plan, contribute to the minimization of cumulative effects. The plan update underwent separate review under the NEPA (Draft EIS released November 2014) and the NHPA. These reviews and NEPA review for other proposed projects in the area ensure that significant effects on cultural resources associated with those actions are avoided, minimized, or compensated, to the extent practicable.

At the 3 Bars Project and Landscape Restoration Project site in Eureka County, the BLM conducted surveys before vegetation treatments to determine whether there are additional cultural sites in these areas that could be impacted by treatment actions; existing and newly found sites would be mitigated in accordance with the *Programmatic Agreement between the Mount Lewis Field Office of the Bureau of Land Management and the Nevada State Historic Preservation Officer regarding National Historic Preservation Act Compliance for the 3 Bars Ecosystem and Landscape Restoration Project, Eureka County, Nevada* before hazardous fuel treatment could begin.

4.4.11.3 Cumulative Impact Analysis

Procedures are in place for the identification, evaluation, and protection of cultural resources at FRTC as defined in the PA (Naval Air Station Fallon, 2011), and NAS Fallon employs one full-time cultural resource manager who regularly monitors the condition of such resources. Cultural resources would continue to be managed in accordance with current federal law, Navy policy, the PA, and the ICRMP (U.S. Department of the Navy, 2013a) under Alternatives 1, 2, or 3. As discussed in the section above, projects in the region of influence would all involve measures outlined in PAs, minimization as a result of management programs and plans, and other mitigation measures to reduce any impacts on cultural resources. Therefore, the incremental impacts of the Proposed Action are not expected to contribute appreciably to cumulative cultural resource impacts when added to other past, present, and reasonably foreseeable future actions in the region of influence.

The Navy anticipates that, with avoidance of known cultural resources and implementation of the other mitigation measures discussed in Section 3.12 (Cultural Resources), impacts to cultural resources would be lessened to less than significant levels. Access to cultural resources within the FRTC would be managed and not eliminated. Given the proposed access MOU has not been finalized and the high degree of concern with respect to potential loss of access documented in comments received from

Indian tribes, the Navy concludes limiting tribal access to cultural resources may result in significant impacts. As discussed above, all of the other projects in the region of influence that could impact cultural resources would require SHPO consultation and compliance with applicable rules and regulations to avoid cultural resources and/or minimize impacts on eligible cultural resources. Other projects in the region of influence would not cumulatively result in significant impacts on cultural resources in the region of influence. Therefore, when past, present, and reasonably foreseeable future projects are analyzed together with the Proposed Action, it is anticipated that implementation of Alternative 1, 2, or 3 would not result in significant cumulative impacts on cultural resources since most projects are outside of the PIAs, and do not involve shared context.

4.4.12 Recreation

4.4.12.1 Description of Geographic Region of Influence

The region of influence for recreation is limited to the lands requested for withdrawal and non-federal land proposed for acquisition as well as any nearby recreation area that the alternatives could directly or indirectly affect. This includes all areas below existing and proposed FRTC SUA.

4.4.12.2 Relevant Past, Present, and Future Actions

Tables 4-1 to 4-8 list the cumulative actions within the region of influence. The past, present, or reasonably foreseeable actions that have a potential to interact with the action alternatives and cumulatively impact recreation resources within the region of influence include military and nonmilitary construction projects as well as livestock grazing, agriculture, mining, renewable energy development, forestry, wildfire management and rehabilitation, invasive species management, habitat management/conservation, and recreation activities. Past impacts from recreational activities have now become the baselines for analysis of cumulative impacts including: Carson City District Drought Management, Solar Projects (through changes to land use), Lahontan Valley Land Sale, and the Kaiser Mine abandoned mine land (see Table 4-9 through Table 4-16 for more information). Present and reasonably foreseeable projects that have the potential to cumulatively impact recreation in the region of influence include the Bureau of Land Management Resource Management Plan, the Churchill County 2015 Master Plan, Enel Salt Wells Interim Reclamation 11-36, 86-26, & 88-26 (through changes to land use), October 26, 2016 Geothermal Lease Sale – Churchill & Mineral County Parcels, and NTTR Military Land Withdrawal (see Table 4-9 through Table 4-17 for more information).

4.4.12.3 Cumulative Impact Analysis

The analysis in Section 3.12 (Recreation) indicates that Alternative 1 would result in significant impacts on recreation resources, by restricting public access to many areas that are currently used for recreation activities such as off-road vehicles, hunting, fishing, hiking, biking, and camping. Alternative 2 would result in significant impacts on recreation; however, these impacts would be reduced by allowing bighorn sheep hunting within B-17 and popular racing events to continue on the B-16, B-17, B-19, and B-20. Alternative 3 would result in significant impacts on recreation; however, these impacts are reduced by allowing bighorn sheep hunting within B-17 and popular racing events to continue on the B-16, B-17, and B-20. In addition, under Alternative 3 B-17 would be shifted off of the Sand Springs Range and Fairview Peak.

Impacts associated with recreation resources have the tendency to be site-specific and do not usually cause cumulative impacts beyond the site where a recreation activity is no longer allowed to occur. However, under the Alternatives, 1, 2, or 3 other recreation areas within the region could be affected as

the public shifts activities from the lands requested for withdrawal and proposed for acquisition to areas that are still open. This shift under Alternatives 1, 2, or 3 would have significant impacts on recreation resources in the region of influence. It could cause impacts on wildlife and sensitive habitats, as well as on the recreational experience itself due to overcrowding. Off Highway Vehicle use may become more concentrated in other areas, causing a potential increase in habitat degradation. Areas where hunting is not allowed could require increased management to prevent population fluctuations of certain game species. Increased hunting pressure in open areas could also potentially lead to the reduction of game species which could in turn possibly lower the number of hunting tags issued in the future. Therefore, when combined with past, present, and reasonably foreseeable future projects, implementation of the Proposed Action would result in significant cumulative impacts on recreation resources, in excess of the significant impacts the Proposed Action would have on its own. Measures such as allowances of popular race events, and hunting on B-17 would reduce cumulative impacts on recreation, but the overall impacts would still be significant.

The Navy would continue to work with the local counties and municipalities as well as federal property land managers to plan for compatible recreation use, which includes the BLM; USFWS; Bureau of Reclamation; and Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe Counties.

4.4.13 Socioeconomics

4.4.13.1 Description of Geographic Region of Influence

The region of influence under the scope of socioeconomics includes all land underlying FRTC airspace, and land outside of that airspace that receives noise originating from within FRTC airspace.

4.4.13.2 Relevant Past, Present, and Future Actions

The analysis presented in Section 3.13 (Socioeconomics) evaluates potential impacts on the population demographics, employment characteristics, schools, housing occupancy status, economic activity, and county revenue from taxes and Payments In Lieu of Taxes (PILT). The analysis concludes that the requested land withdrawal and proposed land acquisition would impact some socioeconomic resources in Churchill, Lyon, Mineral, Pershing, and northern Nye counties. No significant impacts on the population and demographics, housing, and property values would occur under Alternative 1, Alternative 2, or Alternative 3, although there would be appreciable negative impacts with respect to private land owners whose land is acquired by the U.S. Navy due to the proposed expansions (notwithstanding that such owners would be paid just compensation for any such property). Significant impacts on some socioeconomic resources would occur under Alternative 1 due to lost AUMs, potential lost mining and geothermal opportunities, lost recreational opportunities, lost sales, and the lost use of tax revenue, wildlife application fees, and funding sources (i.e., wildlife funding match from the federal government of three federal dollars to one state dollar). Managed access would occur under Alternative 2 and Alternative 3, which would likely reduce potential impacts on some socioeconomic resources (e.g., recreational activities) compared with Alternative 1.

No substantial increase in the number of military or civilian personnel at NAS Fallon is anticipated as a result of expanding the Bravo ranges and the DVTA. The population at NAS Fallon has seen small, incremental increases since the 1990s. The driver for most increases in personnel has been the addition of training requirements expanding the FRTC mission and changes stemming from regionalization. Future increases in the number of permanent military and civilian personnel are expected to be similar and associated mainly with changes in mission related requirements, consistent with historical trends. Present actions impacting the local and regional population include the powdered milk processing plant,

located in the City of Fallon, which created 44 full-time jobs and hundreds of indirect jobs (Capital Press, 2012). The regional dairy herd increased to meet demands, and the economic impact of that alone was approximately \$25 million. Churchill, Washoe, Lyon, and Pershing counties all benefit economically from the plant. The Proposed Action would not impact operations at the processing plant. A few full-time jobs would be created as part of the Proposed Action.

Some present and reasonably foreseeable actions would contribute to potential impacts on livestock operations. For example, the Carson City District Drought Management Plan will enact temporary changes in livestock seasonal use, reductions in livestock AUMs or livestock grazing duration, and targeted grazing in order to reduce the impacts of drought on natural resources. Additional impacts resulting from the Proposed Action on the availability of grazing lands would contribute to limits on grazing and/or reductions in the amount of AUMs permitted on certain federal allotments.

A small number of mining claims owned by individuals or small companies (e.g., LLCs) would no longer be viable, because the claims are located on lands that would be withdrawn from public access, and mining operations would no longer be permitted in those areas. As discussed in detail in Section 3.3 (Mining and Mineral Resources), the vast majority of small mining claims are inactive. Accordingly, implementation of the Proposed Action would not have significant impacts on smaller mining claims. However, there would be potential impacts on geothermal businesses in the form of potential lost opportunities due to losing access to potentially viable claims and untapped geothermal resources in Churchill, Lyon, Mineral, Pershing, and northern Nye counties. Significant impacts on the mining and geothermal industries in the geographical areas would be likely to occur.

The analysis in Section 3.12 (Recreation) concludes that implementation of the Proposed Action would have significant impacts on some recreational activities. Managed access for some recreational activities would occur under Alternative 2 and Alternative 3, which would likely reduce potential impacts compared with Alternative 1, however, the potential impacts would likely still be significant. While some businesses in the recreation and tourism sectors may be impacted due to a decrease in access to popular recreational areas, popular activities such as hunting are likely to continue to occur in other areas, and no significant impacts on the recreation and tourism industry as a whole in Churchill, Lyon, Mineral, Pershing, and northern Nye counties would occur with implementation of the Proposed Action.

The vast majority of residential and commercial properties in the City of Fallon and Churchill County would not be expected to be impacted in terms of value. Any slight increase in personnel at NAS Fallon would likely result in only slight increases in demand for residential properties and an associated increase in property values. Therefore, while the United States does propose to acquire certain privately-owned or other non-federal property, and while the market value of some privately-owned ranch properties could be negatively impacted to some extent as a result of the requested land withdrawals, no significant impacts on property values in Churchill, Lyon, Mineral, Pershing, and northern Nye counties would occur with implementation of the Proposed Action.

Changes in PILT and revenue for taxes would vary between counties. Notwithstanding the extent of the requested additional withdrawals of public lands in Churchill County, the County would see no change in PILT payments due to payment methodology. Therefore, 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 significant reduction in wildlife application fees and funding sources for the Nevada Department of Wildlife under Alternative 1. Managed access for some activities would occur under

Alternatives 2 and 3 would likely reduce potential impacts associated with wildlife application fees compared with Alternative 1.

Tax revenue from the few impacted private properties that would be acquired as part of the land withdrawal is not expected to be a substantial portion of any county budget. Therefore, no significant impacts on county revenue from private property taxes for Churchill, Lyon, Mineral, Pershing, and northern Nye counties would occur with implementation of the Proposed Action. Funding for schools based on changes in county revenue due to implementing the Proposed Action would not be expected to be significantly impacted.

Other past, present, and future actions potentially contributing to cumulative impacts on socioeconomic resources in the project are presented in Table 4-1 through Table 4-8. The Conservation Easement Program (transfer of development rights) “provides a voluntary, incentive-based process for permanently preserving rural resources which provide significant community benefit such as agriculture, open spaces, aquifer recharge for current and future water supply (water recharge area), and a military installation buffer area” (Churchill County Code 16.14.010). This program would add to the cumulative socioeconomic impacts on Churchill County, along with the Churchill County 2015 Master Plan, which addresses goals and limitations on community design, economic development, housing, land use, population projections, recreation, utility corridors, and transportation. The Master Plan affects many of the socioeconomic resources analyzed in this EIS, such as socioeconomic resources, land use, mining and mineral resources, recreation, and livestock grazing. Any restrictions on the location or types of housing development projects, for example, stemming from the Master Plan may affect property values in the county. While the Master Plan supports economic development in Churchill County, impacts on property values could affect the fair market value of privately-owned property in the withdrawal areas. The twelve economic development goals outlined in the Master Plan include the development of a strategic business plan to support 50,000 people; development of adequate infrastructure for commercial growth; identification of key factors/incentives for establishment of new or expanded agriculture based businesses; planning so that new businesses do not adversely affect existing agricultural enterprises; encouragement of renewable energy opportunities; protection of operations at NAS Fallon; promotion of agritourism; promotion of athletic tourism; promotion of synergy and cross-promotion between tourism and local businesses and restaurants; focus on food tourism (e.g., wine/distillery and local specialty crops); development and continuation of improvements to regional park facilities and fairgrounds; and development or facilitation of meeting room venues. Implementation of these goals would positively impact socioeconomic resources in Churchill County.

Leasing of public lands for energy development projects (e.g., geothermal, oil and gas, wind energy) listed in Table 4-1 through Table 4-9 could lead to an increase in jobs and increased economic activity, but at the same time would have the potential to limit land use for other activities associated with socioeconomic resources such as recreation, grazing, and tourism. No significant impacts on these resources would be anticipated from the Proposed Action; however, minor impacts associated with the Proposed Action would add cumulatively to similar socioeconomic impacts associated with the use of public lands in the region for energy development projects.

4.4.13.3 Cumulative Impact Analysis

Based on the analysis presented in Section 3.13 (Socioeconomics) the contribution of Alternatives 1, 2, or 3 to cumulative impacts would be low. Implementation of any of the action alternatives would have no significant impacts on population and demographics, housing, property values, agriculture, or recreation and tourism revenues; would result in significant impacts on geothermal and mining

opportunities; and would have no significant impacts on PILT or lost sales and tax revenues; but would impact funding sources for the Nevada Department of Wildlife.

Potential Impacts on Population and Demographics

The withdrawal and acquisition of additional acreage to expand the individual training ranges within the FRTC 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, and growth associated with NAS Fallon is expected to continue at an incremental rate as it has historically. Increases in the population associated with other activities (e.g., geothermal development projects) are unlikely to contribute substantially to the local or regional population. Current and reasonably foreseeable construction projects would be expected to utilize the local and regional labor force, which would not substantially affect the population. Geothermal development projects listed in Table 4-1 and Table 4-2 are in preliminary, exploratory stages and would not require a large contingent of new employees moving into the area to initiate the project. The availability of existing housing would likely accommodate any slight-to-moderate increase in the population. Therefore, no significant impacts on the population, demographics, or housing in Churchill, Lyon, Mineral, Pershing, and northern Nye counties would occur.

Potential Impacts on Businesses and Industry

Employment in the agricultural, mining and geothermal, and recreation and tourism industries could potentially experience a decrease in revenue due to the land withdrawal; however, the overall unemployment rates in the city of Fallon, Churchill County, and the surrounding counties would not be significantly impacted due to the Proposed Action. Accordingly, no significant impacts on the employment in general in Churchill, Lyon, Mineral, Pershing counties as well as northern Nye County would be expected with implementation of the Proposed Action. Therefore, no significant impacts on the population or demographics in Churchill, Lyon, Mineral, Pershing, and northern Nye counties would occur due to implementation of the Proposed Action. Actions such as the opening or closing of mines, geothermal facilities, or other industries could impact the population or demographics in the region of influence.

Potential Impacts on County Revenue and Payments In Lieu of Taxes

As a result of the NTTR project, it is expected that Nye County would experience fiscal impacts due to the extensive amount of proposed land to be withdrawn. This would include the direct loss of PILT on all withdrawn acreage, real estate taxes, revenue from acres of active grazing leases, share of assessment revenue from invalidated or purchased unpatented mining claims, approved geothermal parcels, and potential future economic opportunities as a result of impacts from the NTTR project. The requested land withdrawal for the NTTR project would also include the indirect loss of all potential royalties from future development of any approved geothermal parcels as well as future mineral proceeds and potential royalty revenue. These fiscal impacts are not significant in a regional economic context, but are significant when combined as they directly affect Nye County's funding balance. This balance provides critical services to Nye County, such as emergency response services that benefit residents and visitors. The NTTR project (see Table 4-15) could potentially impact PILT and revenue from acres of active grazing leases (U.S. Air Force, 2017). Therefore, Nye County would experience a significant impact on their economic resources due to the cumulative nature of NTTR and the Proposed Action. The contribution of the FRTC Modernization project to potential PILT impacts would be dictated by the formula used to calculate PILT, which (if project was realized in 2018) would result in no change in PILT for Churchill,

Mineral, Nye, and Pershing County, and very little changes in PILT for Lyon County (0.48 percent). As stated by Nye County representatives, any change to the County's budget would make a locally significant impact on their overall budget. If PILT Formula B is used during the year the FRTC Modernization project is realized, Nye County's PILT payments would be further reduced in conjunction with the NTTR project.

Recreation

Under Alternative 3 (Preferred Alternative) 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. Other projects in the region of influence that may improve habitat would be beneficial for recreation opportunities in the region of influence.

The hunting-related economic losses as a result of the Proposed Action 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>). 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 (Preferred Alternative).

Summary

Future development, consisting of the specific projects listed in Section 4.3 (Past, Present, and Reasonably Foreseeable Actions), and anticipated regional growth, increases in geothermal energy development, mineral extraction, and the establishment of the powdered milk processing facility would continue to increase economic benefits, especially where the projects use local resources. Construction related to new development would result in short-term, temporary increases in the use of the local workforce. Future limitations on land use to support military, energy development, and recreational activities has the potential to impact socioeconomic resources by increasing pressures on businesses and other interests that rely on public access to potentially impacted lands. While the Proposed Action could potentially impact mining, geothermal, and grazing opportunities and may produce small economic losses in these sectors viewed in isolation, significant cumulative impacts on socioeconomic resources in the region of influence as a result of the incremental addition of the Proposed Action, would not occur.

4.4.14 Public Health and Safety and Protection of Children

4.4.14.1 Description of Geographic Region of Influence

The region of influence for public health and safety and protection of children includes all land under FRTC airspace. This includes Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe Counties.

4.4.14.2 Relevant Past, Present, and Future Actions

The analysis in Section 3.14 (Public Health and Safety and Protection of Children) indicates that the impacts of Alternatives 1, 2, and 3 on public health and safety would be negligible. Routine training activities conducted within the FRTC pose little risk to public health or safety outside of the training areas. Activities using live ammunition do not project hazardous effects beyond the boundaries of the ranges. Safety zones are established, such as Weapons Danger Zones and Surface Danger Zones, and

designed specifically to control these hazardous effects. Flight activities would be conducted in accordance with regulations for the use of aircraft targets, restricted airspace, military operations areas, air traffic control assigned airspace, and supersonic operating areas scheduled by NAS Fallon as well as through the continued issuance of Notice to Airmen. During flights, pilots avoid areas where obstructions to air navigation have been identified. Given the use of military training routes, vigilance by military pilots to avoid any obstructions or other planes, and the avoidance of flights over public areas, aircraft activities would have no significant impacts on public safety. Notices to Airmen advise all pilots of various flight activities or facility conditions for flight planning purposes. Within the FRTC Military Operating Area, the military assumes responsibility for separation of aircraft, and range clearance verification would minimize the potential for adverse interactions between the Navy and the public. Licensed and military pilots are responsible for the safe conduct of flight. Flights from Nellis Air Force Base could increase the area subject to aircraft operations (including accidents, mid-air collisions, BASH) and increase aircraft-delivered ordnance in the region of influence; however, this project includes exclusive military use of the relevant project areas, and airspace management procedures—as well as flight safety measures that are applicable to both Air Force and civilian aviation—would be in effect. No significant impact is anticipated as sufficient management and flight safety measure would be in place.

All air-to-ground training at the FRTC occurs on the four air-to-ground ranges (B-16, B-17, B-19, and B-20). These areas are currently fenced with signage and would continue to be fenced with signage under the Proposed Action. The Navy would expand their fence line patrol and maintenance procedures to include fences that are on withdrawn lands. The Navy proposes to establish two Conservation Law Enforcement Officers at NAS Fallon. Part of the duties of these officers would include patrolling of the added fence line for trespass issues and reporting to the Navy any broken or downed fences for maintenance repair. Training is monitored by camera or observation aircraft. The Navy-managed land in the DVTA and at the Shoal Site is not fenced or signed. These lands are considered open for public use as well as available for Navy training. These types of training activities do not use live ammunition and do not pose a threat to the public, nor would they do so under the Proposed Action. This open area will continue not to pose a threat to the public. New electronic warfare sites would be fenced with signage to protect public health and safety in the DVTA as well as the government systems. BLM guidance and Navy standard operating procedures ensure no impacts on the other users of the public lands.

Public activities within the lands requested for withdrawal and proposed for acquisition where the public retains access would be compatible with military activities. Coordination and collaboration would be necessary to allow other activities to be performed and proposed by surrounding commercial, industrial, and recreational interests in areas that are not open to public access. Risks are often inherent in some recreational activities. However, recreational activities are often performed at personal risk. Grazing, agriculture, woodland product harvest activities, mining, and recreation beyond the boundaries of the Proposed Action areas are associated with public health and safety risks, including risks of injury from livestock, installing and maintaining improvements, digging for minerals, applying pesticides on cropland, using saws and other hand tools to harvest woodland products, exposure to poisonous vegetation or vegetation with thorns, exposure to harmful snakes and other wildlife, or accidents from recreational activities such as off-highway vehicle use. Projects associated with utilities construction and distribution systems include road development, powerlines, communication sites, wind generation facilities, railroads, and related projects. Construction projects, whether they be for mining or for other purposes, would be expected to have a cumulative impact on hazardous material use and the generation of solid and hazardous wastes. Construction activities typically generate solid waste that may be separated to construction and demolition landfills. However, sufficient capacity is in place to

accommodate solid waste. All of these projects have associated occupational and public health and safety risks during the construction phase, and some may have associated risks during the operational phase. Industry standard operating procedures and other procedures would be implemented to minimize health and safety risks in accordance with Occupational Safety and Health Administration regulations. Numerous health and safety risks are associated with resource extraction activities.

For the 3 Bars Ecosystem and Landscape Restoration Project and other conservation vegetation control projects that are similar in nature, human health concerns are associated with herbicide exposure scenarios, including public exposure by direct spray, dermal contact with foliage, swimming, and ingestion; and some occupational exposures that predominantly involve contact with accidental releases of herbicides. Herbicides that may be used by the BLM generally have negligible or minor risks to workers and the public. In all cases, human health risks can be avoided by following standard operating procedures, including application of herbicides with appropriate protective equipment, prevention of spills and other accidental releases, and prevention of public access to sprayed areas for the appropriate time interval.

Alternative energy project developers would be expected to coordinate with the Navy in meeting the requirements and height restrictions for accident potential zone areas, thus reducing airspace safety concerns. Geothermal projects would not add cumulative impacts on public health and safety.

Members of the public living or working within Churchill, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe Counties may live near other projects, may visit or drive through areas where other projects are occurring, or may be hired to implement other projects that have been identified. Therefore, the public, which may be exposed to FRTC training activities, may face public health and safety risks associated with other past, present, and reasonably foreseeable actions, resulting in cumulative public health and safety risks. However, the incremental impacts of the Proposed Action do not represent an appreciable contribution to cumulative public health and safety risks when added to other past, present, and reasonably foreseeable future actions. Since children are included in the overall population evaluated for public health and safety risks, and none of the components from the Proposed Action would disproportionately impact children, the Navy has determined that no environmental health or safety risks would disproportionately affect children.

Although no cumulatively significant impacts would be expected to impact public health and safety and the protection of children, the various projects that have the potential to affect the following categories are listed below. A thorough description of these projects and the resources they may influence are located in Table 4-9 through 4-17.

Emergency Services

Emergency services are present within the region of influence, and related projects listed below may have the potential to cumulatively impact public health and safety. These projects include the following: State Route 839 Notional Relocation Corridor; State Route 361 Notional Relocation Corridor; Paiute Pipeline Relocation; 2020 Transportation Plan; U.S. Route 50 E of Alpine Road to the CH/LA County Line Mill; U.S. Route 50 Downtown Fallon Mill and Fill; State Route 361 Bridge Replacement B-425; U.S.A. Parkway Right-of-way Project; U.S. Route 50 Roy's Road to Silver Springs Widening; Yerington Water Tank, Utility Line, and Road Right-of-way Project; Project I-11; Interstate-80 at Fairview Ditch Bridge Replacement; and G-29 Bridge. These projects have the potential to negatively impact emergency services for only a short amount of time during construction. Overall, these projects may benefit

emergency services by improving road and bridge quality, which in turn may also reduce the potential for roadway accidents.

Fire Risk and Wildfire Management and Rehabilitation

Fire risk and wildfire management practices are present within the region of influence, and related projects listed below may have the potential to cumulatively impact public health and safety. These projects include the following: Humboldt-Toiyabe National Forest Management; Carson City District Office Consolidated Resource Management Plan; Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment; The 3 Bars Ecosystem and Landscape Restoration Project; and Pine Nut Land Health Project.

Aircraft-Related Accidents

Aircraft-related accidents could potentially occur within the region of influence, and related projects listed below may have the potential to cumulatively impact public health and safety. These projects include the following: Airfield Operations at Fallon; NTTR Military Land Withdrawal; USMC Walker MOA; NAS Fallon: Joint Land Use Study; Silver Springs Airport unmanned aerial vehicle and unmanned aerial system Park Permit; and Tonopah Test Range.

Unexploded Ordnance

Unexploded ordnance is present within the region of influence, and related projects listed below may have the potential to cumulatively impact public health and safety. These projects include the following: NTTR Military Land Withdrawal; USMC Walker MOA; NAS Fallon: Joint Land Use Study; Central Nevada Test Range; and Tonopah Test Range. The southern boundary of B-19 shares a 9-mile border with the 339,181-acre Walker River Paiute Indian Reservation. The Walker River Paiute Tribe is a federally recognized Indian Tribe of Northern Paiute. As a result of historical training practices (prior to 1989), a portion of the Reservation adjacent to B-19 was accidentally impacted with off-range ordnance. An effort to locate and clear historic ordnance was conducted, and the Navy implemented measures that seek to eliminate (or at least dramatically reduce) the possibility of off-range ordnance near the southern boundary of training range B-19. In 1989, the Navy changed run-in lines, began using safety observation aircraft during live fire events, and provided additional briefings to aircrews regarding sensitive areas surrounding the ranges. An MOU between NAS Fallon and the Walker River Paiute Tribe establishing protocols for both the Indian Tribe and the Navy to follow in responding to potential future off-range ordnance incidents (e.g., notification and coordinating access to reservation lands) was signed on May 14, 2007. A Memorandum of Agreement between the Indian Tribe and Navy was signed on May 24, 2017, updating and clarifying procedures for addressing any future off-range ordnance incidents on the Reservation. The Navy is actively working with the Indian Tribe to seek a mutually agreeable resolution for the issue of historical off-range ordnance present on the Reservation.

Electromagnetic Energy Safety

Electromagnetic energy-related activities are present within the region of influence, and related projects listed below may have the potential to cumulatively impact public health and safety. These projects include the following: NTTR Military Land Withdrawal; Electronic Warfare/Communication Site Improvements; USMC Walker MOA; Fairview Peak Communications Site; Cotton Peak Communications Improvement; Nevada National Security Site; and Tonopah Test Range.

Lasers

Lasers are present within the region of influence, and related projects listed below may have the potential to cumulatively impact public health and safety. These projects include the following: NTTR Military Land Withdrawal; USMC Walker MOA; NAS Fallon: Joint Land Use Study; Nevada National Security Site; and Tonopah Test Range.

Abandoned Mine Lands

Abandoned mine lands are present within the region of influence, and related projects listed below may have the potential to cumulatively impact public health and safety. These projects include the following: West Gate abandoned mine land Closure; Tonkin Springs Mine; Kaiser Mine abandoned mine land; and Coeur Rochester Plan of Operations Amendment 1. Abandoned mine closure projects would have beneficial cumulative impacts on public health and safety, as physical closure of mines would further limit the potential of unauthorized access by the public.

Hazardous Waste

Hazardous waste is present within the region of influence, and related projects listed below may have the potential to cumulatively impact public health and safety. These projects include the following: Tungsten Mountain Geothermal Development Project; Rawhide Mine: Northwest Heap Leach Pad Extension; Ormat well projects; Hiskett & Sons: Flat Top Pit and Russell Pass Pit; Nevada Iron Mine Rail Project; Buena Vista Mine; Barrick Cortez Mining: Deep South; Gold Bar Mine Project; Barrick Goldrush; Mt. Hope Project; Gullsil Prospect Mountain Project; Prophecy Gibellini Project; GRP Pan Gold Project; Cove Helen Underground Mine Project; Greater Phoenix Project; Ann Mason Project; Ormat Wild Rose Geothermal Project; Geothermal Sundry; Yucca Mountain Project; and Dixie Meadows Geothermal Utilization Development Project.

Contaminated Site Management

Management of contaminated sites is ongoing within the region of influence, and related projects listed below may have the potential to cumulatively impact public health and safety. These projects include the following: Tungsten Mountain Geothermal Development Project; Rawhide Mine: Northwest Heap Leach Pad Extension; Ormat well projects; Hiskett & Sons: Flat Top Pit and Russell Pass Pit; Nevada Iron Mine Rail Project; Buena Vista Mine; Barrick Cortez Mining: Deep South; Gold Bar Mine Project; Barrick Goldrush; Mt. Hope Project; Gullsil Prospect Mountain Project; Prophecy Gibellini Project; GRP Pan Gold Project; Cove Helen Underground Mine Project; Greater Phoenix Project; Ann Mason Project; Ormat Wild Rose Geothermal Project; Geothermal Sundry; Yucca Mountain Project; Precious Metals Recovery, LLC Dry Hills Facility (Barrick Mercury Repository); Dixie Meadows Geothermal Utilization Development Project; and Relief Canyon Expansion.

Range Sustainability Environmental Program Assessment

Range Sustainability Environmental Program Assessment is ongoing within the region of influence, and related projects listed below may have the potential to cumulatively impact public health and safety. These projects include the following: NTTR Military Land Withdrawal; USMC Walker MOA; NAS Fallon: Joint Land Use Study; Nevada National Security Site; and Tonopah Test Range.

Protection of Children

There are no projects which have the potential to cumulatively impact the protection of children listed in Tables 4.1–4.8, so the protection of children will not be discussed further.

4.4.14.3 Cumulative Impact Analysis

The Proposed Action may contribute incrementally to the overall public health and safety risks in Churchill, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe Counties, but the contribution would not be appreciable. The various safety and mitigation measures put in place for the Proposed Action (see Section 3.14, Public Health and Safety and Protection of Children) are sufficiently protective of the public, and if implemented, the Proposed Action would have no meaningful potential to contribute to public health and safety risk. Therefore, when past, present, and reasonably foreseeable future projects are analyzed together with the Proposed Action, implementation of Alternative 1, 2, or 3 would not result in significant cumulative impacts on public health and safety. Because children are included in the overall population evaluated for public health and safety risks, and none of the components of the Proposed Action would disproportionately impact children, the Navy has determined that no environmental health or safety risks would disproportionately affect children.

4.4.15 Environmental Justice

4.4.15.1 Description of Geographic Region of Influence

The region of influence for environmental justice is any minority or low-income population that could be exposed to a disproportionately high and adverse human health or environmental effect as a result of implementing an action. This includes census block groups that overlap or are adjacent to existing FRTC Bravo ranges and training areas (also known as fenceline communities) and any other community that would experience DNL noise of 65 dBA or above as a result of FRTC training activities. Therefore, the region of influence for environmental justice cumulative impacts includes those census block groups in Lyon County, Mineral County, Nye County, and Pershing County that have a potential environmental justice community and are adjacent to the FRTC land assets or either fully or partially fall beneath the modeled noise contours. Minority and low-income populations do not meet the thresholds for further analysis in either Churchill County or in Lander County.

4.4.15.2 Relevant Past, Present, and Future Actions

Tables 4-1 to 4-8 list the reasonably foreseeable cumulative actions for the FRTC. The past, present, or reasonably foreseeable actions that have a potential to interact with the action alternatives, and thus cumulatively impact environmental justice populations, would be limited to those activities that occur within or near potential environmental justice communities. Environmental justice communities within the region of influence are identified in Table 3.15-2. This table also provides the current population growth rate of these communities. Most of the actions identified in Tables 4-1 to 4-8 would not disproportionately affect environmental justice communities.

4.4.15.3 Cumulative Impact Analysis

Under all alternatives/scenarios, there are minority and low-income populations living within the environmental justice region of influence. The Navy has concluded that although there are environmental justice communities within this area and that there would be significant impacts on a number of resource areas within the affected area, these impacts would not disproportionately impact environmental justice communities.

The Navy has determined there would be no disproportionately high or adverse impacts on environmental justice communities under the action alternatives. However, when past, present, and reasonably foreseeable future projects are analyzed together with the Proposed Action and all action alternatives, there is the potential for cumulative impacts. Operational noise is the primary impact on

environmental justice communities from the three action alternatives. Other projects may impact environmental justice communities through impacts on air quality, hazardous materials and wastes, and other disproportionate impacts. The Proposed Action, however, does not disproportionately impact any populations as a result of impacts on these resources, and other projects in the region of influence would not impact these communities disproportionately either. Noise in excess of 65 dBA DNL would largely be contained within the boundaries of the FRTC land assets and aircraft noise is anticipated to be commensurate with baseline conditions. While the Proposed Action would have significant impacts on the acoustic environment, it would not have significant impacts on environmental justice populations, and it would not have the meaningful potential to combine with other actions such that there could be cumulatively significant noise-related or other environmental justice impacts because there are no cumulative projects that would both (1) overlap in space and time with the noise impacts of the Proposed Action and (2) present noise impacts at a level that would potentially combine with the Proposed Action to be cumulatively significant.

The Navy has embarked on a robust community outreach program as part of the NEPA process. As detailed in Section 1.9 (Public and Agency Participation and Intergovernmental Coordination), the Navy has held public scoping meetings as well as public meetings for commenting on the Draft EIS and kept residents informed throughout the process with mailings (both letters and postcards), newspaper advertisements, press releases, a project website, and digital advertisements. Project documents have been made available at local public libraries as well as online at the project's website. Public outreach efforts continued throughout the public comment period to ensure that impacted environmental justice populations were kept informed and involved in the decision-making process.

4.5 Summary of Cumulative Impacts

The analyses presented in this chapter and the individual resource sections indicate that the incremental contribution of Alternative 1, Alternative 2, or Alternative 3 to cumulative impacts on geological resources, airspace, air quality, biological resources, cultural resources, public health and safety, and environmental justice would not have the potential to contribute meaningfully to any potential significant cumulative impact with respect to these resource areas. The incremental contribution of Alternative 1, Alternative 2, or Alternative 3 to cumulative impacts on socioeconomic resources would be appreciable due to the potential loss of revenue in some of the Counties within the region of influence when viewed in isolation, but would not be significant except with respect to potential economic impacts on mining and mineral resources and except insofar as Nye County would experience a significant impact on their economic resources due to the cumulative nature of the NTTR Proposed Action and therefore, the Navy's Proposed Action. The incremental contribution of Alternative 1, Alternative 2, or Alternative 3, viewed in conjunction with other projects in the area, would result in cumulatively significant impacts with respect to the following resource areas: land use, mineral resources and mining (including as an aspect of Socioeconomics), grazing, transportation, water resources, noise, and recreation. The locations of any projects or actions that are cumulatively applicable to the state of Nevada, the FRTC, or the Proposed Action are shown in Figure 4-1, Figure 4-2, and Figure 4-3.

Table 4-9: Other Actions Near or Cumulatively Applicable to Naval Air Station Fallon and the Fallon Range Training Complex

Action		Summary of Action	Applicable Resource(s)
Past			
<i>Planning</i>			
Past – NAS Fallon & FRTC	Carson City District Drought Management	The BLM Carson City District prepared an EA to address potential environmental consequences associated with management actions carried out during drought (Bureau of Land Management, 2013a). The Carson City District manages approximately 4.8 million acres (194,249 km ²) of public land within Washoe, Carson City, Storey, Lyon, Douglas, Mineral, Churchill, and Nye Counties in Nevada, and Plumas, Lassen, and Alpine Counties in California. The effects of drought often impact the environment and economy of an area. Specific impacts depend on drought severity but may include increased number and severity of fires; lack of forage and drinking water; decreased vigor and production of plants; damage to plant species; increased wind and water erosion of soils; reduction and degradation of fish and wildlife habitat; and increased loss of wildlife, wild horses and burros, and livestock. Implementation of the BLM drought management program is expected to reduce drought-related issues by allowing rapid response during drought conditions.	Geological Resources Land Use Livestock Grazing Water Resources Biological Resources Socioeconomics Public Health/Safety
	Humboldt-Toiyabe National Forest Management	The USFS Austin and Tonopah Ranger Districts manage the 1.2 million acres (48,562.28 km ²) of the Humboldt-Toiyabe National Forest that underlie the FRTC airspace for development of mineral resources, dispersed recreation, and intensive wildlife uses. Designated wilderness areas, I Arc Dome Wilderness Area and portions of the Alta-Toquima and Table Mountain Wilderness Areas, are within the FRTC. As of May 2009, work on the Forest Plan revision for Humboldt-Toiyabe National Forest was suspended to focus on other forest priorities (U.S. Department of the Navy, 2015).	Geological Resources Land Use Airspace Water Resources Biological Resources Recreation
	Carson City District Office Consolidated Resource Management Plan	Published in 2001, the Carson City District Office Consolidated Resource Management Plan outlined livestock allotment, wildlife habitat, wild horse herd area, and wilderness management objectives. It combines what was previously written as nine major planning documents from eight planning units of Nevada and California into this one plan. To ensure cohesive language and clear messages, this RMP is currently being rewritten, and a draft form has been released (Bureau of Land Management, 2001).	Geological Resources Land Use Mining Resources Livestock Grazing Air Quality Water Resources Biological Resources Cultural Resources Recreation Socioeconomics

Table 4-9: Other Actions Near or Cumulatively Applicable to Naval Air Station Fallon and the Fallon Range Training Complex (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Construction</i>			
Past – NAS Fallon & FRTC	Milk Processing Plant in Fallon, Nevada	In 2014, the Dairy Farmers of America completed construction of a 90,000-square-foot (776.2 m ²) milk processing plant in Fallon, Nevada’s New River Industrial Park. The powdered milk processing plant boosted the local economy through creation of 44 full-time jobs and hundreds of indirect jobs (Capital Press, 2012). The regional dairy herd increased, resulting in an economic impact of approximately \$25 million in Churchill, Washoe, Lyon, and Pershing counties.	Land Use Livestock Grazing Water Resources Socioeconomics
Past – NAS Fallon & FRTC	Airfield Operations at NAS Fallon	<p>In 2013, the Navy updated the existing and future airfield operations at NAS Fallon in the 2013 FRTC EIS (U.S. Department of the Navy, 2013b). Under the 2013 Proposed Action, the Navy maintained current/baseline airfield operations, conducted airfield operations with new types of aircraft, and increased airfield operations to support future potential training conditions. The Navy began transitioning aging aircraft to newer aircraft in 2015, with the transition to be complete by 2028. Facility development required to support aircraft missions at NAS Fallon included space for aircraft maintenance, crew and equipment, administration, training, and an unmanned aircraft system runway and staging area.</p> <p>The impacts associated with NAS Fallon airfield operations and facility developments included:</p> <ul style="list-style-type: none"> • Changes in noise zones (slightly smaller noise zones northeast of NAS Fallon and slightly larger noise zones southwest of NAS Fallon). • Temporary and localized increases in aircraft operations and construction emissions, but not in excess of the 250 tons per year comparative threshold. • Slightly positive economic impacts on the Churchill County economy through increased population, payroll, and housing demand. • Temporary construction-related increases in traffic volumes on area roadways and long-term minor increases in traffic volumes. • Adverse effect on one archeological site within the new hangar’s parking apron to be addressed through a memorandum of agreement to minimize and mitigate the impact. • Noise zone decrease in the area of the Fallon Paiute-Shoshone Reservation. • Temporary wildlife disturbance during construction phase and during increased airfield operations. • Common loss of AUMs during construction and demolition activities and introduction of additional impervious surface (offset by management practices [MPs]). • Potential increases in erosion, runoff, and sedimentation associated with new impervious surfaces. 	Geological Resources Transportation Livestock Grazing Airspace Noise Air Quality Biological Resources Cultural Resources Socioeconomics

Table 4-9: Other Actions Near or Cumulatively Applicable to Naval Air Station Fallon and the Fallon Range Training Complex (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Conservation</i>			
Past – NAS Fallon & FRTC	Implementation of Integrated Natural Resources Management Plan (INRMP)	The most recent update to the INRMP for NAS Fallon was completed in July 2014 (U.S. Department of the Navy, 2014). The plan fulfills the requirements for the INRMP in accordance with the Sikes Act (16 U.S. Code 670a et seq.), as amended, DoD Instruction 4715.03, and Chief of Naval Operations Instruction 5090.1D. The INRMP was prepared and reviewed in coordination with the USFWS and Nevada Department of Wildlife. The purpose of INRMP is to provide NAS Fallon with a viable framework for on-going and future management of natural resources on lands it owns or controls.	Geological Resources Livestock Grazing Air Quality Water Resources Biological Resources Cultural Resources Recreation
Present & Future – NAS Fallon & FRTC	Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment	Once seen great in numbers across the West, greater sage-grouse have declined in number over the past century due to the loss of sagebrush habitats essential for their survival. The greater sage-grouse are now a candidate species under the Endangered Species Act. The BLM, USFS, USFWS and the Natural Resource Conservation Service are working together to preserve this species. A series of EISs were written to incorporate great sage-grouse conservation measures into the current management plans. The EISs have three common approaches to ultimately comprise the amendment: minimizing new or additional surface disturbance, improving habitat condition, and reducing the threat of rangeland fire. The amendment has preserved the West's heritage of ranching and outdoor recreation; protected hundreds of wildlife species that also rely on sagebrush habitat such as elk, mule deer, and golden eagles; and promoted balance between conservation and development, all while benefiting the greater sage-grouse (U.S. Department of the Interior, 2019).	Geological Resources Land Use Mining Resources Livestock Grazing Transportation Water Resources Cultural Resources Biological Resources Recreation Socioeconomics Environmental Justice

Table 4-9: Other Actions Near or Cumulatively Applicable to Naval Air Station Fallon and the Fallon Range Training Complex (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Telecommunications</i>			
Past – NAS Fallon & FRTC	Electronic Warfare/Communication Site Improvements	<p>The Navy improved three existing electronic warfare/communication sites at the FRTC to support ongoing training activities (U.S. Department of the Navy, 2015). These projects included:</p> <ul style="list-style-type: none"> • White Rock Remote Radio Unit 6. This project upgraded technology used in the existing B-20 communication system. New communications equipment and a helicopter landing area was established at a new site on BLM-administered land. • Fairview Peak is a BLM-designated communication site that is occupied by several users with a designated Navy use-only facility. The Navy facility consists of a 60-foot tower, a 30-foot monopole, and two support buildings. BLM completed the NEPA process with support from the Navy for the project. Surface disturbance was less than one-third acre. • Electronic Warfare Site 32. The Navy sited mobile Electronic Warfare equipment at Electronic Warfare Site 32. This project involved expansion of the existing parking area to accommodate the mobile Electronic Warfare equipment and employee parking. 	Land Use
	U.S. Navy Communications Site Expansion	The U.S. Navy expanded their existing communications site right-of-way, which consisted of a video surveillance camera and equipment building, by 0.26 acres. The site expansion included a steel lattice tower, a monopole tower, two prefabricated steel buildings on concrete slab foundations, new buried electrical and communications lines to connect to the existing utilities on Fairview Peak, and a short segment of new road to connect to the existing service roads.	Land Use Transportation Recreation

Table 4-9: Other Actions Near or Cumulatively Applicable to Naval Air Station Fallon and the Fallon Range Training Complex (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Lands and Realty</i>			
Past – NAS Fallon & FRTC	Naval Air Station Fallon Land Conveyance	The National Defense Authorization Act was signed into law (Public Law 113-291) on December 19, 2014. Included in this Act was section 3009 (g) titled "Naval Air Station Fallon Land Conveyance." Under this section the Secretary of the Interior is required to transfer approximately 400 acres, which were withdrawn under Public Land Order 6834, to the Secretary of the Navy, without reimbursement, no later than 180 days after the date of enactment of the Act. Upon transfer the Secretary of the Navy would have full jurisdiction, custody and control of the Federal land.	Land Use Recreation
Present and Reasonably Foreseeable			
<i>Planning</i>			
Present & Future – NAS Fallon & FRTC	Bureau of Land Management Grazing Program	There are about 45 million acres (182,109 km ²) of public rangelands in Nevada as discussed in Section 3.4 (Livestock Grazing). There are 550 operators, or permittees, with a total of 635 permits to graze livestock. Public land grazing is managed to achieve the fundamentals of rangeland health as indicated by soil and site stability, hydrologic function, and biotic integrity (U.S. Department of the Navy, 2015). Potential impacts and challenges to successfully manage public land grazing include: <ul style="list-style-type: none"> • Potential to exacerbate drought conditions • Introduction of noxious weeds and invasive species (habitat alteration) • Competition for water and other habitat resources with native wildlife 	Land Use Livestock Grazing Water Resources Biological Resources Socioeconomics
	U.S. Marine Corps (USMC) Walker Military Operations Area (MOA)	A new MOA has been proposed by the USMC approximately 28 nautical miles from the southwest corner of the FRTC airspace, to be called the Walker MOA. An Environmental Assessment is underway to assess the environmental impacts of their proposal. The Environmental Assessment Draft underwent public review in late 2018 and early 2019 (U.S. Marine Corps, 2018).	Land Use Noise Airspace Air Quality Biological Resources Public Health/Safety

Table 4-9: Other Actions Near or Cumulatively Applicable to Naval Air Station Fallon and the Fallon Range Training Complex (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Planning</i>			
Present & Future – NAS Fallon & FRTC	Carson City District Office Resource Management Plan (Draft)	The Carson City District Office Resource Management Plan spans across approximately 5 million acres of public land managed by the BLM and 11 counties, including 7 in Nevada (Washoe, Carson City, Storey, Douglas, Churchill, Mineral, and Nye). This Draft RMP was released in 2014, along with an EIS, to begin replacing the existing CCDO Consolidated RMP from 2001 (Bureau of Land Management, 2014b). The objective of this Draft RMP/EIS was to provide a planning approach to update the management decisions of the current RMP. The primary management issues that were addressed are as follows: management of rights-of-way; land tenure adjustments to meet community growth needs; increased recreational use on public lands; evaluation of existing and potential new ACEC; visual resources management classes; wild and scenic river designation; off-highway vehicle designations and recreation management areas; fluid mineral management stipulations to protect sensitive resources; and renewable energy development for solar, wind, and geothermal power.	Geological Resources Land Use Mining Resources Livestock Grazing Transportation Air Quality Water Resources Biological Resources Cultural Resources Recreation Socioeconomics
	Churchill County Water Resources Plan: Dixie Valley Importation Project	Churchill County intends to use surface water to support agriculture, habitat, and recreation; therefore, other sources of water are needed for residential, commercial, and industrial growth. Water from Dixie Valley meets these long-term water-use goals of Churchill County. This project would involve the construction of multiple wells, pumps, and pipelines, as well as a treatment plant. To lessen the cost to the user, Churchill County intends the importation to support as many users as possible, including Fallon, NAS Fallon, and the Fallon Paiute-Shoshone Tribe (V Point and Mahannah & Associates LLC, 2007).	Geological Resources Land Use Water Resources Biological Resources Recreation Socioeconomics Public Health/Safety Environmental Justice
	Wildfire Rehabilitation	Nevada contains fire dependent ecosystems; however, post-wildfire rehabilitation is necessary when certain circumstances threaten human life, property, or ecosystem sustainability. The State Division of Forestry considers post-fire rehabilitation when fire intensity and severity was great enough to kill most vegetation on a site and leave large areas of bare ground; when fire severity was great enough to cause soil alterations; when soils have lost stabilizing features and would wash away or result in mud slides under rainy conditions; when invasive species are present in populations that may outcompete plants that are necessary for the ecosystem; and when pre-fire vegetation composition is not sufficient to provide a reasonable rate of recovery of soils stabilization and ecosystem function (Nevada Division of Forestry, 2019).	Geological Resources Water Resources Biological Resources Public Health/Safety

Table 4-9: Other Actions Near or Cumulatively Applicable to Naval Air Station Fallon and the Fallon Range Training Complex (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Lands and Realty</i>			
Present & Future – NAS Fallon & FRTC	Lahontan Valley Land Sale	<p>Since 1990, the USFWS has been acquiring water rights to be used for the benefit of wetlands in northern Nevada's Lahontan Valley, including wetlands within Stillwater National Wildlife Refuge and Carson Lake and Pasture. The USFWS continues to acquire water rights from willing sellers, and in many cases, land and other real estate is included in the transaction. As not all of the real estate purchased is suitable to keep in the National Wildlife Refuge System, the USFWS proposes to sell lands outside the refuge. As of 2015, the USFWS owns 65 parcels with about 5,891 acres (23.84 km²) of land that would be eligible for sale (U.S. Department of the Navy, 2015). Because the existing water rights acquisition program may last for another 15 years or more, the need to sell acquired land is expected to continue for a similar period.</p> <p>Land sale revenues would be deposited into the Lahontan Valley and Pyramid Lake Fish and Wildlife Fund and used for additional water rights purchases for Lahontan Valley wetlands, payment of annual operations, and maintenance charges for water delivery and other authorized expenditures. Potential impacts related to the land sales project may include minor unknown erosion and introduction of noxious weeds; minor unknown air quality impacts; minor unknown impacts on vegetation; minor positive impacts on agricultural products, income and employment, farmlands, recreation, land use, social values, and Indian trust assets; and minor adverse impacts on cultural resources and municipal/community services.</p>	<p>Geological Resources</p> <p>Land Use</p> <p>Air Quality</p> <p>Water Resources</p> <p>Biological Resources</p> <p>Cultural Resources</p> <p>Socioeconomics</p>

Table 4-9: Other Actions Near or Cumulatively Applicable to Naval Air Station Fallon and the Fallon Range Training Complex (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Construction</i>			
Present & Future – NAS Fallon & FRTC	State Route 839 Notional Relocation Corridor	As discussed in this document, if Alternative 1 or 2 is implemented, potentially, a portion of State Route 839 would be proposed for relocation. Before the Navy would implement Alternative 1 or 2, the Navy would perform site-specific NEPA analysis for a proposed State Route 839 relocation route, which is yet to be determined.	Geological Resources Land Use Transportation Recreation Noise Air Quality
	State Route 361 Notional Relocation Corridor	As discussed in this document, if Alternative 3 is implemented, potentially, a portion of State Route 361 would be proposed for relocation. Before the Navy would implement Alternative 3, the Navy would perform site-specific NEPA analysis for any proposed State Route 361 relocation routes, which are yet to be determined.	Geological Resources Land Use Transportation Noise Air Quality Recreation
	Paiute Pipeline Relocation	As discussed in this document, if Alternative 1, 2, or 3 is implemented, potentially, a portion of the Paiute Pipeline would be proposed for relocation. The Navy would purchase the impacted portion of the Paiute Pipeline and then would pay for relocation of the existing Paiute Pipeline south of the proposed B-17 range. Using funding provided by the Navy, the Paiute Pipeline Company would be responsible for planning, designing, permitting, funding, and constructing any realignment of the pipeline. A right-of-way application submitted to the BLM by the pipeline owner would formally identify any proposed reroute. Site-specific environmental analysis and NEPA planning would be required before any potential relocation of the pipeline could occur, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing pipeline unless and until any such re-routing of the pipeline has been completed and made available to the pipeline owner. The BLM would have decision authority with respect to any proposed final routing subsequent to completion of site-specific environmental analysis.	Land Use Transportation Socioeconomics

Table 4-9: Other Actions Near or Cumulatively Applicable to Naval Air Station Fallon and the Fallon Range Training Complex (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Construction</i>			
Present & Future – NAS Fallon & FRTC	Install Advance Radar System	The project goal is to expand and modify the existing EW-32 site to include locating a new fixed-electronic warfare training system to the north ridgeline of the exiting “Right of Way” use permit. To relocate and install a government provided “fixed” location electronic warfare training system and add additional area for parking and operation of current and future “mobile” electronic warfare threat system assets. This project would work to remove, level, grade and compact the existing ridge-peak and provide road access, rated security fencing and parking. The Right of Way is 6.4 acres. Construction includes ground preparation, concrete pads and tower bases, power, and security fencing on BLM-administered land.	Geological Resources Air Quality
<i>Alternative Energy</i>			
Present & Future – NAS Fallon & FRTC	BLM Nevada Solar Programmatic EIS and Variance Areas	Variance areas are BLM-administered lands that have the potential to provide utility-scale (greater than 20 megawatts) solar energy development, but where development would be considered on a case-by-case basis (Solar Energy Program, 2018). Different variance areas are spread throughout southern Nevada, with a few spots through Churchill County and as far north as Pershing County. The Draft CCD RMP proposes management of these variance areas for utility-scale solar development throughout Nevada. The specific projects under the BLM Solar Programmatic EIS are not located within the region of influence, but because some variance areas are within the region of influence, it is possible that they may be developed in the future.	Land Use Water Resources Transportation Air Quality Biological Resources Socioeconomics
	Wind Energy Projects	The DoD and the BLM have entered into a wind energy protocol that sets requirements for the coordination and military review of wind energy development proposals on public lands. Once notified of a proposed wind energy development, NAS Fallon coordinates with internal Navy stakeholders to determine the impact of proposed development on the FRTC mission. NAS Fallon also works with the project proponent to identify mitigation (U.S. Department of the Navy, 2015). In general, the potential impacts associated with wind energy projects in the FRTC region include temporary disturbance or permanent loss of desert vegetation; possible introduction of noxious weeds; disturbance of wildlife and wildlife habitat; degradation of visual resources; interference with grazing land management; noise and air pollutant emissions; flight safety and electromagnetic interference; and impacts on threatened and endangered species and migratory birds.	Land Use Livestock Grazing Airspace Noise Air Quality Biological Resources Recreation Public Health/Safety

Table 4-9: Other Actions Near or Cumulatively Applicable to Naval Air Station Fallon and the Fallon Range Training Complex (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Alternative Energy</i>			
Present & Future – NAS Fallon & FRTC	Solar Projects	<p>Beginning in 2008, the BLM and the DOE began jointly preparing a programmatic EIS to evaluate actions that further facilitate utility-scale solar energy development in Arizona, California, Colorado, Nevada, New Mexico, and Utah (Bureau of Land Management & Department of Energy, 2012). For the BLM, this included the evaluation of a new Solar Energy Program applicable to solar development on BLM-administered lands.</p> <p>Under the chosen alternative, the BLM proposed categories of lands to be excluded from utility-scale solar energy development (about 79 million acres [319,702 km²]) and identified specific locations well suited for utility-scale production of solar energy (about 285,000 acres [1,553 km²] in solar energy zones) (Bureau of Land Management and Department of Energy, 2012). None of the solar energy zones are within the FRTC region of influence, but some variance areas are within the FRTC region of influence. As part of the variance process, the BLM will consult the DoD to minimize or eliminate impacts on military operations and encourage compatible development. The BLM will accept formal DoD letters with conditions once they have been vetted through both the military departments and the DoD Siting Clearinghouse (U.S. Department of the Navy, 2015).</p> <p>Potential impacts related to construction and operations of solar projects may include water depletion affecting lands with wilderness characteristics; interference with recreational uses (e.g., desert racing and other off-highway vehicle use); project fencing-related impacts on free flow of big game species; potential impacts of cultural resources and Indian Tribe sacred sites listed on the National Register of Historic Places; interference with grazing permittees' use of pasture lands or damage to permittees' fences or other improvements.; temporary disturbance or permanent loss of wash and playa habitats; and noise and air pollutant emissions.</p>	<p>Land Use</p> <p>Livestock Grazing</p> <p>Noise</p> <p>Air Quality</p> <p>Biological Resources</p> <p>Cultural Resources</p> <p>Recreation</p>
	Stillwater Hybrid Power Plant	<p>The Enel Green Power North America Inc., Stillwater Geothermal Plant near Fallon, Nevada, is the only geothermal power plant in the world that combines geothermal energy with two kinds of solar technology. It produces energy efficiently through a complementary operation that relies on solar panels and a new solar thermal operation on the sunniest and hottest days to offset when the geothermal production is lower than average. The solar thermal system that produces energy from heat began operation in 2015 (Sonner, 2016).</p>	<p>Mining Resources</p> <p>Socioeconomics</p> <p>Air Quality</p>

Table 4-9: Other Actions Near or Cumulatively Applicable to Naval Air Station Fallon and the Fallon Range Training Complex (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Airspace</i>			
Present & Future – NAS Fallon & FRTC	Environmental Impact Statement on the Proposed Airspace Optimization for Readiness for Mountain Home Air Force Base	<p>The U.S. Air Force issued a Notice of Intent to prepare an EIS and to hold public scoping meetings on the proposed airspace optimization for readiness for Mountain Home Air Force Base. As stated in the press release provided on October 19, 2019, “Airspace modification will allow the Air Force to provide more realistic and efficient airspace training. It will also improve aircrew proficiency in low-altitude tactics and radar masking in mountainous terrain and improve pilot survivability. There are a few proposed airspace modifications that include:</p> <ol style="list-style-type: none"> 1) changing low-altitude airspace floors that currently prohibit realistic low-altitude training certification and maintenance training and negatively impact vertical capability and capacity, 2) providing consistent low-level operational floors for low-altitude flights to allow use of topographic features of mountainous terrain to mask the aircraft and safely neutralize or avoid technologically advanced threats, and 3) allowing aircrews to descend at supersonic speed and to fly at lower supersonic altitudes so they can realistically train on evasive maneuvers” (U.S. Air Force, 2019). <p>The airspace changes would result in impacts on Washoe County Nevada. Therefore, cumulative impacts may occur in the region of influence to airspace as a result of this project and the Proposed Action.</p>	<p>Airspace Noise Air Quality Biological Resources Cultural Resources Public Health and Safety Environmental Justice</p>

Notes: BLM = Bureau of Land Management, DoD = Department of Defense, DOE = Department of Energy, EA = Environmental Assessment, EIS = Environmental Impact statement, FRTC = Fallon Range Training Complex, N/A = Not applicable, NAS = Naval Air Station, U.S. = United States, USFS = United States Forest Service, USFWS = U.S. Fish and Wildlife Service, km² = square kilometers, FAA = Federal Aviation Administration, NEPA = National Environmental Policy Act, RMP = Resource Management Plan, CCD = Carson City District, CCDO = Carson City District Office, ACEC = Area of Critical Environmental Concern

Table 4-10: Other Actions in Churchill County

Action		Summary of Action	Applicable Resource(s)
Past			
<i>Geothermal Projects</i>			
Past – Churchill	Geothermal Lease Sale Sept. 20–4 – 40 acres	The BLM leased one parcel covering approximately 40 acres of public land for geothermal exploration and development in Churchill County, Nevada, on September 10, 2014. Lease issuance alone does not authorize any ground disturbing activities to explore for or develop geothermal resources beyond casual use without site-specific approval for the intended operation. Leasing geothermal resources by the BLM vests with the lessee a non-exclusive right to future exploration and an exclusive right to produce and use the geothermal resources within the lease area subject to existing laws, regulations, formal orders, and the terms, conditions, and stipulations in or attached to the lease form or included as conditions of approval in permits. Such approval would be subject to further environmental analysis under the NEPA.	Geological Resources Land Use Mining Resources Water Resources Recreation Socioeconomics
	Ormat Nevada Inc. Geothermal Drilling Permits (23-8 and 23-8A, 22C, 24-8 and 24A-8, 17[87-7]-8, 75[53]-4, 84-22)	Drilling permits are issued for exploration and development of various projects. Some of these projects have occurred in Ormat’s Tungsten Mountain Geothermal area located in northern Edwards Creek Valley and in Dixie Hope Geothermal Project located approximately 40 miles east-northeast of Fallon, Nevada. Construction was a component of all drilling permits and actions and often included the creation of access roads.	Geological Resources Land Use Mining Resources Livestock Grazing Noise Air Quality Biological Resources Socioeconomics
	Oil and Gas Leasing of approximately 960 acres	The Nevada State Office BLM offered for lease one parcel of 960 acres of public land for oil and gas exploration and development in Churchill County, Nevada on September 10, 2013. Lease issuance alone does not authorize any ground-disturbing activities to explore for or develop oil and gas beyond casual use without site-specific analysis and approval for the intended operations.	Geological Resources Land Use Mining Resources Recreation
	Ormat Temperature Gradient Well 31-8	Ormat Nevada, Inc. proposed to drill a temperature-gradient well in the Dixie Hope area of Dixie Valley. Access was via overland travel. No new roads or pads were constructed. Access to drill sites was via tracked vehicles and ATVs. Wells were drilled no deeper than 1,000 feet. No sumps or cellars were excavated.	Geological Resources Land Use Mining Resources Livestock Grazing Air Quality Noise Water Resources Recreation Biological Resources Socioeconomics

Table 4-10: Other Actions in Churchill County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Geothermal Projects</i>			
Past– Churchill	Ormat Tungsten Mountain Production Wells (67A-22 GDP, 56A-22 GDP, 75A-22 GDP and 75B-22, 84A-22, 84B-22 GDP and 84C-22)	Production wells were all drilled on lands leased in the Tungsten Mountain Geothermal Project in Edwards Creek Valley, Churchill County, Nevada. Production wells were all drilled on lands leased in the Tungsten Mountain Geothermal Project in Edwards Creek Valley, Churchill County, Nevada. The drilling program (1) drilled a new production well to a specific depth for each well or until the geothermal resource was encountered, (2) tested the well to determine reservoir characteristics, (3) measured the well’s temperature profile, and (4) monitored the geothermal reservoir. Construction projects and the creation of various access roads were included with the above activities.	Geological Resources Land Use Mining Resources Livestock Grazing Noise Air Quality Biological Resources Socioeconomics
	Terra-Gen Dixie Valley, LLC Dixie Valley Power Plant Well 73B-7 Existing Sump Expansion	Terra-Gen Dixie Valley, LLC proposed to extend the existing sump at well 73B-7 to allow surface discharge of low-pressure overflow from the Dixie Valley Power Plant and geothermal fluid from well 73B-7 itself. The newly enlarged sump covered approximately four acres. The entire sump had a clay liner and was fenced along the perimeter. In order to conduct geothermal fluids from the power plant to the sump, a steel pipe was laid on top of the ground from the LP drain at the power plant to the enlarged sump. An application was submitted to Nevada Division of Environmental Protection, Bureau of Water Pollution Control and any discharge was contingent on approval of the proper permit(s).	Geological Resources Land Use Mining Resources Water Resources Recreation Public Health/Safety
	Well 24-8 Sundry Notice to Move Location and Directional Drill	Ormat proposed to move the location and change from a vertical to a directional drilling program for well 24-8 at its Dixie Valley/Hope Geothermal Project area located in Dixie Valley approximately 40 miles east-northeast of Fallon, Nevada. The proposed pad dimensions of approximately 300 feet by 300 feet remained the same as in the approved GDP. The proposed drill site was directly adjacent to the project area analyzed in the Ormat Technologies, Inc., Dixie Meadows Geothermal Exploration Project and FONSI/DR signed January 17, 2012.	Geological Resources Land Use Noise Air Quality Mining Resources Recreation
<i>Mining</i>			
Past – Churchill	Rawhide Mine – Northwest Heap Leach Pad Extension	Rawhide Mining, LLC submitted a modification to their Denton-Rawhide Mine Plan of Operations NVN-69690 (Plan). The EIS was completed and the Record of Decision was signed on April 14, 1997. Rawhide Mining, LLC proposed an extension to the existing Phase 1, 2, 3, and Western Extension heap leach pads. The Heap Leach pad Northwest Extension incorporated approximately 1,100,000 square feet of lined surface area. This pad extension was constructed immediately adjacent to the northern boundary of the existing pads and included a Liner Tie-in area of approximately 185,000 square feet.	Geological Resources Land Use Mining Resources Noise Air Quality Water Resources Recreation Public Health/Safety

Table 4-10: Other Actions in Churchill County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Geothermal Projects</i>			
Past – Churchill	Bell Mountain Exploration	The Bell Mountain Exploration project consisted of epithermal gold-silver mineralization. Exploration at the site since the closure of Bell Mountain Mine has shown that mineralization with open pit mineable potential may exist at the site (Willis & Brown, 2014). Bell Mountain Exploration Corporation (BMEC) is currently involved in permitting the mining operation and the completion of the BLM EA is expected in 2020. The Navy is working with the BMEC to identify ways in which the Navy's proposed action and BMEC's valid existing mining right and proposed mining operations can be de-conflicted, both for purposes of public safety and so as to leave BMEC's operations and interests unaffected by the proposed withdrawal to the maximum extent achievable consistent with training requirements.	Geological Resources Land Use Mining Resources Recreation Socioeconomics
<i>Telecommunications</i>			
Past – Churchill	Fairview Peak Communications Site – NV Energy	NV Energy placed a new communication building on Fairview Peak, next to an existing communications site ROW held by the Nevada Division of State Lands, Department of Information Technology (DoIT) (BLM ROW N-89435). The new building housed electronic equipment to operate the two microwave dishes currently attached to a tower within the DoIT site. NV Energy previously leased space in the DoIT building for their equipment.	Land Use Recreation
	Cotton Peak ROW and Communications Improvement Project EA	The BLM, Stillwater Field Office, issued the DR and FONSI for the EA for the United States Navy Cotton Peak Right of Way and Communications Improvement Project-. The decision was for BLM to issue a ROW grant amendment to the Navy which implemented the Proposed Action (described in Chapter 2 of the EA) with the Mitigation Measures (described in Chapter 3 of the EA). The EA analyzed potential impacts on the natural and human environment that could result from implementation of the proposed expansion of the ROW from 0.06 acres to 1.5 acres, relocation of the existing helicopter landing area for safety and replacing the failing equipment located at the Cotton Peak site in the Stillwater Mountain Range, in Churchill County, Nevada. A determination was made that implementation of the Proposed Action would not result in significant environmental impacts on the natural and human environment, therefore a FONSI was prepared to document that determination, and a DR was issued providing the rationale for approving the Proposed Action.	Geological Resources Land Use Livestock Grazing Noise Water Resources Biological Resources Recreation

Table 4-10: Other Actions in Churchill County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Lands and Realty</i>			
Past – Churchill	Water Rights Acquisition for Lahontan Valley Wetlands	The U.S. Fish and Wildlife Service prepared an Environmental Impact statement in 1996 to assess water rights and acquisition in the Lahontan Valley Wetlands of Churchill County. This analysis informed and shaped the water rights and acquisition in this area as they are presently bound.	Land Use Livestock Grazing Air Quality Water Resources Biological Resources Cultural Resources Recreation Socioeconomics Public Health/Safety
	Stillwater National Wildlife Refuge Complex Comprehensive Conservation Plan and Boundary Revision	The U.S. Fish and Wildlife Service prepared an Environmental Impact Statement to plan for conservation and a boundary revision of the Stillwater National Wildlife Refuge Complex in 2000. This document was the basis for policies and boundaries that are currently in place.	Geological Resources Land Use Livestock Grazing Water Resources Biological Resources Cultural Resources Recreation Socioeconomics
<i>Conservation</i>			
Past – Churchill	Haypress Area Habitat Improvement Project	The BLM CCD improved habitat for greater sage-grouse (<i>Centrocercus urophasianus</i>) and increased the health of aspen stands within the area surrounding Haypress Creek in the Desatoya Mountains. The project consisted of removing the single-leaf pinyon and Utah juniper that had encroached into the sagebrush and aspen communities within the 2,530-acre project area. This project fell under the analysis and location described and analyzed in the Desatoya Mountains Habitat Resiliency, Health and Restoration Project EA from 2012. Though the boundary for the Haypress Area Habitat Improvement Project was predominately outside of the designated treatment areas identified in the EA, the project occurred within the overall project boundary that was analyzed within the EA. The methods for removing pinyon and juniper were the same as those analyzed in the EA.	Land Use Biological Resources

Table 4-10: Other Actions in Churchill County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Transportation</i>			
Past – Churchill	Southern Alternate Access Route to the Bravo-16 Bombing Range Right-of-Way	Recent weather events in the Fallon, Nevada area have included large amounts of precipitation and the current Newlands Project canals and reservoirs in the area cannot hold all of the water. The Bureau of Reclamation proposed to intentionally breach their v-line canal which would help with the release of waters onto bureau lands and Navy withdrawn lands to avoid other flooding issues in the town of Fallon. The current projection of water flow would impact the Navy’s primary access route to the B-16 range. This has caused the Navy to find an alternate route to access this training range to ensure continued training by the Navy SEALs. The U.S. Navy at Naval Air Station, Fallon is proposing to upgrade and maintain an access route from U.S. Route 95 to the southern gate (Gate 12) on the Bravo-16 (B-16) bombing range.	Geological Resources Land Use Transportation Water Resources Biological Resources Public Health/Safety
Present and Reasonably Foreseeable			
<i>Transportation</i>			
Present & Future – Churchill	2020 Transportation Plan	The purpose of the 2020 Transportation Plan was to analyze the Fallon area transportation system, including the roadway network, transit and paratransit services, pedestrian/bikeway facilities, airport facilities, and the freight movement systems. Written in 2000, it aimed to identify all future travel demands through the year 2020 and give recommendations on transportation system improvements, as well as develop a fiscally constrained, multi-modal 2020 Transportation Plan for the Fallon urban area (TranSystems Corporation, 2000).	Land Use Transportation Noise Socioeconomics Public Health/Safety

Table 4-10: Other Actions in Churchill County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Planning</i>			
Present & Future – Churchill	Churchill County 2015 Master Plan	The Master Plan is designed to establish Churchill County’s vision for the future. It provides the framework and foundation for decision making for the Board of County Commissioners, the Planning Commission and the community on matters relating to growth and development through 2035. The Master Plan focuses on land use and development issues facing Churchill County and establishes goals and policies that address county wide issues and concerns. Any action of a local government and private developer relating to the subdivision or development of land, capital improvements and similar activities must conform to the Master Plan. The 2015 Churchill County Master Plan includes an introduction, population, housing and education goals, conservation and natural resources goals and policies, hazards and hazard mitigation, historical data and preservation, economic development, recreation, transportation, public services and facilities (including information on policies and maps for provision of necessary water and sewer services), open space goals and policies, land use goals and policies, and the Chapter 12 Policy Plan for Public Lands. The Chapter 12 policy is carried over from the 2010 Master Plan. Updates will be considered following completion of the BLM Carson District Resource Management Plan, which has been published as a draft form (Churchill County, 2015).	Geological Resources Land Use Mining Resources Livestock Grazing Transportation Airspace Noise Air Quality Water Resources Biological Resources Cultural Resources Recreation Socioeconomics Public Health/Safety Environmental Justice
	Water Resources Plan	The Churchill County Water Resource Plan, updated in 2007, provided a bridge between the existing conditions and the future forecasted by the original Water Resource Plan of 2000 (V Point and Mahannah & Associates LLC, 2007). The report assumed Churchill County’s development will proceed westward from Fallon along U.S. Route 50 and projected water demand for the growth of the county through 2050. The goal of the plan was to fully utilize and maximize ground and geothermal waters for municipal and industrial uses while conserving surface water for agriculture, environmental, and recreational application.	Geological Resources Land Use Livestock Grazing Water Resources Public Health/Safety

Table 4-10: Other Actions in Churchill County (continued)

Action		Summary of Action	Applicable Resource(s)
Present & Future – Churchill	Water Conservation Plan	By mandate of NRS 540.131 and in compliance with NRS 540.121 through 540.151, Churchill County created this Water Conservation Plan. The plan describes the physical setting of Churchill County, the climate, the water sources and allotment, the water system, conservation incentives, water resource planning and conservation, water shortage contingency plans, use of effluent water, and educational materials to promote conservation. The updated Conservation Plan was presented to the Board of County Commissioners in May 2014 and was available for public comment from April 29 to May 21. No comments were received on the Conservation Plan (Churchill County, 2014).	Noise Air Quality Water Resources Public Health/Safety
	Community Source Water Protection Plan (Draft)	The Community Source Water Protection Plan (CSWP Plan) was created to document the public drinking water resources within Churchill County and how the systems intended to protect the water from contamination, as well as to prevent pollution of community drinking water resources (The CSWP Local Planning Team, 2015). The CSWP Plan identified four main goals to protect drinking water quality: develop a local plan to ensure the availability of clean water sources, encourage water resources protection measures to promote sustainable economic growth, increase community awareness, and encourage collaboration and communication between entities in Churchill County.	Land Use Water Resources Socioeconomics Public Health/Safety
	NAS Fallon: Joint Land Use Study (JLUS)	The NAS Fallon JLUS was a collaborative effort between Churchill County as well as various other counties in Nevada and NAS Fallon to guide local governments in planning and land use decisions about development in and around the FRTC (Matrix Design Group, 2015). The main goal of the JLUS was to protect the viability of current and future military training operations while simultaneously guiding community growth, sustaining the environmental and economic health of the region, and protecting the public health, safety, and welfare in the areas surrounding NAS Fallon and within the FRTC. These joint planning efforts resulted in recommended strategies in policy, zoning, communication, and outreach to mutually protect all interested parties.	Land Use Livestock Grazing Transportation Airspace Noise Air Quality Water Resources Biological Resources Cultural Resources Recreation Socioeconomics Public Health/Safety

Table 4-10: Other Actions in Churchill County (continued)

Action		Summary of Action	Applicable Resource(s)
Present & Future – Churchill	Cow Canyon, Clan Alpine, and Dixie Valley Allotments Landscape Project EA	The Bureau of Land Management, Carson City District, Stillwater Field Office (BLM), has issued a Final Decision for the Cow Canyon, Clan Alpine, and Dixie Valley Allotments Landscape Project EA. The Final Environmental Assessment was revised for clarification and removal of wild horse management as proposed actions based on public comments received. Any proposed wild horse management in these areas are analyzed at the time they are proposed under site-specific environmental analysis in accordance with NEPA. The Final Environmental Analysis analyzed seven (7) alternatives that included proposals for livestock grazing permit renewals, range improvements, community mineral material pit designation, invasive, nonnative and noxious weed treatments, interim visual resource management class establishment and adaptive management. The alternatives included options for changes in season of use proposals, reductions in livestock numbers proposals, a no grazing alternative and the no action alternative (status quo).	Geologic Resources Land Use Livestock Grazing Noise Water Resources Biological Resources Cultural Resources Recreation Socioeconomics
	<i>Conservation</i>		
Present & Future – Churchill	Desatoya Greater Sage-Grouse and Riparian Habitat Improvement Project 2017	The BLM, Carson City District, Stillwater Field Office proposed to remove single-leaf pinyon pine (<i>Pinus monophylla</i>) and Utah juniper (<i>Juniperus osteosperma</i>) (referred to as pinyon-juniper for the remainder of the document) on 3,953 acres that have encroached into greater sage-grouse (<i>Centrocercus urophasianus</i>) priority, general, and other habitat management areas within the Desatoya Mountains in the fall of 2017. Within these locations, the pinyon-juniper trees are primarily at Phase 1 densities, meaning trees are present, but shrubs are the dominant vegetation that influences ecological processes at the sites. All pinyon-juniper trees within the treatment unit boundaries will be completely severed from the stumps with the exception of old growth trees.	Land Use Air Quality Biological Resources
	Haypress Meadows Protection Project	The BLM, Carson City District, Stillwater Field Office is proposing to construct four enclosures around springs and wet meadows in the Porter Canyon Allotment near Haypress Creek within the Desatoya Mountains. The restoration enclosure area is within the Desatoya Herd Management Area. The enclosures are to be constructed over a 4-year period and would allow for maintenance and removal as needed.	Land Use Biological Resources Cultural Resources Recreation

Table 4-10: Other Actions in Churchill County (continued)

Action		Summary of Action	Applicable Resource(s)
Present & Future – Churchill	Desatoya Mountains Habitat Resiliency, Health, and Restoration Project Final EA	The proposed action has been developed in collaboration and partnership with members of the local sage grouse working group (Desatoya Population Management Unit), the Nevada Division of Wildlife (NDOW), the Carson City and Battle Mountain District Offices, the University of Nevada Reno, the US Department of Agriculture (ARS & NRCS), and Smith Creek Ranch LLC.	Geological Resources Land Use Livestock Grazing Noise Water Resources Biological Resources Cultural Resources Socioeconomics
	<i>Conservation</i>		
Present & Future – Churchill	Desatoya Mountains Habitat Resiliency, Health, and Restoration Project EA (continued)	Funding and partner contributions will influence how many acres are treated in any given year as well as the breadth of monitoring for response to treatment. Within the project area, up to approximately 32,705 acres of ground disturbing treatments are proposed over a ten year period including pinyon/juniper removal and thinning; wet meadow and spring rehabilitation/protection (includes fencing, pipelines, and troughs); rabbitbrush control using mowing followed by herbicide treatment and reseeding; a site-specific fuels treatment utilizing prescribed fire, herbicide, and seeding; and continuous excess wild horse removal (including utilizing water/bait trapping methods). Additionally, researchers at the University of Nevada Reno (UNR) have set up a long-term experimental watershed on private land within Porter Canyon to measure the hydrologic changes associated with pinyon/juniper tree removal. Portions of the UNR experiment would be expanded to BLM-administered lands within Porter and Dalton Canyons. In addition to the main areas, between Porter and Dalton Canyon approximately 7,753 acres of 20 to 75 percent and 2,054 acres of up to 100 percent of PJ would be removed using any of the described methods in the Vegetation Treatment Methods section.	Geological Resources Land Use Livestock Grazing Noise Water Resources Biological Resources Cultural Resources Socioeconomics
	Conservation Easement Program (transfer of development rights)	As discussed in Chapter 16 of The Transfer of Development Rights (TDR) Program, document, the TDR program in Churchill County is meant “to provide a voluntary, incentive-based process for permanently preserving rural resources which provide significant community benefit such as agriculture, open spaces, aquifer recharge for current and future water supply (water recharge area), and a military installation buffer area. The intent of this chapter is to reduce development pressures and minimize development on agricultural lands, habitats, water recharge areas, flood zones and NAS Fallon and associated ranges notification areas by providing landowners a mechanism to sustain existing land uses and develop lands more compatible for urbanization” (Churchill County Code 16.14.010). Conservation easements are legal agreements between a landowner and eligible organization that restricts future activities on the land granted to protect its conservation, agricultural, open space, or similar value in perpetuity (Churchill County Code 16.14.020).	Land Use Livestock Grazing Water Resources Biological Resources Recreation Socioeconomics

Table 4-10: Other Actions in Churchill County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Geothermal Projects</i>			
Present & Future – Churchill	Temporary Pipeline Placement Geothermal Sundry	Ormat proposes to place a temporary, above-ground pipeline to connect three well pads in the Dixie Hope/Meadows geothermal exploration area. This pipeline would be used during the performance of flow and injection testing of the connected wells. This testing would occur once well 75(53)-4 is completed under a separately submitted Geothermal Sundry. The pipeline would be placed in a roughly straight line cross country from well pad 24-8 to well pad 23-8 to the Dixie Valley road. Once adjacent to the Dixie Valley road it would follow the alignment to the access road for well pad 75-4 and be placed adjacent to the access road. Fences, springs and other sensitive features would be avoided in the placement of the temporary pipeline. At locations where the temporary pipeline crosses existing roads, low-profile road crossings would be used. At the completion of the proposed 60-day flow and injection testing regimen the temporary, above-ground pipeline would be dismantled and removed from the project area.	Geological Resources Land Use Transportation Biological Resources
	Enel Salt Wells Interim Reclamation 11-36, 86-26, & 88-26	Enel Salt Wells, LLC is proposing to conduct interim reclamation of 2.6 acres of previously public land on three geothermal well pads at their Salt Wells Power Plant project.	Geological Resources Land Use Mining Resources Recreation Biological Resources
	Tungsten Mountain Geothermal Development Project	The BLM, Carson City District, Stillwater Field Office issued a Decision for the Tungsten Mountain Geothermal Development Project proposed by Ormat in 2016, as a record and Finding of No Significant Impact. The geothermal portions of the Project are located within the Tungsten Mountain Geothermal Unit, which is comprised of various federal geothermal leases. The EA analyzed the potential impacts from the proposed development of this project including: the construction and operation of 2 geothermal power plants, up to 24 geothermal production and injection well pads and wells, geothermal fluid pipelines, access roads, approximately 17 miles of a generation tie (gen-tie) line, and ancillary facilities (U.S. Department of the Interior, 2016).	Geological Resources Land Use Mining Resources Livestock Grazing Noise Air Quality Water Resources Biological Resources Socioeconomics

Table 4-10: Other Actions in Churchill County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Geothermal Projects</i>			
Present & Future – Churchill	Enel Salt Wells Interim Reclamation 11-36, 86-26, & 88-26 (continued)	The three well pads where the work is proposed are 11-36, 87-26, & 88-26. The proposed work would essentially be the same at each well pad and would involve (1) removing the drain pipe and fence around the reserve pit, (2) backfilling and recontouring the reserve pit, and (3) recontouring the portion of the well pad not needed for future activities. Material stock-piled adjacent to the well pad during construction would be used for backfilling and recontouring. Existing fencing around the well heads would be retained for safety and security reasons.	Geological Resources Land Use Mining Recreation Biological Resources
	Ormat Carson Lake Production Well 81(86-6)-7 GDP	Ormat proposes to drill a geothermal production well on its geothermal lease NVN-079106. The proposed well would be to a total depth of approximately 3,992 feet true vertical depth or until the geothermal resource is encountered. The drill pad would be graded to direct runoff from the pad into the cellar to prevent any accidental material spills from leaving the site. A containment basin would be incorporated into the drill pad foot print. At the conclusion of drilling, the liquid portion of the containment basin's contents would be allowed to evaporate and the remaining solids mixed with stockpiled soil to return the containment basin to pre-disturbance topography.	Geological Resources Land Use Mining Resources Recreation Water Resources
	Ormat Tungsten Mountain Observation Well 24-23	Ormat proposes to conduct an observation core hole drilling program on lands leased in the Tungsten Mountain Geothermal Project area in the Edwards Creek Valley, Churchill County, Nevada. The proposed drilling program would (1) build a drill pad including the improvement, as necessary, of an access road; (2) drill a new observation hole to a total depth of 2,000 feet MD or 1,879 feet total vertical depth (TVD); (3) test the well to determine reservoir characteristics; (4) measure the well's temperature profile; and (5) monitor the geothermal reservoir. The drill site would be at a location analyzed in the Tungsten Mountain Geothermal Development Project EA. A containment basin would be included in the larger pad area. The pad would be graded to direct runoff into the containment basin to prevent any accidental spills from leaving the site. At the conclusion of drilling the liquid portions of the containment basin contents would be allowed to evaporate and the remaining solids would be mixed with the excavated soil to back-fill the basin which would then be backfilled, recontoured, and reseeded. The proposed drill site and drilling activities were surveyed and analyzed in the Tungsten Mountain Geothermal Development Project EA & FONSI/DR signed March 25, 2016.	Geological Resources Land Use Mining Resources Noise Air Quality Biological Resources Recreation

Table 4-10: Other Actions in Churchill County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Geothermal Projects</i>			
Present & Future – Churchill	Ormat Tungsten Mountain Injection Well 27-22 GDP	Ormat proposes to conduct an injection well drilling program on lands leased in the Tungsten Mountain Geothermal Project area in the Edwards Creek Valley, Churchill County, Nevada. The proposed drilling program would (1) drill a well to a total depth of approximately 4,999 feet MD, 4,983 feet TVD, or until the geothermal resource is encountered; (2) test the well to determine reservoir characteristics; (3) measure the well's temperature profile; and (4) monitor the geothermal reservoir. The drill site would be at a location analyzed in the Tungsten Mountain Geothermal Development Project EA. A containment basin would be included in the larger pad area. The pad would be graded to direct runoff into the containment basin to prevent any accidental spills from leaving the site. When the containment basin is no longer needed for well operations it would be backfilled, recontoured and reseeded. The proposed drill site and drilling activities were surveyed and analyzed in the Tungsten Mountain Geothermal Development Project EA & FONSI/DR signed March 25, 2016.	Geological Resources Land Use Mining Resources Noise Air Quality Biological Resources Recreation
	Dixie Comstock Temperature Gradient Holes	Ormat Nevada Inc. proposes to conduct a temperature gradient (core) hole drilling program on lands adjacent to those leased in the Dixie Comstock prospect within Dixie Valley, Churchill County, Nevada. The proposed core hole locations are either adjacent to (one site), within 200 feet (three sites) or within 900 feet (two sites) of existing roads and would be accessed by existing roads or overland travel, as needed. The only modification authorized at any of the drill sites would be minor clearing of brush to eliminate fire hazards during drilling operations. The temperature gradient core holes would be drilled using a "sump-less" drilling program where drilling mud and cuttings are contained in a series of portable tanks with no discharge to the ground surface. All of the proposed drill sites are located outside of the Stillwater Range WSA.	Geological Resources Land Use Mining Resources Transportation Noise Recreation Air Quality Biological Resources
	October 26, 2016 Geothermal Lease Sale – Churchill & Mineral County Parcels	The BLM leased five (5) geothermal lease parcels covering approximately 12,020 acres in Churchill and Mineral Counties, Nevada on October 26, 2016. Issuance of geothermal leases confers on the lessee a non-exclusive right to future exploration and an exclusive development right of the resource within the lease area. However, leasing geothermal resources does not confer on the lessee the right to proceed with any ground disturbing activities related to exploring for or developing geothermal resources. Issuance of geothermal leases could have indirect impacts because such leasing represents a commitment of resources and it is reasonably expected that subsequent exploration, development, and reclamation of facilities would occur. Any proposal for exploration and/or development would be analyzed as required by NEPA. A geothermal lease typically grants the lessee access to geothermal resources in the lease area for a period of 10 years. Once an area is developed for productive use of geothermal energy, the lease allows the lessee use of the resource for 40 years with a right of renewal for another 40 years.	Geological Resources Land Use Water Resources Recreation

Table 4-10: Other Actions in Churchill County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Geothermal Projects</i>			
Present & Future – Churchill	October 26, 2016 Geothermal Lease Sale – Churchill & Mineral County Parcels (continued)	Lands not available for leasing are cited under Department of Interior, Bureau of Land Management, 43 CFR part 3201.11 Geothermal Resource Leasing and Geothermal Resources Unit Agreements and in the CRMP, 2001, as amended. Examples of public lands not open to fluid mineral leasing are Wilderness Areas, WSAs, Areas of Critical Environmental Concern, or National Conservation Areas. Also excluded are tribal lands, wildlife refuges, wildlife management areas, and private land with titles that include all fluid mineral rights.	Geological Resources Land Use Water Resources Recreation
	Ormat's Brady Complex	The Brady Complex has been in operation since 1992. Currently, it is still operating and going through construction updates such as the installation of an energy converter, structural updates, and the placement of more rigging and piping. This update is expected to increase the capacity of the plant from 4 MW to approximately 22 MW. This construction update is currently still in progress.	Geological Resources Land Use Mining Resources Water Resources Recreation Socioeconomics
<i>Mining</i>			
Present & Future – Churchill	Flat Top Pit, Hiskett & Sons Negotiated Sale	Hiskett & Sons is requesting a negotiated sale contract for up to 49,999 cubic yards of sand and gravel material near Fallon, Nevada. Hiskett & Sons would mobilize portable crushing equipment to the site for processing. This material sale contract, pursuant to 43 CFR part 3600, would authorize Hiskett & Sons to excavate and remove the sand and gravel material from the location mentioned above. Final reclamation would be achieved by re-contouring all slopes to a safe and stable angle close to original topography. Revegetation of all surface disturbances would need to be completed with an approved BLM seed mix. The size of the project area is approximately 5 acres.	Geological Resources Land Use Mining Resources Transportation Noise Biological Resources Recreation
	Russell Pass Pit, Hiskett & Sons Negotiated Sale	Hiskett & Sons is requesting a negotiated sale contract for 45,000 cubic yards of sand and gravel material just south of an old material pit near Fallon, Nevada. The material will be crushed and processed onsite. Hiskett & Sons will mobilize portable crushing equipment to the site for processing. Access to the project is on existing disturbance through an old material pit.	Geological Resources Land Use Mining Resources Recreation
	Russell Pass Pit Exploration Permit I & Permit II	Hiskett & Sons proposed to excavate test pits to explore for a possible aggregate source. An excavator was used to excavate the test pits. The test pits will help determine the extent of the aggregate material to see if the deposit is adequate for Hiskett & Sons' needs. Final reclamation will be achieved by backfilling all excavations and re-contouring the surface to its original topography. The size of the project is approximately 1 acre. Hiskett & Sons proposes to excavate test pits to explore for a possible aggregate source.	Geological Resources Land Use Mining Resources Recreation

Table 4-10: Other Actions in Churchill County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Mining</i>			
Present & Future – Churchill	Russell Pass Pit Exploration Permit I & Permit II (continued)	The test pits will help determine the extent of the aggregate material to see if the deposit is adequate for Hiskett & Sons' needs.	Geological Resources Land Use Mining Resources Recreation
	West Gate AML Closure	Nevada Division of Minerals is proposing to permanently close eight (8) abandoned mine hazards in the vicinity of West Gate located along U.S. Route 50 approximately 45 miles east of Fallon in Churchill County, Nevada. Cultural and wildlife surveys would be completed prior to closure activities commencing. Unless these surveys indicate more appropriate methods, all of the abandoned mine hazards would be secured by backfilling with surrounding native material using a dozer.	Land Use Mining Resources Biological Resources Cultural Resources Recreation Public Health/Safety
	A&K Dixie Meadows Pit, Negotiated Sale	A&K Earthmovers proposed to excavate approximately 6,000 cubic yards of mineral materials from the existing Dixie Meadow Pit over a 5-year period under a Negotiated Sale Contract from the BLM. The surface disturbance in the existing pit is approximately 7 acres. The proposed sale will increase the surface disturbance but will remain within the 10 acre project area that was analyzed in DOI-BLM-NV-C010-2011-0516-EA.	Geological Resources Land Use Mining Resources Water Resources Biological Resources Cultural Resources
	Nevada Iron Mine Rail Project	The New Nevada Resources company iron mine project area is located northeast of the Proposed Bravo 20 Expansion Area. It currently is accessed via the existing Pole Line Road. New Nevada Resources proposes to construct a future rail spur that would run east to west through the Proposed Bravo 20 Expansion Area and along the Existing Pole Line road from the Nevada Iron Project Area to U.S. Route 95.	Geological Resources Land Use Mining Resources Transportation Recreation
	Buena Vista Mine	Buena Vista is a magnetite iron deposit at an advanced stage of exploration. Although the various deposits are at different stages of exploration, some have been specified as "Probable Mineral Reserve" or "Mineral Resource." The published technical report is preliminary work for an official mine plan. Nevada Iron, a private mining company, bought the Buena Vista magnetite project area in 2011 and plans to develop mining infrastructure. This will result in various construction projects in the foreseeable future (Sylvester et al., 2013).	Geological Resources Land Use Mining Resources Air Quality Water Resources Biological Resources Socioeconomics

Table 4-10: Other Actions in Churchill County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Mining</i>			
Present & Future – Churchill	Barrick Cortez Mining: Deep South	Barrick Gold Corporation, a mining company, completed a pre-feasibility study for underground mining in the Deep South Zone below currently permitted areas of the Cortez Hills underground mine. The study resulted in the Life of Mine plan beginning foreseeable underground gold production from the Deep South Zone in 2022. The expansion of the underground mine is expected to offset the impact of the end of mining in the Cortez Hills open pit, which is scheduled to conclude in 2018 (Altman et al., 2016).	Geological Resources Land Use Mining Resources Air Quality Water Resources Biological Resources Recreation Socioeconomics
<i>Transportation</i>			
Present & Future – Churchill	U.S. Route 50 E of Alpine Rd to the CH/LA County Line Mill Reconstruction	A portion of U.S. Route 50 that lies east of Mt. Augusta will undergo reconstruction, rehabilitation, and resurfacing activities beginning in the year of 2019.	Land Use Transportation Noise Air Quality
	U.S. Route 50 Downtown Fallon Mill and Fill	Reconstruct U.S. Route 50 in Downtown Fallon to have Plantmix Bituminous Surface with Open Graded surface.	Land Use Transportation Noise Air Quality
	SR 361 Bridge Replacement B-425	Bridge #B-425 is set to be replaced in 2018, and is located east of the existing B-17 range.	Transportation Noise Air Quality

Notes: ATV = All-Terrain Vehicle, BLM = Bureau of Land Management, CRMP = Consolidated Resource Management Plan, EA = Environmental Assessment, EIS = Environmental Impact statement, U.S. = United States, CCD = Carson City District, MW = Megawatt, NEPA = National Environmental Policy Act, FONSI = Finding of No Significant Impact, DR = Decision Record, WSA = Wilderness Study Area, CFR = Code of Federal Regulations, NDOT = Nevada Department of Transportation, SR = State Route, NRS = Nevada Revised Statute

Table 4-11: Other Actions in Eureka County

Action		Summary of Action	Applicable Resource(s)
Past			
<i>Mining</i>			
Past – Eureka	Tonkin Springs Mine	The Tonkin Springs Mine was no longer functional and was approved for a permanent closure process in 2015 (Bureau of Land Management, 2015). This included the decommissioning and clean-closing of the tailings impound, relocating sulfide ore stockpiles and the waste rock dump, backfilling the open pit, and constructing a new evaporation pond for post-closure fluid management.	Geological Resources Land Use Mining Resources Transportation Noise Air Quality Water Resources Biological Resources Public Health/Safety
Present and Reasonably Foreseeable			
<i>Conservation</i>			
Present & Future – Eureka	The 3 Bars Ecosystem and Landscape Restoration Project	The 3 Bars ecosystem is approximately 749,810 acres (3,034 km ²), northwest of Eureka, Nevada (Bureau of Land Management, 2016). The ecosystem is administered by the BLM Mount Lewis Field Office. It is a shrub-steppe ecosystem with important resource values, including habitat for a diversity of plants and animals as well as traditional use areas for several Indian tribes. The 3 Bars ecosystem provides important habitat for greater sage-grouse, mule deer, Lahontan cutthroat trout, and numerous other fish and wildlife species, including migratory birds, and for wild horses. As stated in the Final EIS, the BLM treated vegetation using manual, mechanical, and biological control methods as well as fire (both prescribed and wildland fire for resource benefit) (Bureau of Land Management, 2016). Through sagebrush and other habitat restoration on the 3 Bars ecosystem, the BLM would help to reduce the likelihood that the greater sage-grouse will be federally listed in the future. Potential impacts from the ecosystem management actions include the following: water quality and soil impacts from accidental spills of fuels and lubricants; soil and erosion impacts stemming from mechanical treatments; cultural resources impacted by fire and equipment, mitigated by pre-treatment cultural resource surveys; long-term recreational benefits from healthier vegetation, fewer noxious weeds, and reduced risk of wildfire; and, long-term socioeconomic benefits from improved ecosystem health and functionality.	Geological Resources Land Use Mining Resources Livestock Grazing Noise Air Quality Water Resources Biological Resources Cultural Resources Recreation Socioeconomics Public Health/Safety Environmental Justice

Table 4 11: Other Actions in Eureka County (continued)

Action		Summary of Action	Applicable Resource(s)
Present and Reasonably Foreseeable			
<i>Mining</i>			
Present & Future – Eureka	Gold Bar Mine Project	McEwen Mining Inc. (MMI) proposes to develop the Gold Bar Mine Project in the southern Roberts Mountains in central Nevada approximately 30 miles northwest of Eureka, Nevada. The project would be located primarily on public land administered by the BLM MLFO and on private land controlled by MMI. The Project would involve extracting gold via open pit mining and heap leach beneficiation of ore from the deposits known as Gold Pick, Gold Ridge, and Cabin Creek. Open pit mining operations would be performed during a projected 7-year period.	Geological Resources Land Use Mining Resources Livestock Grazing Transportation Noise Air Quality Water Resources Biological Resources Cultural Resources Socioeconomics Recreation Environmental Justice
	Barrick Goldrush	Goldrush is on track to become Barrick Gold Corporation’s newest mining operation. Construction and initial production is expected to first occur between 2021 and 2022. The mine has already proved probable gold reserves and indicated gold resources with the potential to identify additional resources once underground access is established (Barrick, 2018).	Geological Resources Land Use Mining Resources Noise Air Quality Water Resources Biological Resources Recreation Socioeconomics Public Health/Safety

Table 4 11: Other Actions in Eureka County (continued)

Action		Summary of Action	Applicable Resource(s)
Present & Future – Eureka	Mt. Hope Project	Mt. Hope is one of the largest and highest-grade primary molybdenum deposits in the world. Originally, the first ore scheduled to mill was in 2016. However, because the project requires re-obtaining water permits from the state of Nevada and a ROD approving the SEIS from the BLM, project financing, and a sustained improvement in molybdenum price, it has been suspended. The water permits and ROD are anticipated by early 2019. Once financing is complete, construction will commence (Huss et al., 2014).	Geological Resources Land Use Mining Resources Livestock Grazing Transportation Noise Air Quality Water Resources Biological Resources Cultural Resources Recreation Socioeconomics Public Health/Safety Environmental Justice
	Gullsil Prospect Mountain Project	Gullsil, LLC is proposing to conduct mineral exploration and underground mining activities on various mining claims in Eureka Mining District, approximately 4 miles southwest of Eureka, NV. This project would be located on public BLM-administered land as well as private Gullsil land. The project would disturb 83 acres of land for surface and underground exploration and mining activities. Various construction and drilling projects need to be included in order to build up mining infrastructure. The Plan of Operations for the project still needs to be determined before any development occurs (Bureau of Land Management, 2018).	Geological Resources Land Use Mining Resources Livestock Grazing Transportation Noise Air Quality Water Resources Biological Resources Cultural Resources Recreation Socioeconomics Public Health/Safety

Table 4 11: Other Actions in Eureka County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Mining</i>			
Present & Future – Eureka	Prophecy Gibellini Project	The Prophecy Gibellini Project was designed to be an open pit, heap leach mining operation located approximately 25 miles south of Eureka, NV. A 10-year mineral lease agreement was signed in 2017. The Plan of Operations for mining was submitted in May 2018, and the project is on a streamlined track for NEPA review. Engineering contracts and the preparation of an EIS are expected to be fulfilled in 2019 (Prophecy Development Corporation, 2018).	Geological Resources Land Use Mining Resources Noise Air Quality Water Resources Biological Resources Recreation Socioeconomics
	GRP Pan Gold Project	The Pan Mine Project is an open pit, heap leach mine southeast of Eureka, NV, in White Pine County. GPR Minerals purchased the mine in 2016. Various construction and drilling projects have been underway, improving upon the existing mine. Mining began in 2017 and plans to run until 2022.	Geological Resources Mining Resources Livestock Grazing Noise Biological Resources Cultural Resources Air Quality Water Resources Recreation Socioeconomics
	Ruby Hill Gold Mine	The Ruby Hill Gold Mine is located in Eureka County, west of Eureka and U.S. Route 50. It is under FRTC SUA. The deposit was discovered there in 1991, and the first year of production was in 1997. The mine is owned by the Barrick Gold Corporation, and it is located in a BLM administrative area under the Battle Mountain BLM District.	Geological Resources Mining Resources Airspace Noise Air Quality Water Resources Socioeconomics

Table 4 11: Other Actions in Eureka County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Operations</i>			
Present & Future – Eureka	Precious Metals Recovery (PMR), LLC Dry Hills Facility (Barrick Mercury Repository)	The proposed PMR Dry Hills Facility will receive elemental mercury, activated carbon, and calomel, which will be processed at the facility to produce elemental mercury. The PMR facility is intended only as a treatment and storage facility (TSF) for the mercury containing wastes identified in the permit application, and no hazardous waste disposal is authorized at the site (Nevada Department of Environmental Protection, 2019).	Geological Resources Mining Resources Airspace Noise Air Quality Water Resources Public Health/Safety Recreation Socioeconomics
	Yucca Mountain Project: Carlin Route	The Yucca Mountain Nuclear Waste Repository is located on a piece of land adjoining the NNSS in Nye County, NV. It was designed to be a deep geological repository storage facility for spent nuclear fuel and other high-level radioactive waste, as designated by the Nuclear Waste Policy Act amendments of 1987. Transportation of this waste to the repository has been highly debated over the past decade, and the project has been put on hold. One proposed route of transportation is the Carlin Route. The problem with this proposed route is it was in the same region as the Basin and Range Monument in Lincoln County.	Geological Resources Land Use Mining Resources Livestock Grazing Transportation Airspace Noise Air Quality Water Resources Biological Resources Cultural Resources Recreation Socioeconomics Public Health/Safety Environmental Justice

Notes: BLM = Bureau of Land Management, EIS = Environmental Impact statement, km² = square kilometers, MLFO = Mount Lewis Field Office, NEPA = National Environmental Policy Act, NNSS = Nevada National Security Site, ROD = Record of Decision, SEIS = Supplemental EIS, SUA = Special Use Airspace, FRTC = Fallon Range Training Complex

Table 4-12: Other Actions in Lander County

Action		Summary of Action	Applicable Resource(s)
Past			
<i>Mining</i>			
Past – Lander	Cove Helen Underground Mine Project	<p>According to a 2013 EA for the project, Au-Reka Gold Corporation, a wholly owned subsidiary of Premier Gold Mines Limited, conducted surface exploration and underground drilling and bulk sampling activities at the Cove-Helen Underground Mine Project in north-central Nevada approximately 26 miles (42 km) south of Battle Mountain, Nevada, in Lander County (Bureau of Land Management, 2013b; Ciuculescu & Evans, 2017).</p> <p>The project area measures approximately 2,474 acres (10.01 km²) in which all of the proposed surface and underground activities occur (Bureau of Land Management, 2013b; Ciuculescu & Evans, 2017). The plan created 465 acres (1.88 km²) of project-related disturbance.</p> <p>Environmental impacts associated with the Cove Helen underground mining project include emissions of fugitive dust and equipment emissions; potential cultural resource impacts; soil erosion and surface water sedimentation; inadvertent wildland fire generation; regulated waste generation and potential petroleum spills; noxious weed dispersal; and nest disturbance of migratory birds during exploration activities; and BLM special status species impacts on pale kangaroo mouse (<i>Microdipodops pallidus</i>), dark kangaroo mouse (<i>Microdipodops megacephalus</i>), and sand cholla (<i>Opuntia pulchella</i>).</p>	<p>Geological Resources</p> <p>Mining Resources</p> <p>Transportation</p> <p>Noise</p> <p>Air Quality</p> <p>Water Resources</p> <p>Biological Resources</p> <p>Cultural Resources</p> <p>Socioeconomics</p> <p>Public Health/Safety</p> <p>Environmental</p> <p>Justice</p>
Present and Reasonably Foreseeable			
<i>Mining</i>			
Present & Future – Lander	Greater Phoenix Project	<p>Under the proposed Project, the life of the Phoenix Mine would be extended from approximately 2040 to 2063. The proposed boundary would encompass approximately 18,839 acres, including 10,132 acres of public land managed by the BLM. Total mine-related surface disturbance under the Project would increase to 11,871 acres, which includes 5,975 acres on private land and 5,896 acres on public land.</p>	<p>Geological Resources</p> <p>Land Use</p> <p>Mining Resources</p> <p>Livestock Grazing</p> <p>Noise</p> <p>Air Quality</p> <p>Water Resources</p> <p>Biological Resources</p> <p>Cultural Resources</p> <p>Recreation</p> <p>Socioeconomics</p>

Table 4-12: Other Actions in Lander County (continued)

Action		Summary of Action	Applicable Resource(s)
Present and Reasonably Foreseeable (continued)			
<i>Geothermal</i>			
Present & Future – Lander	Ormat's McGinness Hills Geothermal Facility	Commercial production at the McGinness Hills Geothermal Facility began in 2012, and Ormat completed a second phase of expansion in 2015. Operations of Phase Three have begun, and construction is expected to be completed by the end of 2019. After the completion of Phase Three, McGinness Hills will include 15 production wells. It is projected that over the next 20 years, the entire complex will contribute \$15 million to Lander County and \$30 million to the state of Nevada.	Geological Resources Land Use Mining Resources Livestock Grazing Noise Air Quality Water Resources Biological Resources Socioeconomics Environmental Justice

Notes: BLM = Bureau of Land Management, EA = Environmental Assessment, km = kilometer(s), km² = square kilometers

Table 4-13: Other Actions in Lyon County

Action		Summary of Action	Applicable Resource(s)
Past			
<i>Geothermal</i>			
Past – Lyon	Ann Mason Project, Plan of Operations Amendment	Entrée Gold Corp submitted a revision to the Ann Mason Exploration Plan of Operations (Plan Amendment) (N-84570). The revision expanded the project area to 2,233 acres and included an additional 16 exploration drill sites, 10 water monitoring well sites, and one production well site. Where historic properties occur, exclusion zone(s) were established for mitigation efforts and to ensure that adverse effects did not occur to historic properties during project implementation.	Geological Resources Land Use Mining Resources Air Quality Water Resources Recreation
<i>Transportation</i>			
Past – Lyon	U.S.A Parkway Right-of-way Project	The Nevada Department of Transportation (NDOT) submitted a draft Plan of Development and a Right-of-way (ROW) application for the operation, construction, and maintenance for an arterial roadway, State Route 439 (U.S.A Parkway). The U.S.A Parkway connects Interstate 80 (I-80) to U.S. Route 50 through Lyon and Storey Counties. The ROW crossed approximately 169 acres of public land managed by the BLM. Specific locations for bridge structures, retaining walls, material sites, drainage facilities, utilities, wildlife crossings, signalization and dynamic messaging, and other ancillary installments on public land were determined by the design builder and entirely within the ROW boundaries. The U.S.A Parkway is a permanent transportation facility and the BLM issued NDOT a perpetual ROW grant subject to terms and conditions.	Transportation Noise Air Quality Biological Resources Socioeconomics
<i>Lands and Realty</i>			
Past – Lyon	Yerington Land Conveyance	The BLM Carson City District prepared the Yerington Land Conveyance Final Environmental Assessment, which analyzed the direct, indirect, and cumulative effects from the conveyance of approximately 10,150 acres from the BLM to the City of Yerington. The conveyance area was located east of Yerington, Nevada in Lyon and Mineral counties. Section 3009, titled the “Northern Nevada Land Conveyances,” required the BLM to convey to the City of Yerington (City) approximately 10,150 acres of public lands. The Act exempted the conveyance from the land use planning requirements of Sections 202 and 203 of the Federal Land Policy Management Act.	Geological Resources Land Use Livestock Grazing Biological Resources Cultural Resources Recreation Socioeconomics
<i>Conservation</i>			
Past – Lyon	Livestock Change on Gray Hills Allotment	As a repose to the drought, the permittee changed the kind of livestock from sheep to cattle. Big horn sheep are located in the area and replacing sheep with cattle on the allotment removed the competition between wild and domestic sheep.	Livestock Biological Resources

Table 4-13: Other Actions in Lyon County (continued)

Action		Summary of Action	Applicable Resource(s)
Present and Reasonably Foreseeable			
<i>Geothermal</i>			
Present & Future – Lyon	Ormat's Desert Peak Geothermal Field	In 2001, Ormat purchased the geothermal plant and later constructed a new binary power plant adjacent to the existing dual flash plant. Power generated from this project will be sold to the Nevada Power Company. This plant has two production wells, located east-northeast of the power plant.	Geological Resources Land Use Mining Resources Noise Water Resources Socioeconomics
<i>Conservation</i>			
Present & Future – Lyon	Pine Nut Land Health Project	On April 29, 2014, the BLM Sierra Front Field Office approved the Pine Nut Land Health Project. Over a 10- to 15-year period, vegetative treatments would occur on approximately 24,564 acres of public lands in the Pine Nut Mountains, located in Carson City, Lyon, and Douglas Counties, Nevada. The objectives of this project include restore and maintain sagebrush habitat; restore and maintain riparian plant communities; restore and maintain wet meadows and springs; protect and enhance historic pinyon-juniper woodland habitat; reduce the potential of large-scale high severity wildland fire; provide for public and firefighter safety and protection of property and infrastructure; and provide woodland products to the public, Indian Tribes, and commercial entities. On April 29, 2014 the BLM published the Pine Nut Land Health Final Environmental Assessment, which includes the analysis necessary to describe the projects direct, indirect, and cumulative effects. The analysis contained in the Final Environmental Assessment supports a Finding of No Significant Impact, requiring no environmental impact statement.	Air Quality Biological Resources Cultural Resources
<i>Transportation</i>			
Present & Future – Lyon	U.S. Route 50 Roy's Rd to Silver Spring Widening	U.S. Route 50 leading to Silver Springs is currently being widened from 2 to lanes to 4 lanes and also includes drainage improvements.	Transportation Noise Air Quality

Table 4-13: Other Actions in Lyon County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Lands and Realty</i>			
Present & Future – Lyon	Silver Springs Airport UAV and UAS Park Permit	On December 29, 2015, Lyon County applied for a land use permit for an Unmanned Aerial Vehicles (UAV) and Unmanned Aerial System (UAS) testing site near Silver Springs, Nevada. The permit covers approximately 21,731 acres of public land. The Silver Springs Airport manages the testing site, maintains a schedule of use, and provides the documentation necessary to control the use of the site under this permit. The Silver Springs Airport uses the airspace above the BLM permitted area in accordance with the Federal Aviation and Administration (FAA) and Nevada Institute for Autonomous Systems guidelines.	Airspace
<i>Lands and Realty</i>			
Present & Future – Lyon	Silver Springs Airport UAV and UAS Park Permit (continued)	No runway is needed for this use as the aircraft systems tested within the permit boundary have the capability for vertical take-off and landing. The permit is used at a frequency of four or less users per month during initial use. During testing flights, the UAVs and UASs are flown within a visible line of sight per FAA requirements. Generally, less than six people, and no more than four vehicles use the permitted area at a given time. A small self-contained trailer may be used during testing.	Airspace

Note: BLM = Bureau of Land Management

Table 4-14: Other Actions in Mineral County

Action		Summary of Action	Applicable Resource(s)
Past			
<i>Geothermal</i>			
Past – Mineral	Ormat Wild Rose Stormwater Control Sundry Notice	Ormat Nevada Inc. proposed to better protect the Wild Rose geothermal complex from damage caused by flash flooding in the area. This was accomplished by constructing stormwater diversions, repairing storm damage to existing pads, removing accumulated sediment from retention ponds, and reclaiming no longer needed access roads.	Geological Resources Noise Air Quality Water Resources Recreation
	Ormat Wild Rose Geothermal Project	The BLM, Carson City District, Stillwater Field Office, has issued the Decision Record (DR) for the final EA for the Wild Rose Geothermal Project. The decision was for the BLM to implement the Proposed Action as described in Chapter 2 of the EA. The EA analyzed potential impacts on the natural and human environment that could result from implementation of the geothermal exploration and utilization activities. The primary objective of the project was to further evaluate the characteristics of the geothermal resources in the Wild Rose Project area and develop a geothermal power plant. The proposed activities included: constructing and upgrading existing access roads (both on and off the lease); construction and operation of geothermal pipelines; drilling and testing of up to four exploration wells; construction and operation of a 15-35 megawatt (MW) net rated geothermal power plant facility and electrical substation; and Construction and operation of a 120 k-V gen-tie and switching station.	Geological Resources Land Use Mining Resources Livestock Grazing Noise Air Quality Water Resources Biological Resources Recreation
	Wild Rose II Utilization	The Proposed Action consisted of the following components: construction of five drill pads from which to drill six production wells and two injection wells; construction and operation of an approximately 35 megawatt (MW) net rated (40 MW gross) geothermal power plant facility and electrical substation; construction and operation of geothermal production and injection wells, pipelines, access roads, and support facilities; and construction and operation of a short transmission line fold to the existing 120 kilovolt (kV) transmission line that was built as part of Phase I.	Geological Resources Land Use Mining Resources Livestock Grazing Noise Air Quality Water Resources Biological Resources Recreation

Table 4-14: Other Actions in Mineral County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Mining</i>			
Past – Mineral	Rawhide Mine Minor Mod Western Extension Phase 4 HLP & Crazy Hill South Pit	The Denton-Rawhide Mine is located in northeastern Mineral County, Nevada approximately 55 miles southeast of Fallon and 45 miles north of Hawthorne. Exploration activities and subsequent mine planning have identified additional mineral reserves southeast of the backfilled Crazy Hill Pit. The 2016 Minor Amendment to the Plan of Operations proposed development of the Crazy Hill South Pit and construction of the Western Extension Phase 4 Leach Pad. The Proposed Action consisted of the Western Extension Phase 4 Leach Pad, development of the Crazy Hill South Pit, storm water run-off Sediment Pond, and a Suitable Growth Media (SGM) Stockpile.	Geological Resources Land Use Mining Resources Air Quality Water Resources Recreation Socioeconomics Public Health/Safety
	Kaiser Mine AML	The Nevada Division of Minerals constructed one bat cupola and two culvert gates, conducted six backfills and, depending on future wildlife surveys, either backfilled or grate towed additional abandoned mine hazards north of Gabbs in Mineral County, Nevada in the vicinity of the Kaiser Mine. The Proposed Actions involved less than one acre of BLM managed public lands.	Land Use Mining Resources Biological Resources Recreation Public Health/Safety
	Diamond A	Pellandini Farms requested a negotiated sale contract for 30,000 cubic yards of sand and gravel borrow material from a pit approximately 16 miles west of Gabbs, Nevada. The material was excavated using a dozer and loader. The material was loaded into belly dump trucks and hauled offsite. Access to the project was on existing roads and new roads constructed during the project. The maintenance stayed within the existing road disturbance beams.	Geological Resources Mining Resources Transportation Air Quality Water Resources Recreation
<i>Utilities</i>			
Past – Mineral	Yerington Water Tank, Utility Line, and Road Right-of-Way Project	The BLM, Sierra Front Field Office prepared the Yerington Water Tank, Utility Line, and Road Right-of-Way (ROW) Project Final Environmental Assessment. The EA analyzed, while complying with NEPA, the direct, indirect, and cumulative effects from a right-of-way that was issued to the City of Yerington. In September 2014, the City of Yerington submitted to the BLM a draft Plan of Development (see Documents) and application to obtain a right-of-way (NVN 093475) for the use of a water tank, buried utility line, and Luzier Lane. On November 25, 2014, the BLM approved the Finding of No Significant Impact and Decision Record for this project.	Land Use Transportation Water Resources Biological Resources Public Health/Safety

Table 4-14: Other Actions in Mineral County (continued)

Action		Summary of Action	Applicable Resource(s)
Past – Mineral	Yerington Utility Line Right-of-Way Amendment	The City of Yerington proposed to amend their ROW grant, NVN 093475, issued for a water tank, utility lines, and access road within Luzier Lane in Yerington, Nevada. The City of Yerington proposed to install additional buried pipeline along Luzier Lane for the purpose of providing safe drinking water to the Sunset Hills residential community. Installation of the piping began in the spring of 2015 and took approximately 3 months. The City of Yerington will conduct maintenance when the expected useful life of the pipeline has been exceeded (after approximately 50 years). This proposal was a standard Federal Land Management Policy Act ROW amendment. The amendment coincided with the existing ROW grant, NVN 093475, and would expire on December 31, 2044. The amendment added 3.51 acres to the existing ROW grant.	Land Use Water Resources Recreation Public Health/Safety
Present and Reasonably Foreseeable Future			
<i>Geothermal</i>			
Present & Future – Mineral	October 26, 2016 Geothermal Lease Sale – Churchill & Mineral County Parcels	The BLM leased 5 geothermal lease parcels covering approximately 12,020 acres in Churchill and Mineral Counties, Nevada on October 26, 2016. Issuance of geothermal leases confers on the lessee a non-exclusive right to future exploration and an exclusive development right of the resource within the lease area. However, leasing geothermal resources does not confer on the lessee the right to proceed with any ground disturbing activities related to exploring for or developing geothermal resources. Issuance of geothermal leases could have indirect impacts because such leasing represents a commitment of resources and it is reasonably expected that subsequent exploration, development, and reclamation of facilities would occur. Proposals for exploration and/or development at specific sites would be examined for conformance with the land use plan and analyzed through the NEPA process at the time the proposals are submitted. A geothermal lease typically grants the lessee access to geothermal resources in the lease area for a period of 10 years. Once an area is developed for productive use of geothermal energy, the lease allows the lessee use of the resource for 40 years with a right of renewal for another 40 years. Geothermal exploration and production on public land conducted through leases is subject to terms and stipulations to comply with all applicable federal and state laws pertaining to various considerations for sanitation, water quality, wildlife, safety, and reclamation.	Geological Resources Land Use Mining Resources Recreation

Table 4-14: Other Actions in Mineral County (continued)

Action		Summary of Action	Applicable Resource(s)
Present & Future – Mineral		(continued) Lease stipulations may be site specific and are derived from the environmental analysis process. Most lease applications are for a minimum of 640 acres. Lands not available for leasing are cited under Department of Interior, Bureau of Land Management, 43 CFR part 3201.11 Geothermal Resource Leasing and Geothermal Resources Unit Agreements and in the CRMP, 2001, as amended. Examples of public lands not open to fluid mineral leasing are Wilderness Areas, Wilderness Study Areas, Areas of Critical Environmental Concern, or Page 9 National Conservation Areas. Also excluded are tribal lands, wildlife refuges, wildlife management areas, and private land with titles that include all fluid mineral rights.	
	Well 68-1 Deepen & Pad Expansion Geothermal Sundry	Ormat is proposing to deepen, test, and continue injecting the existing injection well 68-1 located on lands leased in the Wild Rose Field in Mineral County, Nevada. The drilling program would (1) re-grade and expand the existing well pad to allow access for the necessary drill rig and equipment, (2) deepen the existing injection well to a total measured depth of 4,200 feet or total vertical depth of 3,979 feet, (3) test the well to determine reservoir characteristics, (4) measure the well's temperature profile, and (5) continue to use the well for injection of geothermal brine. The existing well pad would increase approximately 1.5 acres in surface disturbance. The existing containment pit would be used for the proposed re-drilling and well testing activities.	Geological Resources Land Use Mining Resources Livestock Grazing Water Resources Biological Resources
<i>Geothermal</i>			
Present & Future – Mineral	Well 68-1 Deepen & Pad Expansion Geothermal Sundry (continued)	The pad would be graded to drain into the containment basin so that drilling fluids and uncontrolled spills would not leave the site. The proposed site and drilling activities were surveyed and analyzed in the Wild Rose Geothermal Project EA (DOI-BLM-NV-C010-2012-0050-EA) and FONSI/DR signed October 5, 2012.	Geological Resources Land Use Mining Resources Livestock Grazing Water Resources Biological Resources
	Ormat's Don A. Campbell Phase Three	The Don A. Campbell Geothermal Project reached operations in 2013. Phase One and Phase Two of expansions have been completed, and now Phase Three is in the development stage. This was the first plant to be developed in Mineral County, bringing huge socioeconomic benefits to the county. The plant currently has 9 production wells and 5 injection wells.	Geological Resources Land Use Mining Resources Noise Air Quality Water Resources Socioeconomics

Table 4-14: Other Actions in Mineral County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Mining</i>			
Present & Future – Mineral	Rawhide Mining Regent Expansion	Rawhide Mining Company LLC proposed to amend their current Plan of Operations authorized by the BLM and Reclamation Plan (Permit No. 0041) issued by the Nevada Division of Environmental Protection/Bureau of Mining Regulation and Reclamation to expand existing operations at the Denton-Rawhide Mine into the Regent Area located in Mineral County, approximately 55 miles southeast of Fallon. The proposed Amended Plan of Operations modifies Rawhide Mining Company's 1997 Plan of Operations and subsequent amendments. The Proposed Action encompasses expansion of mining through construction activities, mining, expansion of existing waste rock storage facility, heap leach activities, and closure/reclamation of mine facilities, to include the Regent Area and expansion of existing facilities located within the Denton-Rawhide Mine site. The need for action is to respond to a mining and exploration plan of operations and to take actions necessary to prevent unnecessary or undue degradation of public land administered by BLM. This is expected to extend the overall mine life of approximately 8 years. This project is adjacent to the proposed western DVTA boundary, but the proposed expansions of this mine project are at least one mile removed from the boundary (U.S. Department of the Interior, 2018).	Geological Resources Mining Resources Air Quality Water Resources Biological Resources Socioeconomics Public Health/Safety

Notes: BLM = Bureau of Land Management, CRMP = Consolidated Resource Management Plan, EA = Environmental Assessment, NEPA = National Environmental Policy Act, CFR = Code of Federal Regulations, FONSI = Finding of No Significant Impact, DR = Decision Record

Table 4-15: Other Actions in Nye County

Action		Summary of Action	Applicable Resource(s)
Present and Reasonably Foreseeable Future			
<i>Operations</i>			
Present & Future – Nye	Nevada Test and Training Range (NTTR) Military Land Withdrawal	The U.S. Air Force has published a Final Legislative Environmental Impact Statement (LEIS) for the extension of the current land withdrawal for Nellis Air Force Base. The Air Force proposes to continue military operations on the NTTR's existing 2,949,603 acres of land. In addition to extending the existing land withdrawal, the Air Force is also proposing to withdraw up to an additional 301,507 acres to improve the range's capacity to support military testing and training. The current land withdrawal expires in 2021 unless legislation is enacted extending it (U.S. Air Force, 2017). The Final LEIS analyzed impacts on airspace, noise, air quality, land use, recreation and visual resources, wilderness and Wilderness Study Areas , socioeconomics, environmental justice, biological resources, cultural resources, earth resources, water resources, hazardous materials and solid wastes, health and safety, and transportation. The analysis found impacts that some of the alternatives had less than significant impacts, some did not anticipate significant impacts, and for some significance could not be determined at this time.	Geological Resources Land Use Mining Resources Livestock Grazing Transportation Airspace Noise Air Quality Water Resources Biological Resources Cultural Resources Recreation Socioeconomics Public Health/Safety Environmental Justice
	Central Nevada Test Area	The Central Nevada Test Area (CNTA), located in the Hot Creek Valley of south-central Nevada, withdrew 2,560 acres for test site surveillance and maintenance. The Department of Energy (DoE) Office of Legacy Management assumed responsibility for long-term surveillance and maintenance at the CNTA Site in 2008. The site requires routine inspection and maintenance, records-related activities, and stakeholder support. It was originally used for underground nuclear weapons testing in the 1960s. Public lands surrounding CNTA are used for livestock grazing and ranching, as well as recreational use during hunting season. No major changes in land use are expected.	Geological Resources Airspace Water Resources

Table 4-15: Other Actions in Nye County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Operations</i>			
Present & Future – Nye	Nevada National Security Site	The Nevada National Security Site (NNSS), previously known as the Nevada Test Site, withdrew 880,000 acres for nuclear testing and related activities. The NNSS helps ensure the security of the United States and its allies by supporting the stewardship of the nuclear deterrent, providing emergency response capability and training, and contributing to key nonproliferation and arms control initiatives. They execute unique national-level experiments, support national security customers through work for others, manage the legacy of the Cold War nuclear deterrent, and provide long-term environmental stewardship for site missions.	Geological Resources Land Use Mining Resources Livestock Grazing Transportation Airspace Noise Air Quality Water Resources Biological Resources Cultural Resources Recreation Socioeconomics Public Health/Safety Environmental Justice
	Tonopah Test Range	The Tonopah Test Range (TTR) withdrew 339,360 acres for research, development, and weapons testing. The TTR provides research and development test support for the DoE's weapon program. The range also offers a unique test environment for use by other government agencies and their contractors.	Geological Resources Land Use Mining Resources Livestock Grazing Transportation Airspace Noise Air Quality Water Resources Biological Resources Cultural Resources Recreation Socioeconomics Public Health/Safety Environmental Justice

Table 4-15: Other Actions in Nye County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Operations</i>			
Present & Future – Nye	Yucca Mountain Project: Mina Route	The Yucca Mountain Nuclear Waste Repository is located on a piece of land adjoining the NNSS in Nye County, NV. It was designed to be a deep geological repository storage facility for spent nuclear fuel and other high-level radioactive waste, as designated by the Nuclear Waste Policy Act amendments of 1987. Transportation of this waste to the repository has been highly debated over the past decade, and the project has been put on hold. One proposed route of transportation is the Mina Route. This route would use an existing railroad track in western Nevada to take waste south through Hawthorne, where a new track would be built to Yucca Mountain. Eventually, the Walker River Paiute Tribe withdrew their permission to ship the nuclear waste through their reservation territories. This route has had some NEPA work done and has been considered by the government several times to be the chosen route.	Geological Resources Land Use Mining Resources Livestock Grazing Transportation Airspace Noise Air Quality Water Resources Biological Resources Cultural Resources Recreation Socioeconomics Public Health/Safety Environmental Justice
	Yucca Mountain Project: Caliente Route	The Yucca Mountain Nuclear Waste Repository is located on a piece of land adjoining the NNSS in Nye County, NV. It was designed to be a deep geological repository storage facility for spent nuclear fuel and other high-level radioactive waste, as designated by the Nuclear Waste Policy Act amendments of 1987. Transportation of this waste to the repository has been highly debated over the past decade, and the project has been put on hold. One proposed route of transportation is the Caliente Route. This route was chosen by the Department of Energy in 2004. However, legal issues arose over this route so the DoE looked elsewhere.	Geological Resources Land Use Mining Resources Livestock Grazing Transportation Airspace Noise Air Quality Water Resources Biological Resources Cultural Resources Recreation Socioeconomics Public Health/Safety Environmental Justice

Table 4-15: Other Actions in Nye County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Operations</i>			
Present & Future – Nye	Department of Interior and Department of Agriculture Projects/Land Withdrawals and Segregation	<p>The Department of Interior (DOI) and the Department of Agriculture combined existing land withdrawals and segregations to comprise 764,170 acres with an additional 136,800 acres of proposed new withdrawal. Total acreage of DOI withdrawals includes Wilderness Study Areas under segregation. Based on historical trends it is likely that these segregations will be made permanent through Congressionally designated wilderness areas. Designated wilderness areas, monuments, parks, refuges, and road-less areas in Nye County are as follows:</p> <ol style="list-style-type: none"> 1) Alta Toquima: 35,860 acres 2) Alta Toquima: proposed withdrawal 40,701 acres 3) Arc Dome: 115,000 acres 4) Arc Dome: proposed withdrawal 96,135 acres 5) Ash Meadows: 23,000 acres 6) Basin Range: 200,000 acres 7) Death Valley: 44,000 acres 8) Grant Exchange: 52,600 acres 9) Quinn Canyon: 26,310 acres 10) Table Mountain: 92,600 acres 11) Table Mountain: proposed withdrawal of unknown acreage 	<p>Geological Resources Land Use Mining Resources Livestock Grazing Transportation Airspace Noise Air Quality Water Resources Biological Resources Cultural Resources Recreation Socioeconomics Public Health/Safety Environmental Justice</p>
<i>Conservation</i>			
Present & Future – Nye	Eastern Nevada Economic Development and Land Management Improvement Act	The Eastern Nevada Economic Development and Land Management Improvement Act (S. 1046 and H.R. 2374) would facilitate certain pinyon-juniper related projects in Lincoln County, Nevada. The bill also includes text that would modify the boundaries of the Mt. Moriah, High Schells, and Arc Dome Wilderness Areas. Collectively, this Act would reduce the amount of wilderness areas in Nye County and White Pine County by approximately 50 acres.	<p>Geological Resources Land Use Biological Resources Cultural Resources Socioeconomics</p>
<i>Transportation</i>			
Present & Future – Nye	Project I-11	Currently under construction is Project I-11, a 4-lane highway that would develop a transportation corridor linking Mexico and Canada. Construction may cause a localized decrease in air quality throughout the duration of the project, but emissions will be minimal. Short-term and localized noise may increase during the duration of construction.	<p>Geological Resources Land Use Transportation Noise Air Quality Water Resources Biological Resources Socioeconomics</p>

Table 4-15: Other Actions in Nye County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Transportation</i>			
Present & Future – Nye	Project I-11 (continued)	<p>There would be minimal habitat disruption and erosion during this project. Construction of I-11 would positively impact the economy by creating increased sales of materials and employment opportunities. One of the proposed routes, B-2, of I-11 may impact the FRTC expansion of site B-16. This would cause a traffic conflict with the entrance of B-16.</p> <p>Five alternatives were evaluated against nine criteria to determine the most feasible options for further refinement. Alternatives B-2, and B-3 are recommended to move forward into NEPA studies to further define a corridor alignment for I-11. Route B-2 (Tonopah to I-80 Fernley Interchange) follows U.S. Route 95 through Coaldale north past Luning. A new corridor bypasses the town of Hawthorne and runs along the east side of Walker Lake. The corridor connects with U.S. Route 95 north of Walker Lake to Fallon. A new corridor bypasses Fallon to connect with U.S. Route 50 ALT north to I-80 and Fernley. This is the most direct route to I-80 that follows existing highways as much as possible.</p> <p>Alternative B-3 (Tonopah to I-80 Fernley Interchange) follows U.S. Route 95 through Coaldale north past Luning. A new corridor bypasses the town of Hawthorne and runs along the east side of Walker Lake (same as Route B-2). The corridor connects with U.S. Route 95 north of Walker Lake to Schurz where the corridor deviates from B-2 to follow U.S. Route 95 ALT to I-80 and Fernley. New corridor segments will bypass Yerington, Sliver Springs, and Fernley. This alternative follows existing highways as much as possible and was developed to minimize impacts on tribal lands.</p> <p>Nye County officials are also concerned with tourism implications this project may have on the county, as well as how travelers will locate amenities within the county as the roads change. The planning horizon for design is still 10–20 years. The next steps for this project are to decide on a definitive route through Nevada and to implement NEPA planning.</p>	<p>Geological Resources</p> <p>Land Use</p> <p>Transportation</p> <p>Noise</p> <p>Air Quality</p> <p>Water Quality</p> <p>Biological Resources</p> <p>Socioeconomics</p>

Notes: NEPA = National Environmental Policy Act, CFR = Code of Federal Regulations, FONSI = Finding of No Significant Impact, DR = Decision Record

Table 4-16: Other Actions in Pershing County

Action		Summary of Action	Applicable Resource(s)
Past			
<i>Geothermal</i>			
Past – Pershing	2014 Geothermal Lease Sales in the Winnemucca District	The Proposed Action was to review one nominated geothermal parcel associated with the Sonoma-Gerlach Management Framework Plan (MFP III). The geothermal parcel was nominated for the September 2014 lease sale. The parcel consists of lands in T 24N, R 25E, Section 36; T 23 N, R 26E, Sections 5 and 6; T 24N, R 26E, Sections 28, 30, and 32. A determination was made that these parcels are open for leasing subject to both general stipulations that apply to all lease parcels within the WD as well as applicable site specific stipulations.	Geological Resources Land Use Mining Resources Recreation Water Resources
	Ormat’s Jersey Valley Geothermal Power Plant	Ormat was successful in bringing the Jersey Valley geothermal power plant online. This was the only utility-scale geothermal plant to be completed in the United States in 2010. The plant is now in regular operations.	Mining Resources Water Resources Recreation Socioeconomics
<i>Telecommunications</i>			
Past – Pershing	Coeur Rochester Inc. ROW N-50235	On December 15, 2014, Erik Lee, Civil Engineer, Battle Born Ventures LLC, on behalf of Coeur Rochester Inc., informed the WDO BLM, that Coeur Rochester Inc. built a new building for IT equipment (i.e., servers, routers, etc.) and communications equipment for the microwave tower to provide better security, insulation and weatherproofing for the computer equipment. Coeur provided an SF-299 application, updated engineers drawings, and shape files in order to amend their ROW on February 27, 2015. On June 15, 2015, Aron King, Assistant Field Manager, Humboldt River Field Office, decided Coeur Rochester Inc. could move the equipment to the new building, provided they remove the old building. Coeur Rochester received final approval of the modification to the existing ROW in October 2015.	Land Use Recreation
<i>Conservation</i>			
Past – Pershing	East Pershing Complex Gather Plan	This Programmatic Environmental Assessment (PEA) specifically considers and analyzes potential methods to be used to manage the wild horses and burros (WH&Bs) within the East Pershing Complex. For the purpose of this PEA, “gathers” refers to rounding up animals and “removals” refers to taking them off the range permanently. Due to WH&B numbers in excess of Appropriate Management Level (AML), lack of water and forage availability for the increasing herd sizes; management actions are necessary in order to prevent further deterioration of range conditions, and reduce population growth rates in order to achieve and maintain AML.	Geological Resources Land Use Livestock Grazing Biological Resources Water Resources Cultural Resources Recreation Public Health/Safety

Table 4-16: Other Actions in Pershing County (continued)

Action		Summary of Action	Applicable Resource(s)
Present and Reasonably Foreseeable Future			
<i>Conservation</i>			
Present & Future – Pershing	Pershing County Lands Bill (Pershing County Economic Development and Conservation Act)	The Pershing County Economic Development and Conservation Act would authorize the sale or conveyance of up to 150,000 acres of public land in Pershing County, north of B-20. This land is referred to as the Checkerboard Lands Resolution Area. In addition, Title III of the bill would designate the following wilderness areas: Mt. Limbo, North Sahwave, Bluewing, Selenite Peak, Fencemaker, Grandfather's, and Cain Mountain. In total, this bill would designate 136,072 acres of wilderness within Pershing County. The bill would also release 48,600 acres of the Augusta Mountain, China Mountain, Mt. Limbo, Selenite Mountains, and Tobin Range Wilderness Study Areas from wilderness study. The current bill expressly states that it would not restrict or preclude military overflights of wilderness areas or the designation or creation of special use airspace.	Land Use Airspace Biological Resources Recreation Socioeconomics
<i>Geothermal</i>			
Present & Future - Pershing	New York Canyon TG Core Holes 88(18-11)-10 & 88(82-11)-2	Operator proposes to drill TG core holes to a total depth of 2,000 feet, hole declination of -60°, orientation is to the south (195° azimuth) and -70°, orientation is to the east-southeast (112° azimuth) respectively. Exploration studies are in progress.	Mining Resources Geological Resources Socioeconomics
	Dixie Meadows Geothermal Utilization Development Project	The BLM, Carson City District, Stillwater Field Office has completed an EA for the Dixie Meadows Geothermal Development Project in Churchill and Pershing Counties, Nevada. The EA was available for public review and comment until June 30, 2017. This EA analyzes the proposal by ORNI 32 LLC and potential impacts from the proposed development of this project that entails the construction of up to two 30 Megawatt net rated geothermal power plants; drilling, testing, and operating up to 15 geothermal production and injection well sites and 8 core hole sites; constructing and operating pipelines to carry geothermal fluid between well fields and the power plant(s); and constructing either a 120-kilovolt (kV) or a 230-kV gen-tie and associated structures.	Geological Resources Land Use Mining Resources Air Quality Water Resources Biological Resources Cultural Resources Socioeconomics
	Oreana Energy LLC Land Use Plan N-94836	This project is located on split estate (i.e., real estate that belongs to the BLM and private owners) near Trinity Pass, NV. Oreana Energy LLC holds a mineral lease for minerals owned by Newmont U.S.A. In January 2010, Trabits Group was awarded a Department of energy (DOE) contract to develop a new high temperature/high pressure geothermal well cement. For completion of this DOE work, it was necessary to demonstrate the technology on a commercial scale. Results from detailed testing proved that interground technology had commercial viability.	Geological Resources Land Use Mining Resources Air Quality Water Resources Biological Resources Recreation Socioeconomics

Table 4-16: Other Actions in Pershing County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Geothermal</i>			
Present & Future - Pershing	Oreana Energy LLC Land Use Plan N-94836 (continued)	Oreana Energy LLC sent in an application on February 8, 2016, with an initial mining plan to remove zeolite deposits under the small mining provision until such a time when sales require that the 5-acre disturbance area or the 36,500 tons per year limit would be exceeded. Resource evaluation indicates that the pit area contains 180,000 tons of minable zeolite which a production rate of 30,000 tons per year would result in a mine life of six years. BLM can process this request under a short-term NEPA compliance (CX), allowing Oreana Energy LLC to operate until the longer-term plan can be analyzed under an EA. The CX has a limit of 25,000 tons, 50,000 cubic yards, and a 5-acre limit, of zeolite per year for a total of three years. The zeolite outcrops at the surface so waste rock will not be created. Water may be used for dust control as necessary and is available from the Lovelock Meadows Water District from a well located south of the Lovelock Speedway on Pitt Road. They would anticipate starting immediately after the permit is approved.	Geological Resources Land Use Mining Resources Air Quality Water Resources Biological Resources Recreation Socioeconomics
	Oreana Exploration Project	The BLM is seeking public input as it initiates an EA for Rye Patch Gold Corporation's (RPG) Oreana Exploration Project. While noncontiguous, the two exploration areas are located in the same geographic area and are referred to in this EA as the Lincoln Hill exploration area and the Wilco exploration area. The Lincoln Hill project area is approximately 17 miles east-northeast of Lovelock, Nevada and encompasses much of the historic Rochester District. The Wilco project area is located approximately 16 miles northeast of Lovelock, Nevada and includes segments of the California Trail. RPG has been doing novice level exploration in these areas for several years. The Plans of Operation are to expand their exploration in these areas and planned to occur in a multi-year phased approach.	Geological Resources Land Use Recreation
<i>Mining</i>			
Present & Future - Pershing	Coeur Rochester POA 10 and 11	The BLM, Winnemucca District, Humboldt River Field Office (WD/HRFO) prepared a Final Environmental Impact Statement (FEIS) for the Coeur Rochester Mine Plan of Operations Amendment 10 Project (POA10) and Closure Plan proposed in Pershing County, Nevada. The existing Coeur Rochester and Packard Mines are located approximately 26 miles northeast of Lovelock, Nevada. A Notice of Availability of the FEIS was published in the Federal Register on May 13, 2016. POA 10 allowed the expansion of existing mining operations reclamation and ultimate closure of the Coeur Rochester Mine, expanding the life of the project for approximately five to seven years, depending on market conditions and the price of silver. The site would be closed and reclaimed approximately five years after each mining and processing facility is closed. The POA 11 is the most recent proposition from the Coeur Rochester and Packard Mines and proposes another mine life extension. The permitting process is anticipated to be completed in 2020 (Coeur Rochester and Packard Mines, 2018).	Geological Resources Land Use Mining Resources Transportation Biological Resources Socioeconomics Public Health/Safety

Table 4-16: Other Actions in Pershing County (continued)

Action		Summary of Action	Applicable Resource(s)
<i>Mining</i>			
Present & Future - Pershing	Relief Canyon Expansion	The BLM, WD/HFRO has issued a Decision Record and a Finding of No Significant Impact for Gold Acquisition Corporation (GAC), a wholly owned subsidiary of Pershing Gold Corporation, on its Relief Canyon project. The Relief Canyon Mine is located Pershing County approximately 17 miles east northeast of Lovelock, in Packard Flat (Township 27 North, Range 33 East, sections 16-21). GAC recently purchased the property and submitted a Modification to the Plan of Operations (NVN 064634) to expand the mine. Past BLM authorizations have approved up to 622 acres of surface disturbance at the Relief Canyon Mine, with 396 acres currently in use. The proposed modification will result in 211 acres of new disturbance on acreage previously authorized for disturbance. The proposed uses of the new disturbance will differ from what was originally authorized but will not increase the total disturbance authorized.	Geological Resources Land Use Mining Resources Noise Air Quality Biological Resources Recreation
<i>Transportation</i>			
Present & Future - Pershing	I-80 at Fairview Ditch Bridge Replacement	The bridge on the I-80 at Fairview Ditch is currently being replaced.	Transportation Noise Air Quality
	G-29 Bridge	The G-29 bridge is to be removed and replaced in 2019.	Transportation Noise Air Quality

Notes: BLM = Bureau of Land Management, EA = Environmental Assessment, EIS = Environmental Impact statement, WDO = Winnemucca District Office, ROW = Right of Way, IBLA = Interior Board of Land Appeal, NEPA = National Environmental Policy Act

Table 4-17: Other Actions Proposed or Existing by the Bureau of Land Management Resource Management Plans

Action	Summary
Present and Reasonably Foreseeable Future	
<i>Air Quality</i>	
Goal: Maintain existing air quality and air quality related values (e.g., visibility) by ensuring that all authorized uses on BLM-administered lands comply with and support federal, state, and local laws and regulations for protecting air quality.	
Action(s)	Conduct prescribed burns consistently with the State of Nevada Division of Environmental Protection, Bureau of Air Pollution Control or the California's Air Resources Board permitting process and timed to minimize smoke impacts.
<i>Climate Change</i>	
Goal: Conserve habitat to support healthy fish, wildlife, and plant populations and ecosystem functions in a changing climate.	
Action(s)	Assess current and potential climate change-induced threats to BLM special status species and ecosystems functions. Prioritize habitat treatments to remove existing threats that may exacerbate the negative effects of climate change on BLM special status species and ecosystem functions. Develop proactive steps that can be taken to mitigate the effects of climate change on BLM special status species and unique plant assemblages through community workshops, tribal consultations, and other organizations.
<i>Soils and Water Resources</i>	
Goals: Manage soils and water resources to maintain watershed health, enhance ecosystem health, and provide for public uses while insuring ecological diversity and sustainability.	
<ul style="list-style-type: none"> Maintain and improve existing water quality by ensuring that all authorized uses comply with state water quality standards. Ensure BLM-administered lands are capable of providing long-term sustainable water for local community needs and for land management activities, while minimizing impacts on the local ecosystem hydrologic functions and processes. 	
Action(s)	<ul style="list-style-type: none"> Improve vegetative cover by increasing litter, biological soil crust and vegetation as appropriate for soil type. Minimize breaking up or shearing of biological crusts. Utilize deep-rooted stabilizing vegetation including native and nonnative plants in order to improve the soil surface. During surface-disturbing activities, stockpile topsoil or the best available material for growth medium for reuse during reclamation. If reclamation is not scheduled to be completed within 1 year, stockpiles must have mulch applied to prevent the loss and degradation of the stockpiled topsoil. If reclamation is not scheduled to be completed within 2 years, stockpiles must be seeded to prevent the loss and degradation of the stockpiled topsoil or the best available material for growth medium. Limit any BLM development, authorized activity, or land treatment so not to exceed a 50 percent reduction in ground cover in High Erosion Susceptibility Areas. Exceptions include water stabilization projects designed to promote vegetative cover; open OHV designations on Prison Hill, North Flannigan, Pah Rah Mountains, McClellan Peak, and East Churchill Canyon; nondiscretionary mining and prospecting activities; lands disposal in High Erosion Susceptibility Areas; green firewood cutting in Bailey Canyon High Erosion Susceptibility Area; and Christmas tree cutting in the Brunswick Canyon. Limit OHV use to designated roads and trails in areas of severe erosion hazard susceptibility and in watersheds where OHV use is causing flood and sediment problems. The areas to be limited include Petersen Mountain, Warm Springs/Hungry Valley, Sun Valley, Jumbo/Geiger Grade, portions of Prison and C Hill, and Mullen Pass.

Table 4-17: Other Actions Proposed or Existing by the Bureau of Land Management Resource Management Plans (continued)

Action	Summary
Action(s) (continued)	<ul style="list-style-type: none"> The Navy and the BLM will not allow access to the subsurface by drilling or any other means and/or removal of any subsurface material from the Shoal Site without thorough evaluation and coordination with Department of Energy.
<i>Vegetation</i>	
<p>Goal: Manage for healthy, diverse, and productive vegetation communities while managing for multiple use and sustained yield objectives.</p> <ul style="list-style-type: none"> Manage for healthy forests and woodland communities. Maintain and improve healthy diverse vegetative communities with species appropriate to the site potential while providing for multiple use and sustained yield. Maintain or reintroduce vegetative components to an ecosystem that allow infiltration and that have root mass capable of stabilizing the soil (Rehabilitation) and allow for transition to a site-appropriate diverse vegetative community based on state and transition modeling (Restoration). Achieve and manage proper functioning condition of riparian areas. Prevent and minimize the introduction and spread of invasive and noxious plants with an emphasis on collaboration with federal, tribal, state, county governments, permitted land users and conservation groups. 	
Action(s)	<ul style="list-style-type: none"> Remove up to 8,500 acres of low density pinyon-juniper areas annually to manage the expected rate of expansion into sagebrush areas. Thin up to 6,500 acres of medium and high density pinyon-juniper woodlands per year. Treat or remove any invasive tree species or nonnative insects/pathogens (e.g., Russian olive). Rehabilitation projects will be conducted to stabilize soils, re-establish hydrologic function, maintain and enhance biological integrity, promote plant resiliency, limit expansion or dominance of invasive species, and reestablish native species. Design and implement emergency stabilization and burned area rehabilitation treatments to protect wildland urban interface areas, improve high value wildlife habitat by re-establishing appropriate species, subspecies, and understory plants relative to site potential and prevent invasive species dominance. Fence riparian or wetland areas to exclude wild horses and burros, livestock, and provide an off-site water source when conditions permit. Timing and Duration of Grazing, the season of use may be shifted to avoid hot season grazing (July – September) or the duration of grazing may be shortened to give the riparian vegetation time to recover. Implement the ecologically based invasive plant management approach for weed abatement projects, regardless of size including: public education, prevention, eradication, control, revegetation and evaluation.
<i>Fish and Wildlife</i>	
<p>Goal: Manage vegetation communities that provide the food, cover, and breeding requisites for existing and potential native or otherwise desirable species of fish and wildlife in order to sustain and optimize their distribution and abundance consistent with habitat capability.</p> <ul style="list-style-type: none"> Manage special status species and their habitats in a manner that facilitates the protection, conservation, and restoration/enhancement of federally listed species and does not contribute to the federal listing of sensitive species. <p>Goals (continued)</p>	

Table 4-17: Other Actions Proposed or Existing by the Bureau of Land Management Resource Management Plans (continued)

Action	Summary
	<ul style="list-style-type: none"> Maintain and/or increase abundance and distribution of Greater Sage-Grouse on BLM-administered lands by conserving, enhancing, or restoring the sagebrush ecosystem upon which populations depend, in cooperation with other conservation partners Manage healthy animals in balance with other uses and the productive capacity of their habitat within Herd Management Areas.
Action(s)	<ul style="list-style-type: none"> Modify existing BLM fences during maintenance and build new fences to facilitate wildlife passage, unless the fences are intended to exclude wildlife. When necessary, mark fences to increase fence visibility and reduce wildlife collision risk. Permanently cap all pipes used in fencing or claim markers to prevent wildlife from being trapped within the pipe. Construct water troughs to allow access by wildlife. Water for wildlife will be made available at all livestock watering developments where appropriate. Install wildlife escape ramps in all new and existing water troughs. Implement timing restrictions and distance buffers, as appropriate, to minimize impacts on wildlife from activities during important life-cycle periods (e.g., breeding, nesting, fawning, and major migrations). Provide sufficient forage, cover, and protection from disturbance for large ungulates (deer, elk, bighorn sheep, and pronghorn) to maintain healthy viable populations across the landscape consistent with the NDOW's big game herd unit objectives. Construct fences and other structures that would not obstruct big game migration corridors or connectivity between seasonal ranges and movement within big game migration corridors. Establish the following ACECs for the protection of special status plant species: <ul style="list-style-type: none"> Existing: Virginia Range Williams Combleaf Botanical ACEC Proposed: Churchill Narrows Buckwheat Botanical ACEC
<i>Wildland Fire Ecology and Management</i>	
Goal: Manage wildland fire as an integral part of the ecosystem, improve the diversity of vegetation, and reduce fire hazard fuels.	
Action(s)	<ul style="list-style-type: none"> Implement hazardous fuels reduction projects where the negative impacts of wildland fire are greatest to health and safety, sensitive biological, cultural, and other natural resources.
<i>Cultural Resources</i>	
Goal: Preserve and protect cultural resources ensuring respectful and appropriate use by present and future generations.	
Action(s)	<ul style="list-style-type: none"> Retain or establish the following ACECs for the protection of cultural resources (see Special Designations, Areas of Critical Environmental Concern for further management actions for each ACEC): <ul style="list-style-type: none"> Existing: Pah Rah High Basin Petroglyph ACEC Proposed: Fox Peak Cultural ACEC, and Grimes Point Archaeological District ACEC Designate 15,900 acres as the Wyemaha Archaeological District for the protection of cultural resources (The Grimes Point Archaeological District ACEC is located within the Wyemaha Archaeological District; Areas of Critical Environmental Concern – Grimes Point Archaeological District ACEC for ACEC specific management actions)

Table 4-17: Other Actions Proposed or Existing by the Bureau of Land Management Resource Management Plans (continued)

Action	Summary
<i>Paleontological Resources</i>	
Goal: Promote stewardship, conservation, and appreciation of paleontological resources.	
Action(s)	<ul style="list-style-type: none"> Retain or establish the following ACECs for the protection of paleontological resources (Areas of Critical Environmental Concern for further management actions for each ACEC): <ul style="list-style-type: none"> Existing: <ul style="list-style-type: none"> Stewart Valley Paleontological ACEC Proposed: <ul style="list-style-type: none"> Ruhenstroth Paleontological ACEC
<i>Visual Resources</i>	
Goal: Manage BLM-administered land actions and activities to provide protection of the visual values and scenic quality of existing landscapes consistent with the Visual Resource Management (VRM) class objectives.	
Action(s)	<ul style="list-style-type: none"> Manage 564,100 acres according to VRM Class I objectives, including the following areas: <ul style="list-style-type: none"> WSAs East Fork Carson River Segment 1 (within 0.25 mile of either side of the ordinary high water mark) Manage 513,600 acres according to VRM Class II objectives, including the following areas: <ul style="list-style-type: none"> Alpine SRMA, Dispersed Use RMZ ERMAs: <ul style="list-style-type: none"> Bagley Valley Petersen, Lassen Red Rock RM. ACECs: <ul style="list-style-type: none"> Fox Peak Cultural Incandescent Rocks Scenic Stewart Valley Paleontological National Historic Trails (1-mile buffer on either side of centerline) Suitable WSR segments (within 0.25 mile of either side of the ordinary high water mark): <ul style="list-style-type: none"> East Fork Carson River Segment 2 East Fork Carson River Segment 3 Sand Mountain Walker Lake West Side of Virginia Range ERMAs: <ul style="list-style-type: none"> 102 Ranch Dry Valley Faye-Luther Mustang Middlegate Mina Pah Rah Portion of Petersen (200 acres) Pine Nut Front Country RMZ Pine Nut Crest RMZ Salt Wells Virginia Mountains Ruhenstroth Paleontological ACEC Manage 2,341,700 acres according to VRM Class IV objectives, including the following areas: <ul style="list-style-type: none"> SRMAs (Recreation and Visitor Services, Special Recreation Management Areas): <ul style="list-style-type: none"> Dead Camel South RMZ

Table 4-17: Other Actions Proposed or Existing by the Bureau of Land Management Resource Management Plans (continued)

Action	Summary
	<ul style="list-style-type: none"> ○ Lands proposed for protection of wilderness characteristics ○ ERMAs: ○ Pine Nut, Rural RMZ <ul style="list-style-type: none"> ▪ Reno Urban Interface ▪ Singatse • Manage 1,383,900 acres according to VRM Class III objectives, including the following areas: <ul style="list-style-type: none"> ○ Virginia City National Historic Landmark District. ○ SRMAs: <ul style="list-style-type: none"> ▪ Alpine, Portion of Indian Creek Campground RMZ
<i>Lands with Wilderness Characteristics</i>	
Goal: Areas to be managed to protect wilderness characteristics should retain a high degree of naturalness where the imprint of humans on lands and resources is substantially unnoticeable. Furthermore, outstanding opportunities for solitude and primitive or unconfined types of recreation should be maintained or enhanced.	
<i>Caves and Cave Resources</i>	
Goal: Protect significant cave and cave-related resources, including unique geological features, biological resources, and cultural properties, for educational, scientific, and recreational values.	
Action(s)	<ul style="list-style-type: none"> • Designate the following caves as having cultural, biological, educational, or scientific significance: Hidden Cave, Burnt Cave, Cowboy Cave, Fish Cave, Eastgate Shelter, Picnic Cave, Salt Cave, Spirit Cave, Dynamite Cave, Topia Cave, and other caves as identified.
<i>Livestock Grazing</i>	
Goal: Provide for economically sustainable and ecologically sound livestock grazing.	
Action(s)	<ul style="list-style-type: none"> • Construct all new fences to comply with applicable wildlife standards. • Restore areas disturbed by range improvements that have been removed using methods such as seeding if needed.
<i>Geology and Minerals</i>	
Goal: Provide opportunities for exploration and development of federal mineral resources to meet national, regional and local needs while ensuring the long-term health and diversity of the land.	

Table 4-17: Other Actions Proposed or Existing by the Bureau of Land Management Resource Management Plans (continued)

Action	Summary
Action(s)	<ul style="list-style-type: none"> • Recommend the withdrawal of the following areas from locatable mineral entry (727,100 acres): <ul style="list-style-type: none"> ○ The Sand Springs Pony Express Station ○ Cold Springs Pony Express historical site ○ Rock Creek Stage and Telegraph Site (total of 120 acres) ○ Wyemaha Archaeological District ○ East Fork Carson River WSR Study Segment 1 ○ Blue Link Spring (11.6 acres) ○ Pistone Site ○ Marine Corps Mountain Warfare Training Center (900 acres) ○ Department of Defense Coordination Area • Manage the following areas as closed to fluid mineral leasing (1,007,200 acres): <ul style="list-style-type: none"> ○ Dynamite Caves ○ Pistone site ○ Wyemaha Archaeological District • ACECs: <ul style="list-style-type: none"> ○ Churchill Narrows Buckwheat Botanical ○ Fox Peak Cultural ○ Grimes Point Archaeological District
	<ul style="list-style-type: none"> ○ ACECs: <ul style="list-style-type: none"> ▪ Churchill Narrows Buckwheat Botanical ▪ Fox Peak Cultural ▪ Grimes Point Archaeological District ▪ Incandescent Rocks Scenic ▪ Ruhenstroth Paleontological ○ Portion of Stewart Valley Paleontological ○ Incandescent Rocks Scenic ○ Pah Rah High Basin Petroglyph ○ Ruhenstroth Paleontological ○ Stewart Valley Paleontological • High potential historic sites and high potential route segments along NHT corridors within a 1-mile buffer from either side or centerline • Sand Mountain SRMA • WSAs • Within 300-foot radius of a known human burial <ul style="list-style-type: none"> ○ Playas ○ Edwards Creek Valley ○ Bune Jugs ○ Dixie Valley ○ Flannigan • A portion of Washoe County (formerly known as Southern Washoe County Urban Interface Planning Area) (except 1,933 acres in and adjacent to the Steamboat Known Geothermal Resource Area)
Battle Mountain Oil and Gas Leasing Environmental Assessment	<ul style="list-style-type: none"> • These documents provide for mineral development on the Battle Mountain District and are currently being revised in a new RMP planning effort.

Table 4-17: Other Actions Proposed or Existing by the Bureau of Land Management Resource Management Plans (continued)

Action	Summary
Winnemucca Resource Management Plan (RMP)	<ul style="list-style-type: none"> This RMP provides for mineral development on the Winnemucca District.
Southern Nevada RMP and Oil and Gas Amendment	<ul style="list-style-type: none"> This RMP will provide for mineral development on Southern Nevada District.
<i>Recreation and Visitor Services</i>	
Goal: Provide a diversity of recreation settings and opportunities for dispersed and organized users while protecting natural and cultural resources.	
Action(s)	<ul style="list-style-type: none"> Prohibit the construction of and eliminate all user created motocross tracks within the planning area that conflict with management goals or resource objectives, do not meet industry standards, or compromise public health and safety.
<i>Special Recreation Management Areas</i>	
Goal: Manage SRMAs to support and sustain the principal recreation activities identified for the area as the primary resource and to protect recreational opportunities and setting characteristics.	
Action(s)	<ul style="list-style-type: none"> Manage 6 areas as SRMAs in order to protect recreation opportunities, values, and experiences: <ul style="list-style-type: none"> Alpine (7,700 acres): <ul style="list-style-type: none"> Indian Creek RMZ (500 acres) East Fork Carson River RMZ (2,500 acres) Dispersed RMZ (4,700 acres) Dead Camel Mountain (37,400 acres): <ul style="list-style-type: none"> Dead Camel North RMZ (17,100 acres) Dead Camel South RMZ (20,600 acres) Hungry Valley (16,200 acres) Sand Mountain (19,700 acres): <ul style="list-style-type: none"> Dune RMZ (1,300 acres) Desert Habitat RMZ (2,600 acres) Trail Riders RMZ (12,300 acres) Mining District RMZ (3,500 acres) Walker Lake (24,600 acres): <ul style="list-style-type: none"> Sportsman's Beach RMZ (100 acres) Shoreline RMZ (600 acres) Wassuk RMZ (23,900 acres) Wilson Canyon (500 acres): <ul style="list-style-type: none"> Copper Belt RMZ (200 acres) West Walker River RMZ (300 acres)

Table 4-17: Other Actions Proposed or Existing by the Bureau of Land Management Resource Management Plans (continued)

Action	Summary
<i>Extensive Recreation Management Areas</i>	
Goal: Manage areas identified as ERMA's to support and sustain the principal recreation activities identified for the area commensurate with other resources and resource uses in a manner that maintains and protects the desired quality and conditions of recreational opportunities identified for the ERMA.	
Action(s)	<ul style="list-style-type: none"> • Manage the following areas as ERMA's with a management emphasis that address recreation demands commensurate with resource protection and multiple use: <ul style="list-style-type: none"> ○ Bagley Valley (2,600 acres) ○ Dry Valley (83,000 acres) ○ Faye-Luther (100 acres) ○ Middlegate (268,700 acres) ○ Mina (824,700 acres) ○ Mustang (400 acres) ○ Pah Rah (20,000 acres) ○ Petersen (42,200 acres): <ul style="list-style-type: none"> ▪ Lassen Red Rock RMZ (200 acres) ○ Pine Nut (201,100 acres): <ul style="list-style-type: none"> ▪ Rural RMZ (138,900 acres) ▪ Front Country RMZ (10,400 acres) ▪ Pine Nut Crest RMZ (51,800 acres) ○ Reno Urban Interface (70,600 acres) ○ Salt Wells (280,400 acres) ○ Singatse (174,900 acres) ○ Virginia Mountains (68,100 acres) ○ Virginia Range (48,800 acres) ○ 102 Ranch (120 acres)
<i>Comprehensive Travel and Transportation Management</i>	
Goal: Develop an interdisciplinary and collaborative approach to comprehensive travel and transportation planning and management that addresses resource uses and associated access to BLM-administered lands and waters, including motorized, nonmotorized, mechanical, and animal-powered modes of travel.	
<ul style="list-style-type: none"> • Develop Travel Management Areas (TMAs) to adequately support specific resource management decisions or address motorized and nonmotorized trails, access or public needs unique to the defined area. 	
Action(s)	<ul style="list-style-type: none"> • Manage the following 55,700 acres as open to OHV use (43 CFR 8342) where use of OHVs and other motorized use is unrestricted: <ul style="list-style-type: none"> ○ Lemmon Valley motocross area (200 acres; see Recreation and Visitor Services, Motocross Tracks and Facilities) ○ SRMAs (see Recreation and Visitor Services, Special Recreation Management Areas): <ul style="list-style-type: none"> ○ 10 acres known as American Flat Mill (per Federal Register Notice #NV-030-97001, December 20, 1996; this area is closed to all access) ○ Desert Habitat RMZ within Sand Mountain SRMA (see Recreation and Visitor Services, Special Recreation Management Areas) <ul style="list-style-type: none"> ▪ Caves (see Caves and Cave Resources): ▪ Within 500 feet of Dynamite Cave

Table 4-17: Other Actions Proposed or Existing by the Bureau of Land Management Resource Management Plans (continued)

Action	Summary
	<ul style="list-style-type: none"> ▪ Dead Camel Mountains, Dead Camel North RMZ ▪ Sand Mountain, Dune RMZ ○ Playas: Edwards Creek Valley; Bune Jugs; Dixie Valley; and Flannigan.
	<ul style="list-style-type: none"> ▪ Within 500 feet of Hidden Cave ○ Lands northeast of the Reno-Sparks Indian Colony (1,940 acres)
	<ul style="list-style-type: none"> • Manage the following areas (24,100 acres) as closed to OHV and other except for authorized administrative purposes with approval of the Authorized Officer. Management of these areas is temporary until the Travel Management Plan is completed motorized travel (mechanized travel is limited to existing routes): <ul style="list-style-type: none"> ○ Bagley Valley (2,600 acres) ○ Faye-Luther Canyon (110 acres). ○ Within 500 feet of caves (see Caves and Cave Resources): Dynamite Cave and Hidden Cave. ○ A portion of the Wilson Canyon SRMA, Copper Belt RMZ (see Recreation and Visitor Services, Special Recreation Management Areas) ○ ERMA (see Recreation and Visitor Services, Extensive Recreation Management Areas): Faye-Luther and Petersen ERMA, Peterson Ridge (5,120 acres). • Manage 6,200 acres as closed to all motorized and mechanized travel: <ul style="list-style-type: none"> ▪ 268 acres known as Harvey's Place within the Indian Creek Recreation withdrawal (this area is closed to all access, including foot and equestrian)
	<ul style="list-style-type: none"> • Manage the following areas as restricted or closed to motorized travel per Federal Register Notice unless notice is revised by Authorized Officer: <ul style="list-style-type: none"> ○ Jumbo Grade (Notice # NV-030-90-04; January 24, 1990) ○ Golden Valley (Notice # NV-030-95-03; May 24, 1995) ○ Stephanie Way and Fuller Avenue in the Johnson Lane area (Notice # NV-030-97-1220-00; November 1, 1996) ○ Pine Nut Road No. 2 (Notice # NV030-97-1330-00; October 15, 1997) ○ Petersen Mountain (Notice # NV-030-99-001; April 2, 1999) ○ South Hungry Ridge/Northwest Spanish Springs (Notice # NV-030-00-001; March 30, 2000) ○ West end of Wilson Canyon (Notice # NV-030-04-001; November 20, 2003) • Manage 4,717,300 acres as limited to existing routes, primitive roads, and trails for OHV and other motorized use until subsequent route designation occurs • Establish 10 TMAs.
<i>Lands and Realty</i>	
<p>Goal: Make land tenure adjustments for public benefit, in order to consolidate land patterns, ensure effective administration, improve resource management, maintain public values, and access to BLM-administered lands, and support community development.</p> <ul style="list-style-type: none"> • Make land tenure adjustments for public benefit, in order to consolidate land patterns, ensure effective administration, improve resource management, maintain public values, access to BLM-administered lands, and promote community development. <p>Goals (continued):</p>	

Table 4-17: Other Actions Proposed or Existing by the Bureau of Land Management Resource Management Plans (continued)

Action	Summary
	<ul style="list-style-type: none"> Meet public needs for use authorizations such as ROWs, leases, and permits, while minimizing adverse impacts on other resources.
Action(s)	<p>The following BLM-administered lands have been identified for disposal (267,200 acres): Alpine County (1,000 acres); Carson City (200 acres); Churchill County (76,900 acres); Douglas County (7,000 acres); Lassen County (1,000 acres); Lyon County (83,500 acres); Mineral County (5,800 acres); Nye County (11,300 acres); Storey County (20,800 acres); and Washoe County (59,700 acres).</p> <ul style="list-style-type: none"> Identify 400 acres of land available for disposal adjacent to Naval Air Station Fallon directly to the Department of the Navy for a safety arc, military housing facilities, and agricultural leasing. Ensure the disposal is in connection with acquiring Navy-controlled lands near the Greater Sand Mountain SRMA if possible.
<i>Renewable Energy (Wind, Solar, Biomass)</i>	
Goal: Encourage development of renewable energy in a timely manner to meet national, regional, and local needs consistent with the objectives for other land uses.	
Action(s)	<ul style="list-style-type: none"> The Federal Aviation Administration (FAA), Military, and local government agencies would be consulted for the development of solar and wind projects.
<i>Areas of Critical Environmental Concern</i>	
Goal: Manage areas as ACECs where special management attention is required to protect and prevent irreparable damage to important biological, historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards.	
Action(s)	<ul style="list-style-type: none"> Retain or establish the following areas as ACECs for the protection of the identified relevance and importance values (82,770 acres) <ul style="list-style-type: none"> Incandescent Rocks Scenic ACEC (1,100 acres) Pah Rah High Basin Petroglyph ACEC (5,300 acres) Stewart Valley Paleontological ACEC (15,900 acres) Virginia Range Williams Combleaf Botanical ACEC (470 acres) Proposed: <ul style="list-style-type: none"> Churchill Narrows Buckwheat Botanical ACEC (6,600 acres) Fox Peak Cultural ACEC (49,000 acres) Grimes Point Archaeological District ACEC (2,100 acres) Ruhenstroth Paleontological ACEC (2,300 acres)

Table 4-17: Other Actions Proposed or Existing by the Bureau of Land Management Resource Management Plans (continued)

Action	Summary
<i>Back Country Byways</i>	
Goal: Enhance existing and develop new back country byways that offer opportunities to provide the public with interpretation and environmental education, wildlife viewing and an understanding of the historical and present uses of the lands unique to Nevada.	
Action(s)	<ul style="list-style-type: none"> In partnership with state and local agencies, develop new or modify existing back county byways to allow for public exploration of Nevada's unique history, culture and landscapes.
<i>National Historic Trails</i>	
Goal: Preserve and protect the historical trail remains, associated historic sites and historical setting of the Pony Express National Historic Trail and California National Historic Trail for public use and enjoyment.	
Action(s)	<ul style="list-style-type: none"> In cooperation with the Oregon-California Trails Association and other partners, identify, record, and evaluate NHT segments and sites for NRHP eligibility. Scientific and historical studies of cultural landscapes, sites, historic trails, and other resources, including excavation, would be allowed by qualified researchers on a case-by-case basis within the Pony Express National Historic Trail and California National Historic Trail corridors with written authorization.
<i>National Recreation Trails</i>	
Goal: Provide continued protection and support for national trails, to preserve, improve, and restore the character to be consistent with guidelines of the National Recreation Trails System Act.	
<i>Wilderness Study Areas</i>	
Goal: Continue to manage WSAs to prevent impairment of wilderness values; protect naturalness, outstanding opportunities for solitude, and primitive and unconfined recreation opportunities; and maintain suitability for future designation as wilderness until such time that congress either designates the WSAs as wilderness or releases them from further consideration.	
<i>Wild and Scenic Rivers</i>	
Goal: Protect National Wild and Scenic River System (NWSRS)-eligible river segments in accordance with the Wild and Scenic Rivers Act and BLM guidance (BLM Manual 6400).	
Action(s)	<ul style="list-style-type: none"> Determine the following 3 river segments as suitable for inclusion in the NWSRS: East Fork Carson River Segment 1; East Fork Carson River Segment 2; and East Fork Carson River Segment 3.

Table 4-17: Other Actions Proposed or Existing by the Bureau of Land Management Resource Management Plans (continued)

Action	Summary
<i>Back Country Wildlife Conservation Areas</i>	
Goal: Preserve and safeguard high value fish and wildlife habitat and hunting and fishing on lands with back country character.	
<i>Tribal Interests</i>	
Goal: Ensure tribal issues and concerns are given consideration and continue the ongoing working relationship with Indian Tribes.	
<i>Public Health and Safety</i>	
Goal: Provide for public health and safety, especially in areas of concern, in development sites, and areas of concentrated use.	
Action(s)	<ul style="list-style-type: none"> • Install and maintain the fencing and signage of dangerous hot spring pools with temperatures exceeding 120 degrees Fahrenheit. • Take appropriate measures to protect the public from known unexploded ordnance locations on BLM-administered lands, such as signing, fencing, removal, and remediation. • Remediate and/or sign dangerous locations, accessible mine shafts, adits, or hot springs, and dangerous conditions or materials when identified. • Close 286 acres known as Harvey's Place located in the withdrawal area within the Alpine SRMA to public access, including motorized, nonmotorized, and mechanized uses, to protect public health and safety. The closure pertains to South Tahoe Public Utility District's existing ROW CANVCA 013255. Closure prevents unauthorized access or contact with discharged filtered-secondary treated wastewater (CA Title 22, Sec. 603010(g) prohibits human contact with recycled wastewater).

Notes: ACEC = Area of Critical Environmental Concern, BLM = Bureau of Land Management, WSA = Wilderness Study Area, RMZ = Resource Management Zone, SRMA = Special Recreation Management Area, ERMA = Extensive Recreation Management Area, RM = Resource Management, WSR = Wild and Scenic River, NHT = National Historic Trail, OHV = Off Highway Vehicle, CFR = Code of Federal Regulations, ROW = Right of Way, RMP = Resource Management Plan, NRHP = National Register of Historic Places

Source: Bureau of Land Management (2014a)

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5.0 Management Practices, Monitoring, and Mitigation

Environmental Impact Statement

Fallon Range Training Complex Modernization

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5 Management Practices, Monitoring, and Mitigation

5.1 Introduction

5.1.1 Overview

National Environmental Policy Act (NEPA) regulations require that an Environmental Impact Statement (EIS) include discussion of measures where required as a means to mitigate adverse environmental impacts. The intention of mitigation is to reduce the adverse effects of an action on the environment. Council on Environmental Quality regulations (40 Code of Federal Regulations [CFR] 1508.20) identify five ways to reduce or mitigate the severity or intensity of adverse impacts:

- Avoiding the impact altogether
- Minimizing impacts
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
- Compensating for the impact by replacing or providing substitute resources or environments

This chapter focuses on management practices, monitoring, and mitigation measures that are proposed to reduce impacts associated with the Proposed Action. Management practices, monitoring, and mitigation measures that were established in Chapter 5 of the 2015 Military Readiness Activities at Fallon Range Training Complex (FRTC), Nevada Final EIS are carried forward in this EIS and are listed under the “current” heading for management practices, monitoring, or mitigation. Mitigation measures generally aim to reduce impacts from training activities that would extend to the proposed expansion areas. Brief descriptions of continued practices are provided in their relevant resource sections.

5.1.2 Approach

The process of identifying ways to reduce the potentially adverse environmental effects of the Proposed Action started early in the planning process for the proposed range modernization and continued through preparation of the Final EIS. For example, several existing United States (U.S.) Department of the Navy (Navy) environmental programs and plans include established procedures, practices, or management actions that would restore, reduce, or eliminate perceived environmental risks of the Proposed Action, such as the *Integrated Natural Resources Management Plan* (INRMP) for Naval Air Station (NAS) Fallon. In accordance with the Department of Defense and Navy policies, these plans are reviewed and revised on a regular basis, and would be updated to reflect changes at the FRTC if the Proposed Action were to be implemented.

This chapter incorporates current resource protection measures such as standard operating procedures and management practices that are integral to the activities covered by the Proposed Action and its alternatives. A management practice may encompass the installation of structural devices or the implementation of non-structural practices or activities, prohibitions of practices, operating procedures, maintenance procedures, and/or other management techniques. The Navy also currently employs standard operating procedures to provide for the safety of personnel and equipment, as well as the success of the training and testing activities. In many cases, standard operating procedures result in incidental environmental, socioeconomic, and cultural benefits, but they serve the primary purpose of providing for safety and mission success, and are implemented regardless of their secondary benefits.

Implementation of both management practices and standard operating procedures has been considered in the environmental analyses for each resource.

In addition to existing management practices and standard operating procedures that would be applied, if the analysis identified potential adverse impacts on a resource from implementing the No Action or action alternatives, the Navy identified methods to minimize or mitigate those impacts through coordination with cooperating agencies and Indian Tribes, where appropriate and practicable. Cooperating agencies, Indian Tribes, and other stakeholders were solicited for potential mitigation or management actions through meetings, as well as through the public scoping process and the public comment process on the Draft EIS. The Navy evaluated the suggestions against compatibility with military training activities and range safety. The Navy conducted several mitigation working group meetings with Cooperating Agencies and Indian Tribes to discuss their concerns as well as the feasibility of their suggested management practices or mitigations. The Navy continued to work with cooperating agencies, tribal participants, and other public stakeholders between the Draft and Final EIS to refine or augment mitigation methods to reduce potential impacts. These suggestions for management practices, monitoring, and mitigation from the cooperating agencies and tribal participants, and other public comments received during scoping and the commenting period on the Draft EIS, have been added to the Final EIS in Tables 5-1 through 5-16. General mitigation suggestions are shown in Table 5-1 along with the Navy's responses for each suggestion indicating whether it was adopted or not, including reasoning for considering but eliminating the suggestion if applicable. Suggestions that were specific to different resource categories are discussed under their respective resource headers in Table 5-2 through Table 5-13, located in Sections 5.2 through 5.16.

5.1.3 Management Practices

Environmental management practices are policies, procedures, or plans that aim to preserve the environment or the integrity of the ranges. Management practices are implemented to reduce the impacts that projects can generally have on their surrounding environment. For instance, having fuel spill procedures and safeguards or posting speed limits reduce impacts that a project could have on various resources within their Region of Influence, such as public health and safety and geological resources. Many management practices are detailed in the current INRMP. Proposed management practices are discussed for each resource in Sections 5.2 through 5.16.

5.1.4 Monitoring

Environmental monitoring involves systematic sampling of physical and biological resources to derive knowledge of the environment, its resources, and processes or activities that affect them. Monitoring can be conducted for a number of purposes, including establishing environmental baselines and trends, informing decision-making for management actions, assessing the effects of natural and human influences, assessing the effectiveness of management practices and mitigation measures, and ensuring compliance with environmental regulations.

Table 5-1: Management Practices, Monitoring, and Mitigation Measures Suggested for General Impacts

Suggestion*	Response	Adopted (✓/-)
As mitigation, the Navy should establish a federal advisory board to assist the Navy and the designated resource agencies in managing the NAS Fallon complex.	An established federal advisory board exists during the development and implementation of an INRMP and brings together multiple resource agencies for natural resource management on Navy lands. The Navy would establish MOUs or MOAs with applicable agencies, including NDOW, BLM, Bureau of Reclamation, and the USFWS, for management of the land as necessary. To facilitate communication, the public could work with the agencies using established advisory pathways.	-
Identify and protect resources in conjunction with local entities by including them on operation planning maps so they can be actively avoided during operations.	The Navy has worked with its cooperating agencies and tribal participants to identify important resources in the Study Area. The Navy has analyzed impacts on these resources in the Draft and Final EIS. Avoidance of impacts has been incorporated wherever possible in conjunction with the Navy's mission.	✓
Incorporate a fully funded and comprehensive wildlife resource mitigation plan into the Final EIS/ROD. A strategy should be developed for forming and enabling a Wildlife Working Group with the objective of enhancing wildlife populations, habitat resources, and rehabilitation strategies.	While the Navy can and does submit requests for wildlife-related funding, the Navy's budget is determined by Congress. In the future for the expansion, the Navy is planning on expanding the INRMP to include the larger area and would seek resources for management of the larger area. The INRMP development and implementation brings together multiple resource agencies for natural resource management on Navy lands. The Navy cannot dedicate future funding to something such as the Wildlife Working Group (e.g., federal advisory board). The Navy would use resources available to it from the INRMP and would collaborate with NDOW on the Bighorn Hunt Program MOA. The Navy is also working with NDOW and other Stakeholders on the Wildland Fire Management Plan that is under development. The Draft MOA and Draft Outline of the Wildland Fire Management Plan are shown in their current form in Appendix D (Memoranda, Agreements, and Plans).	✓
Use a 180-degree azimuth for JDAM instead of a 360-degree azimuth for JDAM.	The Navy has incorporated this suggestion under all of the Alternatives.	✓
Provide an analysis and a detailed estimate of the costs of the entire scope of the proposed withdrawal, as well as required design features.	The focus of the NEPA analysis is environmental impacts. Cost estimates would be dependent on any ultimate Congressional decision.	-

Table 5-1: Management Practices, Monitoring, and Mitigation Measures Suggested for General Impacts (continued)

Suggestion*	Response	Adopted (✓/-)
<p>(continued) A mitigation plan must also be included that is based on this analysis, and that plan should include an appropriations package for submittal to Congress that would provide for compensation of the impacts of the proposed withdrawal by replacing or providing substitute resources. Congressional approval is an important aspect of this process, and appropriations will be required to make counties and their local communities whole from impacts that will occur. NACO has asked from the beginning that the Navy mitigate the infrastructure and revenue impacts to local governments and communities.</p> <p>The EIS must provide a mitigation plan for each alternative that would include (1) a detailed estimate of the costs of the proposed withdrawal, (2) required design features, and (3) an appropriations package for submittal to Congress. This information must be analyzed as if there will be no managed access, possibly with an “up to” amount. While each one of these alternatives includes a “managed access” component; “managed access” is at the full discretion of the Navy and can be terminated by the Commander at will, for any reason. Such a mitigation plan is needed to satisfy Step (5) of NEPA’s Mitigation Hierarchy by compensating for the impact through replacement or providing of substitute resources (40 CFR 1508.20).</p>	<p>(continued) The Navy is unable to produce a detailed estimate of the costs beyond the analysis that has been provided in the Final EIS at this time. The mitigations that have been incorporated as part of the Proposed Action and discussed separately in Chapter 5 serve as the mitigation plan.</p> <p>Future compensation for other losses to allotment holders, mining claimants, water rights holders, and other private land owners would be estimated and discussed after any Congressional decision is made. Calculations of these losses and revenues from the effects of assumed compensatory negotiations between the Navy and individual entities are speculative and based on the economic modeling tool and its assumptions, from within the different economic sectors in northern Nevada.</p> <p>Following any Congressional decision, the Department of Defense’s Office of Economic Adjustment Program may provide technical and financial assistance to state and local governments to undertake Compatible Use and Joint Land Use Studies in response to Military Department compatibility concerns.</p> <p>The land withdrawal would require an Act from Congress. Acquisition of non-federal lands, relocation of State Route 361 or 839, relocation of Paiute Pipeline Company gas line, and range improvements would require congressional appropriation via the military construction program. Funding for operations and maintenance of the range complex would require annual appropriations by Congress.</p> <p>The withdrawal Act would govern access and require the Department of the Navy to take certain steps to safeguard the natural and cultural resources of the area withdrawn. Appropriations for the purchase of non-federal lands and relocation of the state road and privately owned pipeline would include funding for certain mitigation actions. Annual appropriations would not be for operations but instead would be used for recurring mitigation requirements.</p> <p>The Navy has updated the required design features for water and geothermal developments in the DVTA in the Final EIS.</p>	<p>✓</p>

Table 5-1: Management Practices, Monitoring, and Mitigation Measures Suggested for General Impacts (continued)

Suggestion*	Response	Adopted (✓/-)
Begin drafting the MOU and coordinating with the Paiute Pipeline Company for the Paiute Pipeline relocation.	The Navy would coordinate with the Paiute Pipeline Company as appropriate after any ultimate decision by Congress.	✓
Add/improve roads to the outside of the fence lines, such as improving the Stillwater Road or Coral Canyon Road to act as potential solution to lands that would now have substantially more difficult access.	The Navy recognizes the loss of access to exclusive use areas (bombing ranges) under the proposed withdrawal. The Navy is not currently proposing to relocate or add new roads with the exception of relocating either Highway 839 or 361. Following any ultimate Congressional decision, the Department of Defense's Office of Economic Adjustment Program may provide technical and financial assistance to nonfederal agencies when appropriate.	-
Work with BLM and other stakeholders, including Churchill County, to amend the Carson City District RMP. Discussion must focus on important land use allocations, such as where to relocate planned utility corridors, development of ACECs or other special designations to backfill WSA release, development of ROWs for new/relocated roads, and recognition and maintenance of RS 2477 routes.	The Navy would coordinate with BLM, Churchill County, and other stakeholders following any ultimate decision by Congress. Following any ultimate Congressional decision, the Department of Defense's Office of Economic Adjustment Program may provide technical and financial assistance to nonfederal agencies when appropriate, including working with stakeholders to amend the Carson City District RMP.	✓

*Some suggestions are from public comments on the Draft EIS and are components associated with larger comments. The full comments and responses can be found in Appendix F (Public Comments and Responses).

Notes: ACEC = Area of Critical Environmental Concern, BLM = Bureau of Land Management, CFR = Code of Federal Regulations, DVTA = Dixie Valley Training Area, EIS = Environmental Impact Statement, INRMP = Integrated Natural Resource Management Plan, JDAM = Joint Direct Attack Munitions, MOA = Memorandum of Agreement, MOU = Memorandum of Understanding, NACO = Nevada Association of Counties, NAS = Naval Air Station, Navy = U.S. Department of the Navy, NDOW = Nevada Department of Wildlife, NEPA = National Environmental Policy Act, RMP = Resource Management Plan, ROD = Record of Decision, ROW = Right of Way, USFWS = U.S. Fish and Wildlife Service, WSA = Wilderness Study Area, ✓ = affirmative, - = negative.

Monitoring is an important component of the Navy's natural resources management strategy implemented under the INRMP for NAS Fallon (U.S. Department of the Navy, 2014). Necessary updates to the INRMP and associated monitoring programs would be accomplished during routine annual reviews conducted in cooperation with the Bureau of Land Management (BLM) and the U.S. Fish and Wildlife Service (USFWS) and the Nevada Department of Wildlife. This process will help to ensure that a comprehensive, consistent, and adaptive management approach to monitoring, reporting, and tracking is implemented for the Navy-managed lands at the FRTC. Monitoring also applies to other resources such as land use, recreation, transportation, airspace, noise, water, cultural, recreational, socioeconomics, and public health and safety. Considered and proposed monitoring is discussed for each resource in Sections 5.2 through 5.16.

5.1.5 Mitigation

Mitigation measures would be put in place to reduce specific impacts that a project could have on a particular resource, replace the impacted resource, or relocate threatened resources to a new location. These measures are not found in planning documents such as the INRMP because they are specific to an action and can be discussed in the specific documentation for each project. In this case they are found in this chapter. The INRMP is usually developed for the entire facility and all of the activities that occur.

5.2 Geological Resources

5.2.1 Current Management Practices

The following management practices would continue to be implemented on the FRTC to avoid and minimize potential impacts on geological resources under Alternatives 1, 2, and 3:

- Incidental fuel spills would be avoided during training by conducting all refueling activities in a secondary containment area.
- Drip pads would be placed under equipment when parked to avoid soil contamination from leaking fluids.
- Range condition assessment five-year reviews would continue to be conducted, and appropriate steps would be taken, if necessary, to prevent or respond to a release or substantial threat of a release of munitions constituents of potential concern to off-range areas that could pose unacceptable risks to human health or the environment.
- Wind and water erosion would be minimized by adhering to standard operating procedures for vehicles on existing roads and two-track trails (unless otherwise noted in standard operating procedures or in the event of emergency).

5.2.2 Management Practices, Monitoring, and Mitigation Measures Considered

The Navy received suggestions for management practices, monitoring, and mitigation measures from the public, cooperating agencies, and tribal participants during scoping and commenting periods. Suggestions specific to geological resources and impacts on them are shown in Table 5-2 along with the Navy's responses for each suggestion indicating whether it was adopted or not, including reasoning for considering but eliminating the suggestion if applicable.

Table 5-2: Management Practices, Monitoring, and Mitigation Measures Suggested for Geological Resources

Suggestion*	Response	Adopted (✓/-)
Follow posted speed limits (construction personnel).	The Navy has standard operating procedures in place for posting speed limits and would continue to implement these.	✓
Minimize wind and water erosion by adhering to standard operating procedures for vehicles on existing roads and two-track trails (unless otherwise noted in standard operating procedures or in the event of emergency).	The Navy has standard operating procedures in place to minimize wind and water erosion and would continue to implement these.	✓
Stay within established corridors (construction personnel).	The Navy has standard operating procedures in place to stay within established corridors and would continue to implement these.	✓
Continue to conduct range condition assessment five-year reviews; prevent or respond to a release or substantial threat of a release of munitions constituents of potential concern to off-range areas that could pose unacceptable risks to human health or the environment.	The Navy has conducted and would continue to conduct range condition assessment five-year reviews.	✓
Avoid incidental fuel spills during training by conducting all refueling activities in a secondary containment area.	The Navy has standard operating procedures in place to avoid spills during training and would continue to implement these.	✓
Place drip pads under equipment when parked to avoid soil contamination from leaking fluids.	The Navy has standard operating procedures in place to avoid soil contamination and would continue to implement these.	✓
Avoid geological resources during training activities on acquired or withdrawn lands. Avoid disturbance of important or rare geological resources (e.g., Salt Cave) during operations and training.	The Navy would avoid disturbance of geological resources and other important resources during operations and training via placement of targets away from these areas to the maximum extent practicable.	✓
Site the Paiute Pipeline and State Route 839 (Alternatives 1 and 2) or State Route 361 (Alternative 3) to avoid prime or unique farmland or farmland of statewide or local importance.	The Navy would coordinate with the Paiute Pipeline Company and Nevada Department of Transportation as appropriate after any ultimate decision by Congress.	✓

*Some suggestions are from public comments on the Draft EIS and are components associated with larger comments. The full comments and responses can be found in Appendix F (Public Comments and Responses).

Notes: ✓ = affirmative, - = negative.

5.2.3 Proposed Management Practices, Monitoring, and Mitigation

5.2.3.1 Proposed Management Practices

The following management practices are proposed for implementation on the FRTC to avoid and minimize potential impacts on geological resources under Alternatives 1, 2, and 3:

- Construction personnel would stay within established corridors.
- Construction personnel would follow posted speed limits. The maximum speed limit on FRTC bombing ranges is 35 miles per hour unless otherwise posted.
- The potential relocation of the Paiute Pipeline and State Route 839 (Alternatives 1 and 2) or of the Paiute Pipeline and State Route 361 (Alternative 3) would be placed to avoid prime or unique farmland or farmland of statewide or local importance to the maximum extent practicable.
- Pedestrian field surveys would be conducted by a qualified and BLM-permitted paleontologist prior to any surface grading or excavation in areas of high (Class 4), very high (Class 5), or unknown (Class U) fossil yield potential. A partial survey may be conducted by a BLM-permitted paleontologist in areas with moderate potential (Class 3) or in other areas potentially sensitive to fossil resources.
- If there were an unanticipated discovery of a potential paleontological resources, surface-disturbing activities would cease in the immediate area of the discovery until the significance of the discovery can be analyzed, notification to proceed is received, and the appropriate BLM office has been notified. The presence of any found paleontological resources are be managed according to the BLM Instruction Manual. Once the extent and potential significance of the paleontological resources on the site has been determined, appropriate mitigation measures for further site development may be developed.

5.2.3.2 Proposed Monitoring

The measures outlined in *Military Readiness Activities Fallon Range Training Complex Environmental Impact Statement* (U.S. Department of the Navy, 2015a), such as range condition assessment five-year reviews, would continue to be implemented.

5.2.3.3 Proposed Mitigation

The Navy does not have any new proposed mitigation measures for the reduction or minimization of impacts on geological resources as a result of the Proposed Action that are not already in place. However, under the Proposed Action, the Navy would acquire any valid existing mining claims within the proposed withdrawal at fair market value. Under all action alternatives the Navy would reduce impacts on geologic resources by following standard operating procedures.

5.3 Land Use

5.3.1 Current Management Practices

Policies and procedures, such as coordinating with other federal agencies or counties, would continue to be implemented to avoid or minimize land use conflicts.

5.3.2 Management Practices, Monitoring, and Mitigation Measures Considered

The Navy received suggestions for management practices, monitoring, and mitigation measures from the public, cooperating agencies, and tribal participants during scoping and commenting periods. Suggestions specific to land use and impacts on it are shown in Table 5-3, along with the Navy's responses for each suggestion indicating whether it was adopted or not, including reasoning for considering but eliminating the suggestion if applicable.

5.3.3 Proposed Management Practices, Monitoring, and Mitigation

5.3.3.1 Proposed Management Practices

Policies and procedures, such as coordinating with other federal agencies or counties, would continue to be implemented to avoid or minimize land use conflicts. No additional management practices are warranted for land use based on the analysis presented in Section 3.2.3 (Environmental Consequences).

5.3.3.2 Proposed Monitoring

No monitoring measures would be warranted for land use based on the analysis presented in Section 3.2.3 (Environmental Consequences).

5.3.3.3 Proposed Mitigation

Mitigation measures would be warranted for land use. Based on the analysis presented in Section 3.2.3 (Environmental Consequences) and input from public comments, the Navy will incorporate the following mitigation measures to minimize impacts on Land Use:

- Due to the extension of Military Operating Areas in the eastern portion of the FRTC Special Use Airspace (SUA), implement the 5 nautical mile and 3,000 feet above ground level buffer around the towns of Crescent Valley and Eureka.

Table 5-3: Management Practices, Monitoring, and Mitigation Measures Suggested for Land Use

Suggestion*	Response	Adopted (✓/-)
Reconfigure B-17 to the South. Reconfigure B-17 to the East and West in order to avoid Earthquake Fault Road.	Please see Section 2.5.4.3 (Reconfigure Bravo-17 to the South) and Section 2.5.4.4 (Reconfigure Bravo-17 to the East and West) under Chapter 2 (Description of Proposed Action and Alternatives), as alternatives that were considered but were not carried forward for detailed analysis. The reconfiguration to the south would not meet the realistic training environment screening factor. The reconfiguration to the East and West would not meet the purpose of or need for the Proposed Action, nor would it meet the realistic training environment screening factor.	-
Shift or reduce B-20 to avoid the Fallon National Wildlife Refuge. Reconfigure B-20 to avoid closing the Navy's B-20 access road.	Please see Section 2.5.4.6 (Shift or Reduce Bravo-20 to Avoid the Fallon National Wildlife Refuge) and Section 2.5.4.7 (Reconfigure Bravo-20 to Avoid Closing Navy's B-20 Access Road) under Chapter 2 (Description of Proposed Action and Alternatives), as alternatives that were considered but were not carried forward for detailed analysis. The avoidance of the Fallon National Wildlife Refuge would not meet the realistic training environment, tempo screening factors, or safety screening factors, and would not minimize impacts on civilian infrastructure or environmental impacts. The avoidance of closing the Navy's B-20 access road would not meet the realistic training environment or tempo screening factor.	-
Relocate training activities from B-16 to B-19 to leave open the area west of B-16 for public use.	Please see Section 2.5.5.1 (Reallocate Training Activities from Bravo-16 to Bravo-19) under Chapter 2 (Description of Proposed Action and Alternatives), as alternatives that were considered but were not carried forward for detailed analysis. The relocation of training activities from B-16 to B-19 would not meet the purpose of or need for the Proposed Action or the safety and tempo screening factors.	-
Relocate training activities from B-17 to B-19 to minimize impacts to recreation and public access.	Please see Section 2.5.5.2 (Reallocate Training Activities from Bravo-17 to Bravo-19) under Chapter 2 (Description of Proposed Action and Alternatives), as alternatives that were considered but were not carried forward for detailed analysis. The relocation of training activities from B-17 to B-19 would not meet the realistic training environment or tempo screening factors.	-

Table 5-3: Management Practices, Monitoring, and Mitigation Measures Suggested for Land Use (continued)

Suggestion*	Response	Adopted (✓/-)
Relocate training activities from B-17 to B-20 (or the inverse) in order to re-release one of the ranges back to the public.	Please see Section 2.5.5.3 (Reallocate Training Activities from Bravo-17 to Bravo-20 [or the inverse]) under Chapter 2 (Description of Proposed Action and Alternatives), as alternatives that were considered but were not carried forward for detailed analysis. The relocation of activities from B-17 to B-20 or the inverse would not meet the realistic training environment, safety, or tempo screening factors.	-
Relocate DVTA training activities to B-20 to reduce conflicts between training in the DVTA and future geothermal activities.	Please see Section 2.5.5.4 (Reallocate Dixie Valley Training Area Training Activities to Bravo-20) under Chapter 2 (Description of Proposed Action and Alternatives), as alternatives that were considered but were not carried forward for detailed analysis. The relocation of DVTA training activities to B-20 would not meet the realistic training environment and tempo screening factors.	-
Relocate B-16 to the northeast of the Cocoon Mountains.	Please see Section 2.5.5.5 (Relocate Bravo-16 Northeast of Cocoon Mountains) under Chapter 2 (Description of Proposed Action and Alternatives), as alternatives that were considered but were not carried forward for detailed analysis. The relocation of B-16 to the northeast of the Cocoon Mountains would not meet the realistic training environment and tempo screening factors.	-
Allow renewable energy development (solar and wind) within Bravo ranges and DVTA.	Please see Section 2.5.6.3 (Renewable Energy Development [Wind and Solar] within Bravo Ranges and Dixie Valley Training Area) under Chapter 2 (Description of Proposed Action and Alternatives), as alternatives that were considered but were not carried forward for detailed analysis. The Navy considered this concept but is not carrying it forward because it would not meet the purpose of or need for the Proposed Action, nor the realistic training environment and safety screening factors.	-
Allow open access to the northeast portion of B-16.	Please see Section 2.5.6.6 (Open Access to Northeast Portion of Bravo-16) under Chapter 2 (Description of Proposed Action and Alternatives), as alternatives that were considered but were not carried forward for detailed analysis. The Navy considered this concept but is not carrying it forward. This concept would not meet the realistic training environment or safety screening factors.	-
Resize weapon danger zones to less than 99.99% certainty of containment.	The Navy cannot incorporate this request as it would not meet federal requirements for public health and safety.	-

Table 5-3: Management Practices, Monitoring, and Mitigation Measures Suggested for Land Use (continued)

Suggestion*	Response	Adopted (✓/-)
<p>Move training activities to Naval Air Weapons Station China Lake.</p> <p>Move training activities to the Nevada Test and Training Range.</p> <p>Move training activities to the Utah Test and Training Range.</p> <p>Move training activities to the Hawthorne Army Depot.</p> <p>Move training activities to the R-2508 Complex.</p> <p>Move training activities to the Southern California Range Complex or Virginia Capes Range Complex.</p> <p>Move training activities to the Barry M. Goldwater Range Complex.</p> <p>Move training activities to the White Sands Missile Range.</p> <p>Create a new training range complex and relocate training activities to this location.</p>	<p>The Navy considered moving training activities to other locations or creating a new training range complex in Chapter 2 (Description of Proposed Action and Alternatives) of the Draft and Final EIS. These alternatives were considered but not carried forward for detailed analysis (Section 2.3). The discussion for Naval Air Weapons Station China Lake can be found in Section 2.5.3.1, for Nevada Test and Training Range in Section 2.5.3.2, for Utah Test and Training Range in Section 2.5.3.3, for Hawthorne Army Depot in Section 2.5.3.4, for R-2508 Complex in Section 2.5.3.5, for the Southern California Range complex or Virginia Capes Range Complex in Section 2.5.3.6, for the Barry M. Goldwater Range Complex in Section 2.5.3.7, for the White Sands Missile Range in Section 2.5.3.8, and for the creation of a new training range complex in Section 2.5.3.9.</p>	-
<p>Actions for making lands within the ranges safe in the future for public access need to be implemented now.</p>	<p>The Navy does not anticipate opening the ranges to the public in the foreseeable future. However, as discussed in Section 3.14 (Public Health and Safety and Protection of Children), the Navy has implemented a strict Hazardous Material Control and Management Program and a Hazardous Waste Minimization Program for all activities. The Navy continuously monitors its operations to find ways to minimize the use of hazardous materials and to reduce the generation of hazardous wastes.</p>	-
<p>Public access or roads should be allowed outside the fenced WDZ area.</p>	<p>If the WDZ is fenced, but the withdrawn lands boundary extends further and is still accessible to the public, the Navy would not limit access to these unfenced withdrawn lands.</p>	-

Table 5-3: Management Practices, Monitoring, and Mitigation Measures Suggested for Land Use (continued)

Suggestion*	Response	Adopted (✓/-)
Establish a fund for Churchill and other counties to either convey, exchange, or transfer public lands with low resource or multiple use value near communities for the purpose of future economic development and community growth, as well as to offset lost property tax revenue.	The Navy does not have the authority to establish such a fund. Following any ultimate Congressional decision, the Department of Defense's Office of Economic Adjustment Program may provide technical and financial assistance to nonfederal agencies when appropriate.	-
Lower the range and reduce the azimuth of training activities to reduce the WDZ requirements.	The Navy has reduced the size of the overall area requested and proposed for withdrawal in the Final EIS under Alternative 3 (the Preferred Alternative), to the extent that it could do so consistent with meeting mission requirements. The Navy cannot reduce the azimuth of training activities to reduce the WDZ requirements due to requirements for realistic training. Further, the Navy will seek to acquire the minimum amount of non-federal lands needed to meet its mission requirements.	-
Reconfigure B-16 to avoid closing Sand Canyon Road.	The Navy has reduced the size of the overall area requested and proposed for withdrawal in the Final EIS under Alternative 3 (the Preferred Alternative), to the extent that it could do so consistent with meeting mission requirements. However, the Navy cannot avoid closing Sand Canyon Road to meet realistic training requirements on B-16. Further, the Navy will seek to acquire the minimum amount of non-federal lands needed to meet its mission requirements.	-
Work with BLM to develop future Utility Corridors around the FRTC that will be displaced by proposed expansion.	The Navy would not be displacing corridors. There are no public utilities currently along either State Route 839 or 361. At B-16, the Navy is overlapping a portion of the West-Wide Energy Corridor, but not displacing the transmission line or the service road. At the DVTA, the Navy is proposing to allow transmissions through the existing ROW along the west side of State Route 121.	-
Designate utility corridors along U.S. Route 50, State Route 121 and State Route 839 and/or 316.	The Navy is not proposing to designate utility corridors along U.S. Route 50, State Route 839, or 361 as it is not part of the Proposed Action or the Navy mission. At the DVTA, the Navy is proposing to allow transmissions through the existing ROW along the west side of State Route 121.	-

Table 5-3: Management Practices, Monitoring, and Mitigation Measures Suggested for Land Use (continued)

Suggestion*	Response	Adopted (✓/-)
Release all WSA as a means of moving toward a lower level of loss of public access to lands managed for multiple uses.	The Navy cannot request the release of more WSA area than is necessary for the withdrawal of the area that overlaps the DVTA. The Navy can only request the release of the parts of the WSAs that are necessary to fulfill training needs. The Navy does not have the authority or ability to release WSAs as a compensatory mitigation. Only Congress can release WSAs. The Department of the Navy may only ask Congress to take actions that meet the readiness requirements of the Navy; therefore, the Navy can only request the removal of the designation of portions of the WSAs that the Navy proposes to withdraw.	-
A 1/4-mile minimum buffer between the WSA and withdrawal would be more appropriate in order to accommodate the future potential for a utility corridor.	The Navy is proposing 90–300-foot buffers for utility corridors along the west side of State Route 121 on the DVTA. The Navy cannot provide larger buffers, as they would not be compatible with the Navy mission.	-
Since a portion of the WDZ for B-20 crosses into Wildlife Refuge, which will result in closure of these areas, the Navy should consider purchase (and subsequent donation to the Refuge) of the checkerboard of lands immediately within or surrounding the refuge to offset this loss.	The Navy supports BLM’s idea of de-designation, but would not request congressional de-designation because it would not be required for the FRTC modernization.	-
Continue or expand successful conservation easement program to maintain agriculture and open space while minimizing development in high noise areas.	NAS Fallon has maintained the REPI program around the base since 2006 and will continue to maintain the REPI program. Over the past two years, NAS Fallon and the Navy have been expanding the REPI program under the range airspace on private properties and collaborating with other partners.	✓
Grant access for management purposes on certain ranges in coordination with Navy.	The Navy has created allowances for access for management (e.g., wildlife management, flood management, fire management, etc.) purposes on all Bravo ranges under the Proposed Action.	✓
Continue with, and increase funding for, the successful joint Navy-County Conservation Easement program to support the agriculture industry and associated customs and culture within the Lahontan Valley.	The Navy would continue and expand its partnerships with NDOW, County, and other eligible partners to preserve working lands through the REPI program.	✓

Table 5-3: Management Practices, Monitoring, and Mitigation Measures Suggested for Land Use (continued)

Suggestion*	Response	Adopted (✓/-)
<p>Reconfigure B-17 to the East and West in order to avoid State Route 839.</p> <p>Reconfigure the B-17 firing azimuth to avoid State Route 839.</p> <p>Shift and tilt B-17 to avoid State Route 839 and the Fairview Peak area.</p>	<p>The Navy has incorporated this suggestion into Alternative 3, the Preferred Alternative.</p>	✓
<p>The boundary of all proposed withdrawal areas should be shrunk to the greatest extent possible in order to minimize the area closed to public access between the WDZ and withdrawal boundary.</p> <p>Adjust the Proposed Withdrawal area not to include E County Road.</p>	<p>The Navy has reduced the size of the overall area requested and proposed for withdrawal in the Final EIS under Alternative 3 (the Preferred Alternative), to the extent that it could do so consistent with meeting mission requirements. Further, the Navy will seek to acquire the minimum amount of non-federal lands needed to meet its mission requirements.</p> <p>The Navy has added a figure (Figure 2-15) to the Final EIS that illustrates the area requested and proposed in the Draft EIS and the changes to the Final EIS request and proposal area under Alternative 3. The Navy would not be closing East County Road under any Alternative.</p>	✓
<p>For B-16, develop an access road (similar in design and service level to Sand Canyon Road) along the northern boundary of the withdrawal area that connects Lone Tree Road with Red Mountain Road. The same should be implemented for the western boundary.</p> <p>For B-16, develop an access road along the western boundary of the withdrawal area.</p>	<p>The Navy plans (under Alternative 2 and 3) to allow Simpson Road, which provides access to the west, to be open to the public. Numerous unpaved roads that allow access are to the north of B-16. The Navy does not plan on replacing Sand Canyon Road as the road is used primarily for access to B-16, and closure of it will not impact LOS on surrounding roads or intersections.</p> <p>Due to the Navy's usage of Lone Tree Road, the Navy is proposing, for public safety purposes, to reconstruct and maintain Lone Tree Road. The Navy would seek funding from Congress to pay for reconstruction of the road through the military construction program. The Navy will submit a Needs Report to the Surface Deployment and Distribution Command requesting authority to utilize funding through the Defense Access Roads program.</p>	

Table 5-3: Management Practices, Monitoring, and Mitigation Measures Suggested for Land Use (continued)

Suggestion*	Response	Adopted (✓/-)
	(continued) If approved, the Navy would coordinate construction execution through the Federal Highway Administration. Funds received would be used by the Federal Highway Administration, in cooperation with the Nevada Department of Transportation, to plan, design, and construct the road segment. The Navy would coordinate with NDOT during each of these phases. Such proposed rerouting would be subject to follow-on NEPA analysis. NEPA documentation would be completed by the Federal Highway Administration prior to any road construction. The Navy would support, fund, and participate in any such NEPA analysis.	✓
Reconfigure B-16 to avoid closing Simpson Road. Allow public use of portions of Simpson Road following the withdrawal.	The Navy would avoid closing Simpson Road and would relinquish withdrawal of it under the Proposed Action.	✓
BLM grants for existing NV Energy facilities should be converted to easements prior to the land transfer. This would aid long-term planning to address reliability and future load growth of the electric facilities (a.k.a. "the grid"). If existing facilities are expected to be relocated, as it is noted for the Paiute Pipeline in Alternative 1, NV Energy is expected to be reimbursed for the associated expenses.	The Navy has made allowances for potential energy development in the DVTA that would be compatible with the Navy mission. Additionally, under Alternative 3 (Preferred Alternative), the Navy reduced the amount of withdrawn land in the DVTA by creating the Special Land Management Overlay areas to allow future energy development pending BLM approval. This Special Land Management Overlay would define two areas (one east and one west of the B-17 range) as Military Electromagnetic Spectrum Special Use Zones and would be primarily designated to allow for spectrum separation between military and other activities in the region. Regarding the NV Energy ROW, the Navy plans to work with NV Energy in the future to provide adequate service to the local community while maintaining the Navy's needs for training requirements. The ROW that goes through the Special Land Management Overlay would remain open for development if needed, pending discussion with the Navy regarding specific design features. The designation of the Special Land Management Overlay should not prevent or limit the ability of NV Energy or other utilities to serve the local community.	✓

*Some suggestions are from public comments on the Draft EIS and are components associated with larger comments. The full comments and responses can be found in Appendix F (Public Comments and Responses).

Notes: B = Bravo, BLM = Bureau of Land Management, DVTA = Dixie Valley Training Area, EIS = Environmental Impact Statement, FRTC = Fallon Range Training Complex, LOS = Level of Service, Navy = U.S. Department of the Navy, NDOT = Nevada Department of Transportation, NDOW = Nevada Department of Wildlife, NEPA = National Environmental Policy Act, NV = Nevada, REPI = Readiness and Environmental Protection Integration, ROW = Right of Way, WDZ = Weapons Danger Zone, WSA = Wilderness Study Area, ✓ = affirmative, - = negative.

5.4 Mining and Mineral Resources

5.4.1 Current Management Practices

The Navy does not have any current mineral resources and mining management practices for the FRTC Region of Influence.

5.4.2 Management Practices, Monitoring, and Mitigation Measures Considered

The Navy received suggestions for management practices, monitoring, and mitigation measures from the public, cooperating agencies, and tribal participants during scoping and commenting periods. Suggestions specific to mining and mineral resources and impacts on them are shown in Table 5-4, along with the Navy's responses for each suggestion indicating whether it was adopted or not, including reasoning for considering but eliminating the suggestion if applicable.

5.4.3 Proposed Management Practices, Monitoring, and Mitigation

5.4.3.1 Proposed Management Practices

No additional management practices would be warranted for mining and mineral resources based on the analysis presented in Section 3.3.3 (Environmental Consequences). However, under the Proposed Action, the Navy would make payments to holders of mining claims within the proposed withdrawal at fair market value. The evaluation process is outlined below:

- **Validating existing mining right.** For there to be a valid existing mining right, the claim holder must demonstrate that the claim contains a discovery of a valuable mineral deposit. Having a valid existing claim would exclude any such claim from any moratorium imposed by the requested withdrawal legislation for development of the claim. Therefore, under the Proposed Action, the Navy would acquire any valid existing claims within the proposed withdrawal at fair market value.
- **Existing patented mining claims.** With regard to existing patented mining claims, the federal government has passed the title of these lands to the claimant, making these lands private lands. The Navy would therefore need to acquire any such lands within the proposed FRTC land boundary.
- **Unpatented mining claims.** Holders of unpatented mining claims on public lands may conduct a validity exam, which is a formal process that determines whether the claim holder has a valid existing right. However, holders of unpatented mining claims are not required to conduct a validity exam. In instances where a claim holder has not conducted a validity exam, any value associated with the claim is assumed to be nominal. Accordingly, the Navy would offer to claim holders without a validity exam a nominal amount to extinguish the mining claim. This would also apply to claim holders who have conducted a validity exam, but the exam has not indicated the discovery of a valuable mineral deposit. A nominal value offered would minimally cover the investment that the claim holder has made in the claim over the period of time the claimant has held the claim.

5.4.3.2 Proposed Monitoring

No monitoring measures would be warranted for mining and mineral resources based on the analysis presented in Section 3.3.3 (Environmental Consequences).

Table 5-4: Management Practices, Monitoring, and Mitigation Measures Suggested for Mining and Mineral Resources

Suggestion*	Response	Adopted (✓/-)
<p>The FRTC Draft EIS must be revised to include a minerals alternative that examines the managed coexistence of mineral activities within the proposed FRTC expansion areas. The alternatives analysis requirements in 40 CFR 1502.14 require the Navy to evaluate alternatives that minimize mineral withdrawals and impacts to the nation’s ability to develop domestic minerals— many of which are necessary for national security.</p>	<p>Due to the Mining Act of 1872, the Navy does not have the authority to set required design features for locatable mining operations. Therefore, the Navy cannot allow locatable mining operations on the DVTA or other areas of the FRTC due to safety concerns and incompatibilities with training.</p>	<p>-</p>
<p>Releasing WSAs, especially those that BLM has determined are unsuitable for wilderness designation, would provide meaningful compensation for the “vast irretrievable impact” to mineral resources. Pershing Gold believes that the Draft EIS should be revised to evaluate an acre-for-acre release of WSAs as compensatory mitigation for the “vast irretrievable impact” that would result from the proposal to withdraw 618,727 new acres and to renew the existing withdrawal of 202,864 acres of land. The Navy’s Preferred Alternative in the Final EIS should include a request to Congress to authorize the release of 821,591 acres of WSA in the counties impacted by the FRTC proposed withdrawals. If 821,591 acres exceeds the acres of WSAs in the affected counties, other WSAs in Nevada should be released as well to compensate the State for the impacts resulting from the proposed withdrawal.</p>	<p>The Navy cannot request the release of more WSA area than is necessary for the withdrawal of the area that overlaps the DVTA. The Navy does not have the authority or ability to release WSAs as a compensatory mitigation. Only Congress can release WSAs. The Department of the Navy may only ask Congress to take actions that meet the readiness requirements of the Navy; therefore, the Navy can only request the removal of the designation of portions of the WSAs that the Navy proposes to withdraw.</p>	<p>-</p>

Table 5-4: Management Practices, Monitoring, and Mitigation Measures Suggested for Mining and Mineral Resources (continued)

Suggestion*	Response	Adopted (✓/-)
If the proposed expansion of the Bravo 20 Complex is approved, RGGGS Lands & Minerals, Ltd requests Navy approval for development and use of Nevada Iron's corridor within the expanded Bravo 20 Complex, between the Buena Vista Mine and the Huxley Rail Siding.	Mining is not a compatible activity on a bombing range due to public safety concerns. The Navy, therefore, would not be able to approve the development or use of Nevada Iron's corridor within the expanded B-20 range.	-
Allow mining on live-fire ranges. Allow access to the development of high potential geothermal resource areas and active mining claims within B-17. Allow directional drilling for geothermal underneath bombing ranges.	The Navy cannot allow mining on live-fire ranges due to public health and safety risks and incompatibility of mining activities with training. There is potential for the Navy to allow for directional drilling underneath bombing ranges. The Navy cannot allow any above ground drilling on the bombing ranges. Proposals for directional drilling underneath the bombing ranges would be considered on a case-by-case basis as future technology develops for compatibility with the Navy's training needs (see Section 3.3, Mining and Mineral Resources, for geothermal RDFs in the DVTA).	-
Most mining operations are very small and do not require 24-hour operations. Why not allow daylight mining only for all minerals locatable and salable minerals. Mines could be required to cease operations before sundown.	The Navy does not have the authority to manage locatable mineral development and therefore cannot allow them in the DVTA. The Navy cannot allow mining on live-fire ranges due to public health and safety risks and incompatibility of mining activities with training.	-
Compensate for expensive and long processes and individual must go through during the claim validity process and annual fees. Waive the mining validity exam for mineral claimants in order to save time and money for the individual and the government; compensate only for active claims.	The Navy would not compensate individuals for their expenses in undertaking validity examinations. Holders of unpatented mining claims on public lands may conduct a validity exam, which is a formal process that determines whether the claim holder has a valid existing right. However, holders of unpatented mining claims are not required to conduct a validity exam. In instances where a claim holder has not conducted a validity exam, any value associated with the claim is assumed to be nominal. Accordingly, the Navy would offer to claim holders without a validity exam a nominal amount to extinguish the mining claim. This would also apply to claim holders who have conducted a validity exam, but the exam has not indicated the discovery of a valuable mineral deposit. A nominal value offered would minimally cover the investment that the claim holder has made in the claim over the period of time the claimant has held the claim.	✓

Table 5-4: Management Practices, Monitoring, and Mitigation Measures Suggested for Mining and Mineral Resources (continued)

Suggestion*	Response	Adopted (✓/-)
The federal government should reimburse us and other claim holders for our losses due to the moratorium placed on our property since 2015, and now extended for the next four years until 2022. If the land should be permanently withdrawn, our future earnings and royalties should be compensated for.	The administrative withdrawal undertaken by the Department of the Interior will expire in conjunction with any withdrawal enacted by Congress. Areas that are not withdrawn by Congress would be returned to the Public Domain for all appropriate uses consistent with the Department of the Interior regulations. Valid claims within any Congressional withdrawal would be adjudicated as described in Section 3.3 (Mining and Mineral Resources).	-
The environmental consequences to minerals discussed in Section 3.3.4 of the Draft EIS states for each of the training areas that "Navy training activities would not impact mining activities outside of the proposed withdrawal boundary." (DEIS at 3.3-57, 3.3-58, 3.3-59, 3.3-60, 3.3-61). Pershing Gold wants to emphasize the importance of this commitment. It is imperative that the withdrawal zones be confined to the FRTC expansion areas described in the DEIS and that there will be no buffer zones outside of the withdrawal area in which mineral activities would be restricted or potentially prohibited. The Navy should assure the affected counties, the State of Nevada, and the Nevada mining industry that the Navy will not propose any buffer zones around the proposed expansion areas or request future expansion of the withdrawal areas.	The Navy is not proposing any "buffer zones" around the proposed acquisition or withdrawal areas of the FRTC as discussed in Chapter 2 (Description of Proposed Action and Alternatives) of the Final EIS.	✓

Table 5-4: Management Practices, Monitoring, and Mitigation Measures Suggested for Mining and Mineral Resources (continued)

Suggestion*	Response	Adopted (✓/-)
Bravo 17 minerals which are outside of any danger areas which could have a potential mining operation should be discussed on a case by case basis.	The Navy cannot allow mining on live-fire ranges due to public health and safety risks and incompatibility of mining activities with training. There would be potential for the Navy to allow for directional drilling underneath bombing ranges. The Navy cannot allow any aboveground drilling on the bombing ranges. Proposals for directional drilling underneath the bombing ranges would be considered on a case-by-case basis as future technology develops for compatibility with the Navy's training needs (see Section 3.3, Mining and Mineral Resources, for geothermal RDFs in the DVTA).	✓
Allow geothermal and mining activities to continue on DVTA as long as the actions are consistent with training activities and approved by the Navy (under Alternatives 2 and 3).	The Navy would propose to allow limited leasable (geothermal) and salable materials mining on the DVTA with required design features. The Final EIS further identifies the process by which interested parties could pursue compatible geothermal development in a portion of the DVTA. The proposed RDFs are necessary in order for the Navy to meet necessary training requirements. Development of the RDFs affords an opportunity for geothermal development that would otherwise be lost. The Navy is committed to working with the developer on a case-by-case basis; however, the Navy acknowledges that complying with RDFs could add cost to a potential geothermal development. This is addressed in Section 3.3 (Mining and Mineral Resources).	✓
Address compensation for losses in a way that does not determine value based on PILT formulas. Compensate for the taking of mining claims within the ranges or for the "de-facto" taking of claims within DVTA. Claimholders should be provided the time and opportunity to provide additional documented costs associated with expenditures associated with their impacted claims.	The Navy is not proposing to compensate for losses in a way that is determined by PILT. The Final EIS has been updated to include further discussion of the process by which the Navy would make payments to holders of mining claims. Valid and existing mining rights, existing patented mining claims, and unpatented mining claims are discussed in Section 3.3 (Mining and Mineral Resources).	✓

Table 5-4: Management Practices, Monitoring, and Mitigation Measures Suggested for Mining and Mineral Resources (continued)

Suggestion*	Response	Adopted (✓/-)
<p>Seek means for allowing mineral and geothermal exploration, development, and operations within the DVTa to the greatest practical extent in order to minimize the significant impacts to these economic sectors.</p> <p>Allowance of exploration and development of leasable (geothermal) and salable minerals (sand, gravel, etc.) with certain conditions that allow for an economically viable operation and one that doesn't interfere with Navy operations.</p>	<p>The Navy is proposing to allow limited leasable (geothermal) and salable materials mining on the DVTa with required design features.</p>	✓
<p>The mineral district (Wildhorse-Pershing) on the northwest edge of proposed B-20 land withdrawal should be wholly excluded from the FRTC Modernization. Valid claims have been maintained in and near the district, which is classified to have a High Mineral Potential in the Minerals Report prepared by Golder.</p>	<p>The Navy has reduced the size of the overall area requested and proposed for withdrawal in the Final EIS under Alternative 3 (the Preferred Alternative), to the extent that it could do so consistent with meeting mission requirements. Further, the Navy will seek to acquire the minimum amount of non-federal lands needed to meet its mission requirements. The Navy analyzed the potential reconfiguration of B-20 in Section 2.5.4 (Reconfigure Components of the Fallon Range Training Complex Withdrawal). However, the Navy cannot change the boundary of the B-20 range as requested because this alternative would not meet the realistic training environment or tempo screening factor.</p> <p>Figure 2-13 (Fallon Range Training Complex B-20 Modernization Comparison of (A) Existing Range, (B) Draft EIS Alternative 3, and (C) Final EIS Alternative 3) illustrates the area requested and proposed in the Draft EIS and the changes to the Final EIS request and proposal area under Alternative 3.</p>	-

Table 5-4: Management Practices, Monitoring, and Mitigation Measures Suggested for Mining and Mineral Resources (continued)

Suggestion*	Response	Adopted (✓/-)
Geothermal operations could be required to provide underground transmissions to existing poles which would not increase the transmission lines which could affect helicopters. They could also be required to operate with no nighttime lights except for an emergency situation. (These conditions could be part of any required Special Use Permit issued by the county in which they operator must abide by or lose their permits to operate.) The geothermal leases are almost exclusively to the east side of State Route 121, yet this EIS states that it will allow geothermal development west of State Route 121.	Training in the DVTA occurs on the east side of the DVTA and is not compatible with geothermal development. The proposed RDFs are necessary in order for the Navy to meet necessary training requirements. Development of the RDFs affords an opportunity for geothermal development that would otherwise be lost. The Navy acknowledges that complying with RDFs, such as underground transmission lines and lighting requirements, could add cost to a potential geothermal development. The Navy is committed to working with developers on a case-by-case basis. This is addressed in Section 3.3 (Mining and Mineral Resources). Operations not addressed by the required design features would need to be coordinated with the Navy to determine compatibility.	✓

*Some suggestions are from public comments on the Draft EIS and are components associated with larger comments. The full comments and responses can be found in Appendix F (Public Comments and Responses).

Notes: B = Bravo, BLM = Bureau of Land Management, CFR = Code of Federal Regulations, DVTA = Dixie Valley Training Area, EIS = Environmental Impact Statement, FRTC = Fallon Range Training Complex, PILT = Payment in Lieu of Taxes, RDF = Required Design Feature, WSA = Wilderness Study Area, ✓ = affirmative, - = negative.

5.4.3.3 Proposed Mitigation

Under Alternatives 2 and 3 (Preferred Alternative) the Navy would allow salable mining activities and, subject to conditions established in conjunction with BLM leasing procedures, would allow geothermal development west of State Route 121 as managed under the Geothermal Steam Act of 1970, as long as the required design features listed in this chapter are met.

Alternative 3 would likely have less of an impact on locatable mining, as creation of the proposed Special Land Management Overlay would reduce the area in which exploration and development of locatables would be prohibited. Also, under Alternative 2 and Alternative 3 the Navy would reduce impacts on mineral resource development by proposing to allow salable mining activities and, subject to conditions established in conjunction with BLM leasing procedures, to allow geothermal development west of State Route 121 in the Dixie Valley Training Area (DVTA) as managed under the Geothermal Steam Act of 1970, as long as the required design features listed in this chapter are met. The Navy and BLM would enter into a Memorandum of Understanding (MOU) that would define the coordination process to ensure any permit, lease, or other land use decision would be consistent with the purposes of the military withdrawal.

Alternative 2 and Alternative 3 (Preferred Alternative) incorporate mitigation by proposing to allow geothermal development and mining activities to continue on certain withdrawn areas as long as the actions are consistent with training activities and approved by the Navy.

The Navy has developed the following required design features for geothermal development:

- Allow the expansion of two Rights of Way (ROWs) adjacent to the current transmission corridor as close to current Terra-Gen line as possible.
- Maximum width of permanent ROW is 90 feet each.
- Maximum width of temporary ROW is 300 feet.
- Construct underground transmission line connection from the facility to existing transmission line ROW along State Route 121.
- Use compatible lighting with downward facing shades, lighting with frequency that doesn't "wash out" night-vision devices, and motion sensors to minimize light as appropriate.
- Coordinate with Navy on frequency spectrum.
- Use cooling towers and other structures no higher than 40 feet.
- Avoid steam field piping blocking current access roads to/from State Route 121 and canyon areas.
- Require a glint and glare analysis for photovoltaic solar/geothermal hybrid design, approved by the Navy, prior to construction.
- Coordinate all exploratory and construction activities with NAS Fallon.
- Coordinate with NAS Fallon for all temporary vertical obstruction safety lighting.
- Coordinate with NAS Fallon on the use of unmanned aerial vehicles used in the DVTA.

5.5 Livestock Grazing

5.5.1 Current Management Practices

Policies and procedures in the NAS Fallon Integrated Natural Resources Management Plan would continue to be implemented to avoid conflicts with livestock grazing (e.g., routine monitoring of the

fence lines surrounding potentially hazardous areas to ensure that the fence is secure and cannot be crossed by people or animals).

5.5.2 Management Practices, Monitoring, and Mitigation Measures Considered

The Navy received suggestions for management practices, monitoring, and mitigation from the public, cooperating agencies, and tribal participants during scoping and commenting periods. Suggestions specific to livestock grazing and impacts on it are shown in Table 5-5, along with the Navy's responses for each suggestion indicating whether it was adopted or not, including reasoning for considering but eliminating the suggestion if applicable.

5.5.3 Proposed Management Practices, Monitoring, and Mitigation

The Navy proposes to continue to implement the current policies and procedures in the NAS Fallon Integrated Natural Resources Management Plan to avoid conflicts with livestock grazing.

5.5.3.1 Proposed Management Practices

The following management practices are proposed to avoid or minimize potential impacts on livestock grazing for Alternatives 1, 2, and 3:

- There are existing Standard Operating Procedures to address unauthorized livestock on the FRTC training ranges, which would be updated upon any ultimate Congressional decision on the lands requested for withdrawal and proposed for acquisition and continue to be implemented.
- Livestock-friendly erosion controls (e.g., aspen or synthetic wattles) should be used when performing construction activities on or adjacent to grazing land that is actively being used.
- The Navy would continue to work with the local counties and municipalities as well as federal property land managers to plan for compatible grazing beneath FRTC SUA, which would include the BLM, USFWS, U.S. Forest Service, Bureau of Reclamation, and Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe Counties.

5.5.3.2 Proposed Monitoring

The Navy would expand their fence line patrol and maintenance procedures to include fences that are on withdrawn lands. The Navy proposes to establish two Conservation Law Enforcement Officers at NAS Fallon. Part of the duties of these officers would include patrolling of the added fence line for trespass issues and reporting to the Navy any broken or downed fences for maintenance repair.

5.5.3.3 Proposed Mitigation

No mitigation measures are proposed for livestock grazing based on the analysis presented in Section 3.4.3 (Environmental Consequences). However, pursuant to 43 United States Code Section 315q of the Taylor Grazing Act of 1934, as amended, the Navy would 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, if any of the action alternatives is ultimately chosen. 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.

Table 5-5: Management Practices, Monitoring, and Mitigation Measures Suggested for Livestock Grazing

Suggestion*	Response	Adopted (✓/-)
Establish a grazing program on all Navy-administered and public lands, as well as on certain portions of such lands, to the extent compatible with the Navy's mission.	The Navy cannot accommodate grazing on bombing ranges due to public health and safety incompatibility. The Navy worked with permittees throughout the EIS development, and ranchers have agreed the logistical challenges would be cost prohibitive as well as unsafe.	-
Would like to see a commitment from the Navy to work with the BLM and Bureau of Reclamation to identify alternative parcels that might be made available to impacted permit holders. Dedicate grazing by water location.	The Navy does not have the expertise or authority to identify alternative parcels that might be made available to permit holders. However, the Navy would work with the Bureau of Reclamation and the BLM in the future to undertake Joint Land Use Studies and could potentially fund NEPA efforts for new Range Management Plans.	-
The Navy must follow Congress' mandate and other precedent and do the right thing by adequately compensating ranchers, in a manner that is "fair and reasonable," for the lost economic outputs due to loss of forage and water access that will exist forever.	Further discussion of the valuation process to compensate for losses resulting from the cancellation of grazing permits has been included in Section 3.4 (Livestock Grazing), specifically Section 3.4.3.2 (Alternative 1: Modernization of the Fallon Range Training Complex), and also applies to Alternatives 2 and 3 in the Final EIS. Water rights are considered real property; therefore, if impacted, the Navy would consider purchasing them following the valuation of water rights process that has been included in Section 3.9.3.2 (Alternative 1: Modernization of the Fallon Range Training Complex, Disposition of Water Rights and Water Wells), Figure 3.9-16, and Section 3.9.3.5.3 (Proposed Mitigation). The Final EIS further discusses the procedures and process by which the Navy will value the loss of access to grazing lands by permittees and the Navy's ability to purchase water rights as real property or pay for the eventual diversion of those water rights, pending coordination with the permittee.	✓
Re-seed with native plants; develop a list of approved non-native species. Biological cheatgrass controls. Install double fencing for controlled fringe grazing. Improve range conditions outside by developing high-quality vegetation location (move water, better seeds, access to haul sites for water at existing and new sites). Improve water guzzlers, habitat, and seeding outside of ranges.	The Navy is not proposing resource land improvements outside of the lands proposed for withdrawal or requested for acquisition, as the Proposed Action would not impact vegetation to the extent that this type of mitigation would be warranted. The Navy is not proposing reseeding of native plants, cheatgrass controls, double fencing, improvement of range conditions, or improvement of water guzzlers or habitat outside of the ranges. Within the withdrawn or acquired lands, the Navy would coordinate with NDOW on habitat improvements (e.g., water guzzlers).	-

Table 5-5: Management Practices, Monitoring, and Mitigation Measures Suggested for Livestock Grazing (continued)

Suggestion*	Response	Adopted (✓/-)
Help pay for the cost the permittee will incur for development of a new grazing permit (due to boundary changes and AUM adjustments) and/or allotment management plans as well as costs to implement the additional terms and conditions (i.e., new fencing, relocation or new range improvements, etc.).	The Navy will work with permittees on a case-by-case basis to mitigate losses resulting from the cancellation of a permit. The Taylor Grazing Act of 1934 (43 U.S.C. 315-316o) provides the Navy authority to make payments for certain grazing-related losses; however, any payments would be limited to losses suffered during the term of an existing permit. The Navy will follow the authority in the 43 CFR Parts 4120.3-6 regarding a loss of range improvements. The Navy payments for grazing-related losses would encompass the cost of the Allotment Management Plan revisions. 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.	-
Create a comprehensive list of allotment location by bombing range or area.	In Section 3.4 (Livestock Grazing) of this EIS, the Navy has listed the allotment locations by bombing range and area and discusses impacts on each.	✓
Continue to work with local counties and municipalities as well as federal property land managers to plan for compatible grazing beneath FRTC SUA, to include the BLM, USFWS, U.S. Forest Service, Bureau of Reclamation, and Churchill, Elko, Eureka, Lander, Lyon, Mineral, Nye, Pershing, and Washoe Counties	The Navy would not restrict grazing beneath FRTC SUA outside of the Bravo ranges including on the DVTA.	✓
Under “Proposed Monitoring Measures” the Navy should, at a minimum, monitor their perimeter fencing and any gates to ensure livestock from adjacent allotments do not get into the WDZ. Routinely monitor fence lines surrounding potentially hazardous areas to ensure fence is secure and cannot be crossed by people or animals.	The Navy would expand their fence line monitoring and maintenance procedures to include fences that are on withdrawn lands. The Navy proposes to establish two Conservation Law Enforcement Officers at NAS Fallon. Part of the duties of these officers would include patrolling of the added fence line for trespass issues and reporting to the Navy any broken or downed fences for maintenance repair.	✓

Table 5-5: Management Practices, Monitoring, and Mitigation Measures Suggested for Livestock Grazing (continued)

Suggestion*	Response	Adopted (✓/-)
Install fire breaks. Water tankers staged or personnel detachment for wildland fire capability.	The Navy is working on a Wildland Fire Management Plan and has included goals and procedures as outlined in the Draft Plan included in Appendix D (Memoranda, Agreements, and Plans).	✓
Use livestock-friendly erosion controls (e.g., aspen, synthetic wattles) when performing construction activities on or adjacent to grazing land actively being used.	The Navy would use livestock-friendly erosion controls when applicable as a management practice.	✓
Compensate public land grazing permittees for: the loss of AUMs at fair market (assessed value); loss of range improvements; loss of water rights; and, cost associated with revised grazing permits and improvements needs to alter operations. Acknowledge that the Navy has the authority under 43 U.S.C. section 315q of the Taylor Grazing Act of 1934 to make payments to federal grazing permit holders for losses associated with termination of grazing permits as a result of the withdrawal or other use of former federal grazing lands for war or national defense purposes. If it is determined that none of the avoidance and minimization measures referred to above can be implemented or the impact is not totally offset by the avoidance and minimization measures, the Navy must mitigate the forage loss, loss of access, and loss of our water rights through direct monetary compensation.	Further discussion of the valuation process to compensate for losses resulting from the cancellation of grazing permits has been included in Section 3.4 (Livestock Grazing), specifically Section 3.4.3.2 (Alternative 1: Modernization of the Fallon Range Training Complex), and also applies to Alternatives 2 and 3 in the Final EIS. The Navy is discussing water rights and values of allotments on a case-by-case basis with stakeholders. The Final EIS further discusses the procedures and process by which the Navy will value the loss of access to grazing lands by permittees and the Navy's ability to purchase water rights as real property or pay for the eventual diversion of those water rights, pending coordination with the permittee. The Navy will work with permittees on a case-by-case basis to mitigate losses resulting from the cancellation of a permit. The Taylor Grazing Act of 1934 (43 U.S.C. 315-316o) provides the Navy authority to make payments for certain grazing-related losses; however, any payments would be limited to losses suffered during the term of an existing permit. The Final EIS further identifies the process by which the Navy would determine payment amounts to holders of grazing permits that would be affected by the Proposed Action (Section 3.4.3.2.6, Process for Determining Payment Amounts for Losses Resulting from Permit Modification or Cancellation). This process evaluates the cost of providing replacement forage and/or the losses resulting from an inability to provide replacement forage. The process also determines the value of improvements made by permit holders (e.g., value of wells, corals, fencing and other real property). The renewal is subject to all valid and existing rights to real property. Otherwise rights would need to be extinguished (purchased) or moved. If a water resource has not been put to beneficial use, it is no longer a valid right.	✓

Table 5-5: Management Practices, Monitoring, and Mitigation Measures Suggested for Livestock Grazing (continued)

Suggestion*	Response	Adopted (✓/-)
<p>(continued) Propose that farmers and ranchers be properly compensated by the military branches or the federal government for any adverse economic impacts, short and long term, of new and existing military activities, reservations or restricted areas. In cases where grazing allotment closure is required, compensation to grazing allotment owners should be required and should take into account the value of the feed provided for that allotment (within the seasonal context of how that allotment fits into the ranch's operations); the value of the water rights on the allotment (with the full value of the loss or change in status of the water right); the value of any and all range improvements and the consequences of the economic conditions for the ranching operation by the loss of the component provided by the grazing allotment. Compensated water rights should be retired.</p> <p>This speaks to the long-term economic viability and sustainability of the entire agricultural operation.</p> <p>Offset AUM loss.</p> <p>Define cost and value of AUMs with adjustment for hauled water.</p> <p>Compensate for loss of grazing AUMs and range improvements including fences, corrals, pipelines, or water rights.</p> <p>As such, in addition to identifying just compensation for each affected permit holder, I would also like to see a commitment from the Navy to work with the BLM and Bureau of</p>	<p>(continued) The Navy would fence out the primary hauling site for water near State Route 839, pending any ultimate decision by Congress to choose the configuration of B-17 under Alternative 3.</p> <p>The Navy has worked and would continue to work with the BLM and Bureau of Reclamation to identify alternative parcels that might be available to impacted permit holders.</p> <p>Livestock would only co-occur with training activities in the DVTA. Ground operations in the DVTA area low impact. These activities are not expected to impact biological resources such as cattle. Navy Policy directive is not to interfere with wildlife or cattle during training activities.</p> <p>The Navy would work with permittees on a case-by-case basis to mitigate losses resulting from the cancelation of a permit. The Taylor Grazing Act of 1934 (43 U.S.C. 315-316o) provides the Navy authority to make payments for certain grazing-related losses; however, any payments would be limited to losses suffered during the term of an existing permit rather than for the economic expectations for the future, which would be too speculative to evaluate. 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.</p>	

Table 5-5: Management Practices, Monitoring, and Mitigation Measures Suggested for Livestock Grazing (continued)

Suggestion*	Response	Adopted (✓/-)
<p>(continued) Reclamation to identify alternative parcels that might be made available to impacted permit holders.</p> <p>Just compensation for whatever losses are suffered. At jeopardy are, without limitation, our adjudicated grazing allotments, water rights, right of ways; infrastructure, corrals, fences, watering facilities and also economic expectations for the future; along with the expected additional expenses of maintaining our current ranching operation, and whatever other loss may occur. If this expansion occurs, expect the Navy and the Government of the United States to make grazers whole.</p> <p>This could include the following options: (1) Minimize ground operations when livestock are present to avoid hazing, livestock stress, road degradation, unwanted spreading or moving of livestock, etc. (2) Provide alternate livestock forage (may include seeding) on other federally administered land; which the ranch is authorized to graze livestock. (3) Provide a livestock forage seeding on other private land owned/controlled by the ranch. (4) Provide alternative livestock watering source(s) on federally administered land which the ranch is authorized to graze livestock where forage was previously unused or underused due to lack of a viable water source;</p>		

Table 5-5: Management Practices, Monitoring, and Mitigation Measures Suggested for Livestock Grazing (continued)

Suggestion*	Response	Adopted (✓/-)
(continued) (5) Provide an alternative livestock watering source on private land owned/controlled by the ranch, in any area where forage was previously unused or underused due to lack of a viable water source. (6) Implement a Rangeland Improvement Project on federally administered land which the ranch is authorized to graze livestock which would improve livestock production, forage availability, or rangeland condition (e.g., fencing, weed control, brush management); vegetation management).		
Nye County gets grazing feeds as straight compensation. Offset the cost of new management plans.	The Counties could work with the Department of Defense's Office of Economic Adjustment Program and the BLM and Bureau of Reclamation in the future through Joint Land Use Studies that the Navy could participate in funding for potential compensation routes. Further, the Navy is collaborating with pertinent federal, state, and local governments, depending on the subject, to address management planning through the use of agreements.	✓
Compensate the BLM for fire management plans off range.	The Navy is working on a Wildland Fire Management Plan and has included goals and procedures as outlined in the Draft Plan included in Appendix D (Memoranda, Agreements, and Plans). The Navy would not be responsible or have authority over lands outside of the withdrawal or acquisition areas and therefore would not fund a fire management plan off range.	-
Establish MOU between grazing permit holders, BLM, Navy, and Nevada Cattlemen's Association that assists permit holders to be actively involved with new grazing permit procedures, AMP, range improvement, and relocation of water rights.	The Navy is not proposing to establish an MOU between grazing permit holders, BLM, Navy, and Nevada Cattlemen's Association at this time. The Navy would work with permittees on a case-by-case basis to mitigate losses resulting from the cancellation of a permit. The Taylor Grazing Act of 1934 (43 U.S.C. sections 315-316o) provides the Navy authority to make payments for certain grazing-related losses;	-

Table 5-5: Management Practices, Monitoring, and Mitigation Measures Suggested for Livestock Grazing (continued)

Suggestion*	Response	Adopted (✓/-)
	<p>(continued) however, any payments would be limited to losses suffered during the term of an existing permit rather than for the economic expectations for the future, which would be too speculative to evaluate. 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.</p> <p>Private water rights would be purchased as real property as necessary. Acquisition of water rights would be factored into the processes for valuing grazing and mining-related just compensation or other authorized payments as appropriate. As discussed in Section 3.9 (Water Resources), the Navy does not have the authority or the expertise to assist water rights holders with any other water rights actions (i.e., change applications). The Navy is discussing water rights and values of allotments on a case-by-case basis with stakeholders. The Final EIS further discusses the procedures and process by which the Navy will value the loss of access to grazing lands by permittees and the Navy's ability to purchase water rights as real property or pay for the eventual diversion of those water rights, pending coordination with the permittee.</p>	
Consider an allowance for grazing around the outer perimeter of the Bravo WDZs to manage and reduce fuels. Allow for watering and supplement locations outside or at the perimeter of the WDZ with targeted grazing along the periphery of the area.	The Navy would not allow grazing on acquired or withdrawn lands used for bombing ranges for public safety. The Navy would also compensate grazing permittees for relocating water resources outside of withdrawn lands. Management and reduction of fuels will be addressed in the Wildland Fire Management Plan (see the draft outline in Appendix D, Memoranda, Agreements, and Plans).	-

*Some suggestions are from public comments on the Draft EIS and are components associated with larger comments. The full comments and responses can be found in Appendix F (Public Comments and Responses).

Notes: AMP = Allotment Management Plan, AUM = Animal Unit Month, B = Bravo, BLM = Bureau of Land Management, CFR = Code of Federal Regulations, DVTA = Dixie Valley Training Area, EIS = Environmental Impact Statement, FRTC = Fallon Range Training Complex, MOU = Memorandum of Understanding, NDOW = Nevada Department of Wildlife, NEPA = National Environmental Policy Act, SUA = Special Use Airspace, U.S.C. = United States Code, U.S. Fish and Wildlife Service, WDZ = Weapons Danger Zone, WSA = Wilderness Study Area, ✓ = affirmative, - = negative.

5.6 Transportation

5.6.1 Current Management Practices

The Navy does not have any current requirements or management practices for ground transportation.

5.6.2 Management Practices, Monitoring, and Mitigation Measures Considered

The Navy received suggestions for management practices, monitoring, and mitigation measures from the public, cooperating agencies, and tribal participants during scoping and commenting periods. Suggestions specific to transportation and impacts on it are shown in Table 5-6, along with the Navy's responses for each suggestion indicating whether it was adopted or not, including reasoning for considering but eliminating the suggestion if applicable.

5.6.3 Proposed Management Practices, Monitoring, and Mitigation

5.6.3.1 Proposed Management Practices

Using funding provided by the Navy, the Federal Highway Administration, in cooperation with the Nevada Department of Transportation (NDOT), would be responsible for planning, design, permitting, and constructing any realignment of State Route 839 or 361. The Navy has submitted a Needs Report to the Surface Deployment and Distribution Command requesting authority to utilize funding through the Defense Access Roads program. If approved, the Navy would coordinate construction execution through the Federal Highway Administration. NDOT would ensure that construction of any new route is complete before closing any portion of the existing State Route 839 or 361, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing State Route 839 or 361 unless and until any such new route has been completed and made available to the public.

The Navy would purchase the impacted portion of the Paiute Pipeline and then would pay for relocation of the existing Paiute Pipeline south of the proposed B-17 range. Using funding provided by the Navy, the Paiute Pipeline Company would be responsible for planning, designing, permitting, funding, and constructing any realignment of the pipeline. A ROW application submitted to the BLM by the pipeline owner would formally identify any proposed reroute. Site-specific environmental analysis and NEPA planning would be required before any potential relocation of the pipeline could occur, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing pipeline unless and until any such re-routing of the pipeline has been completed and made available to the pipeline owner. The BLM would have decision authority with respect to any proposed final routing subsequent to completion of site-specific environmental analysis.

Due to the Navy's usage of Lone Tree Road, the Navy is proposing, for public safety purposes, to reconstruct and maintain Lone Tree Road. The Navy would seek funding from Congress to pay for reconstruction of the road through the military construction program. The Navy will submit a Needs Report to the Surface Deployment and Distribution Command requesting authority to utilize funding through the Defense Access Roads program. If approved, the Navy would coordinate construction execution through the Federal Highway Administration. Funds received would be used by the Federal Highway Administration, in cooperation with NDOT, to plan, design, and construct the road segment. The Navy would coordinate with NDOT during each of these phases. Such proposed rerouting would be subject to follow-on NEPA analysis. NEPA documentation would be completed by the Federal Highway Administration prior to any road construction. The Navy would support, fund, and participate in any such NEPA analysis.

Table 5-6: Management Practices, Monitoring, and Mitigation Measures Suggested for Transportation

Suggestion*	Response	Adopted (✓/-)
The County would like the Navy to map and describe its identified RS 2477 Roads in order to document their existence prior to the withdrawal in the event that some of these lands re-open to public access in the future. An MOU with the County to this affect is also requested to acknowledge the status of RS2477 roads.	The Navy does not take a position as to the validity or non-validity of any claimed RS 2477 road or right-of way. In working with the BLM, no adjudicated RS 2477 roads have been identified in the areas requested for withdrawal and proposed for acquisition. The Navy recognizes that there would be loss of access to certain withdrawn or acquired areas and potentially to non-traditional roads, but such roads would not be relocated, as there would still be other means of accessing available areas.	-
Mitigation measures should be stated in support of relocating State Route 361 and 839.	Mitigation measures supporting the road relocation aspects of the project would be discussed in the site specific NEPA documents that would be developed in the future for these specific activities.	-
To mitigate the small [B-16] southern expansion, the existing northeastern 1990s withdrawal, north of Sand Pass Road should revert back to public land.	The area requested for release from the withdrawal area would be within the WDZ on B-16 and needed for training requirements. Furthermore, under Alternative 3, Simpson Road and the land south of it would be relinquished back to the BLM if Alternative 3 is chosen by any ultimate Congressional decision.	-
Request that the Navy work with counties when considering closing, re-routing, or restricting travel on any highways, whether paved or gravel, and on county designated roads. For example, proposed Alternative 3 will force road closure at Sand Canyon Road, as part of this withdrawal, as well as the relocation of State Route 361.	The Navy will coordinate with appropriate agencies when closing or re-routing designated roads. The Navy is not proposing to create or construct any new access roads in the area. The Navy will coordinate with Nevada Department of Transportation with the relocation of either State Route 361 or State Route 839. Using funding provided by the Navy, the Federal Highway Administration, in cooperation with the Nevada Department of Transportation, would be responsible for planning, design, permitting, and constructing any realignment of State Route 839 or 361. The Navy has submitted a Needs Report to the Surface Deployment and Distribution Command requesting authority to utilize funding through the Defense Access Roads program. If approved, the Navy would coordinate construction execution through the Federal Highway Administration.	-

Table 5-6: Management Practices, Monitoring, and Mitigation Measures Suggested for Transportation (continued)

Suggestion*	Response	Adopted (✓/-)
	(continued) Nevada Department of Transportation would ensure that construction of any new route is complete before closing any portion of the existing State Route 839 or 361, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing State Route 839 or 361 unless and until any such new route has been completed and made available to the public.	
Request development of a new access road (with a similar service level) along the northern boundary of the existing and proposed B-16 to connect Lone Tree/Solias Roads with Red Mountain Road outside of the withdrawal area.	Due to the Navy's usage of Lone Tree Road, the Navy is proposing, for public safety purposes, to reconstruct and maintain Lone Tree Road. The Navy would seek funding from Congress to pay for reconstruction of the road through the military construction program. The Navy will submit a Needs Report to the Surface Deployment and Distribution Command requesting authority to utilize funding through the Defense Access Roads program. If approved, the Navy would coordinate construction execution through the Federal Highway Administration. Funds received would be used by the Federal Highway Administration, in cooperation with the Nevada Department of Transportation, to plan, design, and construct the road segment. The Navy would coordinate with NDOT during each of these phases. Such proposed rerouting would be subject to follow-on NEPA analysis. NEPA documentation would be completed by the Federal Highway Administration prior to any road construction. The Navy would support, fund, and participate in any such NEPA analysis.	✓
Request development of a new access road along the western boundary of the existing and proposed B-20, perhaps even utilizing the existing pole line road in the area.	The Navy is not proposing to create any new access roads in this area. The Navy recognizes that there would be loss of access to certain withdrawn or acquired areas and potentially to non-traditional roads, but such roads would not be relocated, as there would still be other means of accessing available areas.	-

Table 5-6: Management Practices, Monitoring, and Mitigation Measures Suggested for Transportation (continued)

Suggestion*	Response	Adopted (✓/-)
The County suggests altering the WDZ for B-20 to allow for a re-route of Pole Line Road along the toe of the West Humboldt Range rather than leaving the road open in its current alignment.	<p>The Navy is not proposing to create any new access roads in this area. The Navy recognizes that there would be loss of access to certain withdrawn or acquired areas and potentially to non-traditional roads, but such roads would not be relocated, as there would still be other means of accessing available areas. The Navy considered altering the WDZ for B-20 to avoid Pole Line Road in Section 2.5.4.7 (Reconfigure Bravo-20 to Avoid Closing Navy's B-20 Access Road) under Chapter 2 (Description of Proposed Action and Alternatives), as alternatives that were considered but were not carried forward for detailed analysis. This alternative would not meet the realistic training environment or tempo screening factor.</p> <p>The Navy understands the loss of access as a result of the closure of non-traditional routes. Pole Line Road is not a BLM-authorized County road. The Navy has held an ROW through the BLM, and since Churchill County abandoned the Pole Line Road in 2005, the Navy has maintained the road.</p>	-
The EIS should identify all roads, paved and unpaved, that will be effectively closed to the public in the Proposed Action, and I would like to see mitigation of alternate routes that will allow the public to get from one place to another.	The Navy is not proposing to create any new access roads in this area. The Navy recognizes that there would be loss of access to certain withdrawn or acquired areas and potentially to non-traditional roads, but such roads would not be relocated, as there would still be other means of accessing available areas. Please see Section 3.5 (Transportation) for a discussion of roads that are analyzed in the Final EIS.	-
Suggestions of moving the Target Area 3 miles to the Southeast which would eliminate the need to Close the B-20 Pole Line Road were met with the excuse that the Playa was to soft part of the year to allow truck traffic to the suggested Target area. It would be a minimal effort to build a road and pad to firm up the Playa area. This Target Area Relocation would also eliminate the current Proposed Impact on the Humboldt Sink allotment.	<p>The Navy considered the alternative suggested in Section 2.5.4.7 (Reconfigure Bravo-20 to Avoid Closing Navy's B-20 Access Road). The Navy considered this alternative but is not carrying it forward for detailed analysis in this EIS. This alternative would not meet the realistic training environment or tempo screening factor.</p> <p>The Navy understands the loss of access as a result of the closure of non-traditional routes. Pole Line Road is not a BLM-authorized County road. The Navy has held an ROW through the BLM, and since Churchill County abandoned the Pole Line Road in 2005, the Navy has maintained the road.</p>	-

Table 5-6: Management Practices, Monitoring, and Mitigation Measures Suggested for Transportation (continued)

Suggestion*	Response	Adopted (✓/-)
Allow off-highway vehicle use on east side of B-17 near Gabbs Road.	The Navy has not and would not restrict OHV use outside of the B-17 boundaries. Due to safety reasons, OHV activities would not be allowed within the proposed withdrawal areas associated with B-16, B-17, and B-20. Topography and OHV trails similar to those in B-17 also occur in the DVTA or other nearby public lands and could be used by recreationists. These areas would not be impacted by the proposed withdrawal or acquisition and would continue to be available for full public use and recreation, as discussed in Section 3.12 (Recreation).	✓
Replace in kind road(s) needed to be closed for training activities. Allow public use of State Route 839 or State Route 361, depending on what Alternative was chosen, until follow-on NEPA and construction completed for notional relocation corridors (Only once the relocation corridors are available for public use would the existing State Route 839 or State Route 361 be closed and training activities at B-17 would commence).	The Navy is not proposing to create any new access roads in this area. The Navy recognizes that there would be loss of access to certain withdrawn or acquired areas and potentially to non-traditional roads, but such roads would not be relocated, as there would still be other means of accessing available areas. NDOT would ensure that construction of any new route is complete before closing any portion of the existing State Route 839 or 361, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing State Route 839 or 361 unless and until any such new route has been completed and made available to the public.	✓
Retain Simpson Road and the lands south of the road as open even though they would be included in the public land withdrawal (Under Alternatives 2 and 3).	The Navy is proposing to release the withdrawal of Simpson Road and lands south of the road to the public as part of the Preferred Alternative (Alternative 3).	✓

Table 5-6: Management Practices, Monitoring, and Mitigation Measures Suggested for Transportation (continued)

Suggestion*	Response	Adopted (✓/-)
Relocate Paiute Pipeline out of the bombing range if an action alternative is chosen.	The Navy would purchase the impacted portion of the Paiute Pipeline and then would pay for relocation of the existing Paiute Pipeline south of the proposed B-17 range. Using funding provided by the Navy, the Paiute Pipeline Company would be responsible for planning, designing, permitting, and constructing any realignment of the pipeline. A ROW application submitted to the BLM by the pipeline owner would formally identify any proposed reroute. Site-specific environmental analysis and NEPA planning would be required before any potential relocation of the pipeline could occur, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing pipeline unless and until any such re-routing of the pipeline has been completed and made available to the pipeline owner. The BLM would have decision authority with respect to any proposed final routing subsequent to completion of site-specific environmental analysis.	✓

*Some suggestions are from public comments on the Draft EIS and are components associated with larger comments. The full comments and responses can be found in Appendix F (Public Comments and Responses).

Notes: B = Bravo, BLM = Bureau of Land Management, DVTA = Dixie Valley Training Area, EIS = Environmental Impact Statement, MOU = Memorandum of Understanding, NDOT = Nevada Department of Transportation, NEPA = National Environmental Policy Act, OHV = Off Highway Vehicle, ROW = Right of Way, RS = Revised Statute, WDZ = Weapons Danger Zone, ✓ = affirmative, - = negative.

5.6.3.2 Proposed Monitoring

No monitoring measures would be warranted for transportation based on the analysis presented in Section 3.5.3 (Environmental Consequences). The Navy proposes to continue to work with ROW users to review potentially impacted county-designated access roads and other potential ROWs in the lands requested for withdrawal and proposed for acquisition and to look for appropriate replacement routes if appropriate and applicable.

5.6.3.3 Proposed Mitigation

No mitigation measures would be warranted for transportation based on the analysis presented in Section 3.5.3 (Environmental Consequences).

5.7 Airspace

5.7.1 Current Management Practices

The Navy would continue current levels of operations, and manage all facets of the FRTC airspace under the guidance of official policies, procedures, and Navy instructions.

5.7.2 Management Practices, Monitoring, and Mitigation Measures Considered

The Navy received suggestions for management practices, monitoring, and mitigation measures from the public, cooperating agencies, and tribal participants during scoping and commenting periods. Suggestions specific to airspace and impacts on it are shown in Table 5-7, along with the Navy's responses for each suggestion indicating whether it was adopted or not, including reasoning for considering but eliminating the suggestion if applicable.

5.7.3 Proposed Management Practices, Monitoring, and Mitigation

5.7.3.1 Proposed Management Practices

The Navy would continue current levels of operations and manage all facets of the FRTC airspace under the guidance of official policies, procedures, and Navy instructions. Specifically, the Navy would:

- Maintain a close working relationship with the Federal Aviation Administration (FAA) in the management of the FRTC SUA, following FAA publication guidance that would fully support the final modernization configuration of the FRTC SUA.
- Continue a proactive outreach to civil and commercial aviation to ensure safe and efficient transit across the FRTC via the Visual Flight Rules Corridor, as well as the safe and efficient managed access and civil flight profiles within the FRTC SUA.
- Ensure that the NAS Fallon Airfield Operations Manual is maintained with the most current airspace information, restrictions, and compliance requirements.
- Avoid Q (Global Positioning System-based) routes to the maximum extent possible.
- NAS Fallon would update the NAS Fallon Airfield Operations Manual to reflect Naval Aviation Warfighting Development Center operational guidance on noise-sensitive areas, and confirmation of FAA airspace exclusion zone guidelines, for the Proposed Action.

5.7.3.2 Proposed Monitoring

No monitoring measures would be warranted for airspace based on the analysis presented in Section 3.6.3 (Environmental Consequences).

Table 5-7: Management Practices, Monitoring, and Mitigation Measures Suggested for Airspace

Suggestion*	Response	Adopted (✓/-)
Portions of Diamond Valley under the airspace includes areas more densely populated than Crescent Valley. This would include the two Diamond Valley General Improvement Districts. While we appreciate the 5 mile buffer around Eureka and Crescent Valley, roughly one-third of Eureka County's population resides in Diamond Valley. A 5 mile buffer around the General Improvement Districts in south-western Diamond Valley should be implemented.	The Navy acknowledges that people that do not live in the center of town, as presented in the suggestion regarding Diamond Valley, and that they may be affected by noise. The airspace exclusion zone around the Eureka Airport, combined with the noise sensitive area around the town of Eureka, would contain much of the general improvement districts mentioned by the suggestion. Therefore, additional noise buffer areas are not necessary.	-
Lander Co. has invested substantial money in upgrading the Austin Airport. We now have a large two room pilots lounge, rebuilt our well, added a new fire main, put in Av-Gas and Jet-A fuel tanks. Now MEDEVAC flights can reach S. Lander Co. without refueling on the way here and return flights. Our pilots lounge and upgraded water/fire system is getting used by the U.S. Forest Service/BLM as a forward base for firefighting air tanker operations. When I ask those people what we can do to improve our airport they all say the same thing get GPS/instrument landing. If you know our location you could understand the Austin airport will never attract much business. Its future is as a strategically located full-service air strip in central Nevada. Recently Reach Air/Summit air ambulance has talked to us about locating a permanent MEDEVAC helio at the Austin Airport. We ask the Navy's support in our efforts to get a GPS landing system at our airport.	The Navy does not have the authority to fund or assist in the obtaining of a GPS landing system. However, the Navy would not object to this system being implemented if approved by the FAA.	-

Table 5-7: Management Practices, Monitoring, and Mitigation Measures Suggested for Airspace (continued)

Suggestion*	Response	Adopted (✓/-)
Request that the Duckwater MOA be adjusted to match the Diamond MOA floor of 1,200 feet AGL. If not, the Duckwater MOA (and all other low-level flight MOAs) floor should be no lower than the stated need of 500 feet AGL consistent with the requirements stated in "90 Days to Combat." The impacts from 200 feet AGL are severe for people, wildlife, and land use including agriculture and the proposed vanadium mine.	<p>Please see page B-7 of the <i>90 Days to Combat</i> for specific needs in the Diamond, Duckwater, and Smokie MOAs. The 200 feet AGL proposed under all action alternatives for the Duckwater MOA is listed on this page as a necessary aspect for realistic training.</p> <p>The Navy is not proposing to make changes to mitigation based on airspace. With the exception of being subject to changes to MOA ceilings, general aviation could be conducted in the same way that it is currently. There would be no change to the General Aviation IFR or VFR traffic as a result of the Proposed Action, and therefore the Navy is not proposing mitigation for impacts.</p>	-
During preflight planning pilots can access SUA information via NOTAMs and schedule information via SUA.FAA.gov. If a pilot sees the SUA overlying or near their departure or destination airport, such as at Derby Field Airport (KLOL) or Austin Airport (TMT), is scheduled to be active, the pilot has no choice but to amend their flight to arrive before the SUA's activation or after it is scheduled to be inactive. The General Aviation flying public does not have access to Letters of Agreement or other information that states air traffic control will coordinate with the military to give way to IFR General Aviation aircraft to allow them access during a SUA's scheduled utilization. It is not reasonable to think a pilot will expend the money and time to fly IFR under the possibility the scheduled time in SUA.FAA.gov is incorrect.	<p>There is an existing charted VFR corridor that is available for general aviation. Control towers (Desert Control and other air traffic control) would be responsible for contacting Navy aircraft in case of emergency aircraft needing to fly through SUA. Regarding other mitigation suggestions in the comment, the FAA would document and publicly disseminate all information needed by general aviators in order to travel safely in the airspace. The Navy would continue outreach to civilian aviation to ensure safe flights and managed access to SUA.</p>	✓

Table 5-7: Management Practices, Monitoring, and Mitigation Measures Suggested for Airspace (continued)

Suggestion*	Response	Adopted (✓/-)
<p>(continued) Pilots flying IFR are trained that they should plan to not have any access to that airspace when the SUA is active and will delay their flight if their destination is located below the active SUA. If there is to be “flexible use” or “dynamic deactivation” of the airspace formally documented with the FAA, that arrangement should be publicly disseminated so pilots can be informed that they will be provided egress or ingress to underlying airports with minimal delay. AOPA agrees this is a significant mitigation as it facilitates airport access, but only if pilots are told this is the case. Any arrangement must be noted for each airport in FAA publications utilized by pilots.</p>		
<p>The proponent should continue to provide general aviation a protected and approved route through the SUA complex regardless of what airspace is active. AOPA believes this mitigation should be expanded equally with the expansion of SUA and, at the very least, sustained. For example, the east-west route should be continued to K05U through the new MOAs. A new north-south exclusion area route, such as from Mina VORTAC (MVA) to Battle Mountain VORTAC (BAM), should be considered given the amount of VFR traffic that would benefit from this route. This new route would also assist with predictability for see-and-avoid and mid-air collision avoidance.</p>	<p>General aviation aircraft would continue to be allowed to transit through the FRTC outside of active restricted airspace or through the VFR corridor, just as they do now. This would apply to any proposed restricted airspace. Typically, restricted airspace is inactive on weekends and holidays, and when ground ranges are closed for maintenance. Therefore, there would be regular opportunities for general aviation aircraft to transit through inactive restricted airspace(s). The proposed changes to airspace would therefore have minimal impact on recreational/general aviation aircraft. Impacts on general aviation for each alternative are discussed in Section 3.6 (Airspace), specifically in Section 3.6.3 (Environmental Consequences).</p>	<p>✓</p>

Table 5-7: Management Practices, Monitoring, and Mitigation Measures Suggested for Airspace (continued)

Suggestion*	Response	Adopted (✓/-)
(continued) To assist pilots with transiting the Restricted Area and MOA exclusion areas safely and accurately, the proponent should work with the FAA to create GPS VFR waypoints at key points along the routes. The charting of VFR waypoints will assist pilots unfamiliar with the area safely navigate through the expanded SUA complex.		
Continue the close working relationship with the Federal Aviation Administration to manage FRTC SUA, through FAA publications that clearly define the final modernization configuration of the FRTC SUA.	The Navy would continue this relationship.	✓
Continue outreach to civilian aviation to ensure safe, managed access to and flight profiles through the FRTC airspace, and more efficient transit across the FRTC via the Visual Flight Rules corridor.	The Navy would continue this relationship.	✓
As we approach the FAA's January 2, 2020, ADS-B mandate, it is important the military embrace the safety enhancing benefits of this technology and ensure their air traffic automation systems integrate ADS-B surveillance information. When the mandate becomes effective, over 100,000 civil aircraft will be equipped with a system that can greatly reduce mid-air collisions and allow air traffic to identify aircraft in more areas than they can today with radar. In a remote area like FRTC where radar coverage may only exist at higher altitudes, ADS-B can improve the safety and efficiency of the airspace for military and General Aviation aircraft.	The prevalence of GPS in navigation, and the capabilities offered by ADS-B, may allow additional airports in the FRTC Region of Influence, to explore the creation of instrument approaches. Future liaison with the FAA, once ADS-B is fully implemented and low-level radio coverage of Desert Control across the FRTC SUA is expanded through additional communication relays, may lead to the ability of local FRTC region airfields to develop instrumented approaches, which would further make civil traffic in the FRTC SUA more predictable, safer, and efficient.	✓

Table 5-7: Management Practices, Monitoring, and Mitigation Measures Suggested for Airspace (continued)

Suggestion*	Response	Adopted (✓/-)
(continued) The military should articulate their plans for FRTC resident aircraft to be ADS-B equipped, such that civil aircraft can view them with their traffic information display, and what the Navy's plan is for integrating ADS-B traffic information into the platforms used by the air traffic controllers responsible for the FRTC airspace.		✓
In June 2018, the U.S. Marine Corps notified the public that they were preparing an Environmental Assessment to support the establishment of the Walker MOA at the Marine Corps Mountain Warfighting Training Center near Bridgeport, California. The proposed SUA would be southwest of the FRTC but only a few nautical miles away. The geographical proximity of the Walker MOA airspace and the FRTC SUA concerns us that the two proponents are not coordinating their actions. The effects of both airspace actions need to be considered in parallel and cumulatively since the flying public will deal with their impacts simultaneously. The Navy must note in their Final EIS how the Walker MOA's proximity was considered and how it might magnify the impacts on civil aviation flying in this area.	The Walker MOA is outside of the FRTC airspace and would not be compatible for use due to the inability of the Walker MOA to accommodate training tempo needs of both the U.S. Marine Corps and the Navy. There is an EA that has been completed; however, the airspace has not yet been implemented. This project was addressed in Chapter 4 (Cumulative Impacts) under recreation with regard to impact on general aviators.	-

Table 5-7: Management Practices, Monitoring, and Mitigation Measures Suggested for Airspace (continued)

Suggestion*	Response	Adopted (✓/-)
Schedule activities through NAWDC. Ensure entire hazard zone is clear before commencing hazardous activities. Coordinate with Range Safety Officers prior to expending military munitions. Ensure NAS Fallon Airfield and NAWDC Range Operations manuals are maintained with most current airspace information, restrictions, and compliance requirements.	Activities are scheduled through NAWDC and hazard zones are clear before commencement of hazardous activities. These activities are coordinated with the Range Safety Officer.	✓
WSAs are managed as wilderness until Congress takes actions. WSAs that receive overflights should be disclosed and included in the same BMPs, mitigation, etc. for wilderness.	WSAs are discussed in Section 3.12 (Recreation). Overflights are discussed in this Section and the same BMPs would be followed by the Navy as required of other Federal agencies over WSAs by the FAA.	✓
Replace routes (high altitude J and low altitude V) that rely on ground-based navigation aids with routes (high altitude Q and low altitude T) that use GPS for safer and more efficient transit across the FRTC.	Replacement routes are outside of the authority of the Navy. The FAA is the governing authority of the airspace and would be responsible for reviewing and potentially approving any such proposed changes.	-
At the very least extensive additional mitigations for all General Aviation IFR and VFR traffic are needed.	General aviation aircraft would continue to be allowed to transit through the FRTC outside of active restricted airspace or through the VFR corridor, just as they do now. This would apply to any proposed restricted airspace. Typically, restricted airspace is inactive on weekends and holidays, and when ground ranges are closed for maintenance. Therefore, there would be regular opportunities for general aviation aircraft to transit through inactive restricted airspace(s). The proposed changes to airspace would therefore have minimal impact on recreational/general aviation aircraft. Impacts on general aviation for each alternative are discussed in Section 3.6 (Airspace), specifically in Section 3.6.3 (Environmental Consequences).	✓

Table 5-7: Management Practices, Monitoring, and Mitigation Measures Suggested for Airspace (continued)

Suggestion*	Response	Adopted (✓/-)
Update the NAS Fallon Airfield Operations Manual to reflect support for final FAA determinations regarding noise sensitive and airport exclusion area guidelines for the proposed action. Consider airspace west of Gabbs Airport.	In order to minimize any aviation impacts under each of the proposed alternatives, the Navy is requesting that the FAA create airspace exclusion zones (3 nautical-mile radius, surface to 1,500 feet AGL) for the Gabbs and Eureka airports. Current range procedures identify the town of Crescent Valley and the Gabbs Airfield as noise sensitive areas that shall be avoided by 3,000 feet AGL or 5 nautical miles. This would ensure those airports could operate regardless of the alternative ultimately chosen. The airspace exclusion zones would be avoided, unless the airport is specifically being utilized for take-offs and landings associated with military training activities. This is discussed in Section 3.6.2.2.4 (Local and Regional Airports).	✓

*Some suggestions are from public comments on the Draft EIS and are components associated with larger comments. The full comments and responses can be found in Appendix F (Public Comments and Responses).

Notes: ADS-B = Automated Dependent Surveillance – Broadcast, AGL = Above Ground Level, AOPA = Aircraft Owners and Pilots Association, B = Bravo, BLM = Bureau of Land Management, BMP = Best Management Practice, EA = Environmental Assessment, EIS = Environmental Impact Statement, FAA = Federal Aviation Administration, GPS = Global Positioning System, IFR = Instrument Flight Rules, K05U = Eureka Airport, MEDEVAC = Medical Evacuation, MOA = Memorandum of Agreement, NAS = Naval Air Station, NAWDC = Naval Air Warfighting Development Center, NOTAM = Notice to Airmen, SUA = Special Use Airspace, U.S. = United States, VFR = Visual Flight Rules, VORTAC = Very High Frequency Omnidirectional Range/Tactical Aircraft Control, WSA = Wilderness Study Area, ✓ = affirmative, - = negative.

5.7.3.3 Proposed Mitigation

NAS Fallon would update the NAS Fallon Airfield Operations Manual to reflect Naval Air Warfighting Development Center operational guidance on noise-sensitive areas, and confirmation of FAA airspace exclusion zone guidelines, for the Proposed Action.

5.8 Noise

5.8.1 Current Management Practices

Activities at the FRTC comply with numerous established acoustic control procedures to ensure that neither participants nor non-participants engage in activities that would endanger life or property. Aircraft standard operating procedures are largely oriented toward safety, which also provide significant noise abatement benefits. For example, many standard operating procedures involve flight routing and minimum altitudes. Each of these procedures increases the range of the noise source from human receptors, thus reducing noise impacts. As stated in Chapter 18 of Chief of Naval Operations Instruction (OPNAVINST) 5100.23, *Navy Safety and Occupational Health Program Manual*, noise control and abatement programs are developed to minimize noise impacts whenever practicable through implementation of operational alternatives that do not degrade mission requirements or aircraft safety.

Navy occupational noise exposure prevention procedures are required at the FRTC for those military personnel who might be exposed to occupational hearing hazards (e.g., military aircraft operations or land detonations) to meet all applicable Occupational Safety and Health Administration and Navy occupational noise exposure regulations. These procedures are designed to minimize occupational hearing hazards. When utilized, there is no risk of hearing impacts from occupational noise exposure.

Additionally, there are a number of noise-sensitive areas that are shown in Figure 3.7-2 either as coordinate points or areas defined by buffers from coordinate points. Pilots overflying these areas are instructed to maintain altitudes of no lower than 3,000 feet above ground level.

Current policies and procedures to ensure proper use of the FRTC SUA and munitions release rules would continue to be implemented. The Air Operations Office logs noise complaints at NAS Fallon. The office records information about the time, location, and nature of the complaint; and initiates investigation of what airspace operations were occurring. If the caller requests, range personnel will follow up with a return phone call to explain the resolution of the complaint.

5.8.2 Management Practices, Monitoring, and Mitigation Measures Considered

The Navy received suggestions for management practices, monitoring, and mitigation measures from the public, cooperating agencies, and tribal participants during scoping and commenting periods. Suggestions specific to noise and impacts from it are shown in Table 5-8, along with the Navy's responses for each suggestion indicating whether it was adopted or not, including reasoning for considering but eliminating the suggestion if applicable.

Table 5-8: Management Practices, Monitoring, and Mitigation Measures Suggested for Noise

Suggestion	Response	Adopted (✓/-)
We appreciate the inclusion of 5-mile noise avoidance buffers for the towns of Eureka and Crescent Valley and the Eureka Airport. We are requesting that those noise avoidance buffers be set from the outer perimeter of the Town of Crescent Valley and Town of Eureka rather than the center of the towns. We also request a 5-mile avoidance buffer around the perimeter of the General Improvement Districts in southwestern Diamond Valley. As we have indicated previously and in our specific comments below, the GIDs have a concentration of population similar to Crescent Valley, and are not protected by the Town of Eureka buffer.	<p>The Navy is not subject to FAA guidelines for Noise Sensitive Areas under Special Use Airspace. However, the Navy has previously established noise-sensitive areas (such as around wildlife refuges, incorporated areas, and certain tribal areas). Under the Proposed Action, the Navy has proposed two new Noise Sensitive Areas (Crescent Valley and Eureka) around incorporated areas near the FRTC Special Use Airspace boundary. Establishment of Noise Sensitive Areas for Crescent Valley and Eureka are considered compatible with military training activities.</p> <p>The Noise Sensitive Areas are recommendations provided to the military pilots for avoidance to the extent practicable.</p> <p>The Navy acknowledges that people that do not live in the center of town may be affected by noise. The airspace exclusion zone around the Eureka Airport, combined with the noise sensitive area around the town of Eureka, would contain much of the general improvement districts mentioned by the suggestion. Therefore, additional noise buffer areas are not necessary.</p>	-
Implement a five nautical mile buffer around Crescent Valley and Eureka.	The Navy would establish new Noise Sensitive Areas as part of the Proposed Action around the incorporated areas of Crescent Valley and Eureka. The establishment of these Noise Sensitive Areas is considered compatible with military training activities and will include a 5-nautical-mile radius and an elevation of 3,000 feet AGL.	✓
Given the number of sensitive noise receptors such as Austin Town, Kingston Town, the Yomba Tribal area, Reese River Valley, and heavy recreational use in the Toiyabe Mountains it would make sense to have some level of noise and overflight restriction for a larger geographic area.	The Navy acknowledges that people that do not live in the center of town may be affected by noise. However, the Navy cannot define Noise Sensitive Areas using a town's perimeter because doing so, evaluated against the Navy's purpose and need, would not be compatible with military training activities.	-

Table 5-8: Management Practices, Monitoring, and Mitigation Measures Suggested for Noise (continued)

Suggestion	Response	Adopted (✓/-)
Mitigation must include sound monitors in all SUAs. Data from sound monitors should be provided to the public and all stakeholders on a quarterly basis. As mitigation NAS Fallon should install noise sensitivity sensor in the Austin canyon and all communities impacted by Supersonic Operations and low-level overflights below 3,000 feet AGL. It would be easy to then clarify how big a boom is.	The Navy is not proposing to include sound monitors. The Navy has an established process for noise complaints. As stated in Section 3.7.3.5 (Proposed Management Practices, Monitoring, and Mitigation), the Air Operations Office logs noise complaints at NAS Fallon. The office records information about the time, location, and nature of the complaint; and initiates investigation of what if any Navy airspace operations were occurring by the Navy at the FRTC. If the caller requests, range personnel will follow up with a return phone call to explain the resolution of the complaint.	-
What impacts have overflights and sonic booms created by military operations had on, the architectural remains of the Pony Express National Historic Trail, telegraph, and stage stations and the fragile adobe ruins at Fort Churchill? As mitigation these areas should be designated as no-fly zones.	The Navy's current activities and proposed activities would not impact the architectural remains of these sites. Please see Section 3.11 (Cultural Resources) for this analysis.	✓
Alter flight routing and minimum altitudes to increase the range from noise sources and human receptors.	The Navy does not anticipate any risk of hearing loss because noise would not rise to a level at which hearing loss would occur. Areas that could experience noise levels of 65 dBA or greater are located in Churchill, Lander, Lyon, Mineral, Nye, and Pershing counties. The EIS includes several figures (Figure 3.7-32 and Figure 3.7-41) that depict where changes to noise would occur using existing and proposed noise contour data.	✓
Continue to follow munitions release rules.	The Navy would continue to follow munitions release rules.	✓
In contrast to the AICUZ programs at other stations, a web search on NAS Fallon yields a 14-year-old noise contour map and a 1999 EIS which claims aircraft noise from NAS Fallon does not affect populated areas. This is simply not true. Any expansion or modernization program at Fallon NAS should address these deficiencies and to provide a full range of verifiable noise abatement measures comparable to those at NAS Oceana or NAS North Island.	Section 3.7 (Noise) modeled the existing and proposed noise levels associated with military training activities. The EIS includes several figures (Figure 3.7-32 and Figure 3.7-41) that depict where changes to noise may occur using existing and proposed noise contour data.	-

Table 5-8: Management Practices, Monitoring, and Mitigation Measures Suggested for Noise (continued)

Suggestion	Response	Adopted (✓/-)
Avoid noise sensitive areas.	The Navy acknowledges noise-sensitive areas and has established Noise Sensitive Areas (such as around wildlife refuges, incorporated areas, and certain tribal areas) in the past. The Navy is proposing new Noise Sensitive Areas as part of the Proposed Action around the incorporated areas of Crescent Valley and Eureka. The establishment of these Noise Sensitive Areas is considered compatible with military training activities and will include a 5-nautical-mile radius and an elevation of 3,000 feet AGL.	✓
Implement a five nautical mile buffer around Crescent Valley and Eureka due to the extension of Military Operating Areas in the eastern portion of the FRTC SUA. Avoid noise sensitive areas; maintain an altitude of at least 3,000 feet if flying over sensitive areas. The EIS should consider a mitigation measure of instituting “no-fly zones” over these communities in order to avoid and minimize these adverse impacts. Populated locations are designated as Noise Sensitive Areas and are to be avoided by a minimum of 3,000 feet in accordance with FAA regulations and Navy doctrine.	The Navy acknowledges noise sensitive areas and has established Noise Sensitive Areas (such as around wildlife refuges, incorporated areas, and certain tribal areas) in the past. The Navy is proposing new Noise Sensitive Areas as part of the Proposed Action around the incorporated areas of Crescent Valley and Eureka. The establishment of these Noise Sensitive Areas is considered compatible with military training activities and will include a 5-nautical-mile radius and an elevation of 3,000 feet AGL.	✓

*Some suggestions are from public comments on the Draft EIS and are components associated with larger comments. The full comments and responses can be found in Appendix F (Public Comments and Responses).

Notes: AGL = Above Ground Level, AICUZ = Air Installation Compatible Use Zone, dBA = A-weighted Decibels, EIS = Environmental Impact Statement, FAA = Federal Aviation Administration, FRTC = Fallon Range Training Complex, NAS = Naval Air Station, SUA = Special Use Airspace, ✓ = affirmative, - = negative.

5.8.3 Proposed Management Practices, Monitoring, and Mitigation

5.8.3.1 Proposed Management Practices

Existing policies and procedures would continue to be implemented to ensure proper use of the FRTC airspace and munitions release rules. The Air Operations Office logs noise complaints at NAS Fallon. The office records information about the time, location, and nature of the complaint; and initiates investigation of what airspace operations were occurring. If the caller requests, range personnel would follow up with a return phone call to explain the resolution of the complaint. No additional management practices would be warranted for noise based on the analysis presented in Section 3.7.3 (Environmental Consequences).

5.8.3.2 Proposed Monitoring

No monitoring measures would be warranted for the noise environment based on the analysis presented in Section 3.7.3 (Environmental Consequences).

5.8.3.3 Proposed Mitigation

Based on the analysis presented in Section 3.7.3 (Environmental Consequences), the Navy would revise their range operations to include Crescent Valley and Eureka as noise-sensitive areas. Due to the extension of Military Operating Areas in the eastern portion of the FRTC SUA, implement the five nautical mile buffer around the towns of Crescent Valley and Eureka.

Additionally, the Navy will implement an airspace exclusion zone over the Gabbs and Eureka airport. Though established for airspace separation, this will serve as an additional means to reduce low-level overflights near Gabbs.

5.9 Air Quality

5.9.1 Current Management Practices

Management practices for construction activities are developed on a project-to-project basis. Therefore, there were no management practices that were already in place that are applicable to the Proposed Action.

5.9.2 Management Practices, Monitoring, and Mitigation Measures Considered

The Navy received suggestions for management practices, monitoring, and mitigation measures from the public, cooperating agencies, and tribal participants during scoping and commenting periods. Suggestions specific to air quality and impacts on it are shown in Table 5-9, along with the Navy's responses for each suggestion indicating whether it was adopted or not, including reasoning for considering but eliminating the suggestion if applicable.

Table 5-9: Management Practices, Monitoring, and Mitigation Measures Suggested for Air Quality

Suggestion*	Response	Adopted (✓/-)
<p>Phase Surface Area Disturbance activities (grading/leveling and shoulder dragging) to reduce the amount of area that is disturbed at a single time.</p> <p>Use water trucks for water spraying.</p> <p>Schedule Surface Area Disturbance activities immediately following periods of precipitation; suspend operations when wind or other meteorological conditions make fugitive dust control difficult.</p> <p>Properly maintain equipment used by military units in the Study Area, including construction equipment, in accordance with applicable Navy requirements; meet federal and state emission standards for operating equipment, where applicable.</p> <p>Minimize generation of dust by adhering to standard operating procedures to operate vehicles on existing roads and two-track trails.</p> <p>Minimize fugitive dust of vehicles participating in construction activities that occur on unpaved surfaces by implementing traffic control measures, including vehicle speed controls; restrict non-project vehicles in affected areas during Surface Area Disturbance activities.</p> <p>Remove any visible material tracked from Surface Area Disturbance locations onto adjoining paved roads.</p> <p>Make available a designated on-base facility with wash racks and water hoses to clean equipment and machinery as needed.</p> <p>Determine need for additional dust abatement measures during pre-construction planning (consider locations and duration of the exercise; the number of vehicles involved in the exercise; soil moisture conditions prior to the exercise; and predicted precipitation, wind speed, and wind direction during the exercise).</p>	<p>These are and would be management practices for any construction or training activities as applicable. Management practices are developed on a project-by-project basis.</p>	<p>✓</p>

*Some suggestions are from public comments on the Draft EIS and are components associated with larger comments. The full comments and responses can be found in Appendix F (Public Comments and Responses).

Note: ✓ = affirmative

5.9.3 Proposed Management Practices, Monitoring, and Mitigation

5.9.3.1 Proposed Management Practices

The primary proposed management practice is dust control. Strategies for dust control are described in the NAS Fallon Dust Control Plans and would continue to be implemented under the Action Alternatives. Specific measures, using best practical methods available for dust suppression, would include, but would not be limited to, the following approaches and procedures:

- Phasing of Surface Area Disturbance activities (grading/leveling and shoulder dragging) would occur, reducing the amount of area that is disturbed at a single time.
- Water trucks may be used for water spraying.
- Whenever possible, Surface Area Disturbance activities shall be scheduled immediately following periods of precipitation. Operations may be suspended when winds (or other meteorological conditions) make fugitive dust control difficult.
- Equipment used by military units in the Region of Influence, including construction equipment, is properly maintained in accordance with applicable Navy requirements. Operating equipment meets federal and state emission standards, where applicable.
- Generation of dust would be minimized by adhering to standard operating procedures to operate vehicles on existing roads and two-track trails (unless otherwise noted in standard operating procedures or in the event of emergency).
- Vehicles participating in construction activities that occur on unpaved surfaces would minimize fugitive dust generation implementing traffic control measures, including vehicle speed controls (not to exceed 15 miles per hour). Restrictions on non-project vehicles may also be imposed in affected areas during Surface Area Disturbance activities.
- Any visible material tracked from Surface Area Disturbance locations onto adjoining paved roads shall be promptly removed.
- A designated on-base facility with wash racks and water hoses would be made available to clean equipment and machinery as needed.
- The need for additional dust abatement measures would be determined on a case-by-case basis during pre-construction planning with input from the NAS Fallon Environmental Division. Factors considered in determining the need for additional dust abatement include the locations and duration of the exercise; the number of vehicles involved in the exercise; soil moisture conditions prior to the exercise; and predicted precipitation, wind speed, and wind direction during the exercise.

5.9.3.2 Proposed Monitoring

No monitoring measures would be warranted for air quality based on the analysis presented in Section 3.8.3 (Environmental Consequences).

5.9.3.3 Proposed Mitigation

No mitigation measures would be warranted for air quality based on the analysis presented in Section 3.8.3 (Environmental Consequences).

5.10 Water Resources

5.10.1 Current Management Practices

The following requirements and management practices apply to water resources at the FRTC:

- Incidental spills that could contaminate groundwater are avoided and minimized. Navy personnel receive initial and periodic refresher training in the proper storage, handling, and management of hazardous materials.
- Potential groundwater contamination issues are addressed in the range condition assessment and subsequent five-year reviews, in accordance with the Range Sustainability Environmental Program Assessment Policy implementation.
- The FRTC has an operational range clearance plan in compliance with Department of Defense Directive 4715.11, *Environmental and Explosives Safety Management*. The operational range clearance plan provides for safe management and removal of unexploded ordnance, and recycling of training munitions, munitions debris, and range scrap that has been rendered safe.
- Ground training activities avoid streams, ponds, and U.S. Army Corps of Engineers' jurisdictional wetlands.
- Incidental fuel spills would be avoided by conducting all refueling activities in a secondary containment area.
- Drip pads would be placed under equipment when parked to avoid soil contamination from leaking fluids.
- A spill prevention, control, and countermeasures plan would be developed if quantities of fuel or other petroleum products above the spill prevention, containment, and countermeasures quantity threshold were stored. The plan would help to ensure rapid and effective response to incidental spills and avoid contaminant migration to groundwater.
 - If any such spill were to exceed reportable quantities as defined by the U.S. Environmental Protection Agency for regulated material, the event would be immediately reported to the appropriate regulatory authorities. All spills that are 5 gallons or more are reportable to the NAS Fallon environmental department. If a spill would meet any of the following criteria, it would be reported to the state within one working day:
 - Released to the soil or other surfaces of land in a quantity greater than 25 gallons or 200 pounds;
 - Discovered in at least 3 cubic yards of soil during any subsurface excavation;
 - Discovered in or on ground water; or
 - A confirmed release from an underground storage tank.
 - The operational range clearance plan would be updated and implemented to address any new requirements for the ranges.
 - Range condition assessment five-year reviews would continue to be conducted, and appropriate steps would be taken, if necessary, to prevent or respond to a release or substantial threat of a release of munitions constituents of potential concern to off-range areas that could pose unacceptable risks to human health or the environment.

- Lead accumulation on the small arms ranges at B-19 would be monitored and adaptively managed by implementing appropriate management practices such as erosion control, lead removal, and pH monitoring and modification.

5.10.2 Management Practices, Monitoring, and Mitigation Measures Considered

The Navy received suggestions for management practices, monitoring, and mitigation measures from the public, cooperating agencies, and tribal participants during scoping and commenting periods. Suggestions specific to water resources and impacts on it are shown in Table 5-10, along with the Navy's responses for each suggestion indicating whether it was adopted or not, including reasoning for considering but eliminating the suggestion if applicable.

5.10.3 Proposed Management Practices, Monitoring, and Mitigation

5.10.3.1 Proposed Management Practices

Current management practices would continue to be implemented under the No Action Alternative, Alternative 1, Alternative 2, or Alternative 3; and existing programs and plans would be updated to reflect new conditions. The following management practices would continue to be implemented to avoid and minimize potential impacts on water quality under each alternative.

- Environmental impacts from incidental fuel spills would be avoided by conducting all ground-based refueling activities in a secondary containment area.
- Drip pads would be placed under equipment when parked to avoid soil contamination from leaking fluids.
- A spill prevention, control, and countermeasures plan would be developed to respond to any event that would exceed spill prevention, containment, and countermeasures quantity thresholds. The plan would help to ensure rapid and effective response to incidental spills and avoid contaminant migration to groundwater.
- Any spills of petroleum or other waste products would be managed and cleaned up in accordance with applicable state and federal regulatory requirements. If such a spill included a regulated material or impacted a waterway, the event would be immediately reported to the Nevada Department of Environmental Protection by the NAS Fallon Environmental Program. For more information, see Section 3.14 (Public Health and Safety and the Protection of Children).
- The operational range clearance plan would be updated and implemented to address any new requirements for the ranges.
- Range condition assessment five-year reviews would continue to be conducted, and appropriate steps would be taken, if necessary, to prevent or respond to a release or substantial threat of a release of munitions constituents of potential concern to off-range areas that could pose unacceptable risks to human health or the environment.
- Evaluate wells on expansion areas prior to closing to determine if a beneficial use (e.g., fire suppression, wildlife/stock water) could be established.

Table 5-10: Management Practices, Monitoring, and Mitigation Measures Suggested for Water Resources

Suggestion*	Response	Adopted (✓/-)
Install and monitor new wells or existing wells in proposed expansion areas for groundwater quality.	The Navy does not intend to install wells where none presently exist for the sole purpose of monitoring, however monitoring would continue to be considered during range condition assessment 5-year reviews.	-
The Draft EIS does not adequately disclose impacts to guzzlers and other water infrastructure that has been developed in the area. NDOW estimates this project may impact around 64 guzzlers. The sporting community needs to be aware of this impact and the Navy needs to propose specific mitigation for the loss of these features that were created specifically for wildlife, hunting, and recreation.	The Navy currently has an Access Management Memorandum of Understanding with NDOW that would be updated (with a new MOA) after any ultimate Congressional Decision on an action. The BLM would continue to allow the NDOW to manage guzzlers in the DVTA.	✓
Address potential groundwater contamination issues in the range condition assessment and subsequent five-year reviews, in accordance with the Range Sustainability Environmental Program Assessment Policy implementation.	The Navy addresses these concerns in range condition assessment and 5-year reviews and will continue to do so.	✓
Dixie Valley - Avoid spring and wildlife guzzler sites with bombing and training activities. Identify and protect important resources (such as springs, wells, guzzlers, and other water resources) in conjunction with local entities by including them on operation planning maps so they can be actively avoided during operations.	The Navy does not conduct bombing activities in the DVTA. While the Navy conducts activities (foot traffic, use of off-road and on road vehicles) in the vicinity of these wetland resources, the Navy's guidance is that sensitive habitat should be avoided during training activities and that training activities should not disturb the fish and wildlife or alter the flow of water in the DVTA as a standard best practice incorporated into the Range Management Plan at NAS Fallon. Navy would not place targets in wash areas on the Bravo ranges.	✓
Avoid streams, ponds, and U.S. Army Corps of Engineers' jurisdictional wetlands during ground training.	The Navy would continue to avoid streams, ponds, and U.S. Army Corps of Engineers' jurisdictional wetlands during ground training.	✓

Table 5-10: Management Practices, Monitoring, and Mitigation Measures Suggested for Water Resources (continued)

Suggestion*	Response	Adopted (✓/-)
Continue the FRTC operational range clearance plan in compliance with DoD Directive 4715.11, <i>Environmental and Explosives Safety Management</i> to provide for safe management and removal of unexploded ordnance, and recycling of training munitions, munitions debris, and range scrap that has been rendered safe.	The Navy would continue to comply with the DoD Directive 4715.11.	✓
Avoid incidental fuel spills by conducting all refueling activities in a secondary containment area. Place drip pads under equipment when parked to avoid soil contamination from leaking fluids. Develop a spill prevention, control, and countermeasures plan to ensure rapid and effective response to incidental spills and avoid contaminant migration to groundwater (if storing quantities of fuel or other petroleum products are above the spill prevention, containment, and countermeasures quantity threshold).	The Navy would continue to do these things as standard management practices. As discussed in Section 3.14 (Public Health and Safety and Protection of Children), the Navy has implemented a strict Hazardous Material Control and Management Program and a Hazardous Waste Minimization Program for all activities. The Navy continuously monitors its operations to find ways to minimize the use of hazardous materials and to reduce the generation of hazardous wastes. Any spills would be managed and cleaned up in accordance with applicable state and federal regulatory requirements. If any such spill were to exceed reportable quantities as defined by the U.S. Environmental Protection Agency for regulated material, the event would be immediately reported to the NAS Fallon Environmental Division for appropriate action per the Integrated Contingency Plan (U.S. Department of the Navy, 2009).	✓
Monitor and adaptively manage lead accumulation on the small arms ranges at B-19 by implementing appropriate MPs such as erosion control, lead removal, and pH monitoring and modification.	The Navy would continue to monitor and adaptively manage lead accumulation at B-19.	✓
Develop a program and fund to relocated water rights and existing infrastructure affected by the expansion, OR purchase or lease existing affected water rights for Navy operations and mitigations (i.e., wildlife water, emergency wildfire water, temporary vegetation restoration irrigation water, etc.).	Private water rights would be purchased as real property as necessary. Acquisition of water rights would be factored into the processes for valuing grazing and mining-related just compensation or other authorized payments as appropriate. As discussed in Section 3.9 (Water Resources), the Navy does not have the authority or the expertise to assist water rights holders with any other water rights actions (i.e., change applications).	✓

Table 5-10: Management Practices, Monitoring, and Mitigation Measures Suggested for Water Resources (continued)

Suggestion*	Response	Adopted (✓/-)
(continued) Several water rights appear to be located within the proposed withdrawal area. The Navy should coordinate with the NDWR to identify said water rights. The County would suggest avoiding the water rights if at all possible. If this cannot be accommodated, then proper payment should be made to existing water right holders.	(continued) The Navy is discussing water rights on a case-by-case basis with stakeholders. The Final EIS further discusses the procedures and process by which the Navy will value the loss of access to and the Navy's ability to purchase water rights as real property or pay for the eventual diversion of those water rights, pending coordination with the permittee.	
Dixie Valley - Allow access for spring and wildlife guzzler monitoring and maintenance.	The Navy would allow access for spring and wildlife guzzler monitoring and maintenance.	✓
Continue controlled access to LeBeau water allotment directly off Rawhide Preserve's current access.	The Navy would not change the current fencing at this stock well, so as to ensure the LeBeau water allotment remains accessible as requested. After any ultimate Congressional decision, the Navy would review the water wells along the perimeter of the proposed fence line and review the potential to leave them outside of the fenced area. However, wells on the interior would not be considered, as they would not meet safety requirements.	✓
Allow managed access to wells on bombing ranges for livestock water hauling (similar to the well that is currently used on B-17).	After any ultimate Congressional decision, the Navy would review the water wells along the perimeter of the proposed fence line and review the potential to leave them outside of the fenced area. However, wells on the interior would not be considered, as they would not meet safety requirements. The Navy is discussing water rights on a case-by-case basis with stakeholders. The Final EIS further discusses the procedures and process by which the Navy will value the loss of access to and the Navy's ability to purchase water rights as real property or pay for the eventual diversion of those water rights, pending coordination with the permittee.	✓
Establish a fund for Churchill County to develop the Dixie Valley (Water) Importation Project in order to accommodate future growth and ensure a supply of reliable and clean drinking water to both the community of Fallon and NAS Fallon. Estimated construction cost per Churchill County Water Resources Plan is \$164.6 million.	The Navy is aware of the project and would continue to coordinate with Churchill County but cannot commit to establishing such a fund. The Navy is proposing to allow access for management of retained guzzlers on withdrawn lands as compatible with training activities and range safety.	-

Table 5-10: Management Practices, Monitoring, and Mitigation Measures Suggested for Water Resources (continued)

Suggestion*	Response	Adopted (✓/-)
(continued) Work with Churchill County to allow development of the Dixie Valley (Water) Importation Project and associated infrastructure (i.e., pipelines, wells, power lines, treatment and pump facilities). Work with Churchill County to develop design standards that allow development of the Dixie Valley (Water) Importation Project (which could also benefit NAS Fallon), and develop a plan to allow and avoid potential impacts to well protection zones or water infrastructure.		
Dixie Valley - Allow administrative access for development, monitoring, maintenance and management of quasi-municipal, municipal, and domestic water rights that will be maintained.	Navy would continue to allow public access to the DVTA, including for access to water rights in the DVTA. However, development of water rights would be regulated by required design features.	✓
Continue to monitor existing monitoring wells for groundwater quality.	The Navy has and would continue to monitor existing monitoring wells for ground water quality.	✓

*Some suggestions are from public comments on the Draft EIS and are components associated with larger comments. The full comments and responses can be found in Appendix F (Public Comments and Responses).

Notes: BLM = Bureau of Land Management, DoD = Department of Defense, DVTA = Dixie Valley Training Area, EIS = Environmental Impact Statement, NAS = Naval Air Station, NDOW = Nevada Department of Wildlife, NDWR = Nevada Division of Water Resources, ✓ = affirmative, - = negative.

5.10.3.2 Proposed Monitoring

The need for groundwater sampling, analysis, or monitoring would continue to be considered during range condition assessment five-year reviews conducted under the Navy's Range Sustainability Environmental Program assessment program. There are no new monitoring programs proposed.

5.10.3.3 Proposed Mitigation

Under Alternative 2 and Alternative 3 (Preferred Alternative), the Navy would incorporate mitigation by proposing to allow development of water resources activities to continue on certain withdrawn areas as long as the actions are consistent with training activities and approved by the Navy. The Navy is currently proposing the following required design features for infrastructure supporting water development:

- A permanent right-of-way immediately adjacent to the existing Terra-Gen ROW to accommodate the main transmission power line
 - Maximum width of permanent ROW is 90 feet each
 - Maximum width of temporary ROW is 300 feet
- Infrastructure outside the ROW to be located west of State Route 121 to the greatest extent possible.
- Place all transmission lines located outside of the main ROW corridor underground.
 - A 90-foot-wide permanent ROW for all lateral transmission lines from the main transmission power line ROW to the well locations, 300 feet for construction.
 - Trenching for water and electrical lines will be constructed to recommended engineering standards assuming separate trenches will be necessary.
- Provide 1.5-acre ROWs for well houses. Provide a 2-acre temporary construction ROW for all proposed well locations for well siting and construction.
- Communication tower locations minimized and the use of fiber communication maximized.
- Communication towers would be limited to 20 feet and appropriately lighted for safety.
- Major facilities (permanent structures) within Dixie Valley would be collocated and have no structures over 40 feet in height.
- Coordinate with Navy on frequency spectrum.
- Use compatible lighting with downward facing shades, lighting with frequency that doesn't "wash out" night-vision devices, and motion sensors to minimize light as appropriate.
- Coordinate all exploratory and construction activities in the DVTA with NAS Fallon.
- Coordinate with NAS Fallon for all temporary vertical obstruction safety lighting.
- Coordinate with NAS Fallon on the use of unmanned aerial vehicles used in the DVTA.
- Minimize impacts on current access roads from electrical and water utilities in ROWs.

The Navy, as part of the Proposed Action, would acquire existing and valid state water rights within the proposed withdrawal areas if the water right can be maintained for beneficial use. If a condition of the water right can be modified, then the water right would not be acquired by the Navy. The Navy would reimburse the movement of the water right on a case-by-case basis. If wells are associated with the water right, then the Navy would evaluate on a case-by-case basis the disposition of the well (e.g., continued beneficial use or capping of the well). The Navy does not plan to use any water rights

purchased for stock water but would instead request to modify the beneficial use as appropriate relative to mission requirements. In the DVTA, the Navy would not seek to acquire existing water rights.

In addition, the following mitigation measures would be implemented to reduce impacts on water resources:

- The Navy would allow access for spring and wildlife guzzler monitoring and maintenance.
- The Navy would ensure the LeBeau water allotment remains accessible.
- The Navy is currently performing a land parcel survey to allow the potential relinquishment of 12 acres of land on the existing B-17 adjacent to State Route 839 to allow continued use of the area for local livestock and wildlife watering efforts.

5.11 Biological Resources

5.11.1 Current Management Practices

Following is a summary of current requirements and practices applicable to vegetation and wildlife at FRTC:

- Current requirements and management practices applicable to wildlife and vegetation at the FRTC are described in the INRMP (U.S. Department of the Navy, 2014). Actions focus on minimizing disturbance, controlling invasive plants, and restoring native habitats.
- Management practices that are currently applied to the existing ranges would continue to be implemented and expanded to the withdrawn lands.

5.11.2 Management Practices, Monitoring, and Mitigation Measures Considered

The Navy received suggestions for management practices, monitoring, and mitigation measures from the public, cooperating agencies, and tribal participants during scoping and commenting periods. Suggestions specific to biological resources and impacts on them are shown in Table 5-11, along with the Navy's responses for each suggestion indicating whether it was adopted or not, including reasoning for considering but eliminating the suggestion if applicable.

5.11.3 Proposed Management Practices, Monitoring, and Mitigation

5.11.3.1 Proposed Management Practices

Management of proposed expansion areas would require extensive updates to management plans. If the Proposed Action is implemented, the NAS Fallon INRMP would be revised to include management practices for special-status species and other future actions pertaining to the expansion areas as identified in the ROD. This coordination would include grazing management by BLM on DVTA, invasive species control and interdiction, wildland fire management, and other stewardship conservation programs. In addition, the Navy is developing a Wildland Fire Management Plan.

To the maximum extent possible and if compatible with mission training requirements, the Navy would avoid placing targets in "Biologically Sensitive Areas" as identified by NDOW and depicted in Figure 5.11-1.

5.11.3.2 Proposed Monitoring

The Navy would coordinate with BLM, Nevada Department of Wildlife, and USFWS in the revision of the INRMP and would consider which additional monitoring activities can be incorporated. The Navy is proposing to fund a study that would be conducted by NDOW (in cooperation with the Navy) to monitor behavior of sage grouse on leks during aircraft overflights.

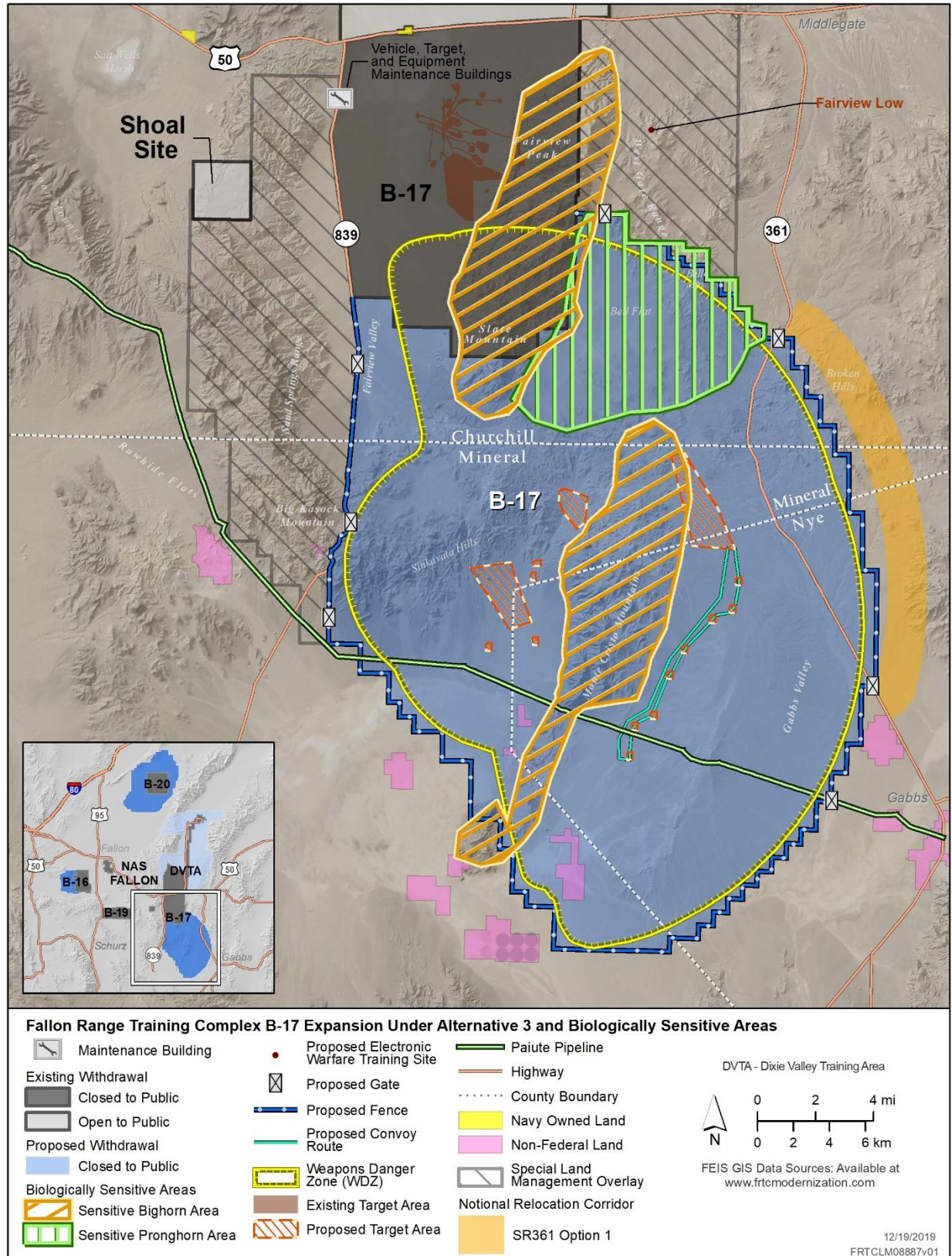


Figure 5-1: Fallon Range Training Complex B-17 Expansion Under Alternative 3 and Biologically Sensitive Areas

Table 5-11: Management Practices, Monitoring, and Mitigation Measures Suggested for Biological Resources

Suggestion	Response	Adopted (✓/-)
<p>Low Level Flight Exercises: Greater sage grouse habitat exists within the DVTa, including a remnant lek in the Louderback Hills. Seasonal timing restrictions should be designed to mitigate those impacts to grouse during breeding and nesting season in those areas identified by NDOW. Additionally, Chalk Mountain is recognized by BLM and NDOW as an important lambing area for bighorn sheep. Seasonal timing restrictions during lambing must be designed to mitigate impacts.</p> <p>We request that analysis by a qualified wildlife biologist and specialist wildlife acoustics be included within the Final EIS so a minimum flight deck for air operations can developed that does not negatively impact greater sage-grouse and bighorn sheep. We request that this flight deck be seasonal in nature, which would be defined by NDOW and species-specific.</p>	<p>The Navy has a requirement to train year-round and cannot implement seasonal flight restrictions. The Final EIS includes a thorough analysis by qualified wildlife biologists. Potential impacts on wildlife species, including bighorn sheep and greater sage grouse, as well as their habitat are discussed in Section 3.10 (Biological Resources), specifically Sections 3.10.3.1 (Potential Stressors), 3.10.3.3 (Alternative 1: Modernization of the Fallon Range Training Complex), 3.10.3.4 (Alternative 2: Modernization of the Fallon Range Training Complex and Managed Access), and 3.10.3.5 (Alternative 3: Bravo-17 Shift and Managed Access [Preferred Alternative]) of the Final EIS.</p> <p>Navy operational doctrine dictates that during transiting, pilots avoid lambing areas. Viable populations of species are distributed throughout current FRTC boundaries. Based on species distribution data, historical coexistence with training activities, and the analysis presented in the Final EIS, populations would not be significantly impacted by proposed training activities. While the analysis indicates a less than significant impact, the Final EIS has been updated with a discussion regarding the potential for impacts on individuals of a species.</p> <p>Based on available literature and the analysis presented in Section 3.10 (Biological Resources), specifically Section 3.10.3.1 (Potential Stressors), of the Final EIS, impacts on Sage Grouse are expected to be minimal. However, NDOW has expressed concerns regarding increased low-level overflights and has asked the Navy to undertake a long-term study to further assess potential impacts. The Navy is proposing to fund a study that would be conducted by NDOW (in cooperation with the Navy) to monitor behavior of sage grouse on leks during aircraft overflights. Any commitment by the Navy to undertake a study (or studies) will be addressed in the EIS ROD.</p>	-
<p>A fully-funded and comprehensive wildlife resource mitigation plan should be incorporated into the Final EIS/ROD. A strategy for forming and enabling a Wildlife Working Group with the objective of enhancing wildlife populations, habitat resources, and hunting opportunities within and outside of the proposed withdrawal should be included.</p>	<p>The Navy will update the INRMP in cooperation with the appropriate state and federal natural resource agencies and incorporate adaptive management strategies identified with these partners during annual INRMP reviews. The Navy will use resources available to it from the INRMP and will collaborate with NDOW on the Bighorn Hunt Program MOA. The Navy is also working with BLM and other Stakeholders on the Wildland Fire Management Plan that is under development. The Draft MOA and Draft Outline of the Wildland Fire Management Plan are shown in their current form in Appendix D (Memoranda, Agreements, and Plans).</p>	-

Table 5-11: Management Practices, Monitoring, and Mitigation Measures Suggested for Biological Resources (continued)

Suggestion	Response	Adopted (✓/-)
We recommend changing B-20 - Hunting to a 2 (yellow) to allow for a managed access hunt program.	The Navy cannot accommodate a hunting program on B-20 at this time. Currently, the Navy is only proposing bighorn hunts on B-17 for a 15-day period to ensure training tempo requirements can be met. The Navy is continuing to look at ways to allow other hunting activities. This is also part of the proposed annual review of the hunt program and INRMP review.	-
The County would support establishment of a fund to improve wildlife habitat in the Game Management Units that are being impacted, outside of the withdrawal area.	The Navy is not proposing to establish a fund to improve wildlife habitat in the Game Management Units outside of the withdrawal area as impacts on biological resources as a result of the Proposed Action would not be significant at a population level. However, the Navy would work with NDOW to identify potential opportunities for habitat improvement within the withdrawal and acquisition boundaries.	-
We recommend that the southern boundary of B-20 be shifted north to provide an adequate waterfowl migration buffer between the SNWR and the B-20 range. The EIS needs to identify and include an appropriate buffer.	The southern end of B-20 is not used for bombing, but is part of the WDZ for safety reasons. By its very nature then, this can act as a migration corridor and does not need special designation. The Navy considered reconfiguring the boundaries of B-20 and that discussion can be found in Section 2.5.4.7 (Reconfigure Bravo-20 to Avoid Closing Navy's B-20 Access Road) of the Final EIS.	-
The County strongly requests inclusion of a representative of the Churchill County Advisory Board to Manage Wildlife be included in Navy annual meetings in order to have a local perspective included on the annual discussion and review of policies and procedures.	The annual INRMP metric signature meeting is limited to statutorily designated signatory parties. The county advisory board is not a signatory under the Sikes Act and therefore would not be involved in the INRMP metrics meetings. However, they are welcome to participate in working groups and review/comment on the INRMP through the standard INRMP revision process that includes public input. The Navy welcomes their input but would engage with them separately from the INRMP annual metrics. Non-signatories of the INRMP have an opportunity to comment on the INRMP during the public commenting period. An advisory board can also be involved in the INRMP process by contacting the CPLO.	-

Table 5-11: Management Practices, Monitoring, and Mitigation Measures Suggested for Biological Resources (continued)

Suggestion	Response	Adopted (✓/-)
Actively manage invasive species and noxious weeds within the FRTC and Region of Influence and work with local weed control districts and/or conservation districts to implement coordinated efforts, including pooling of funding. Revise the NAS Fallon INRMP to include management practices for special-status species and coordination with NDOW, USFWS, and BLM on management actions within the expansion areas; coordination would include grazing management by BLM on DVTA, invasive species control and eradication, wildland fire management, and other stewardship conservation programs.	The INRMP and Integrated Pest Management Plan already address this issue. Both documents would be updated to reflect additional needs relative to any new withdrawal lands.	✓
Support making Navy apparatus, and communications and control systems, available for wildfire suppression efforts within the Region of Influence and outside of the proposed withdrawal areas.	The Navy is developing a Wildland Fire Management Plan, and where possible, proposed elements and goals of this plan were added to the Final EIS. For further information on wildfire and wildfire mitigation, see Section 3.14 (Public Health and Safety and Protection of Children), specifically Section 3.14.2.1.2 (Wildfire Management).	✓
Keep a GIS database of both air and ground collisions with wildlife to determine trends and a means for avoiding future collisions.	The Navy involves NDOW on a consistent basis regarding the wildlife monitoring. The Navy currently has a BASH program that tracks air and ground collisions for the existing ranges, and this program will be extended to cover any acquired or withdrawn lands. It includes a GIS database of incidents. However, exact locations of bird strikes are not always possible; many times, strikes are discovered once the aircraft is on the ground. The strike will be incorporated to the database if a pilot knows when a strike occurs. Through the NEPA process and evaluation of resources for the EIS, the Navy has made attempts to identify important resources and designs training areas to avoid any identified important resources. If additional important resources are identified in the future, the Navy will evaluate if avoidance is necessary and will make plans to do so.	✓

Table 5-11: Management Practices, Monitoring, and Mitigation Measures Suggested for Biological Resources (continued)

Suggestion	Response	Adopted (✓/-)
Support funding for habitat improvement and water development outside of the FRTC.	The Navy would continue its partnership with NDOW and Churchill County to preserve lands and fund projects throughout the FRTC. REPI funding can be used throughout the FRTC and is requested on an annual basis. For clarification REPI funding for easements and project can only be used on non-Department of Defense lands and is a partnership between land owners, local governments, non-governmental organizations, and state governments with the Department of the Navy.	-
We recommend that the Navy dedicate funding to wildlife and habitat avoidance, minimization, and monitoring activities in the Final EIS/ROD.	The Navy would update the INRMP and would use resources available to it from the INRMP to avoid, minimize, and monitor impacts.	✓
Would like to see trap and transplant programs established for big and small game for re-introduction or augmentation of populations outside of the FRTC.	The Navy would support NDOW's efforts of a trap and transplant action if such actions are deemed necessary.	✓
Would like to see a stakeholder group work out which areas are best suited to a Wilderness designation and which with another protective Congressional designation such as an NCA. This procedure has been successfully accomplished in several similar situations and has become known as the Nevada way.	The Navy does not have the authority to designate Wilderness or other special designation areas. This would be accomplished through any ultimate Congressional Decision.	-
Recommend further examination of noise impacts on sage-grouse. If upon further monitoring, impacts to sage-grouse lek counts are detected, mitigation maybe necessary such as reducing the noise impacts at lek sites below the impact threshold (e.g., creating an appropriate buffer around leks to keep noise below the necessary threshold during leking season).	Based on available literature and the analysis presented in Section 3.10 (Biological Resources), specifically, Section 3.10.3.1 (Potential Stressors) of the Final EIS, impacts on Sage Grouse are expected to be minimal. However, NDOW has expressed concerns regarding increased low-level overflights and has asked the Navy to undertake a long-term study to further assess potential impacts. The Navy is proposing to fund a study that would be conducted by NDOW (in cooperation with the Navy) to monitor behavior of sage grouse on leks during aircraft overflights. Any commitment by the Navy to undertake a study (or studies) would be addressed in the EIS Record of Decision.	✓

Table 5-11: Management Practices, Monitoring, and Mitigation Measures Suggested for Biological Resources (continued)

Suggestion	Response	Adopted (✓/-)
(continued) Request that the Navy explore modifications to lessen noise impacts so they don't increase at the SNWR and Stillwater Farms Inc./Canvasback Gun Club. We also request that the Navy shift the B-20 area one to two miles north so that the bombing area is not immediately adjacent to the Stillwater National Wildlife Refuge. This will not only aid in lessening potential impacts from ordinance but also will allow sportsmen access to waterfowl that often use this flooded area (just north of the current refuge boundary) during wetter years. Furthermore, request that the current BASH of maintaining a minimum 3,000 feet over refuges be adopted as an enforceable Navy regulation over both SNWR and Stillwater Farms Inc./Canvasback Gun Club.	(continued) Please see Section 2.5.4.6 (Shift or Reduce Bravo-20 to Avoid the Fallon National Wildlife Refuge) as an alternative that was considered but was not carried forward for detailed analysis. The avoidance of the Fallon National Wildlife Refuge would not meet the realistic training environment, tempo screening factors, or safety screening factors, and would not minimize impacts on civilian infrastructure or environmental impacts. Thank for the suggestion regarding BASH protocol. The current Navy policy is to enforce a buffer of 3,000 feet AGL over refuges, as suggested.	
Develop an integrated fire management plan that includes specific actions for pre-suppression, suppression and post fire rehabilitation.	The Navy is developing a Wildland Fire Management Plan, and where possible, proposed elements and goals of this plan were added to the Final EIS. For further information on wildfire and wildfire mitigation, see Section 3.14 (Public Health and Safety and Protection of Children), specifically Section 3.14.2.1.2 (Wildfire Management).	✓
The proposed fencing is likely to block wildlife migration and trap obstructions that can lead to flooding. Consider alternative fencing that would demarcate boundary while allowing for wildlife passage.	The proposed fencing is BLM-approved four-wire fence. In order to minimize impacts on wildlife from fencing, the Navy would utilize wildlife friendly configured four-wire fencing. Spacing of wires would be configured appropriately for the wildlife in the area.	✓

Table 5-11: Management Practices, Monitoring, and Mitigation Measures Suggested for Biological Resources (continued)

Suggestion	Response	Adopted (✓/-)
Keep a GIS database of all fire starts and fire perimeters associated with training activities in order to determine trends and means for avoiding additional fire starts. Strongly recommend that Fire Management be included into the biological resources section and include commitments for monitoring and mitigation. Please see our other comments on fire management, the Draft EIS's inadequate analysis, and our comments on the Fire Management Plan for additional details.	This could be incorporated into the Wildland Fire Management Plan. Data would be collected for fire analysis and planning purposes; existing data was collected from the BLM. The Navy is developing a Wildland Fire Management Plan, and where possible, proposed elements and goals of this plan were added to the Final EIS. For further information on wildfire and wildfire mitigation, see Section 3.14 (Public Health and Safety and Protection of Children), specifically Section 3.14.2.1.2 (Wildfire Management).	✓

*Some suggestions are from public comments on the Draft EIS and are components associated with larger comments. The full comments and responses can be found in Appendix F (Public Comments and Responses).

Notes: AGL = Above Ground Level, B = Bravo, BASH = Bird Aircraft Strike Hazard, BLM = Bureau of Land Management, CPLO = Community Planning Liaison Officer, DVTA = Dixie Valley Training Area, EIS = Environmental Impact Statement, FRTC = Fallon Range Training Complex, GIS = Geographical Information System, INRMP = Integrated Natural Resource Management Plan, MOA = Memorandum of Agreement, NCA = National Conservation Area, NDOW = Nevada Department of Wildlife, NEPA = National Environmental Policy Act, REPI = Readiness and Environmental Protection, ROD = Record of Decision, SNWR = Stillwater National Wildlife Refuge, USFWS = U.S. Fish and Wildlife Service, WDZ = Weapons Danger Zone, ✓ = affirmative, - = negative.

5.11.3.3 Proposed Mitigation

In order to minimize impacts on wildlife from fencing, the Navy would utilize wildlife friendly configured four-wire fencing. Spacing of wires would be configured appropriately for the wildlife in the area.

5.12 Cultural Resources

5.12.1 Current Management Practices

Cultural resources at the FRTC Region of Influence are managed in accordance with the National Historic Preservation Act, the Archaeological Resources Protection Act, the American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act (NAGPRA), and appropriate Navy Instructions. The Navy also abides by a Programmatic Agreement (PA) with the Nevada State Historic Preservation Office (SHPO), the BLM, and the Advisory Council on Historic Preservation that requires the identification, evaluation, and treatment of historic properties on lands managed by NAS Fallon to ensure protection of cultural resources and coordination between the Navy and the Nevada SHPO (Naval Air Station Fallon, 2011). The PA contains stipulations that address cultural resource staffing, coordination and information exchange with the SHPO, standard procedures, special procedures, public participation, dispute resolution, training of nonprofessional staff, reports and monitoring, reviews, amendments, suspension, termination, execution, and implementation. In addition, the Navy abides by a MOU concerning Native American human skeletal remains and associated artifacts signed in 1991 by NAS Fallon, the Fallon Paiute-Shoshone Tribe, the Nevada SHPO, the USFWS, and the Nevada State Museum (Naval Air Station Fallon et al., 1991).

An Integrated Cultural Resources Management Plan (ICRMP) was completed in 2013. The document provides guidance to staff at NAS Fallon to ensure that all laws, regulations, policies, and directives related to cultural resources are appropriately followed while fulfilling the installation's mission. The ICRMP also provides standard operating procedures for routine actions that may affect cultural resources (U.S. Department of the Navy, 2013).

Any inadvertent discovery of sensitive archaeological materials on the FRTC ranges would be handled in accordance with the Navy's management practices, which include provisions for stopping work and notifying the appropriate parties. If human remains are inadvertently discovered, then the procedures established under the NAGPRA and OPNAVINST 11170.2 series, *Navy Responsibilities Regarding Undocumented Human Burials*, would be followed.

5.12.2 Management Practices, Monitoring, and Mitigation Measures Considered

The Navy received suggestions for management practices, monitoring, and mitigation measures from the public, cooperating agencies, and tribal participants during scoping and commenting periods. Suggestions specific to cultural resources and impacts on them are shown in Table 5-12, along with the Navy's responses for each suggestion indicating whether it was adopted or not, including reasoning for considering but eliminating the suggestion if applicable.

Table 5-12: Management Practices, Monitoring, and Mitigation Measures Suggested for Cultural Resources

Suggestion*	Response	Adopted (✓/-)
Develop a cultural center along U.S. Route 50 and include information for self-guided tours in areas open to the public as well as a schedule of guided tours in areas closed to the public.	The Navy does not have the authority to develop or fund a cultural center and therefore is not proposing to do so at this time. The Navy would continue to allow site visits to Bravo ranges with prior coordination with the Navy and if compatible with Navy training activities and range safety.	-
Avoid disturbance of identified and eligible historic properties during operations and training.	The Navy avoids disturbance of identified and eligible historic properties during operations and training, and would continue to do so.	✓
We are also pleased that Fallon NAS would reconsider the Tribe's request to fund the ethnographic and cultural studies required, as has been done with Southern Paiute Tribes with respect to the proposed expansion of Nellis Air Force Base.	The Navy has conducted an ethnographic and cultural study for this EIS. The ethnographic and cultural studies are complete and have been forwarded to requesting Indian Tribes.	✓
Abide by a Programmatic Agreement (PA) with the Nevada State Historic Preservation Office (SHPO), the BLM, and the Advisory Council on Historic Preservation (ACHP) that requires the identification, evaluation, and treatment of historic properties on lands managed by NAS Fallon to ensure protection of cultural resources and coordination between the Navy and the Nevada SHPO.	The Navy continues to abide by a PA with the Nevada SHPO, BLM, and ACHP and anticipates entering into an amended PA addressing any lands withdrawn or acquired for Navy purposes as a result of the ultimately chosen action alternative.	✓
Abide by a Memorandum of Understanding concerning Native American human skeletal remains and associated artifacts signed in 1991 by NAS Fallon, the Fallon Paiute-Shoshone Tribe, the Nevada SHPO, the USFWS, and the Nevada State Museum.	The Navy would continue to abide by this MOU.	✓
Allow site visits on certain ranges for ceremonial, cultural, and research purposes when the range is not in use and following coordination with the Navy.	The Navy would continue to allow site visits to Bravo ranges with prior coordination with the Navy and if compatible with Navy training activities and range safety.	✓

Table 5-12: Management Practices, Monitoring, and Mitigation Measures Suggested for Cultural Resources (continued)

Suggestion*	Response	Adopted (✓/-)
Continue to implement an Integrated Cultural Resources Management Plan (ICRMP) (2013).	The Navy would continue to implement an ICRMP.	✓
Handle any inadvertent discovery of sensitive archaeological materials on the FRTC ranges in accordance with the Navy's MPs, which include provisions for stopping work and notifying the appropriate parties; Follow procedures established under the NAGPRA and OPNAVINST 11170.2 series, <i>Navy Responsibilities Regarding Undocumented Human Burials</i> if human remains are inadvertently discovered.	The Navy would continue to handle any inadvertent discovery of sensitive archaeological materials on the FRTC ranges in accordance with applicable laws and regulations, as well as applicable policy and procedures.	✓
Conduct pedestrian field surveys prior to any surface grading or excavation in areas of high (Class 4), very high (Class 5), or unknown (Class U) fossil yield potential; Possibly conduct a partial survey by a BLM-permitted paleontologist in areas with moderate potential (Class 3) or potentially sensitive to fossil resources.	The installation's cultural resources manager has referenced and would reference the paleontological resource protection program. Archaeological surveys would be completed prior to these types of activities taking place. During these surveys, the archaeologist would also look for paleontological resources and would notify a permitted paleontologist if necessary.	✓
Cease surface-disturbing activities in the immediate area of an unanticipated discovery of potential paleontological resources until the significance of the discovery can be analyzed, notification to proceed is received, and the appropriate BLM office notified; Develop appropriate mitigation measures for further site development once the extent and potential significance of the paleontological resources on the site has been determined.	Prior to surface disturbing activities, archaeological surveys would be completed. During these surveys, the archaeologist would also look for paleontological resources and would notify a permitted paleontologist if necessary. If an unanticipated discovery were made after surface-disturbing activities began, the Navy would cease activities and notify a permitted paleontologist if necessary. The Navy would continue to handle any inadvertent discovery of paleontological materials on the FRTC ranges in accordance with applicable laws and regulations, as well as applicable policy and procedures.	✓

Table 5-12: Management Practices, Monitoring, and Mitigation Measures Suggested for Cultural Resources (continued)

Suggestion*	Response	Adopted (✓/-)
Use a qualified paleontological monitor to monitor construction actions requiring grading or excavation and located in an area of high (Class 4) or very high (Class 5) fossil yield potential, or within any area where field surveys have identified fossil occurrences.	Prior to construction activities, archaeological surveys would be completed. During these surveys, the archaeologist would also look for paleontological resources and would notify a permitted paleontologist if necessary. If unanticipated discovery were made after surface-disturbing activities began, the Navy would cease activities and notify a permitted paleontologist if necessary.	✓
The NAS Fallon should work with the Tribe to prepare a memorandum of agreement to define the Tribe's access to the proposed renewal and expansion areas.	The Navy is seeking to work with the Indian Tribes to prepare a managed access Memorandum of Understanding defining access procedures to the proposed expansion lands as well as current withdrawn lands up for renewal.	✓

*Some suggestions are from public comments on the Draft EIS and are components associated with larger comments. The full comments and responses can be found in Appendix F (Public Comments and Responses).

Notes: BLM = Bureau of Land Management, EIS = Environmental Impact Statement, FRTC = Fallon Range Training Complex, MOU = Memorandum of Understanding, MP = Management Practice, NAGPRA = Native American Graves Protection and Repatriation Act, NAS = Naval Air Station, OPNAVINST = Chief of Naval Operations Instruction, U.S. = United States, USFWS = U.S. Fish and Wildlife Service, ✓ = affirmative, - = negative.

5.12.3 Proposed Management Practices, Monitoring, and Mitigation

5.12.3.1 Proposed Management Practices

Management of proposed expansion areas would require updates to the ICRMP. If the Proposed Action is implemented (i.e., expansion of the existing DVTA and B-16, B-17, and B-20 ranges), the NAS Fallon ICRMP would be revised to include management practices for cultural resources in the expansion areas.

The amended 2011 PA and the ICRMP would continue to be implemented on existing withdrawn lands, and lands requested for withdrawal and proposed for acquisition would additionally be included in an amendment to the 2011 PA.

The Navy is also working with Indian Tribes to prepare an MOU defining access procedures to the proposed renewal and expansion areas.

5.12.3.2 Proposed Monitoring

The Navy would coordinate with BLM, Nevada SHPO, and affected Tribes in the revision of the ICRMP and would consider which additional management or monitoring activities can be incorporated. This coordination would include archaeological and tribal monitoring, as appropriate

5.12.3.3 Proposed Mitigation

In cases where avoidance of historic properties is not possible, the appropriate process outlined in the amended 2011 PA and 36 CFR 800.6 (resolution of adverse effects) would be followed. The Navy acknowledges that there may be impacts that have yet to be defined and that it would continue to develop and incorporate mitigation measures consistent with the amended 2011 PA and 36 CFR 800.6.

5.13 Recreation

5.13.1 Current Management Practices

Current requirements and management practices applicable to recreation within the FRTC Region of Influence are agency specific and are discussed in respective subsections in Section 3.12.2 (Affected Environment).

Based on the FRTC Range Air Installations Compatible Use Zones Study (U.S. Department of the Navy, 2011), land uses, including recreational activities, within the FRTC Region of Influence are compatible with current training activities. The study includes training range safety and noise analyses and provides land use recommendations that are compatible with training range operations and their associated noise levels. Noise associated with training activities, as well as compatibility of noise levels with existing land use and points of interest, is addressed further in Section 3.7 (Noise) of this EIS. Safety associated with land use is of interest in areas proximate to training ranges B-16, B-17, and B-20, where air-to-ground delivery of munitions occurs.

5.13.2 Management Practices, Monitoring, and Mitigation Measures Considered

The Navy received suggestions for management practices, monitoring, and mitigation measures from the public, cooperating agencies, and tribal participants during scoping and commenting periods. Suggestions specific to recreation and impacts on it are shown in Table 5-13, along with the Navy's responses for each suggestion indicating whether it was adopted or not, including reasoning for considering but eliminating the suggestion if applicable.

5.13.3 Proposed Management Practices, Monitoring, and Mitigation

5.13.3.1 Proposed Management Practices

Management practices were found to be warranted for recreation based on the analysis presented in Section 3.12.3 (Environmental Consequences) and are listed below:

- The Navy would update the current MOA with the Nevada Department of Wildlife relative to the bighorn sheep hunting program on B-17 and outline management practices, including the annual review process. The current Draft MOA is located in Appendix D (Memoranda, Agreements, and Plans).
- The Navy currently supports the NDOW actions to install/maintain guzzlers for wildlife and will continue this partnership with the NDOW within range or training areas.
- Allow the BLM or NDOW to continue to access and maintain existing water developments. The Navy would also work with NDOW to determine if moving certain guzzlers would be applicable within range or training areas.
- Install wildlife-friendly fence design for any new fences and removal of all existing fences not required for safety/security purposes within the withdrawal area.
- The Navy would expand their fence line patrol and maintenance procedures to include fences that are on withdrawn lands. The Navy proposes to establish two Conservation Law Enforcement Officers at NAS Fallon. Part of the duties of these officers would include patrolling of the added fence line for trespass issues and reporting to the Navy any broken or downed fences for maintenance repair.
- The Navy proposes to enter into an agreement (MOU) with the USFWS to allow the portion of the Fallon National Wildlife Refuge within B-20 to be closed to all public access, but to continue to be managed as a wildlife refuge.

Table 5-13: Management Practices, Monitoring, and Mitigation Measures Suggested for Recreation

Suggestion*	Response	Adopted (✓/-)
A fully-funded and comprehensive wildlife resource mitigation plan should be incorporated into the Final EIS/ROD. A strategy for forming and enabling a Wildlife Working Group with the objective of enhancing wildlife populations, habitat resources, and hunting opportunities within and outside of the proposed withdrawal should be included.	The Navy would update the INRMP in cooperation with the appropriate state and federal natural resource agencies, and incorporate adaptive management strategies identified with these partners during annual INRMP reviews. The Navy would use resources available to it from the INRMP and would collaborate with NDOW on the Bighorn Hunt Program MOA. The Navy is also working with all interested Stakeholders on the Wildland Fire Management Plan that is under development. The Draft MOA and Draft Outline of the Wildland Fire Management Plan are shown in their current form in Appendix D (Memoranda, Agreements, and Plans).	-
Request that the Navy include a definitive commitment to allow the NDOW and sportsmen access to withdraw areas in perpetuity. We also request that the Navy develop an AMP and allow adequate opportunity for public and cooperating agency involvement in its development. Also request the AMP be included with the Final EIS or as a condition of approval for the project. The AMP should also include a significant funding mechanism to ensure that any damage resulting to wildlife habitat and/or water developments from Naval operations are adequately addressed in a timely manner. This funding mechanism should not only provide compensation for damage to habitat and water development structures resulting from Naval operations but should also include conservation funding to improve wildlife habitat within the Naval Complex. NBU would request that the funding mechanism be administered by a working group of interested stakeholders, including but not limited to, wildlife interests, conservation interest, and grazing interests.	The Navy is working with NDOW 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 an MOA regarding access for management activities at the FRTC While the Navy can and does submit requests for wildlife related funding, the Navy's budget is determined by Congress. In the future for the expansion, the Navy is planning on expanding the INRMP to include the larger area and would seek resources for management of the larger area. The INRMP development and implementation brings together multiple resource agencies for natural resource management on Navy lands. The Navy cannot dedicate future funding to something such as the AMP	✓

Table 5-13: Management Practices, Monitoring, and Mitigation Measures Suggested for Recreation (continued)

Suggestion*	Response	Adopted (✓/-)
Mitigate recreation losses with commensurate new federal land designations outside of the project areas for OHV use. Lands may include hard release of WSAs and/or ACECs, special status designations such as NCAs and/or NRAs, recreation focused prescriptions on general public lands, acquisition of nonfederal lands, or similar mechanisms.	OHV use would continue to be allowed within the DVTA. The BLM has proposed to open/un-restrict OHV use in the Sand Mountain and Dead Camel Mountain Special Recreation Management Areas, as well as on the playa north of the DVTA. Continued OHV use would also be allowed in the Special Land Management Overlay and potentially within new areas of the withdrawn portions of the Clan Alpine Mountains, Job Peak, and Stillwater Range WSAs after any removal of WSA designation by Congress. Due to safety reasons, OHV activities would not be allowed within the proposed withdrawal areas associated with B-16, B-17, and B-20. Topography and OHV trails similar to those in B-17 also occur in the DVTA or other nearby public lands and could be used by recreationists. These areas would not be impacted by the proposed withdrawal or acquisition and would continue to be available for full public use and recreation, as discussed in Section 3.12 (Recreation). The requested mitigations to designate surrounding land as Special Recreation Area and to release all WSAs in Nevada are outside of the scope of the Proposed Action for this EIS, and therefore are not part of the Proposed Action.	-
Commit to ROWs with Churchill County for public and recreation access in DVTA.	The DVTA would already be open to the public for recreation access under the Proposed Action, therefore a ROW would not be necessary.	-
Recommend that the Navy program include access/tours to other sites in the nearby area, and especially to the many sites within the DVTA boundary. Recommend that an annual report should be presented to the County Commissioners to ensure the program is being used effectively, and to receive input on improvements to the reduce access program. Allow guided (i.e., Navy escorted) visits to important geological and other resources (such as the Salt Cave, hoodoos, peaks, sand dunes, etc.).	The DVTA would remain open to recreation under all Alternatives, but the Navy does not have authority to manage recreation outside of its lands. The Navy will work with the BLM to provide information on military training activities to support the RMP process. The Navy is not proposing to report annually on the managed access program.	-

Table 5-13: Management Practices, Monitoring, and Mitigation Measures Suggested for Recreation (continued)

Suggestion*	Response	Adopted (✓/-)
<p>Consider a conservation proposal that would include a combination of National Conservation Area and Wilderness to provide maximum protection for Wilderness values, wildlife habitat and cultural resources. We are proposing a National Conservation Area for the Stillwater Range (about 284,000 acres) that would also include Wilderness designation for the Stillwater and Job Peak WSAs.</p> <p>Some of the highlights would include: The Stillwater Range would remain undeveloped and available for military training without dangerous developments and low-light conditions. The Stillwater Range would remain undeveloped to protect cultural resources and be consistent with ACEC proposals by the Tribes. The National Conservation Area would still be managed by the BLM and 113,000 acres of public lands would no longer need to be withdrawn from the public domain by the Navy. The Navy could use these lands and be assured that they would not be developed. However, the public will continue to own them and access would be assured in the future.</p> <p>Currently the Navy is proposing to withdraw about 247,000 acres of public lands in Dixie Valley Training Area and take them out of the public domain. Our proposal would limit the amount of withdrawn land in the DVTA to about 134,000 acres. That would reduce the need for withdrawing 113,000 acres.</p>	<p>The proposed de-designation is necessary to meet certain training requirements, such as installing stationary and mobile electronic threat emitters, landing helicopters, and maneuvering by special operations forces, along with other non-hazardous training activities (e.g., night vision goggle training, low altitude flights).</p> <p>This type of training within Wilderness Study Areas is not currently permitted, and any de-designation would require Congressional action, as discussed in Section 3.12 (Recreation). Any such de-designation would not prohibit the use of the area by recreationalists. Portions of the following WSAs would be included in Congressional withdrawal legislation, removing the WSA designation: Stillwater Range WSA (approximately 10,951 acres; 12 percent of the WSA), Jobs Peak WSA (approximately 41,680 acres; 47 percent of the WSA), and Clan Alpine Mountains WSA (approximately 22,324 acres; 11 percent of the WSA) (Figure 3.2-8). The de-designation of portions of the WSAs would not reduce a disproportionate share of relevant wilderness characteristics in such a way that it would eliminate the potential for these areas to be designated as wilderness in the future. Management of the remaining WSAs (outside the proposed expansion lands) would continue according to policy and regulations related to the WSAs.</p>	<p>-</p>

Table 5-13: Management Practices, Monitoring, and Mitigation Measures Suggested for Recreation (continued)

Suggestion*	Response	Adopted (✓/-)
(continued) Additionally, the conservation proposal would be in perpetuity and would not have to be renegotiated through Congress every 20 years. Additionally, Wilderness designation for the Clan Alpine Mountains, Desatoya Mountains and Gabbs Valley Range would further support the Navy by keeping out developments that might be incompatible with military operations. Wilderness designation will ensure development, encroachments, and obtrusive terrestrial lights will not impact the viability of the DVTA for as long as the Navy needs to conduct training there. We would look forward to working with the Navy and our delegation to ensure any routes and access needs within these proposals are clearly identified. Conservation Proposal for Dixie Valley Training Area.	(continued) The BLM has stated ongoing Navy operations in the SUA over these WSAs diminish solitude opportunities and could adversely impact wilderness designation. Similarly, although the South Stillwater and Clan Alpine Herd Area/Herd Management Areas overlap the DVTA, there would be no change to the current land use or land management of these areas. The proposed DVTA expansion would overlap 11,600 acres of the BLM's proposed Fox Peak ACEC (24 percent), resulting in the BLM changing the boundaries of the proposed Fox Peak ACEC to remove those areas within the DVTA. The Navy is not proposing to change the management or designated land use within the revised ACEC boundary. The construction of the proposed Job Peak Electronic Warfare Site would be north of the Fox Peak ACEC. There are transmission corridors as well BLM planning and utility corridors within the boundary of the DVTA. Action Alternatives would not affect the current configuration of utilities within the proposed DVTA boundary. However, it would limit the ability to improve existing and proposed transmission lines within the DVTA. Military Training activities on the DVTA would continue to be compatible with the various activities that may take place on the DVTA because the range would continue to be open to the public.	-
Allow camping and hiking activities within the Bravo ranges that would be compatible with the Navy's mission. Designate camping spots on ranges for hunting.	The Navy cannot allow camping or hiking on the Bravo ranges due to public health and safety restrictions. The Navy would work with NDOW to provide a quality hunt experience on B-17, to include camp location for hunters and will address this issue in the annual hunt program work plan as able.	-
Evaluate alternate access with regard to travel time when ranges are closed.	The Navy cannot allow the public to access ranges when they are closed due to public health and safety restrictions.	-
Establish viewing areas for Navy activities on bombing ranges and provide training schedules.	The Navy cannot provide training schedules to the public as they change often and release of this information would be a security risk. The Navy does not establish viewing areas due to security risks, however, there are locations outside of the training ranges that are open to the public, where the public would be able to view training activities and that the Navy does not control access.	-

Table 5-13: Management Practices, Monitoring, and Mitigation Measures Suggested for Recreation (continued)

Suggestion*	Response	Adopted (✓/-)
Allow unstructured OHV use within the Bravo ranges that would be compatible with the Navy's mission.	The Navy cannot allow unrestricted OHV use on the Bravo ranges due to public health and safety restrictions.	-
With the Navy's proposed willingness to reroute a section of State Route 361 along the proposed eastern boundary, we believe the Navy should also consider constructing a new dirt road along the northeastern boundary to connect the remaining sections of existing dirt roads to State Route 361. Boundary roads provide a clear, distinct visual delineation for OHV users while riding or planning a ride. Thereby maximizing the safety envelope and reducing inadvertent intrusion to dangerous areas. An option to building a new road as stated above, would be to use the large dirt road that runs south-easterly connecting the Fairview/Earthquake Fault Road from Bell Flat to State Route 361 approximately ½ mile north of the Churchill/Mineral Counties line.	The Navy has no jurisdiction outside of Navy land. Therefore, the Navy would not propose to construct a new dirt road along the boundary of the sections of dirt roads that would remain near State Route 361 for OHV users. Simpson Road would remain open to the public, and the lands south of Simpson Road would remain open for OHV use under the Preferred Alternative (Alternative 3).	-
Support a cooperative agreement between the Navy, BLM and Churchill County to develop a recreation plan that results in "no net loss" of SRMAs and ERMAs, and establishment of a fund to develop facilities and management in such areas.	The Navy does not have the authority to provide funding for this purpose.	-
Fund development of an OHV trail and/or Park to offset impacts on the recreation industry and associated customs and culture.	The Navy does not have the authority to provide funding for this purpose.	-
Develop recreation area and/or facilities that link areas near FRTC to Lahonton State Park.	The Navy is not proposing to develop recreation areas or facilities. The Navy does not have the authority to create these areas outside of Navy owned or withdrawn lands.	-

Table 5-13: Management Practices, Monitoring, and Mitigation Measures Suggested for Recreation (continued)

Suggestion*	Response	Adopted (✓/-)
Improve existing roads and trails.	The Navy is not proposing to improve existing roads and trails, as the Navy assumes adequate roads and trails already exist outside of the expansion boundaries. Additionally, the Navy does not have the authority to fund this action.	-
There are some specific alternative ways to mitigate the closure impact such as allowing cherry stem road access to Fairview Peak. Another option for Fairview Peak might have a gate and signs at this location N39° 12.171' W118° 08.334', prohibiting vehicles, but allowing for hiker access. Another option would be to reduce the perimeter of the closure area in effect to provide access to key peaks and other recreation use areas.	The Navy would not be able to allow access to the area Under Alternative 1 due to public health and safety restrictions. The Navy has reduced the size of the overall area requested and proposed for withdrawal in the Final EIS under Alternative 3 (the Preferred Alternative), to the extent that it could do so consistent with meeting mission requirements. Fairview Peak would be accessible to the public under Alternative 3.	-
Develop a fund to help implement the Churchill County Open Space Plan and Trails Across Churchill County programs.	The Navy would work with Churchill County to authorize trails on Navy properties when consistent with military training activities and range safety. However, the Navy does not have authority to provide funding for this purpose.	-
Release of WSAs outside of withdrawal to increase public access and economic development; designate parts of Special Land Management Overlay as WSA to make up for losses elsewhere.	This type of training within Wilderness Study Areas is not currently permitted, and any de-designation would require Congressional action, as discussed in Section 3.12 (Recreation). The Navy is only proposing to de-designate the portions of the WSAs proposed for training use in the DVTa. The Navy would not propose to designate the Special Land Management Overlay as WSA, as this proposition would not be within the Navy's authority or within the Navy's mission.	-
Develop range compatibility zones for all targets to translate aviation and munitions delivery safety concerns into degrees of safety that can be reasonably attained on the ground.	The Navy currently does and would continue to do this as a management practice.	✓
Phase roadwork to avoid or minimize impacts to public recreation.	The Navy currently does and would continue to do this as a management practice.	✓

Table 5-13: Management Practices, Monitoring, and Mitigation Measures Suggested for Recreation (continued)

Suggestion*	Response	Adopted (✓/-)
Allow the BLM or Nevada Department of Wildlife to continue to access and maintain existing wildlife guzzlers and other water developments.	The Navy currently does and would continue to do this as a management practice.	✓
Install wildlife friendly fence design for any new fences and removal of all existing fences not required for safety/security purposes within the withdrawal area.	The proposed fencing is BLM-approved four-wire fence. In order to minimize impacts on wildlife from fencing, the Navy would utilize wildlife friendly configured four-wire fencing. Spacing of wires would be configured appropriately for the wildlife in the area. The Navy currently does and would continue to do this as a management practice.	✓
Recommend NOT closing the ranges entirely, but rather minimizing impacts by allowing limited access, with as many recreation activities included as possible.	The Navy currently allows site visits for the Bravo ranges only to accommodate cultural, academic, and management activities and would continue to allow these visits. These visits requiring access will be coordinated with the Navy and allowed if compatible with Navy training activities and range safety. Information about recreational use on DVTAs should be obtained from BLM as the Navy is not restricting public access to it for recreation. All other ranges will not be accessible by the public due to health and safety restrictions.	✓
Allow hunting during certain times of year on B-17 (under Alternatives 2 and 3). Hold races through the ranges following coordination with the Navy (under Alternatives 2 and 3).	This is part of the Proposed Action under Alternatives 2 and 3.	✓
We also proposed that the US Navy consider working with the BLM, OHV groups and other individuals to create a National OHV Recreation Area of approximately the same acreage, located elsewhere, as that being withdrawn by this Draft EIS to protect our recreational access.	Large event off-road races would be allowable on all ranges subject to coordination with the Navy. The process for submitting such a request would be available through the public outreach officer at NAS Fallon. However, the Navy cannot create a National OHV Recreation Area as it is outside of the Navy's authority. The Navy is not proposing to develop recreation areas or facilities. The Navy does not have the authority to create these areas outside of Navy-owned lands.	-

Table 5-13: Management Practices, Monitoring, and Mitigation Measures Suggested for Recreation (continued)

Suggestion*	Response	Adopted (✓/-)
<p>In addition, the agency should go further to incorporate adjustments and designation changes to offset the impacts associated with eliminating access to nearly half a million acres of public land. See, e.g., Draft EIS at 23 (describing legislative withdrawal of WSA status for specified areas). These should occur both within and beyond the project area. For example, areas within or adjacent to existing BLM designations, such as the Nightingales SRMA, could be redesignated as National Recreation Areas or National Conservation Areas, with specific language to provide statutory protection to recreation and other uses. Similarly, existing WSAs should be revisited, released to multiple-use status and/or incorporated into new statutorily-described units. Additional sites that are excellent candidates for one or more of these strategies include the area east of State Highway 361, the Desakota Mountains, the WSA in the Desatoya Mountains, riding areas and connections near the existing Sand Mountain Area and the Middle Gate Station/Gabbs areas and associated routes.</p>	<p>The Navy understands the suggestion to de-designate more of the WSAs in the region, however, the Navy is only proposing to de-designate the portions of the WSAs proposed for training use in the DVTA. The Navy would not propose to de-designate other parts of WSAs as they are not necessary for fulfilling mission requirements.</p>	<p>✓</p>
<p>Please ensure that Wilderness and Wilderness Study areas under the SUA (especially Roberts Mountain WSA and Simpson Park WSA) are identified as “noise-sensitive areas” that will be avoided. This should be a specific mitigation measure.</p>	<p>The Navy recognizes WSAs as sensitive receptors and analyzed impacts of the Proposed Action to these resources in Section 3.7 (Noise). These impacts do not rise to the level that would require mitigation measures as suggested by the comment.</p>	<p>-</p>

Table 5-13: Management Practices, Monitoring, and Mitigation Measures Suggested for Recreation (continued)

Suggestion*	Response	Adopted (✓/-)
Please add a “placeholder” to incorporate the Managed Access Hunting Program, and possibly, an MOU or LOU between NDOW and the Navy for establishment and maintenance of a hunting program within the proposed withdrawal.	The Navy is working with NDOW 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).	✓
Conduct an annual review of the hunting program to determine if additional hunts can be coordinated. Allow hunting of antelope, mule deer, and chukar (allow chukar hunting on B-20 during scheduled seasons).	The Navy would review their hunting program annually to determine if additional hunts can be coordinated.	✓
Install water developments for recreational hunting purposes outside of closed Navy lands; Determine numbers and locations cooperatively with NDOW.	The Navy would work with the NDOW to determine guzzler installation if applicable.	✓
De-designate wilderness study areas.	The proposed de-designation of portions of WSAs in the DVTA is necessary to meet certain training requirements, such as installing stationary and mobile electronic threat emitters, landing helicopters, and maneuvering by special operations forces, along with other non-hazardous training activities (e.g., night vision goggle training, low altitude flights). This type of training within Wilderness Study Areas is not currently permitted, and any de-designation would require Congressional action, as discussed in Section 3.12 (Recreation).	✓
Would like to have a process to submit a request for use of the area. I did not notice a plan developed for this. Hopefully a good process can be achieved to allow this access on the weekends. Most of our events are on the weekend, but sometimes during events there will need to be access during the week with coordination with the Navy.	Under Alternative 2 and 3 the Navy would work with groups to allow OHV races in the Bravo ranges under certain conditions if compatible with training requirements and public health and safety requirements with prior coordination.	✓

Table 5-13: Management Practices, Monitoring, and Mitigation Measures Suggested for Recreation (continued)

Suggestion*	Response	Adopted (✓/-)
(continued) I am hoping the above alternatives are moved forward and a process is set up to keep access to the OHV riding area and still allow the Navy to expand their training complex.		
Appreciate the allowance for bighorn sheep hunting; however, would prefer the same allowance for all big game even if that meant alignment of seasons or Sunday only hunting.	The Navy would review their hunting program annually to determine if additional hunts can be coordinated. The Navy also supports any management activities proposed to be conducted by NDOW for trap and transport.	✓
PASCO stands opposed to the creation of additional restricted areas within the Great Basin. However, if the airspace expansions and modifications, including the new restricted area R-4805, must be approved, I would like to request that they be open for public use on weekends as this is when most recreational flying occurs. Contests, however, do include weekday flying and it is PASCO's desire that public use of the restricted area on contest days could be negotiated.	General aviation aircraft would continue to be allowed to transit through the FRTC outside of active restricted airspace or through the Visual Flight Rules corridor, just as they do now. This would apply to any proposed restricted airspace. Typically, restricted airspace is inactive on weekends and holidays, and when ground ranges are closed for maintenance. Therefore, there would be regular opportunities for general aviation aircraft to transit through inactive restricted airspace(s). The proposed changes to airspace would therefore have minimal impact on recreational/general aviation aircraft. Impacts on general aviation for each alternative are discussed in Section 3.6 (Airspace), specifically in Section 3.6.3 (Environmental Consequences).	-

*Some suggestions are from public comments on the Draft EIS and are components associated with larger comments. The full comments and responses can be found in Appendix F (Public Comments and Responses).

Notes: ACEC = Area of Critical Environmental Concern, AMP = Allotment Management Plan, B = Bravo, BLM = Bureau of Land Management, DVTA = Dixie Valley Training Area, EIS = Environmental Impact Statement, ERMA = Extensive Recreation Management Area, FRTC = Fallon Range Training Complex, INRMP = Integrated Natural Resource Management Plan, LOU = Letter of Understanding, MOA = Memorandum of Agreement, MOU = Memorandum of Understanding, NCA = National Conservation Area, NDOW = Nevada Department of Wildlife, NRA = National Recreation Area, OHV = Off Highway Vehicle, RMP = Resource Management Plan, ROD = Record of Decision, ROW = Right of Way, SRMA = Special Recreation Management Area, SUA = Special Use Airspace, WSA = Wilderness Study Area, ✓ = affirmative, - = negative.

5.13.3.2 Proposed Monitoring

No monitoring measures would be warranted for recreation based on the analysis presented in Section 3.12.3 (Environmental Consequences).

5.13.3.3 Proposed Mitigation

Mitigation measures were found to be warranted for recreation based on the analysis presented in Section 3.12.3 (Environmental Consequences) and are listed below:

- Install big game and small game water developments outside of closed Navy lands to support populations outside of the ranges in order to mitigate against impacts on hunting. Numbers and locations of water developments are to be determined cooperatively with NDOW.
- Conduct annual review of the Hunt Program Work Plan to determine if additional hunts are feasible and compatible with mission requirements on the FRTC.

5.14 Socioeconomics

5.14.1 Current Management Practices

There are no current requirements and management practices related to socioeconomics. However, requirements and management practices in place for other resources (e.g., air quality, water quality, noise, and public health and safety) ensure that nonparticipants are not affected by actions within the Region of Influence (Bravo ranges and FRTC SUA).

5.14.2 Management Practices, Monitoring, and Mitigation Measures Considered

The Navy received suggestions for management practices, monitoring, and mitigation measures from the public, cooperating agencies, and tribal participants during scoping and commenting periods. Suggestions specific to socioeconomics and impacts on it are shown in Table 5-14, along with the Navy's responses for each suggestion indicating whether it was adopted or not, including reasoning for considering but eliminating the suggestion if applicable.

5.14.3 Proposed Management Practices, Monitoring, and Mitigation

5.14.3.1 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.

5.14.3.2 Proposed Monitoring

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

Table 5-14: Management Practices, Monitoring, and Mitigation Measures Suggested for Socioeconomics

Suggestion*	Response	Adopted (✓/-)
<p>Establish a fund to offset the loss of: PILT, property tax, and net proceeds tax.</p> <p>Direct loss of PILT on all withdrawn acreage (Formula B years) in perpetuity.</p> <p>Direct loss of real estate taxes (small but not cumulatively insignificant) in perpetuity.</p> <p>Direct loss of revenues from the acres of active grazing leases within the County boundary in perpetuity. The Draft EIS reports that PILT payments are capped based on the populations in each county. However, the PILT payments were calculated to offset property taxes on multiple uses of the land. This allowed the continued use of the land to provide additional income through mineral production and other uses. If the lands under evaluation are transferred to the Navy, there will be a potential significant economic impact to local, state and federal governments. This fact is identified in the Draft EIS but the Draft EIS fails to calculate the impact of the proposed action on the above government entities over a single year, let alone for the duration of the withdrawal. The Navy must compensate the local and state governments for their loss of income due to the loss or reduction of private economic use of the public lands. The taxes and fees paid to the Federal government through its regulatory agency, the Bureau of Land Management, should be calculated to address the true cost of Alternatives 1-3 so that Congress can adequately assess the impacts.</p>	<p>The establishment of a fund to offset the loss of PILT, property tax, real estate tax, loss of revenues from acres of active grazing leases and net proceeds tax, is outside the authority of the Department of Navy. The Navy has factored economic losses into the analysis, but would not be including funding/compensation of this type into the EIS.</p> <p>A detailed analysis of PILT is located in Supporting Study: Socioeconomic Report (available at https://frtcmodernization.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, 2017). The payments are distributed by the State to counties with entitled acreage. As discussed in Section 3.13 (Socioeconomics), Churchill County, even with its large reduction in public lands, would see no change in PILT payments due to the payment methodology. Only Lyon County is estimated to experience a loss in PILT based on 2018 PILT estimates. Lyon County followed non-ceiling Alternative B plan. 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 requested withdrawal. 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.</p> <p>The Navy does not have the authority to make payments for taxes on the public use of the lands. There is potential for the Department of Defense's Office of Economic Adjustment Program to work with affected Counties in the future for funding of loss of income at the county level if there are any losses as a result of the Proposed Action. The Navy is limited in its ability to calculate these losses as it is highly speculative.</p>	-

Table 5-14: Management Practices, Monitoring, and Mitigation Measures Suggested for Socioeconomics (continued)

Suggestion*	Response	Adopted (✓/-)
(continued) Further, the federal government should compensate the local and state governments for potential lost production from withdrawn private lands, grazing, mining, geothermal, solar, wind, oil and gas activities and production. We suggest an ongoing fund that pays to the affected counties and State of Nevada for lost opportunities. This could be in lieu of PILT payment.		
The Navy can help fund things that will help mitigate negative economic effects of reduced tourism/recreation opportunities and or reduced mining taxes. So I ask the Navy to help fund the main Town Meeting Hall the "Hawthorne 1942 USO Bld."	The Navy cannot help to fund the request as it is outside of the Navy's authority.	-
Direct loss of share of County's share of assessment revenues from (97) invalidated or purchased unpatented mining claims in perpetuity; loss of all future mineral proceeds and potential royalty revenues.	Section 3.13 (Socioeconomics) contains the Navy's analysis of losses to Counties based on impacts on the mining industry in each County. Potential impacts on the mining and geothermal industries can be found under each alternative discussion in Section 3.13.3 (Environmental Consequences). The Navy has factored economic losses into the analysis, but does not have the authority to provide funds to offset those impacts, and therefore would not include funding/compensation of this type in the EIS. Following any ultimate Congressional decision, the Department of Defense's Office of Economic Adjustment Program may provide technical and financial assistance to nonfederal agencies when appropriate.	-
Direct loss of an approved geothermal parcel and indirect loss of all potential royalties from future development of the parcel.	The Navy has factored economic losses into the analysis, but would not be including funding/compensation of this type into the EIS as potential royalties from future development are too speculative.	-
Direct loss of potential future economic opportunities appurtenant to the withdrawn land in perpetuity.	The Navy has factored economic losses into the analysis but would not be including funding/compensation of this type into the EIS.	-

Table 5-14: Management Practices, Monitoring, and Mitigation Measures Suggested for Socioeconomics (continued)

Suggestion*	Response	Adopted (✓/-)
Constrain of future expansion to Gabbs Airport and resulting potential economic opportunities.	The Navy has factored economic losses into the analysis, but would not be including funding/compensation of this type into the EIS.	-
Determine the fair market value for parcels in accordance with federal appraisal rules codified in the Uniform Appraisal Standards for Federal Land Acquisitions (for privately owned property); Engage an experienced and qualified independent appraiser to determine each fair market value.	The Navy currently does this as a management practice and would continue to do this as a management practice.	✓
A completed "Fire Management Plan" should be included in the Final EIS/ROD which commits adequate funding and identifies procedures for implementing fire prevention, suppression, and rehabilitation strategies.	The Navy is developing a Wildland Fire Management Plan, and where possible, proposed elements and goals of this plan were added to the Final EIS. For further information on wildfire and wildfire mitigation, see Section 3.14 (Public Health and Safety and Protection of Children), specifically Section 3.14.2.1.2 (Wildfire Management).	-
Acknowledge that the Navy has the authority under 43 U.S.C. section 315q of the Taylor Grazing Act of 1934 to make payments to federal grazing permit holders for losses associated with termination of grazing permits as a result of the withdrawal or other use of former federal grazing lands for war or national defense purposes.	Further discussion of the valuation process to compensate for losses resulting from the cancellation of grazing permits has been included in Section 3.4 (Livestock Grazing), specifically Section 3.4.3.2 (Alternative 1: Modernization of the Fallon Range Training Complex), and also applies to Alternatives 2 and 3 in the Final EIS.	✓
Although potential economic gains from mining activities are hard to quantify, please consider mitigation measures that will allow basic services to be provided to the Tonopah County District area through County channels. Helping to insure the future of the County Emergency Services and the Northern Nye County Hospital District would benefit all partners and visitors in our mutual areas of interest.	Following any ultimate Congressional decision, the Department of Defense's Office of Economic Adjustment Program may provide technical and financial assistance to nonfederal agencies when appropriate.	✓

Table 5-14: Management Practices, Monitoring, and Mitigation Measures Suggested for Socioeconomics (continued)

Suggestion*	Response	Adopted (✓/-)
Additionally, as taxpayers we believe the socioeconomic impacts to the Counties and State should also be properly mitigated, and the full cost to withdraw the lands adequately addressed in a spreadsheet where one can view the total cumulative effect—both near term and in the future.	Identification of specific costs would be both outside the scope of NEPA and also premature. A decision on this action has not yet taken place. After any ultimate Congressional Decision, the Navy would move forward with allocations and applications for funding, based on the Congressional Decision and any mandates of it.	-

*Some suggestions are from public comments on the Draft EIS and are components associated with larger comments. The full comments and responses can be found in Appendix F (Public Comments and Responses).

Notes: EIS = Environmental Impact Statement, NEPA = National Environmental Policy Act, PILT = Payment in Lieu of Taxes, ROD = Record of Decision, U.S.C. = United States Code, ✓ = affirmative, - = negative.

5.14.3.3 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.

5.15 Public Health and Safety

5.15.1 Current Management Practices

Specific and documented safety procedures are in place to ensure that nonparticipants are not endangered by training actions (U.S. Department of the Navy, 2008, 2016). The presence of fences and signs around bombing areas and the use of strict standard operating procedures helps to protect the public from potentially hazardous training activities. Monitoring of training events serves to identify potential public health and safety risks and avoid them.

5.15.2 Management Practices, Monitoring, and Mitigation Measures Considered

The Navy received suggestions for management practices, monitoring, and mitigation measures from the public, cooperating agencies, and tribal participants during scoping and commenting periods. Suggestions specific to public health and safety and protection of children are shown in Table 5-15, along with the Navy's responses for each suggestion indicating whether it was adopted or not, including reasoning for considering but eliminating the suggestion if applicable.

5.15.3 Proposed Management Practices, Monitoring, and Mitigation

5.15.3.1 Proposed Management Practices

Current measures are in place to ensure that nonparticipants are not endangered by actions at the FRTC, and they would remain in effect with the implementation of any of the Alternatives. The FRTC is actively developing a Wildland Fire Management Plan to reduce the risk of wildlife in the Region of Influence; a draft outline can be found in Appendix D (Memoranda, Agreements, and Plans). Standard Operating Procedures and range clearance procedures would remain in place to ensure that training areas are clear of nonparticipants before an activity commences. The following management practices would continue to be implemented to reduce hazards associated with unexploded ordnance:

- Post signs warning of areas where unexploded ordnance clearance has not been confirmed.
- For public access, there would be procedures in place (e.g., escorts, range clearance, explosive ordnance disposal sweeps) to protect the public if authorized to enter the ranges.
- Maintain the Range Sustainability Environmental Program Assessment.
- Continue Operational Range Clearance activities which remove unexploded ordnance and other materials to reduce munitions constituent loading.

With the implementation of existing management practices on proposed withdrawn or acquired lands, no additional management practices would be warranted for public health and safety and protection of children based on the analysis presented in Section 3.14.3 (Environmental Consequences).

Table 5-15: Management Practices, Monitoring, and Mitigation Measures Suggested for Public Health and Safety

Suggestion*	Response	Adopted (✓/-)
Nye County continues to experience a shortage of Emergency Response volunteers because of the times and distances required to respond to a call. Responders can spend up to 8 hours, and sometimes longer, to transport accident victims from as far as Tonopah to Fallon or Reno where they can be treated. Alternative 3 will add several facility access gates in Nye County, the use of which is not discussed in the Draft Legislative EIS. Nonetheless, the use of these additional access gates will increase the potential for incident and will be an added strain on an already understaffed and underfunded emergency response volunteer corps. Nye County looks to the Navy to be a good community neighbor and help to mitigate these impacts. The Final Legislative EIS should include mitigation measures that consider a hardened civilian volunteer corps comprised of professionally trained defense contractor staff that would be available to support a trained local volunteer base.	The Navy understands the shortage of Emergency Response volunteers within Nye County. Following any ultimate Congressional decision, the DoD's Office of Economic Adjustment Program may provide technical and financial assistance to nonfederal agencies to undertake Compatible Use and Joint Land Use Studies in response to Military Department compatibility concerns, including northern Nye County's emergency response shortages.	-
An annual report needs to be presented to the County as a measure of ensuring this [off-range ordnance] issue does not get lost or forgotten in the future.	The Navy implemented operational changes in November 1989 seeking to eliminate off-range munitions, including reorienting strafing/bomb run-in lines and increasing surveillance of all drops. These operational changes have been effective in reducing off-range ordnance occurrences. The Navy continues to refine and improve its health and safety operating procedure. In the rare case that ordnance lands off range, pilots or other range users are instructed to inform NAS Fallon of the incident immediately. NAS Fallon is part of a MOA with the BLM and a MOA with the Walker River Paiute Tribe, both of which detail the procedures implemented if an incident were to occur (depending on which entity's land the ordnance fell on).	✓

Table 5-15: Management Practices, Monitoring, and Mitigation Measures Suggested for Public Health and Safety (continued)

Suggestion*	Response	Adopted (✓/-)
	(continued) Any off-range ordnance would be collected by military personnel in accordance with the respective MOAs, best management practices, and standard operating procedures.	
The presence of FRTC facility infrastructure in Nye County will increase demands on County Emergency Services and the burden on local volunteer emergency responders. Upon withdrawal of FRTC lands in Nye County, the County will pursue the following Infrastructure Grants to the maximum extent possible under the final provisions of the proposed Defense Community Infrastructure Programs. Since the grant program will likely require the participation of the Navy FRTC, the Draft EIS must include a discussion of the Navy's intent to support the program, including estimates of the fiscal impact of supporting this program.	The Navy understands the shortage of Emergency Response volunteers within Nye County. Following any ultimate Congressional decision, the Department of Defense's Office of Economic Adjustment Program may provide technical and financial assistance to nonfederal agencies to undertake Compatible Use and Joint Land Use Studies in response to Military Department compatibility concerns, including northern Nye County's emergency response shortages.	-
Remove the proposed portion of the B-20 site that would overlay on Fallon National Wildlife Refuge. Rank the 5 training sites in priority as to how each meets the modernization needs for Navy personnel and choose the top 1–3 for the proposed expansion. Minimize fencing and restricted access to the public. Consider if any of the other air bases in Nevada can accommodate this training need in the existing foot print. A large section of southern Nevada already supports several military bases with substantial restricted areas used for aerial combat training and weapons testing.	The Navy would be interested in coordination as it is in the best interest of all parties, all suggestions need to be evaluated against the Navy's purpose and need and compatibility with military training activities. As such, these suggestions have been incorporated as alternatives considered but eliminated, see Section 2.5 (Alternatives Considered but Not Carried Forward for Detailed Analysis).	-

Table 5-15: Management Practices, Monitoring, and Mitigation Measures Suggested for Public Health and Safety (continued)

Suggestion*	Response	Adopted (✓/-)
<p>Are munitions constituents migrating off-range and presenting unacceptable risk to human health and the environment, and are the range is in compliance with environmental laws and regulations. What sampling or monitoring has been done at each range? As a mitigation measure the State of Nevada should be provided with site-specific soil and water results for lands surrounding current and proposed land withdrawals.</p>	<p>Munitions constituents have not been and are not considered recalcitrant to biodegradation like some other organic chemicals commonly known as groundwater and soil contaminants at hazardous waste sites. The Navy conducts Range Conditions Assessments as part of the Navy's Range Sustainment Environmental Program Assessment every 5 years. The most recent Range Conditions Assessment for FRTC was completed in 2015 (U.S. Department of the Navy, 2015b). A team of environmental and operational range experts evaluated the history of range use within FRTC ranges, the types and quantities of munitions or military expended materials used and their chemical constituents, range location, spatial distribution of activities, available environmental data, environmental regulatory requirements, and compliance efforts. The Range Conditions Assessment information and data were derived from site visits, personnel interviews, archive search reports, and document reviews conducted in 2013 and 2014. The review team's findings, based on these data, concluded that the range and training operations are in compliance with environmental laws and policies, and there are no munitions constituents migrating off of the ranges.</p>	<p>✓</p>
<p>Identify containment areas that will never be re-opened to the public due to safety problems caused by the density of unexploded ordnance.</p>	<p>Presently the Navy has not identified any areas that would never be re-opened to the public.</p> <p>As discussed in Section 3.14 (Public Health and Safety and Protection of Children), the Navy has implemented and would continue to implement a strict Hazardous Material Control and Management Program and a Hazardous Waste Minimization Program for all activities. The Navy continuously monitors its operations to find ways to minimize the use of hazardous materials and to reduce the generation of hazardous wastes. Any spills would be managed and cleaned up in accordance with applicable state and federal regulatory requirements. If any such spill were to exceed reportable quantities as defined by the U.S. Environmental Protection Agency for regulated material, the event would be immediately reported to the NAS Fallon Environmental Division for appropriate action per the Integrated Contingency Plan (U.S. Department of the Navy, 2009).</p> <p>Additionally, the DoD created the Installation Restoration Program to identify, evaluate, and clean up contamination from past operations on military bases. The.</p>	<p>✓</p>

Table 5-15: Management Practices, Monitoring, and Mitigation Measures Suggested for Public Health and Safety (continued)

Suggestion*	Response	Adopted (✓/-)
	(continued) program was designed to ensure DoD compliance with federal and state environmental laws and regulations. Lastly, Chief of Naval Operations Instruction 3571.4, Operational Range Clearance Policy for Navy Ranges, establishes the policy and requirements for performing operational range clearance on Navy ranges.	
<p>A completed “Fire Management Plan” should be included in the Final EIS/ROD which commits adequate funding and identifies procedures for implementing fire prevention, suppression, and rehabilitation strategies.</p> <p>Develop fuel breaks around targets and WDZs on Bravo Ranges to help with fire suppression activities given the history of fires in these areas.</p> <p>Would it be beneficial to increase this minimum to further reduce wildfire ignitions? Given the dry nature of many of the Navy’s MOAs would the Navy consider extending the fire season or making the 2000’ + minimum a requirement year-round. What can be done with flare releases to reduce wildfire risk? Is there any option for monitoring and adaptive management within the Fire Management Plan that could help improve flare release heights for wildfire prevention?</p> <p>We recommend no flare use during fire season as well as better definitions of fire season dates and a commitment by the Navy to discipline unauthorized flare releases.</p>	<p>The Navy has implemented and would continue to implement operational and administrative controls to reduce the occurrence of wildfires. The Navy is developing a Wildland Fire Management Plan and will consider fire breaks in this formalization. Where possible, proposed elements and goals of this plan were added to the Final EIS. For further information on wildfire and wildfire mitigation, see Section 3.14 (Public Health and Safety and Protection of Children), specifically Section 3.14.2.1.2 (Wildfire Management). The Navy restricts flare use during fire season as it is necessary to fulfill training requirements.</p>	✓
Fencing should be placed along the WDZ.	Fencing has been and would be placed around all of the Bravo range perimeters. Proposed perimeter fencing would include BLM-approved 4-foot-high strand fencing. The purpose of this fencing is to exclude public access and discourage trespassers while allowing animal movements.	✓

Table 5-15: Management Practices, Monitoring, and Mitigation Measures Suggested for Public Health and Safety (continued)

Suggestion*	Response	Adopted (✓/-)
Establish a program to periodically recover stray exploded and unexploded ordnance outside the containment area. Establish a system of tracking/monitoring the individual ordnance that falls outside the containment area. Monitor unexploded ordnance and track drops that do not hit target areas in order to remove them as practical.	The Navy has conducted and would continue to conduct range clearance activities during period of land ownership. Chief of Naval Operations Instruction 3571.4, Operational Range Clearance Policy for Navy Ranges, establishes the policy and requirements for performing operational range clearance on Navy ranges. In the event of range closure as a result of selection of the No Action Alternative, the Navy would perform range closure processes as appropriate to render areas safe for transfer. Unexploded Ordnance and Off Range Ordnance (ORO) is in described in public health and safety section of the Draft EIS. Navy has MOUs with agencies to deal with ORO. The Navy also has Ordnance Range Clearance for disposal of ordnance on the range.	✓
Maintain the Range Sustainability Environmental Program Assessment.	The Navy has maintained and would continue to maintain the Range Sustainability Environmental Program Assessment as a management practice.	✓
Monitor training events to identify potential public health and safety risks and avoid.	The Navy has monitored and would continue to monitor training events to identify potential public health and safety risks and avoid them.	✓
Continue Operational Range Clearance activities which remove unexploded ordnance and other materials to reduce munitions constituent loading.	The Navy has conducted and would continue operational range clearance activities as a management practice.	✓
Monitoring of soils for toxic chemicals related to exploded ordnances needs to be done on a long-term basis. This monitoring should be done at sites where there is a high concentration of such events.	The Navy has conducted and would continue operational range clearance activities as a management practice to reduce the potential for toxic chemicals related to exploded ordnance contaminating the soils.	✓

Table 5-15: Management Practices, Monitoring, and Mitigation Measures Suggested for Public Health and Safety (continued)

Suggestion*	Response	Adopted (✓/-)
<p>Install fences and signs around bombing areas and use standard operating procedures to help protect the public from potentially hazardous training activities.</p> <p>Post warning signs for areas where unexploded ordnance clearance has not been confirmed.</p> <p>Implement procedures for public access to protect the public if authorized to enter the ranges.</p>	<p>The Navy has implemented and would continue to implement these safety suggestions as management practices.</p>	<p>✓</p>
<p>The numerous abandoned mine land hazards on DVTA will require securing and monitoring in order to continue to protect the public.</p>	<p>As discussed in Section 3.14 (Public Health and Safety and Protection of Children), the Navy would be responsible for securing abandoned mines in B-16, B-17, B-19, and B-20 and would follow the substantive procedures of the State of Nevada. The BLM would be responsible for any such action in the DVTA.</p>	<p>✓</p>
<p>Continue to allow for flood alleviation efforts in B-16 associated with Sheckler Reservoir and the new emergency flood weir that prevents flooding in the City of Fallon.</p>	<p>Flood management activities would be allowed to continue if coordinated with the Navy and compatible with military trainings activities and range safety.</p>	<p>✓</p>
<p>The FRTC is actively developing a Fire Management Plan. “The County supports this; however, the County would request County and state inclusion in this planning process.”</p> <p>We recommend that the Navy includes a completed “Fire Management Plan” in the Final EIS/ROD which commits adequate funding and identifies procedures for implementing fire prevention, suppression, and rehabilitation strategies. We would also recommend that the Fallon Range Training Complex maintain a re-load base with a dedicated single engine air attack plane to quickly drop retardant on fires started by military activities.</p>	<p>The Navy has identified stakeholders in the Wildland Fire Management Plan and has invited them to participate in the Wildland Fire Management Plan development process. The Navy would welcome all interested stakeholders to participate in the fire management working group in order to contribute during the development of the Wildland Fire Management Plan.</p> <p>The Navy would consider fire breaks in this formalization of the Wildland Fire Management Plan. Where possible, proposed elements and goals of this plan were added to the Final EIS. For further information on wildfire and wildfire mitigation, see Section 3.14 (Public Health and Safety and Protection of Children), specifically Section 3.14.2.1.2 (Wildfire Management).</p>	<p>✓</p>

Table 5-15: Management Practices, Monitoring, and Mitigation Measures Suggested for Public Health and Safety (continued)

Suggestion*	Response	Adopted (✓/-)
(continued) Fire risk and rehabilitation for Navy-caused fires is not adequately addressed. We would like to see a Fire Management Plan, which includes dedicated air attack resources (single engine air tankers at a minimum) stationed in Fallon.		
If the Navy plan to expand as indicated in Option 3 of the proposal, perhaps the Navy might find it to their advantage to place an emergency services outpost here or minimal auxiliary facility that could serve both the Navy and Gabbs.	Following any ultimate Congressional decision, the Department of Defense's Office of Economic Adjustment Program may provide technical and financial assistance to nonfederal agencies to undertake Compatible Use and Joint Land Use Studies in response to Military Department compatibility concerns.	✓

*Some suggestions are from public comments on the Draft EIS and are components associated with larger comments. The full comments and responses can be found in Appendix F (Public Comments and Responses).

Notes: B = Bravo, BLM = Bureau of Land Management, DoD = Department of Defense, DVTA = Dixie Valley Training Area, EIS = Environmental Impact Statement, LEIS = Legislative Environmental Impact Statement, MOA = Memorandum of Agreement, MOU = Memorandum of Understanding, NAS = Naval Air Station, NEPA = National Environmental Policy Act, ROD = Record of Decision, WDZ = Weapons Danger Zone, ✓ = affirmative, - = negative.

5.15.3.2 Proposed Monitoring

Monitoring of training events serves to identify potential public health and safety risks and avoid them. The Navy would continue to monitor training events to identify public health and safety risks and avoid them.

5.15.3.3 Proposed Mitigation

No mitigation measures would be warranted for public health and safety based on the analysis presented in Section 3.14.3 (Environmental Consequences).

5.16 Environmental Justice

5.16.1 Current Management Practices

Consistent with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994), the Navy's policy is to identify and address any disproportionately high and adverse human health or environmental effects of its actions on minority and low-income populations.

5.16.2 Management Practices, Monitoring, and Mitigation Measures Considered

The Navy received suggestions for management practices, monitoring, and mitigation measures from the public, cooperating agencies, and tribal participants during scoping and commenting periods. Suggestions specific to environmental justice and impacts on it are shown in Table 5-16, along with the Navy's responses for each suggestion indicating whether it was adopted or not, including reasoning for considering but eliminating the suggestion if applicable.

5.16.3 Proposed Management Practices, Monitoring, and Mitigation

5.16.3.1 Proposed Management Practices

No management practices would be warranted for environmental justice based on the analysis presented in Section 3.15.3 (Environmental Consequences).

5.16.3.2 Proposed Monitoring

No monitoring measures would be warranted for environmental justice based on the analysis presented in Section 3.15.3 (Environmental Consequences).

5.16.3.3 Proposed Mitigation

No mitigation measures would be warranted for environmental justice based on the analysis presented in Section 3.15.3 (Environmental Consequences). The Navy acknowledges that there may be impacts that have yet to be defined and would develop and incorporate mitigation measures as necessary after any ultimate Congressional decision.

Table 5-16: Management Practices, Monitoring, and Mitigation Measures Suggested for Environmental Justice

Suggestion*	Response	Adopted (✓/-)
Identify and address any disproportionately high and adverse human health or environmental effects of its actions on minority and low-income populations.	The Navy has and would continue to identify and address impacts on human health, minority, and low-income populations; see Section 3.15 (Environmental Justice) for details.	✓

*Some suggestions are from public comments on the Draft EIS and are components associated with larger comments. The full comments and responses can be found in Appendix F (Public Comments and Responses).

Notes: ✓ = affirmative, - = negative.

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6.0 Other Considerations

Environmental Impact Statement

Fallon Range Training Complex Modernization

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6 Other Considerations Required by the National Environmental Policy Act

6.1 Possible Conflicts with Objectives of Federal, State, Regional, and Local Plans, Policies, and Controls

The Proposed Action and any associated mitigations for the Fallon Range Training Complex (FRTC) Modernization Environmental Impact Statement (EIS) would not conflict with the objectives of federal, state, regional, or local policies; or applicable legal requirements, except insofar as it may potentially conflict to some extent with the local county plans that are in effect, most notably the Churchill County 2015 Master Plan. This plan emphasizes the importance of public lands and their continued purpose as multi-use areas for various resources such as energy development, mining, and recreation. The expansion would remove over 540,000 additional acres of land from further or potential public use for at least one of these various purposes. The United States Department of the Navy (Navy) has incorporated into such alternatives various ways to reduce the conflicts that the Proposed Action would have with the local plans. The Navy has also consulted with regulatory agencies as appropriate during the National Environmental Policy Act process and before implementation of the Proposed Action to ensure applicable requirements have been met. Table 6-1 summarizes the Navy's compliance with requirements (including substantive compliance with requirements not formally applicable to the Navy). Cooperating agency correspondence can be found in Appendix B (Agency Correspondence), cultural resource-related correspondence (with the State Historic Preservation Office) and government-to-government correspondence can be found in Appendix C (Tribal Correspondence), and supporting documentation can be found on the FRTC Modernization EIS website at <https://frtcmodernization.com/>.

Table 6-1: Summary of Environmental Compliance for the Proposed Action

Plans, Policies, and Controls	Status of Compliance
National Environmental Policy Act of 1969 (42 U.S.C. section 4321 et seq.) Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR parts 1500–1508) Department of the Navy Procedures for Implementing NEPA (32 CFR part 775)	This EIS was prepared in compliance with NEPA, Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR parts 1500–1508), and Navy Procedures for Implementing NEPA (32 CFR part 775).
Clean Air Act (42 U.S.C. section 7401 et seq.) Clean Air Act General Conformity Rule (40 CFR part 93[B])	The air quality analysis conducted for this EIS indicates that the Proposed Action would not cause National Ambient Air Quality Standards to be exceeded. The Proposed Action does not occur within a nonattainment or maintenance area. Therefore, the General Conformity Rule does not apply.
Clean Water Act (33 U.S.C. sections 1251–1387)	Based on the analysis presented in Section 3.9 (Water Resources), the Navy has determined that the Proposed Action would have no substantial effect on the quality or quantity of surface waters or underground aquifers. The Proposed Action would include no point or non-point discharges into surface waters, nor would it include dredging or filling of surface waters. Therefore, the Proposed Action would be in compliance with the federal Clean Water Act.

Table 6-1: Summary of Environmental Compliance for the Proposed Action (continued)

Plans, Policies, and Controls	Status of Compliance
Federal Land Policy Management Act (43 U.S.C section 1701 et seq.)	The Navy consulted with the BLM in regard to public lands that would be withdrawn, as well as in regard to land that might be acquired and eventually attain public land status as a result of the Proposed Action.
National Historic Preservation Act (16 U.S.C. section 470 et seq.)	In accordance with Section 106 of the NHPA, the Navy is working with the Nevada SHPO, the Advisory Council on Historic Preservation, BLM, and potentially affected Indian Tribes to amend the Programmatic Agreement from 2011 that governs the identification, evaluation, and treatment of historic properties under Section 106 on lands to be managed by Naval Air Station Fallon within the FRTC as proposed for expansion; and to facilitate coordination between the Navy and the Nevada SHPO (and other parties referenced above) in accordance with applicable requirements. Copies of Section 106 and tribal correspondence are provided in Appendix B (Agency Correspondence) and Appendix C (Tribal Correspondence).
National Wildlife Refuge System Administrative Act and the National Wildlife Refuge System Improvement Act (16 U.S.C. sections 668dd–668ee and Public Law 105-57)	USFWS manages wildlife refuges for protecting, conserving, and restoring fish, wildlife, and plant resources and their habitats. The Navy consulted with the USFWS with respect to potential impacts on refuge lands in the withdrawal and acquisition area.
National Trails System Act (16 U.S.C. section 1241 et seq.)	National Historic Trails and National Recreation Trails would not be impacted with implementation of the Proposed Action.
Nevada Revised Statutes (NRS) Chapter 405, Control and Preservation of Public Highways	<p>The Navy would replace any public roads that are closed in kind to maintain accessibility for the population to previously reachable locations. The Navy recognizes that there would be loss of access via non-traditional roads to areas proposed to be withdrawn or acquired; however, the Navy is not proposing to re-locate any such non-traditional roads or to build new roads.</p> <p>Using funding provided by the Navy, the Federal Highway Administration, in cooperation with the Nevada Department of Transportation, would be responsible for planning, designing, permitting, and constructing any realignment of State Route 839 or 361. The Navy has submitted a Needs Report to the Surface Deployment and Distribution Command requesting authority to utilize funding through the Defense Access Roads program. If approved, the Navy would coordinate construction execution through the Federal Highway Administration. NDOT would ensure that construction of any new route is complete before closing any portion of the existing State Route 839 or 361, and the Navy would not utilize any portion of an expanded B-17 range (if implemented) that would overlap the existing State Route 839 or 361 unless and until any such new route has been completed and made available to the public.</p>

Table 6-1: Summary of Environmental Compliance for the Proposed Action (continued)

Plans, Policies, and Controls	Status of Compliance
Endangered Species Act (16 U.S.C. section 1531 et seq.)	There are no endangered or threatened species known to occur within the FRTC region of influence. Therefore, the Proposed Action would not have the potential to affect federally listed endangered or threatened species, and formal consultation with the USFWS under the Endangered Species Act was not required.
Migratory Bird Treaty Act (16 U.S.C. sections 703–712)	Based on the analysis in Section 3.10 (Biological Resources), the Navy has determined that military readiness and construction activities under the Proposed Action would not have a significant adverse effect on a population of a migratory bird species, as defined in the Final Rule authorizing incidental take of migratory birds during military readiness activities (50 CFR Part 21).
Bald and Golden Eagle Protection Act (16 U.S.C. sections 668–668d)	The Navy has determined that implementation of the Proposed Action would not result in the “taking” of bald or golden eagles, their nests, or their eggs as defined by the Bald and Golden Eagle Protection Act.
Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. section 9601 et seq.)	Based on analysis in Section 3.14 (Public Health and Safety and Protection of Children), the Navy has determined that the Proposed Action would not require CERCLA-related cleanup of uncontrolled or abandoned hazardous-waste sites, accidents, or spills. The Navy would report any spill or release of hazardous substance of a quantity equal to or greater than the reportable quantity.
Emergency Planning and Community Right-to-Know Act (42 U.S.C. section 11001 et seq.)	The Emergency Planning and Community Right-to-Know Act is applicable to the Proposed Action because small quantities of hazardous materials would be stored on site. Section 312 (Tier Two) reporting applies; this requirement is satisfied by complying with Nevada’s counterpart regulations. Under the Proposed Action, the Navy would not manufacture, store, or otherwise use hazardous chemicals above Toxics Release Inventory (Emergency Planning and Community Right-to-Know Act Section 313) reporting thresholds..
Federal Noxious Weed Act (7 U.S.C. section 2801 et seq.)	The U.S. Department of the Navy would continue to manage and control the spread of noxious weeds on lands withdrawn or acquired as a result of the Proposed Action in accordance with the integrated natural resources management plan.
Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. section 136 et seq.)	FIFRA regulates the use of pesticides. Under the Proposed Action, all pesticides would be used in accordance with their labeling, and only certified applicators would apply restricted-use pesticides. Wood pilings from the demolition of the wharf would be disposed of in accordance with federal, state, and local regulations.
Resource Conservation and Recovery Act (42 U.S.C. section 6901 et seq.)	Small quantities of hazardous waste would continue to be generated at the FRTC under the Proposed Action. Hazardous wastes would continue to be safely disposed of through local vendors in accordance with hazardous waste standard operating procedures.

Table 6-1: Summary of Environmental Compliance for the Proposed Action (continued)

Plans, Policies, and Controls	Status of Compliance
Taylor Grazing Act (43 U.S.C. sections 315–316o)	The BLM would continue to use this permitting system to manage livestock grazing, and maintain or improve rangeland conditions on grazing lands that would remain open to grazing activities.
General Mining Law of 1872 (30 U.S.C. section 22 et seq.)	The Navy is consulting with the BLM, and the BLM would continue to regulate prospecting and development of minerals when and where applicable. Navy policy does not allow mining or utilities to occur within active WDZs (OPNAVINST 3550.1A) for public safety reasons. See Section 2.5.6.2 (Mining on Live-Fire [Bravo] Ranges) for more information on the Navy’s consideration of this issue.
Mineral Leasing Act (30 U.S.C. section 181 et seq.)	Leasable minerals would continue to be subject to leases, permits, or licenses granted by the Secretary of the Interior on the authority administered by the BLM where and when applicable.
Geothermal Steam Act (30 U.S.C. section 1001 et seq.)	The BLM would continue to administer development of geothermal resources through leasing or other appropriate means within its authority to the extent compatible with mission and safety requirements.
Materials Act of 1947 (30 U.S.C. sections 601–604)	The BLM would continue to administer the disposal of salable minerals from public lands at its discretion where and when applicable.
Military Reservations and Facilities: Hunting, fishing, and trapping (10 U.S.C. section 2671)	As discussed during consultation and planning, the Navy would work with the BLM and USFWS to develop procedures to give designated fish and game officials access to the ranges to effect measures for managing, conserving, and harvesting fish and game resources.
Federal Cave Resources Protection Act (16 U.S.C. sections 4301 et seq.)	The Department of the Interior and Department of Agriculture would continue to secure, protect, and preserve significant caves on land managed by them. The Navy would consult with these agencies if applicable.
Earthquake Hazards Reduction Act (42 U.S.C. sections 7701 et seq.)	All construction that is part of the Proposed Action would be in compliance with the International Building Code for the United Facilities Criteria for construction and earthquake resistance.
Defense Withdrawal (“Engel Act”) (43 U.S.C. sections 155-158)	The Secretary of the Interior would continue to have jurisdiction over all minerals within lands withdrawn for the Department of Defense.
Paleontological Resources Preservation Act (16 U.S.C. sections 470aaa et seq.)	The Act does not generally apply on withdrawn land. The B-ranges would be fenced and closed to public access, which would prevent violations of the Act as a practical matter. The DVTA would not be fenced, however, and it is anticipated the DVTA would remain under management of the BLM for purposes of the Act. BLM-managed land is open to casual collecting of common invertebrate and plant paleontological resources for non-commercial personal use under the Act or other authorities, unless otherwise specified. Collection of other paleontological resources may require a permit, and questions should be directed to BLM.

Table 6-1: Summary of Environmental Compliance for the Proposed Action (continued)

Plans, Policies, and Controls	Status of Compliance
The Sikes Act of 1960 (16 U.S.C. sections 670a–670o, as amended by the Sikes Act Improvement Act of 1997, Pub. L. No. 105-85)	In accordance with the Sikes Act, an integrated natural resources management plan has been prepared and implemented at the FRTC in cooperation with the USFWS and the Nevada Department of Wildlife. The plan is reviewed by the parties annually as to operation and effect and would be updated if the Proposed Action were carried forward to cover the newly withdrawn lands.
Archaeological Resources Protection Act (16 U.S.C. section 470aa–mm)	<p>Based on the cultural surveys conducted in support of this EIS, proposed new target areas have the potential to impact identified cultural resources.</p> <p>Ground-disturbing activities associated with use of the drill ground maneuver area and close air support target area would be conducted in accordance with an amended 2011 PA and placed to avoid affecting known cultural resources when mission and safety requirements allow.</p> <p>If cultural resources cannot be avoided, the Navy would follow 36 CFR Part 800.6 with additional stipulations as included in an amended 2011 PA. In the event of post-review discovery of cultural resources, or an inadvertent discovery under NAGPRA during training activities, training in the immediate vicinity of the discovery would be suspended until an archaeologist could assess the potential significance of the resource(s) and actions to be taken in accordance with applicable legal requirements, as appropriate. The Navy anticipates that, with implementation of these measures, training activities would impact cultural resources, but through the implementation of mitigation measures, the impact could be reduced to a level less than significant.</p>
Archaeological and Historic Preservation Act, as amended (54 U.S.C. section 312501–312508: Preservation of Historical and Archaeological Data)	No impacts on known archaeological sites would be anticipated to occur as a result of implementation of the Proposed Action because the cultural surveys conducted in support of this EIS would be used to determine construction locations that would not disturb historical or archaeological data. In the event of inadvertent discovery of sensitive archaeological materials during construction, the Navy would ensure that measures are taken promptly to protect the find from disturbance, assess the significance of the discovery, and implement appropriate mitigating measures for significant resources. Inadvertent discovery of sensitive archaeological materials would be handled in accordance with appropriate standard operating procedures, which include provisions for notifying the Nevada SHPO, Indian Tribes, and other appropriate parties of the discovery.

Table 6-1: Summary of Environmental Compliance for the Proposed Action (continued)

Plans, Policies, and Controls	Status of Compliance
Native American Graves Protection and Repatriation Act (25 U.S.C. section 3001)	<p>Of the 900 documented places of cultural and/or religious importance to Native Americans who are culturally affiliated with the lands within the proposed FRTC of potential cultural and religious importance identified in this study, about half are within the FRTC boundaries. Such properties include mountain peaks, springs, plant resources, and pinyon stands that derive importance from their association with traditional origin and mythological places or spiritual/ceremonial locations as well as traditional hunting and gathering locations.</p> <p>Specifically, the Fallon Paiute-Shoshone, the Walker River Paiute, and the Yomba Paiute Tribes utilize resources within the existing and proposed FRTC Modernization area (U.S. Department of the Navy & Bureau of Land Management, 2001). Based on previous consultation and discussions with these tribes regarding the Resource Management Plan for certain federal lands in Churchill County, the Navy and BLM identified sensitive areas that may have religious or cultural importance (U.S. Department of the Navy & Bureau of Land Management, 2001).</p> <p>Notwithstanding, the Navy recognizes that additional ethnographic studies or inventories need to be conducted in consultation with the Indian tribes to more fully determine the presence of potential TCPs or sacred sites and has programmed for this requirement. The Navy also recognizes that access constraints could impact traditional cultural practices of these tribes.</p>
American Indian Religious Freedom Act (42 U.S.C. section 1996)	No Native American resources or artifacts subject to AIRFA have been identified in the area of potential effects. If such resources are discovered, the Navy would comply with AIRFA and continue consultations with federally recognized tribes.
Wild and Free-Roaming Horses and Burros Act (16 U.S.C. sections 1331–1340)	BLM has agreed to maintain management responsibility of wild horses and burros. The Navy currently has an MOU with the BLM for management of wild horses and burros that would be extended onto any lands requested for withdrawal or proposed for acquisition. The Navy would consult with the BLM on issues pertaining to wild horses or burros.
Wilderness Act (16 U.S.C. sections 1131 et seq.)	The Navy consulted with the BLM on WSAs and other wilderness areas within the region of influence. Any change to the WSA designation would presumably be accomplished through any ultimate Congressional withdrawal legislation.
Land and Water Conservation Fund Act (54 U.S.C. sections 200301 et seq.)	The Navy is compliant with this Act, as no Section 6(f) properties would be converted to non-recreational uses as a result of the Proposed Action.

Table 6-1: Summary of Environmental Compliance for the Proposed Action (continued)

Plans, Policies, and Controls	Status of Compliance
Department of Transportation Act Section 4(f) (49 U.S.C. section 303)	Section 4(f) properties apply only to agencies within the USDOT. The FAA must take the lead on Section 4(f) compliance for the USDOT if they are involved in a NEPA action. Special Use Airspace actions are exempt from the requirements of Section 4(f); therefore, this Act does not apply to the Navy under the Proposed Action.
NRS Chapter 533, Adjudication of Vested Water Rights	Any valid claims to water rights that would be revoked as a result of Navy action would be justly compensated by the Navy. The Navy would purchase existing and valid water rights claims, or compensate for the movement of such rights off of any lands acquired by or withdrawn for the benefit of the Navy as a result of any ultimate implementation of the Proposed Action, in accordance with applicable law.
NRS Chapter 534, Underground Water and Wells	Navy would not be affecting the groundwater and would not construct any wells or pull from any aquifers for purposes of this action.
EOs 11988, <i>Floodplain Management</i> ; and 13690, <i>Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input</i>	Federal Emergency Management Agency floodplain maps do not exist for the FRTC ground ranges. Periodic flooding is expected to occur along the washes in these areas, and drainage into dry lake beds occasionally creates standing water. The Proposed Action includes development or construction activities and would be implemented in accordance with these EOs. The Navy would allow land managers to continue coordinating access to the ranges for flood management purposes (regarding B-16 and B-20).
EO 11990, <i>Protection of Wetlands</i>	The Navy would continue to protect wetlands at the FRTC in accordance with EO 11990.
EO 12088, <i>Federal Compliance with Pollution Control Standards</i>	The Navy would continue to ensure Federal facilities and activities under the Proposed Action would be in compliance with environmental pollution prevention, control, and abatement standards.
EO 12630, <i>Government Actions and Interference with Constitutionally Protected Property Rights</i>	The Navy would purchase private properties that are proposed for acquisition and would pay the fair market value of the property.
EO 12898, <i>Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations</i>	The Navy addressed requirements of EO 12898 in Section 3.15 (Environmental Justice) and determined that implementation of the Proposed Action would not result in any disproportionately high and adverse human health or environmental effects on minority or low-income populations.
EO 13007, <i>Indian Sacred Sites</i>	No concerns regarding Indian Sacred Sites have been identified for the Proposed Action based on consultation with Indian Tribes. If concerns are identified, the Navy would comply with EO 13007 and avoid or mitigate impacts on Indian Sacred Sites in consultation with affected Tribes.

Table 6-1: Summary of Environmental Compliance for the Proposed Action (continued)

Plans, Policies, and Controls	Status of Compliance
EO 13045, <i>Protection of Children from Environmental Health Risks and Safety Risks</i>	The Navy addressed requirements of EO 13045 in Section 3.14 (Public Health and Safety and Protection of Children) and determined that implementation of the Proposed Action would not result in health or safety risks that may disproportionately affect children.
EO 13112, <i>Invasive Species</i>	The Navy would continue to implement invasive plant and weed controls at the FRTC in accordance with the integrated natural resources management plan, which ensures compliance with EO 13112.
EO 13175, <i>Consultation and Coordination with Indian Tribal Governments</i>	The Commander, U.S. Pacific Fleet invited the following federally recognized Indian Tribes and the Inter-Tribal Council of Nevada to participate in the NEPA and NHPA Section 106 processes for this EIS: Duckwater Shoshone Tribe, Fallon Paiute-Shoshone Tribe, Fort McDermitt Paiute and Shoshone Tribes, Lovelock Paiute, Pyramid Lake Paiute Tribe, Reno-Sparks Indian Colony, Summit Lake Paiute Tribe, Te-Moak Tribe of Western Shoshone Indians of Nevada (as well as the Battle Mountain Band, Elko Band, South Fork Band, and Wells Band), Walker River Paiute Tribe, Washoe Tribe of Nevada and California, Winnemucca Paiute Tribe, Yerington Paiute Tribe, and Yomba Shoshone Tribe. Correspondence with these Indian Tribes and the Inter-Tribal Council of Nevada can be found in Appendix C (Tribal Correspondence).
EO 13406, <i>Protecting Property Rights of the American People</i>	Owners of private properties would be justly compensated by the Navy if such properties would be acquired for Navy use as a result of the Proposed Action. In addition, this action does not involve the taking of private property for the purpose of advancing economic interests of private parties.
EO 13783, <i>On Promoting Energy Independence and Economic Growth</i>	The Proposed Action is consistent with the policy and immediate review of all agency actions that potentially burden the safe, efficient development of domestic energy resources. This EO revokes EO 13653, <i>Preparing the United States for the Impacts of Climate Change</i> .
EO 13834, <i>Planning for Federal Sustainability in the Next Decade</i>	In accordance with EO 13834, to create a sustainable energy economy and demonstrate the federal government's commitment to reducing greenhouse gas emissions, the Navy is committed to improving energy security and environmental stewardship by reducing reliance on fossil fuels. The Navy is actively developing and participating in energy, environmental, and climate change initiatives that would increase use of alternative energy and help conserve the world's resources for future generations.

Table 6-1: Summary of Environmental Compliance for the Proposed Action (continued)

Plans, Policies, and Controls	Status of Compliance
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Notes: AIRFA = American Indian Religious Freedom Act; CFR = Code of Federal Regulations; DoD = Department of Defense; EIS = Environmental Impact Statement; FRTC = Fallon Range Training Complex; NAGPRA = Native American Graves Protection and Repatriation Act; Navy = United States Department of the Navy; NEPA = National Environmental Policy Act; NHPA = National Historic Preservation Act; U.S. = United States; U.S.C. = United States Code; USFWS = United States Fish and Wildlife Service; BLM = Bureau of Land Management; SHPO = State Historic Preservation Office; CERCLA = Comprehensive Environmental Response Compensation and Liability Act; USDOT = U.S. Department of Transportation; EO = Executive Order; U.S. = United States; MOU = Memorandum of Understanding; TCP = Traditional Cultural Property; WSA = Wilderness Study Area; WDW = Weapons Danger Zone; OPNAVINST = Chief of Naval Operations Instruction; PA = Programmatic Agreement; NDOT = Nevada Department of Transportation; FIFRA = Federal Insecticide, Fungicide, and Rodenticide Act

6.2 Relationship between Short-Term Uses and Long-Term Productivity

In accordance with the Council on Environmental Quality regulations (Part 1502), this EIS analyzes the relationship between the short-term impacts on the environment and the effects those impacts may have on the maintenance and enhancement of the long-term productivity of the affected environment. Impacts that narrow the range of beneficial uses of the environment are of particular concern. This means that choosing one option may reduce future flexibility in pursuing other options, or that committing a resource to a certain use often may eliminate the possibility for other uses of that resource.

The Proposed Action in this EIS would be categorized as long term. For example, although the use of expanded training areas for individual training activities may be of short duration, the training areas would remain withdrawn for military use at all times for safety reasons. Because the Proposed Action includes an increase in withdrawn land, operational activities would be distributed over a larger area, which would affect the long-term productivity of environmental resources in those areas. However, there would also be short-term impacts that could arise due to this action, mostly associated with construction activities. Therefore, the determining factor in whether a resource is impacted in the long term or the short term depends on whether that resource is more affected by the withdrawal of lands or by construction activities.

The Navy has developed and periodically updates Integrated Cultural Resource Management Plans, Integrated Natural Resource Management Plans, and other environmental management plans to establish a process for preserving the cultural and natural resources that exist on their various ranges without interfering with the military activities that occur on the ranges. These management plans can help to determine the issues a range manager might face in the future and allow the Navy to address any shortfalls through planning and accommodation of future training tempo requirements and deployment schedules. Improved planning facilitates long-term resource management strategies while achieving the near-term goal of providing the capacity and capabilities to fully support required training tasks and meet the Title 10 mandate (10 United States Code section 5062) to be organized, trained, and equipped for prompt and sustained combat.

6.3 Irreversible or Irretrievable Commitment of Resources

The National Environmental Policy Act requires that environmental analysis include identification of “any irreversible and irretrievable commitments of resources which would be involved in the proposed

action should it be implemented.” Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy or minerals) that cannot be replaced within a reasonable time. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., the disturbance of a cultural site, or closure of potential mineral resource areas).

Military training activities would not increase at the FRTC under the Proposed Action, but these activities would be conducted in different locations, along with where they currently take place. The Navy would make every effort to avoid the disturbance or loss of non-renewable resources such as cultural sites. The only irretrievable commitment of resources associated with training activities would be fossil fuel consumption, which would remain the same under the Proposed Action because the tempo of training would not change. Irreversible and irretrievable commitment of resources under the Proposed Action would include potential disturbance or closure of previously unrecorded mineral resource areas, the consumption of fossil fuels during construction activities, and the expenditure of funds for the purchase of private properties. Although the land acquisition, including withdrawal of any non-federally owned lands acquired, may render mineral resources associated with this land unavailable for development during the period of withdrawal, the future production yield of mineral resources is unknown, as is to what extent their development would be limited. The latter depends upon the specific terms of any withdrawal. While it seems that the Proposed Action would have considerable irretrievable impacts, the actual withdrawal would not permanently remove resources from future use. There is potential for the FRTC to be redistributed as public lands in the future, and almost all of the impacts that this EIS has detailed would no longer exist should that occur.

REFERENCES

U.S. Department of the Navy, and Bureau of Land Management. (2001). *Bureau of Land Management and Navy Resource Management Plan for Certain Federal Lands in Churchill County, Nevada* (Navy Integrated Natural Resource Management Plan, Amendment to the BLM Lahontan Resource Management Plan, and Environmental Assessment). Fallon, NV: U.S. Department of the Interior.

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7.0 List of Preparers

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8.0 Distribution List

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8 DISTRIBUTION LIST

The following is a list of public officials, government agencies, Indian tribes, and representatives from organizations and private companies who attended public meetings, provided comments during the Environmental Impact Statement process, or have been identified by the Navy to be on the distribution list for the Fallon Range Training Complex Modernization Environmental Impact Statement.

Information Repositories

Austin Branch Library

88 Main St.
Austin, NV 89310

Carson City Library

900 N. Roop St.
Carson City, NV 89701

Churchill County Library Annex

507 S. Maine St.
Fallon, NV 89406

Crescent Valley Branch Library

5045 Tenabo Ave.
Suite 103
Crescent Valley, NV 89821

Downtown Reno Library

301 South Center St.
Reno, NV 89501

Eureka Branch Library

80 S. Monroe St.
Eureka, NV 89316

Fernley Branch Library

575 Silver Lace Blvd.
Fernley, NV 89408

Gabbs Community Library

602 Third St.
Gabbs, NV 89409

Mineral County Library

1st and A St.
Hawthorne, NV 89415

Pershing County Library

1125 Central Ave,
Lovelock, NV 89419

Yerington Branch Library

20 Nevin Way
Yerington, NV 89447

Federal Regulatory Agencies

Federal Aviation Administration

Federal Aviation Administration Liaison, Renton

Federal Aviation Administration Northwest

Federal Aviation Administration, Oakland Center

Federal Aviation Administration, Salt Lake City Center

Federal Aviation Administration, Western Pacific Region

Federal Highway Administration, Nevada Division
National Park Service, Nevada Field Office
Nevada Natural Resource Conservation Service, Fallon Services Center
Nevada Natural Resource Conservation Service, State Office
U.S. Bureau of Indian Affairs, Branch of Real Estate Services
U.S. Bureau of Indian Affairs, Eastern Nevada Agency
U.S. Bureau of Indian Affairs, Western Nevada Agency
U.S. Bureau of Indian Affairs, Western Regional Office
U.S. Bureau of Land Management
U.S. Bureau of Land Management, Carson City District
U.S. Bureau of Land Management, Nevada State Office
U.S. Bureau of Land Management, Sierra Front-Northwestern Great Basin Resource Advisory Council
U.S. Bureau of Land Management, Stillwater
U.S. Bureau of Land Management, Stillwater Field Office
U.S. Bureau of Land Management, Winnemucca District Office
U.S. Bureau of Reclamation, Lahontan Basin Area Office
U.S. Bureau of Reclamation, Mid-Pacific Region
U.S. Department of Agriculture, Great Basin Plant Materials Center
U.S. Department of Commerce, Reno Export Assistance Center
U.S. Department of Energy, Office of Legacy Management
U.S. Department of the Interior, Office of Environmental Policy and Compliance, Pacific Southwest Region
U.S. Environmental Protection Agency, Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency, Region 9
U.S. Fish and Wildlife Service
U.S. Fish and Wildlife Service, Nevada Office
U.S. Fish and Wildlife Service, Nevada Realty Field Office
U.S. Fish and Wildlife Service, Southern Nevada Office
U.S. Fish and Wildlife Service, Stillwater National Wildlife Refuge
U.S. Forest Service, Carson Ranger District
U.S. Forest Service, Humboldt-Toiyabe National Forest
U.S. Forest Service, Office of Communication
U.S. Geological Survey, Nevada Water Sciences

State Regulatory Agencies

Bureau of Land Management, Nevada State Office
Nevada Board of Wildlife Commissioners
Nevada Bureau of Air Quality Planning

Nevada Bureau of Mines and Geology
Nevada Commission on Off-Highway Vehicles
Nevada Department of Agriculture
Nevada Department of Business and Industry, Carson City Office
Nevada Department of Conservation and Natural Resources
Nevada Department of Conservation and Natural Resources, Division of Environmental Protection
Nevada Department of Conservation and Natural Resources, Division of Forestry
Nevada Department of Conservation and Natural Resources, Division of State Lands
Nevada Department of Conservation and Natural Resources, Division of State Parks
Nevada Department of Conservation and Natural Resources, Division of Water Resources
Nevada Department of Conservation and Natural Resources, Natural Heritage Program
Nevada Department of Education and Public Instruction, Carson City Office
Nevada Department of Health and Human Services
Nevada Department of Tourism and Cultural Affairs, Division of Museums and History
Nevada Department of Tourism and Cultural Affairs, Nevada Arts Council
Nevada Department of Transportation
Nevada Department of Transportation, Aviation Program
Nevada Department of Transportation, District 1
Nevada Department of Transportation, District 2
Nevada Department of Transportation, District 3
Nevada Department of Wildlife
Nevada Governor's Office of Energy
Nevada Division of Environmental Protection, Bureau of Water Pollution Control
Nevada Division of Minerals
Nevada Division of Water Resources
Nevada Indian Commission
Nevada Legislative Counsel Bureau
Nevada Public Utilities Commission
Nevada State Clearinghouse, Nevada Division of State Lands
Nevada State Historic Preservation Office
Nevada State Historic Preservation Office, Comstock Historic District
Nevada State Land Use Planning Advisory Council
Nevada Water Resources Association
Office of the Governor, Nevada
Sagebrush Ecosystem Program
State of Nevada Board of Health Members, Division of Public and Behavioral Health

Local Agencies

Carson City Open Space Advisory Committee
Carson Water Subconservancy District
Churchill County
Churchill County Economic Development Authority
Churchill County Emergency Management
Churchill County Museum
Churchill County Planning Commission
Churchill County Planning Department
Churchill County Road Department
Churchill County School District
Churchill County Volunteer Fire Department
City of Fallon
City of Reno
City of Sparks
City of Winnemucca
City of Winnemucca Volunteer Fire Department
Crescent Valley Town Advisory Board
Douglas County
Elko County
Elko County Planning Commission
Eureka County
Eureka County Natural Resources Advisory Commission
Eureka County Planning Commission
Eureka County Sheriff's Office
Lahontan Conservation District
Lander County
Lander County Commission
Lander County Conservation District
Lander County Economic Development Authority
Lander County Public Lands Advisory
Lander County Public Works Department
Lander County School District
Lyon County
Lyon County Planning Department
Lyon County Sheriff's Office
Mason Valley Conservation District

Mineral County

Mineral County Airport Land Advisory Board

Mineral County Convention and Tourism Authority

Mineral County Economic Development Authority

Mineral County Parks and Recreation

Mineral County Planning Commission

Mineral County Public Works Department

Mineral County Wildlife Advisory Board

Nevada Association of Counties

Nye County

Nye County Department of Emergency Management

Nye County Planning Department

Pahrump Sheriff's Office Headquarters

Pershing County

Pershing County Economic Development Authority

Pershing County Natural Resources Advisory Commission

Pershing County Planning Department

Stillwater Conservation District

Tonopah Conservation District

Town of Kingston

Truckee Carson Irrigation District

Truckee Meadows Fire Protection District

Washoe County

Washoe County Community Services Department, Division of Planning and Development

Washoe County Department of Water Resources, Resources Planning and Management

Indian Tribes

Battle Mountain Shoshone

Duckwater Shoshone Tribe

Elko Band Council

Fallon Paiute-Shoshone Tribe

Fort McDermitt Paiute and Shoshone Tribes

Inter-Tribal Council of Nevada

Lovelock Paiute Tribe

Native American Interaction Program, Pahrump Paiute Tribe

Pyramid Lake Paiute Tribe

Reno-Sparks Indian Colony

South Fork Band Council

Summit Lake Paiute Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Walker River Paiute Tribe
Washoe Tribal Environmental Protection
Washoe Tribe, Carson Community
Washoe Tribe, Dresslerville Community
Washoe Tribe of Nevada and California
Washoe Tribe, Reno Sparks
Washoe Tribe, Stewart Community
Washoe Tribe, Woodfords Community
Wells Band Council
Western Shoshone Nation
Winnemucca Indian Colony of Nevada
Yerington Paiute Tribe
Yomba Shoshone Tribe

Federal Elected Officials

U.S. House of Representatives, District 1 NV, Hon. Dina Titus
U.S. House of Representatives, District 2 NV, Hon. Mark Amodei
U.S. House of Representatives, District 3 NV, Hon. Jacky Rosen
U.S. House of Representatives, District 4 NV, Hon. Ruben Kihuen
U.S. Senate, NV, Hon. Dean Heller
U.S. Senate, NV, Hon. Catherine Cortez Masto

State Elected Officials

State of Nevada, Governor, Hon. Brian Sandoval
Nevada State Assembly, District 24, Hon. Amber Joiner
Nevada State Assembly, District 25, Hon. Jill Tolles
Nevada State Assembly, District 26, Hon. Lisa Krasner
Nevada State Assembly, District 27, Hon. Teresa Benitez-Thompson
Nevada State Assembly, District 30, Hon. Michael Sprinkle
Nevada State Assembly, District 31, Hon. Skip Daly
Nevada State Assembly, District 32, Hon. Ira Hansen
Nevada State Assembly, District 33, Hon. John Ellison
Nevada State Assembly, District 34, Hon. Shannon Bilbray-Axelrod
Nevada State Assembly, District 35, Hon. Justin Watkins
Nevada State Assembly, District 36, Hon. James Oscarson
Nevada State Assembly, District 37, Hon. Jim Marchant

Nevada State Assembly, District 38, Hon. Robin Titus
Nevada State Assembly, District 39, Hon. Jim Wheeler
Nevada State Assembly, District 40, Hon. Al Kramer
Nevada State Senate, District 13, Hon. Julia Ratti
Nevada State Senate, District 14, Hon. Donald Gustavson
Nevada State Senate, District 15, Hon. Heidi Gansert
Nevada State Senate, District 16, Hon. Ben Kieckhefer
Nevada State Senate, District 17, Hon. James Settlemeyer
Nevada State Senate, District 19, Hon. Pete Goicoechea

Local Elected Officials

Churchill County, County Manager, Mr. Jim Barbee
Churchill County, District 1, Mr. Harry Scharmann
Churchill County, District 2, Mr. Pete Olsen
Churchill County, District 3, Mr. Carl Erquiaga
City of Fallon, City Council, Ward 1, Ms. Kelly Frost
City of Fallon, City Council, Ward 2, Mr. Bob Erickson
City of Fallon, City Council, Ward 3, Mr. James Richardson
City of Fallon, Mayor, Hon. Ken Tedford
City of Lovelock, City Council, Mr. Daniel Murphy
City of Lovelock, City Council, Mr. Pat Rowe
City of Lovelock, City Council, Mr. Tim Donaldson
City of Lovelock, Mayor, Hon. Michael Giles
City of Reno, City Council, Mr. David Bobzien
City of Reno, City Council, Ward 1, Ms. Jenny Brekhus
City of Reno, City Council, Ward 2, Ms. Naomi Duerr
City of Reno, City Council, Ward 3, Mr. Oscar Delgado
City of Reno, City Council, Ward 4, Mr. Paul McKenzie
City of Reno, City Council, Ward 5, Ms. Neoma Jardon
City of Reno, Mayor, Hon. Hillary Schieve
City of Winnemucca, Mayor, Hon. Di An Putnam
City of Winnemucca, City Council, Seat 1,
Mr. Michael Owens
City of Winnemucca, City Council, Seat 2,
Ms. Teresa Mavity
City of Winnemucca, City Council, Seat 3, Mr. Vince Mendiola
City of Winnemucca, City Council, Seat 4, Mr. Jim Billingsley
City of Winnemucca, City Council, Seat 5, Ms. Paige Brooks

City of Yerington, Mayor, Hon. George Dini
Crescent Valley Advisory Board, Chair, Ms. Dawn Gann
Crescent Valley Advisory Board, Clerk, Mr. Michael Caldwell
Crescent Valley Advisory Board, Secretary, Ms. Kathy Kinkade
Crescent Valley Advisory Board, Vice-Chair, Ms. Jessica Evertsen
Douglas County, County Manager, Mr. Larry Werner
Elko County, District 1,
 Mr. Demar Dahl
Elko County, District 2,
 Mr. Delmo Andreozzi
Elko County, District 3,
 Mr. Jon Karr
Elko County, District 4,
 Mr. Cliff Eklund
Elko County, District 5,
 Mr. Rex Steninger
Eureka County Board of Commissioners, Chair,
 Mr. J.J. Goicoechea
Eureka County Board of Commissioners, Commissioner,
 Mr. Rich McRay
Eureka County Board of Commissioners, Mr. Fred Etchegaray
Eureka County Board of Commissioners, Vice-Chair, Mr. Michael Sharkozy
Lander County, District 1,
 Mr. Doug Mills
Lander County, District 2,
 Mr. Arthur Clark III
Lander County, District 3, Ms. Patsy Waits
Lander County, District 4,
 Ms. Judie Allan
Lander County, District 5,
 Mr. Sean Bakker
Lander County, Executive Director,
 Mr. Keith Westengard
Lyon County, County Manager, Mr. Jeff Page
Lyon County, District 1,
 Mr. Bob Hastings
Lyon County, District 2,
 Ms. Don Alt
Lyon County, District 3,
 Mr. Ken Gray

Lyon County, District 4,
Mr. Joe Mortensen

Lyon County, District 5,
Mr. Greg Hunewill

Mineral County Board of Commissioners, Chair,
Mr. Jerrie Tipton

Mineral County Board of Commissioners, Mr. Garth Price

Mineral County Board of Commissioners, Vice-Chair, Mr. Chris Hegg

Nye County Board of Commissioners, District 1,
Ms. Lorinda Wichman

Nye County Board of Commissioners, District 2,
Mr. Frank Carbone (scoping)

Nye County Board of Commissioners, District 2,
Mr. Frank Carbone (draft)

Nye County Board of Commissioners, District 3,
Ms. Donna Cox

Nye County Board of Commissioners, District 4,
Mr. Andrew Borasky

Nye County Board of Commissioners, District 5,
Mr. Dan Schinhofen

Nye County, County Manager, Mr. Timothy Sutton

Pershing County Board of Commissioners, Chair, Mr. Robert McDougal

Pershing County Board of Commissioners, Ms. Carol Shank

Pershing County Board of Commissioners, Vice-Chair, Mr. Larry Rackley

Pershing County District Attorney, Mr. R. Bryce Shields

Storey County, County Manager, Mr. Pat Whitten

Storey County Board of Commissioners, District 1,
Mr. Marshall McBride

Storey County Board of Commissioners, District 2,
Mr. Jack McGuffey

Storey County Board of Commissioners, District 3,
Mr. Lance Gilman

Tonopah Town Board, Chair, Mr. Duane Downing

Washoe County, County Manager, Mr. John Slaughter

Washoe County, District 1, Ms. Marsha Berkbigler

Washoe County, District 2, Mr. Bob Lucey

Washoe County, District 3, Ms. Kitty Jung

Washoe County Board of Commissioners, District 4, Mr. Vaughn Hartung

Washoe County Board of Commissioners, District 5, Ms. Jeanne Herman

Nongovernmental Organizations

Aircraft Owners and Pilot Association
Alta Alpina Bicycle Club
American Exploration and Mining Association
American Institute of Professional Geologists (AIPG)
American Motorcyclist Association
Association of Naval Aviation
Backcountry Horsemen of Nevada, Carson Valley Chapter
Back Country Horsemen of Nevada, High Sierra Chapter
Backcountry Hunters and Anglers, Nevada Chapter
Basin and Range Watch
Battle Mountain Chamber of Commerce
Bear Yuba Land Trust
Best in the Desert Racing
Big Meadow Conservation District
Canoe Hill Trails Association
Canvasback Gun Club
Carson Valley Chamber of Commerce
Carson Valley Chukar Club
Carson Valley Trails Association
Center for Biological Diversity
Churchill Arts Council
Churchill County Democratic Central Committee
Churchill County Farm Bureau
Churchill Economic Development Authority
Coalition for Nevada's Wildlife
Comstock Residents Association
Congressional Sportsmen's Foundation
Delta Waterfowl
Disabled American Veterans, NV
Elko Bighorns Unlimited
Eureka County Economic Development
Eureka County Opera House
Fallon Chamber of Commerce
Fallon Convention and Tourism Authority
Fallon Horseman's Association
Fallon Lions Club

Fleet Reserve Association, Fallon Branch 192
Friends of Black Rock High Rock
Friends of Nevada Wilderness
Friends of Nevada Wilderness, Reno Gem and Mineral Society
Friends of Plumas Wilderness
Friends of Silver Saddle Ranch
Gabbs School
Great Basin Bird Observatory
Great Basin Resource Watch
Greater Austin Chamber of Commerce
High Desert Detachment, Marine Corps League
Lahontan Audubon Society
More Than Just Parks
Mineral County Economic Development Authority
National Association of Conservation Districts
National Pony Express Association, Nevada State Division
National Rifle Association of America
National Wild Horse Association
National Wildlife Refuge Association
Navy League Council of Fallon
Nevada All-State Trail Riders
Nevada Archaeological Association
Nevada Backcountry Hunters and Anglers
Nevada Bighorns Unlimited
Nevada Bowhunters Association
Nevada Cattlemen's Association
Nevada Concerned Citizens
Nevada Farm Bureau Federation
Nevada Firearms Coalition
Nevada Four Wheel Drive Association
Nevada Historical Society
Nevada Land Trust
Nevada Motocross Development
Nevada Outdoor School
Nevada Soaring Association
Nevada Sportsman
Nevada Trappers Association

Nevada Waterfowl Association
Nevada Wildlife Alliance
Nevada Wildlife Federation, Northern Office
Northern Nevada ATV Association
Northern Nevada Chapter of Safari Club International
Off Road Riders
Oregon-California Trails Association
Pine Nut Mountains Trail Association
Pony Express
Progressive Leadership Alliance of Nevada
Pyramid Lake Fisheries
Red Rock Audubon Society
Renner ATV Riders
Reno Air Racing Association
Reno Gem and Mineral Society
Retired Public Employees of Nevada
Rotary Club of Sparks
Rotary Club, District 5190
Ruby Lake National Wildlife Refuge
Sharetrails.org/BlueRibbon Coalition
Sierra Area Landsailing Association
Sierra Club
Sierra Club, Toiyabe Chapter
Sierra Motocross Racing Association
Stillwater Firearms Association
Street to Sand Off-Road Trails West Inc.
Tahoe Mountain Bike Patrol
The Chamber of Commerce of Reno-Sparks-Northern Nevada
The Fallon Tea Party
The Nature Conservancy in Nevada
The Nevada Rock Art Foundation
The Reno Wheelmen
The Wilderness Society
The Wilderness Society, California/Nevada Headquarters
Theodore Roosevelt Conservation Partnership
Trails West Inc.
University of Florida

University of Nevada
Veterans of Foreign Wars, Fallon Post
Veterans of Foreign Wars, Gabbs Post
Walker Basin Conservancy
Western Nevada Resource Conservation and Development
Western States Racing Association
Wild Sheep Foundation

Private Companies

Altarock Energy, Inc.
Anderson Ranch
Bell Mountain Exploration Corp.
Bench Creek Ranch
Brown Ranch
Stix-Card Ltd.
Canterra Petroleum, Inc.
Cattle Man Ranch
Chaffee Geothermal
Conner Springs Philips Well Allotment
Cow Canyon, Pleasant Valley Livestock LLC
Cyrq Energy
Damonte Ranch LLC
Bass Flat
Deadhorse Well
Desert Pacific Exploration, Inc.
Dixie Valley, Bench Creek Ranch
Dusty Miller LLC
El Capitan
Elko Mining Group
EM Strategies Inc.
ENEL
Environmental Management and Planning Solutions, Inc.
EP Minerals
Eros Resources Corp.
Flare Energy Corp.
Gandolfo Ranch
Geoglobal US Gabbs LLC
Geothermal Energy Association

Geothermal Resources Council
GIS Land Services
Golden Star Resource Corp.
Gradient Resources
H.T. Harvey & Associates
Harry Brown Trust
Harvey Clayton LLC
Hassie Hunt Exploration Company
HB Engineering
Heguy Ranches Inc.
Hodges Transportation
HOV Energy
HRH Nevada Resources, Ltd.
Hycroft Mining Corporation
Idaho North Resources
International Capital & Metals Corporation
Jones Consulting
KHTH Operations Liaison Volunteer
Kodali, Inc.
Land Ho, Inc.
LiCo Energy Metals Inc. and Nevada Energy Metals
Lithium Corporation and Summa, LLC
McDougal Livestock Company and Nevada Nile Ranch Inc.
Moore Ranch
Mountain Gold Claims, LLC
Mountain Well - La Plata, Bench Creek Ranch
NCH/El Capitan
Nevada Copper, Inc.
Nevada Energy
Nevada Iron LLC
Nevada Mineral Exploration Coalition
Nevada Mining Association
Nevada Outhouse Photography
Nevada Rand Mining LLC
New Nevada Lands, New Nevada Resources
New Nevada Resources
Newmont Mining Corporation

Nobel Metal Capital
Ormat Technologies, Inc.
Paiute Pipeline Company
Pershing Gold Corporation
Peter Dilles Consulting Services
Pleasant Valley Livestock LLC, Alpine Ranch
Premier Magnesite, LLC
Projem Venture Inc.
Rawhide Mining LLC
Rawhide Ranch
Renaissance Gold Exploration
Resource Concepts, Inc.
Rosewood Corp.
Runcer Leasing Inc.
Schroeder Law Office
Silver Sage Aviation LLC
Silverbell Mining and Developing
Southwest Gas Corporation
Summa LLC
Terra-Gen
The Shining K, LLC
Toiyabe Guns
Top Gun Raceway
Union Oil Co.
WCW Corporation
Western Geothermal Partners LLC
Western Lands Development Corp
White Sage Grazing Association LLC
Wolf Ranch
Young Bros