
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.

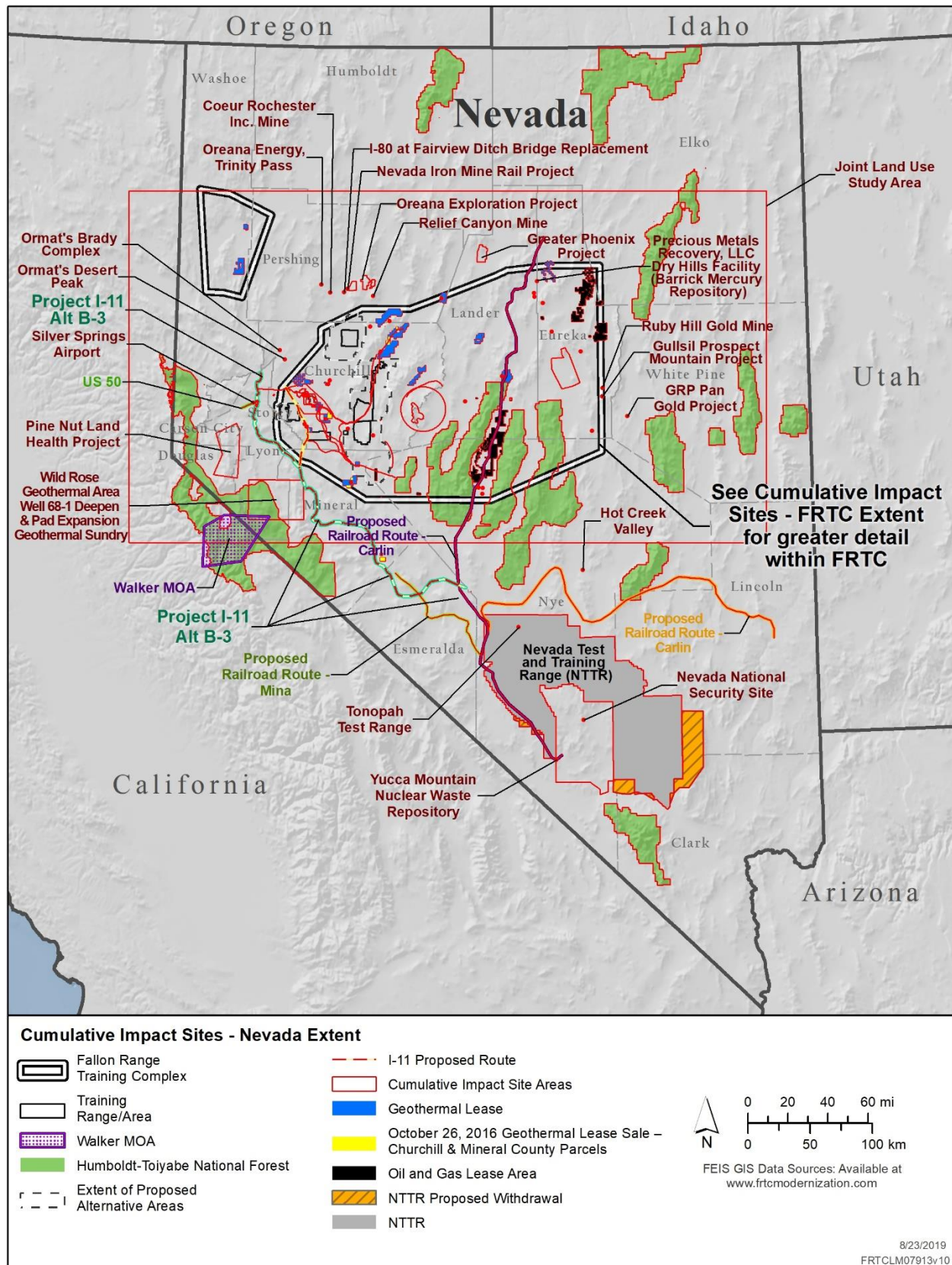


Figure 4-1: Cumulative Impact Sites – Nevada Extent

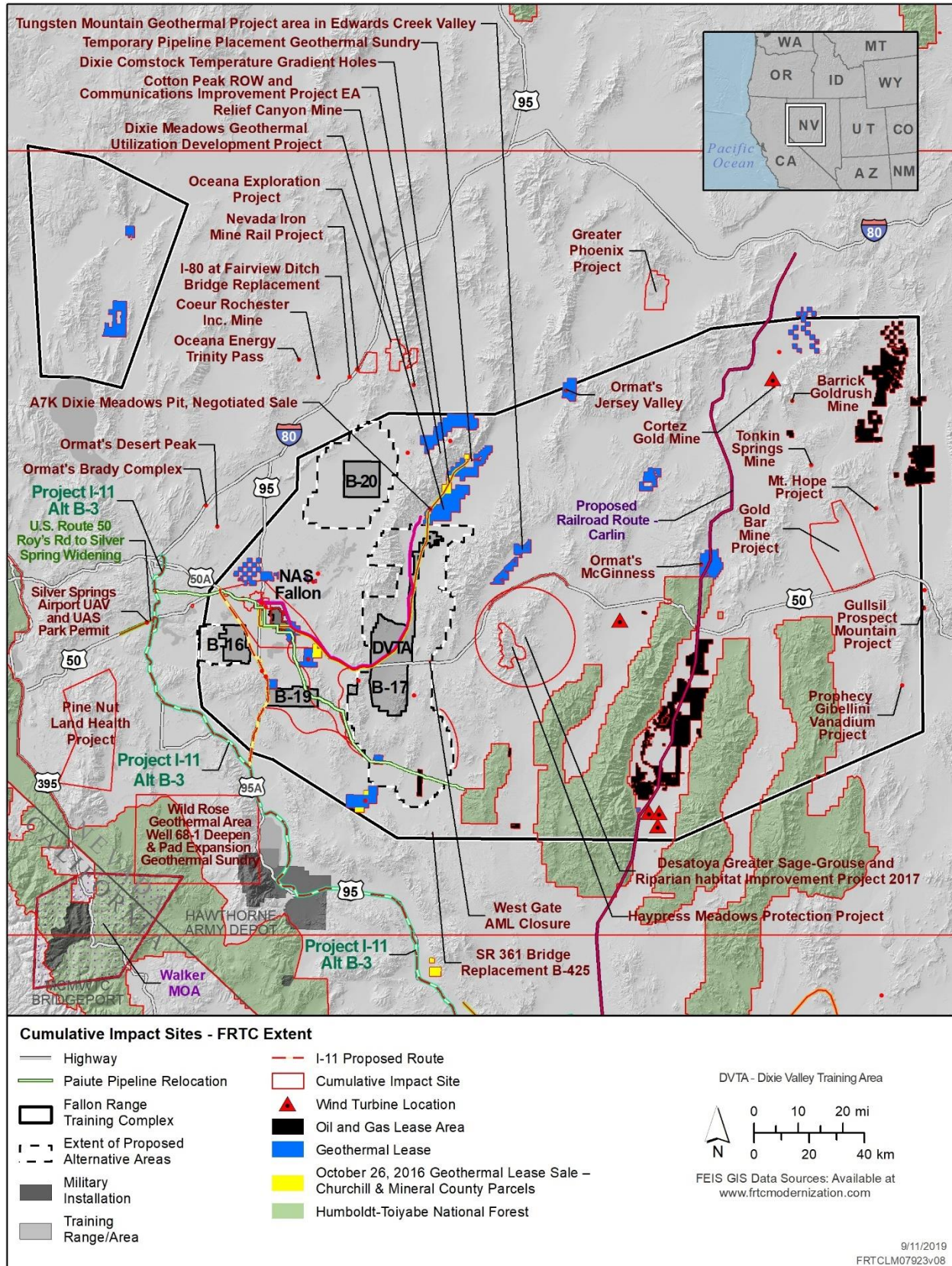


Figure 4-2: Cumulative Impact Sites – FRTC Extent

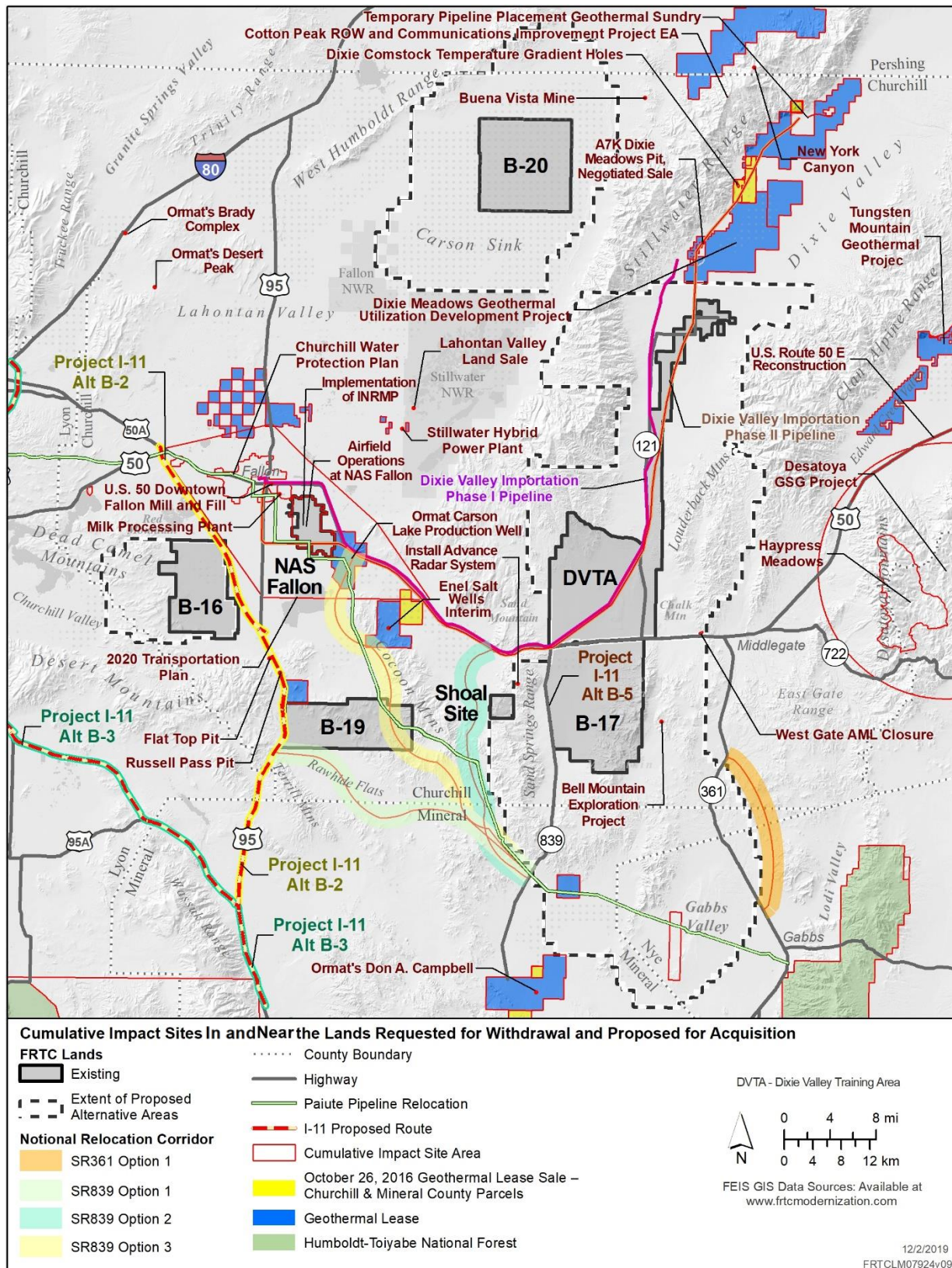


Figure 4-3: Cumulative Impact Sites In and Near the Lands Requested for Withdrawal and Proposed for Acquisition

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 <ul style="list-style-type: none"> 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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