

holder for the incremental increase in pumping costs for the impacted water right. This mitigation would be required by the NDWR, which has a regulatory process to implement the identified mitigation. If a water right is affected by the Project activities and the water right holder files for relief with the NDWR, historic adjudications by the NDWR have shown that there is a high likelihood that the NDWR would act; however, the seniority of the affected water right relative to the EML water rights would factor into a NDWR determination.

3.26.2 Transportation

Potential mitigation for transportation impacts would require EML to mitigate impacts to transportation as a result of Project activities. This mitigation may include, but not be limited to, the following: more frequent monitoring and maintenance of SR 278; the construction of passing lanes on SR 278 in Pine Valley and Diamond Valley; the construction of school bus turnouts; or more frequent snow removal and the application of traction aids during snow and ice conditions. This type of mitigation has been historically implemented and has successfully alleviated safety and congestion impacts. This mitigation would be required by the NDOT; however, the NDOT does not have a regulatory process that could require the implementation of the above identified mitigation. Thus, there appears to be a low likelihood that the above identified mitigation would be implemented.

3.26.3 Livestock Grazing and Production

Potential mitigation for livestock grazing and production impacts would require EML to mitigate impacts to grazing as a result of Project activities. This mitigation may include, but not be limited to, the following: requiring EML to enter into a contract with the permittees for the Roberts Mountain and Romano Grazing Allotment to compensate for the losses in available AUMs. There is no regulatory agency that could require the implementation of this mitigation. Historically, the probability of successfully implementing this type of mitigation is low.

3.26.4 Air Quality

Potential mitigation for impacts to air quality would require EML to mitigate impacts as a result of Project activities. This mitigation may include, but not be limited to, the following: installation and operation of continuous emission monitors on various Project process components; or the installation and operation of ambient air quality monitoring at one or more points outside the Project fence boundary. In addition, the following mitigation measures to reduce impacts associated with emissions of particulate matter, NO₂, ozone, and other toxic air pollutants from mining activities could be implemented:

- Limit idling of heavy equipment to less than five minutes and verify through unscheduled inspections;
- Maintain and tune engines per manufacturer's specifications to perform at EPA certification levels, prevent tampering, and conduct unscheduled inspections;
- If practicable, lease new, clean equipment meeting the most stringent of applicable Federal standards. In general, commit to the best available emissions control

technology. Tier 4 engines should be used for project construction equipment to the maximum extent feasible;

- Lacking availability of non-road construction equipment that meets Tier 4 engine standards, EML should commit to using best available control technology to reduce emissions of diesel particulate matter and other pollutants at the mine site; and
- Consider alternative fuels such as natural gas and electricity (plug-in or battery).

This mitigation would be required by the BAPC which has a regulatory process to implement the identified mitigation. If the BAPC determines that EML is operating the Project in a manner that violates the conditions of their Air Quality Operation Permit, then there is a high likelihood that the BAPC would act to address the situation. Additionally, the BAPC likely might also require other types of conditions or limitations on the operation to mitigate these impacts in order to ensure that EML operates within their air permit conditions.

3.26.5 Socioeconomics

Potential mitigation for social and economic impacts would require coordination and collaboration between EML and local governments to mitigate impacts as a result of Project activities to housing and provision of public infrastructure and services. This mitigation may include, but not be limited to, the following:

- EML would develop a housing plan in close coordination with Eureka County and involve Elko County, Lander County, and White Pine County. This housing plan would document plans for housing both the construction and operation workforce in full. In each case, the plan would address the housing needs for daily commuters from outside southern Eureka County, single status weekly commuters to Eureka County, and relocating households to Eureka County. Actions outlined in the housing plan expand on and formalize the housing options laid out in Section 3.17.3.3.3 and would address the needs for both temporary and permanent housing. Any construction would be required to adhere to policies and controls of Eureka County or other counties if applicable. The plan would be updated annually to account for changes in housing demand that differ from the assumptions used in the EIS. Successful implementation of this mitigation would depend on good faith efforts from all parties.

The State of Nevada, Eureka County, and other listed Nevada counties do not have a regulatory process that could require the implementation of the above identified mitigation. As of August 2012, collaborative social and economic planning efforts between EML and Eureka County remain suspended. Unless the parties resume discussions, there is a low likelihood that the above mitigation would be implemented.

3.27 Relationship Between Short-Term Uses and Long-Term Productivity of the Human Environment

Short term is defined as the life of the Project through closure and reclamation. Long term is defined as the future beyond reclamation. The short-term use of resources during the construction, operation, and reclamation of the mine would result in beneficial impacts in

the form of additional local employment and the generation of revenue. The proposed project would result in various short-term impacts such as the temporary loss of soil and vegetation productivity and the associated loss of herbaceous habitat, possible wildlife avoidance, a reduction in dispersed recreation opportunities, temporary increases in fugitive dust, social and economic impacts to the local infrastructure, and increased noise levels. These impacts are expected to end upon completion of operations and would be minimized through implementation of EMLs applicant committed practices and EIS mitigation measures. The short-term visual impacts would last a few years beyond mine closure and would gradually be reduced as vegetation becomes established. The scale and extent of the waste rock dumps and tailings impoundment facilities would continue to alter the local landscape and views in the long term. Impacts to long-term productivity (i.e., following Project reclamation) would primarily depend on the effectiveness of the proposed reclamation of the disturbed areas. Successful reclamation would provide for post-mining wildlife and livestock grazing by establishing self-sustaining plant communities. Revegetation is also expected to stabilize disturbed surfaces and control erosion. There would be long-term loss in soil and vegetation productivity and associated terrestrial wildlife habitat, a reduction in livestock grazing areas, and public lands used for dispersed recreation that would not be reclaimed. In addition, a potential long-term loss of riparian vegetation associated with seeps, springs, and creeks associated with mine dewatering pending recovery of the ground water tables.

4 CUMULATIVE IMPACTS AND IRREVERSIBLE/IRRETRIEVABLE COMMITMENT OF RESOURCES

4.1 Introduction

CEQ regulations for the NEPA define cumulative impact as follows:

"...the impact on the environment which results from the incremental impact of the action when added to 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" (40 CFR 1508.7).

As required under the NEPA and the regulations implementing the NEPA, this chapter addresses those cumulative effects on the environmental resources in the CESAs, which could result from the implementation of the Proposed Action and reasonable alternatives, past actions, present actions, and reasonably foreseeable future actions (RFFAs). The extent of the CESA will vary with each resource, based on the geographical or biological limits of that resource. As a result, the list of projects considered under the cumulative analysis vary according to the resource being considered. In addition, the length of time for cumulative effects analysis will vary according to the duration of impacts from the Proposed Action on the particular resource.

For the purposes of this analysis and under federal regulations, 'impacts' and 'effects' are assumed to have the same meaning and are interchangeable. The cumulative impacts analysis was accomplished through the following three steps:

- Step 1: Identify, describe, and map CESAs for each resource to be evaluated in this chapter;
- Step 2: Define timeframes, scenarios, and acreage estimates for cumulative impact analysis. Past and present disturbances and activities include commercial/public and mining operations with disturbed areas not reclaimed or unsatisfactorily reclaimed (based on a pre-bonding timeframe) (impacts from those activities are reflected in the current condition). Future scenarios address reasonably foreseeable actions from the following: grazing and agriculture; utilities and infrastructure activities; wildfires, fuels management and reseeding activities; wild horse gathers; other wild horse management activities; habitat stabilization and rehabilitation activities; noxious weed and invasive, nonnative species control activities; recreation and wilderness activities; land development activities; mining and exploration operations identified in notices and plans of operation; hazardous/solid waste and hazardous materials activities; or oil and gas operations; and
- Step 3: Identify and quantify (if possible) the location of possible specific impacts from the Proposed Action and judge the significance of these contributions to the overall impacts. The incremental impact of the Proposed Action is determined by first calculating the sum of all the past, present, and RFFAs (excluding the Proposed Action) actions and then determining incremental increase from the Proposed Action (e.g., if all actions, excluding the Proposed Action, total 1,000 acres and the Proposed Action is ten acres, then the incremental contribution of the Proposed Action would be one percent).

Information utilized in the cumulative impacts assessment was gathered from the following sources: the BLM; State of Nevada; local jurisdictions; private land owners; and mining companies. The past actions, present actions, and RFFAs are current as of February 2011. Changes in actions after this date are not considered in this analysis.

Environmental consequences of the Proposed Action and the reasonable alternatives were evaluated in Chapter 3 for the various environmental resources. Based upon the analysis of the environmental resources as completed in Chapter 3, the following resources could be impacted by the Proposed Action and reasonable alternatives: water quality and quantity; geology and minerals; air quality; soils; vegetation; wildlife and fisheries; special status species; livestock grazing and production; land use authorizations; recreation and wilderness; visual resources; auditory resources; socioeconomics; hazardous materials; cultural resources; forest products; historic trails; Native American Traditional Values; noxious weeds, invasive, nonnative species; transportation and access; wetlands and riparian zones; migratory birds; and wild horses. The above resources are considered to have the potential to be cumulatively impacted by actions within the identified CESA for that resource.

4.2 Cumulative Effects Study Areas

The geographical areas considered for the analysis of cumulative effects are generally illustrated in Figures 4.2.1 and 4.2.2. The locations vary in size and shape to reflect each evaluated environmental resource. Table 4.2-1 outlines the CESAs and their size, as well as references to the figures that show the area.

The CESA for surface water and ground water quality and quantity was determined to be the three hydrographic subbasins, based on the location of the Project relative to the location and patterns of subsurface waters and aquifers.

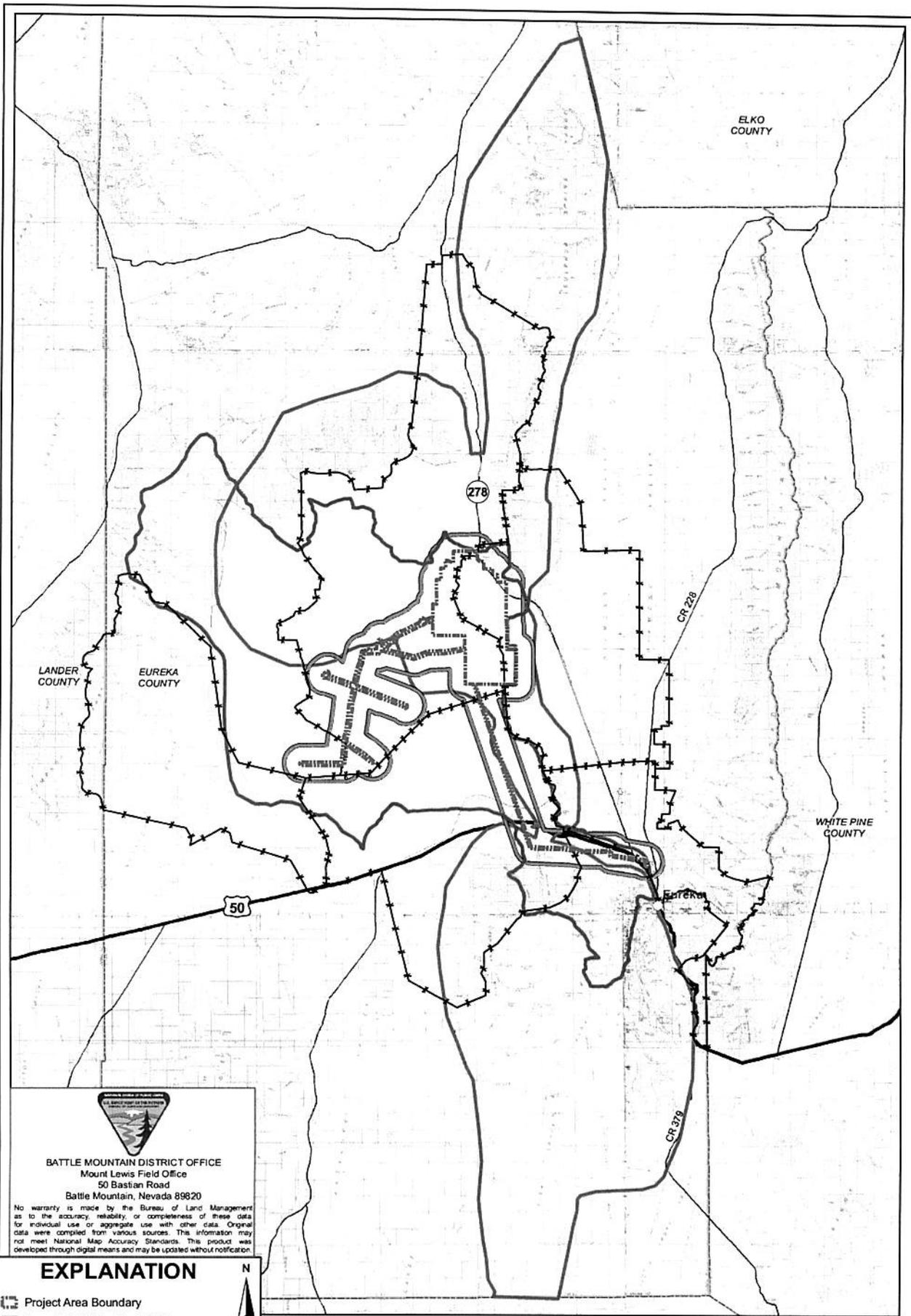
The CESA for geology and minerals was determined to be an area 30 miles in radius from the Project's open pit, based on a determination that the area adequately encompassed the resource use in the east central portion of Nevada.

The CESA for air quality was determined to be the three air basins within which the Project is located, based on the anticipated extent of air impacts. The regulatory framework for air resources in the State of Nevada is based on air basins.

The CESA for soils, vegetation (including special status plant species and fire management), noxious weeds, invasive nonnative species, and wetlands and riparian zones was determined to be the local watershed, based on an assessment that each of these resources would have similar impact characteristics within the local watershed for the Project Area.

The CESA for wildlife and fisheries (including special status animal species and migratory birds) was determined to be the four hunt units, since **the majority of the effects** from the Project would **occur** to wildlife **habitat within** the four hunt units.

The CESA for livestock grazing and production was determined to be the grazing allotments that the Project is located within, as well as the allotments in the ten-foot drawdown contour associated with the ground water impacts (Section 3.2.3), based on the fact that the allotments define the range resource.

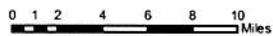


BATTLE MOUNTAIN DISTRICT OFFICE
 Mount Lewis Field Office
 50 Bastian Road
 Battle Mountain, Nevada 89820

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

EXPLANATION

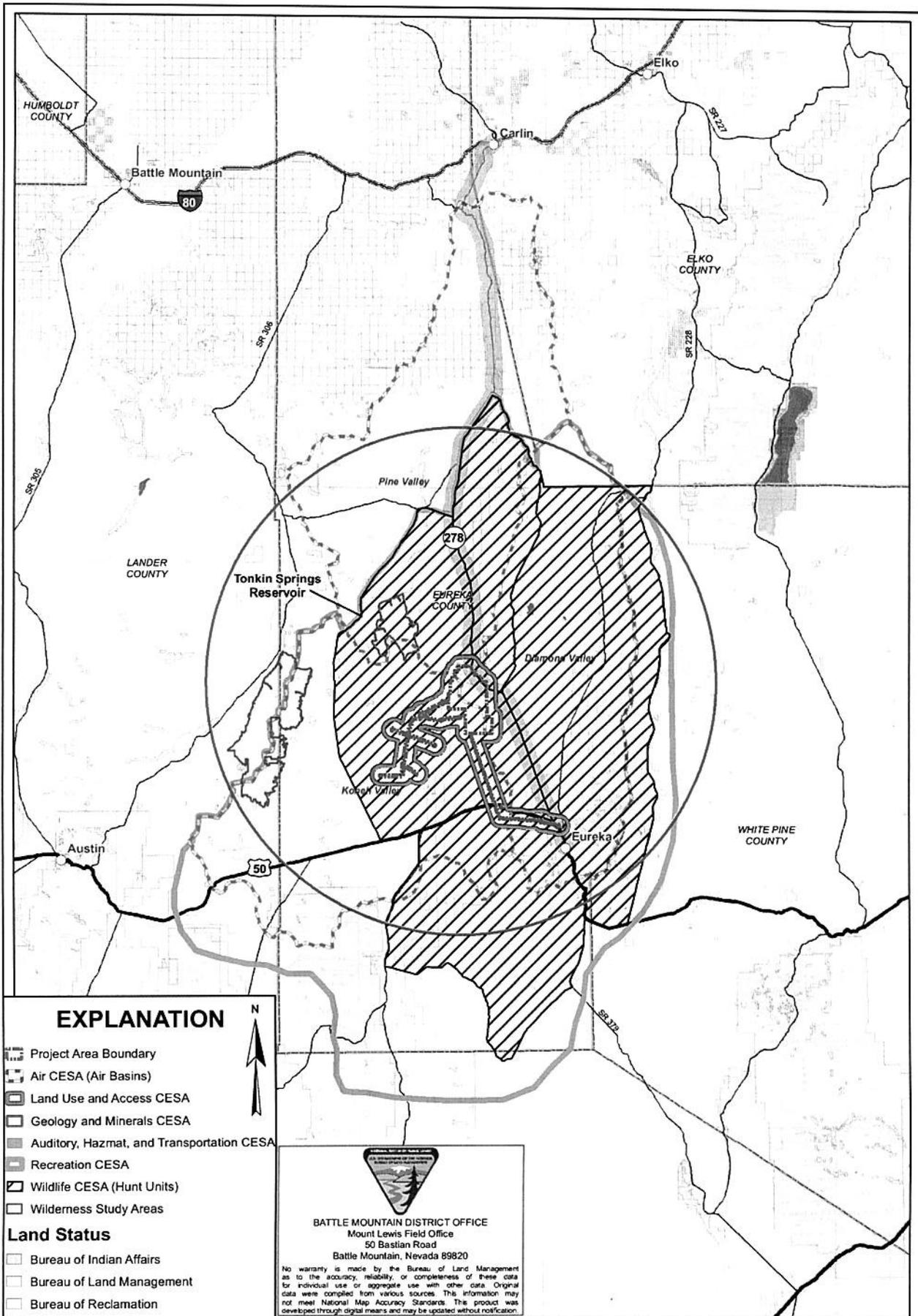
- Project Area Boundary
- Immediate Watershed CESA
- Land Use and Access CESA
- Livestock Grazing and Production CESA
- Wild Horse CESA
- Forestry CESA



DESIGN: EMLLC	DRAWN: CVD/GSL	REVIEWED: RFD
CHECKED: -	APPROVED: RFD	DATE: 08/06/2012
FILE NAME: p1635_Fig-2-1_LargeScaleCESA_v2.mxd		

BUREAU OF LAND MANAGEMENT
MOUNT HOPE PROJECT

DRAWING TITLE:
**Large Scale Cumulative
 Effects Study Areas Map**
 Figure 4.2.1



EXPLANATION

- Project Area Boundary
- Air CESA (Air Basins)
- Land Use and Access CESA
- Geology and Minerals CESA
- Auditory, Hazmat, and Transportation CESA
- Recreation CESA
- Wildlife CESA (Hunt Units)
- Wilderness Study Areas

Land Status

- Bureau of Indian Affairs
- Bureau of Land Management
- Bureau of Reclamation
- U. S. Forest Service
- U. S. Fish and Wildlife Service
- State of Nevada
- Private
- Water



BATTLE MOUNTAIN DISTRICT OFFICE
 Mount Lewis Field Office
 50 Bastian Road
 Battle Mountain, Nevada 89820

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

0 5 10 15 20 Miles

SIGN: EMLLC DRAWN: CVD/GSL REVIEWED: RFD
 CHECKED: APPROVED: RFD DATE: 08/13/2012
 FILE NAME: p1635 Fig4-2-2 SmallScaleCESA v2.mxd

BUREAU OF LAND MANAGEMENT
 MOUNT HOPE PROJECT

DRAWING TITLE:
 Small Scale Cumulative
 Effects Study Areas Map
 Figure 4.2.2

The CESA for land use was determined to be the area within a one-mile buffer around the Project, based on an assessment that any effect of the Project to land use authorization and access would not extend beyond a one-mile buffer of the Project Area.

Table 4.2-1: Cumulative Effects Study Areas by Resource

Resource	Cumulative Effects Study Area	Size of Area (acres)	Figure Number Reference
Ground Water Quality and Quantity	Hydrographic Subbasins 53, 139, 153	1,671,181	4.2.2 4.4.1
Surface Water Quality and Quantity	Hydrographic Subbasins 53, 139, 153	1,671,181	4.2.2 4.4.1
Geology and Minerals	Thirty-mile radius around the open pit	1,809,552	4.2.2 4.3.5
Air Quality	Hydrographic Subbasins 53, 139, 153	1,671,181	4.2.2
Soils	Immediate Watershed	262,490	4.2.1
Vegetation (including Special Status Species and Fire Management)	Immediate Watershed	262,490	4.2.1
Wildlife and Fisheries (including Special Status Species)	NDOW Hunt Units 142, 143, 144, and 145	1,250,319	4.2.2
Livestock Grazing and Production	Grazing Allotments	544,458	4.2.1
Land Use	One mile buffer around the Project Area	75,901	4.2.1
Recreation and Wilderness	An area generally bounded by the Simpson Park Range, Pine Valley, Newark Valley and approximately 30 miles south of the Town of Eureka	1,970,179	4.2.2
Visual Resources	Viewshed of the Project as represented by the KOPs	Approx. 645,000	3.7.1
Auditory Resources	One mile buffer around the Project Area, the SR 278 transportation corridor (including the City of Carlin), and U.S. Highway 50 from SR 278 through the Town of Eureka	97,720	4.2.1
Socioeconomics	The CESA for socioeconomics and environmental justice was determined to include those projects and activities regardless of location, that have a potential effect on socioeconomics or environmental justice as analyzed in this EIS.	n/a	n/a
Hazardous Materials	One-mile buffer around the Project Area, the SR 278 transportation corridor (including the City of Carlin), and U.S. Highway 50 from SR 278 through the Town of Eureka	97,720	4.2.2
Cultural Resources	Project Area, and the viewshed of the Project from specific historic cultural properties within 20 miles of the Project	200,960	3.7.1
Historic Trails	Viewshed of the Project from the Pony Express Trail	69,061	3.20.1
Native American Traditional Values	North Central Nevada from Kobeh Valley to the Tuscarora Mountains, and from the Shoshone Range to the Piñon Range	3,218,045	4.4.2 4.3.3

Resource	Cumulative Effects Study Area	Size of Area (acres)	Figure Number Reference
Environmental Justice	Southern Eureka County	1,692,208	3.17.1
Noxious Weeds, Invasive and Nonnative Species	Immediate Watershed	262,490	4.2.1
Wetlands and Riparian Zones	Immediate Watershed	262,490	4.2.1
Wild Horses	Roberts Mountain, Whistler Mountain, and Fish Creek (north of U.S. Highway 50) HMAs and historic use areas.	253,610	4.2.1
Transportation and Access	One-mile buffer around the Project Area, the SR 278 transportation corridor (including the City of Carlin), and U.S. Highway 50 from SR 278 through the Town of Eureka	97,720	4.2.2
Forest Products	The Sulphur Springs Ranges, the Roberts Mountains, the Whistler Mountains, and the Fish Creek Range within Eureka County.	515,000	4.2.1

The CESA for recreation and wilderness is based on the anticipated Project-related increase in population and demands on recreation and wilderness resources from the expected population increase as opposed to potential specific effects associated with the mining activities. For this reason, the CESA has been defined by topography and the inclusion of areas typically utilized by the residents of Eureka and Diamond Valley. The recreation and wilderness CESA includes the area east of the Simpson Park crest, south of the JD Ranch Road/northern end of Diamond Valley Playa, west of the middle or eastern edge of Newark Valley, and north of a boundary located approximately 30 miles south of Eureka (an area that would include the Fish Creek Range, Mahogany Hills, Ninemile Peak portion of the Antelope Range, and the northern portion of the Monitor Range).

The CESA for visual resources was determined to be the viewshed of the Project as represented by the KOPs, based on the fact that it is the area where the Project effects could be viewed relative to cumulative activities. The viewshed contains approximately 645,000 acres.

The CESA for auditory, hazardous materials, and transportation and access was determined to be the area within a one-mile radius around the Project, the SR 278 transportation route (including the City of Carlin, and U.S. Highway 50 from SR 278 through the Town of Eureka), based on the assessment that any effect to the Project from hazardous materials would not extend beyond a one-mile buffer of the Project Area or on SR 278 and U.S. Highway 50.

The CESA for socioeconomics and environmental justice was determined to **include those projects and activities regardless of location, that have a potential effect on socioeconomics or environmental justice as analyzed in this EIS.**

The CESA for cultural resources was determined to be the Project Area and the viewshed of the Project from selected historic cultural properties, based on the fact that the Project could only directly affect cultural resources within the Project Area, and any indirect effects would only be visual from those specific historic cultural properties where the Project's effects could be viewed relative to cumulative activities.

The CESA for historic trails was determined to be the viewshed of the Project from the Pony Express Trail, based on the fact that it is the area where Project effects could be viewed relative to cumulative activities.

The CESA for Native American Traditional Values was determined to be the area of north central Nevada, which encompasses Kobeh Valley on the south, the Tuscarora Mountains on the north, the Shoshone Range on the west, and the Piñon Range on the east, based on information obtained through Native American consultation for the Proposed Action, the Cortez Hills Expansion Project, and other actions in the Mount Lewis and Tuscarora Field Offices.

The CESA for wild horses was determined to be the HMAs that the Project is located within, as well as the adjacent historic use areas.

The CESA for forest products was determined to be the area that encompasses the Sulphur Springs Range, the Roberts Mountains, the Whistler Mountains, and the Fish Creek Range within Eureka County.

The cumulative impacts analysis for this EIS utilizes a time frame based on the estimated potential future duration of the impacts from the Proposed Action. Based on a Project approval in 2011 and a 32-year mining life and a 44-year milling operations life, the time frames over which the cumulative analysis was completed are as follows:

- Geology and minerals and cultural resources - length of the mining portion of the Project; approximately 32 years (through 2043);
- Water resources and wetlands and riparian zones - time frame for the maximum extent of drawdown, which would occur after processing is completed is greater than 200 years in the future (beyond 2200); and
- Air quality, visual resources, soils, vegetation resources, noxious weeds, invasive and nonnative species, livestock grazing and production, wild horses, recreation and wilderness, auditory resources, social and economic values, wildlife and fisheries, hazardous materials, transportation and access, historic trails, Native American Traditional Values, environmental justice, forest products, and land use - length of the Project, including reclamation; approximately 74 years (through 2085).

The types of Project-specific impacts to the resources evaluated in Chapter 3 may also occur as a result of the past actions, other present actions, and RFFAs. The potential cumulative effects from the past actions, present actions, and RFFAs are discussed in Section 4.4. The individual projects described in Section 4.3 comprise the past and present actions, and RFFAs identified by the BLM's MLFO, Tuscarora, and Egan Field Offices.

The projects and activities include the following: grazing and agriculture; utilities and distribution; wildfires and reseeding; fuels management projects; stabilization and rehabilitation activities; noxious weed and invasive, nonnative species control activities; recreation; land development; mineral development and exploration; **wild horse and burro management; range/habitat improvement projects;** and oil, gas, and geothermal leasing. All of the projects

and activities have the potential to impact the environmental resources of concern within all or portions of the various CESAs.

Table 4.2-2 outlines all the actions considered in the cumulative impacts analysis, their status, potential environmental impacts, and the area of the potential impact. An explanation of the abbreviations and numbering is located at the end of the table. In addition to the actions outlined in Table 4.2-2, there are a number of activities or management actions that have or would affect vegetation or vegetation health, which have occurred in the past, are occurring now, and will continue to occur in the future. These include timber removal for historic mining activities, livestock use and management, wildlife use, and wild horse use and management. The BLM is also in the process of revising their RMP for the BMDO, which includes the Project and surrounding areas. The BLM is currently in the early stages of the RMP development and no specific activities or alternatives have been developed. The development of the revised RMP may result in changes to management decisions and directions on public lands.

Table 4.2-2: Summary of Activities that May Cumulatively Affect Resources

Project Descriptions	Status	Anticipated Resources That Could Be Cumulatively Impacted	Primary/Secondary Impact Location
Grazing, Agriculture, and Forest Product Activities			
Open Range Operations	PP, RF	1, 4, 5, 6, 7, 8, 13, 15, 20, 21, 23	AW, WL
Fenced Feeding Operations	PP, RF	1, 4, 5, 6, 7, 8, 13, 15, 20, 21, 23	AW, WL
Range Improvements (fences, cattle guards, wells, windmills, pipeline/trough, springs, water pumps, noxious weed control)	PP, RF	1, 4, 5, 6, 7, 8, 13, 15, 20, 21	AW, WL
Irrigated Crops	PP, RF	1, 4, 6, 7, 8, 13, 15, 20, 21, 23	AW, WL
Personal Fire Wood and Christmas Tree Harvesting	PP, RF	3, 4, 5, 6, 12, 13, 17, 20, 21, 23	NA, WL
Commercial Fire Wood Harvesting	PP, RF	3, 4, 5, 6, 12, 13, 17, 20, 21, 23	NA, WL
Commercial Pine Nut Harvesting	PP, RF	3, 4, 5, 6, 12, 13, 17, 20, 21, 23	NA, WL
Public (including Native American) Pine Nut and Woodland Products Harvesting	PP, RF	3, 4, 5, 6, 12, 13, 15, 20, 21, 23	NA, WL
Greenwood Cutting	PP, RF	3, 4, 5, 6, 12, 13, 17, 20, 21, 23	NA, WL
Utilities and Infrastructure			
Powerlines	PP, RF	1, 4, 5, 6, 7, 8, 9, 11, 15, 16, 20, 21, 23	AW
Telephone	PP, RF	1, 4, 5, 6, 7, 8, 9, 11, 15, 16, 20, 21, 23	AW
Communication Sites	PP, RF	1, 4, 5, 6, 7, 8, 9, 11, 15, 16, 20, 21, 23	AW
Paved Roads	PP, RF	1, 3, 4, 5, 6, 7, 8, 9, 11, 15, 16, 20, 21, 23	AW
Unpaved Roads	PP, RF	1, 3, 4, 5, 6, 7, 8, 9, 11, 15, 16, 20, 21, 23	AW
Railroads	PP, RF	1, 3, 4, 5, 6, 7, 8, 9, 11, 15, 16, 20, 21, 23	AW
Public Water and Waste Water Facilities	PP	1, 7, 13, 23	AW
Wind Generation	RF	1, 4, 5, 6, 7, 8, 9, 10, 11, 13, 15, 20, 21, 23	WL
Other Federal Facilities	PP, RF	1, 4, 5, 6, 7, 8, 9, 11, 15, 16, 20, 21, 23	AW
Reservoirs	PP	1, 6, 7, 8, 10, 21, 23	RC, WL
Community Facilities and Infrastructure	PP, RF	1, 3, 4, 5, 6, 9, 14, 20	WL
Wildland Fires, Fuels Management, and Reseeding			
Henderson-Romano Project Fuels Treatment	RF	1, 3, 4, 5, 6, 7, 8, 10, 11, 15, 20, 21, 23	WL, AW

Project Descriptions	Status	Anticipated Resources That Could Be Cumulatively Impacted	Primary/Secondary Impact Location
Henderson Creek Project Fuels Treatment	RF	1, 3, 4, 5, 6, 7, 8, 10, 11, 15, 20, 21, 23	WL, AW
Sulphur Springs Fuels Treatment	RF	1, 3, 4, 5, 6, 7, 8, 10, 11, 15, 20, 21, 23	WL, AW
Mahogany Hills-Spring Valley Fuels Treatment	RF	1, 3, 4, 5, 6, 7, 8, 10, 11, 15, 20, 21, 23	WL, AW
Fenstermaker Wash Project Fuels Treatment	RF	1, 3, 4, 5, 6, 7, 8, 10, 11, 15, 20, 21, 23	WL, AW
Northwest Diamond Valley Fuels Reduction	PP	1, 3, 4, 5, 6, 7, 8, 10, 11, 20, 21, 23	WL, AW
Tonkin Project Fuels Treatment	PP	1, 3, 4, 5, 6, 7, 8, 10, 11, 20, 21, 23	WL, AW
Red Hills Fuels Reduction	PP	1, 3, 4, 5, 6, 7, 8, 10, 11, 20, 21, 23	WL, AW
Seven Mile Fuels Reduction	PP	1, 3, 4, 5, 6, 7, 8, 10, 11, 20, 21, 23	WL, AW
Eureka-South Diamond Valley Fuels Reduction	PP	1, 3, 4, 5, 6, 7, 8, 10, 11, 20, 21, 23	WL, AW
Wildland Fires	PP, RF	1, 3, 4, 5, 6, 7, 8, 10, 11, 20, 21, 23	WL, AW
Habitat Stabilization, Rehabilitation, and Wild Horse Management Activities			
3-Bars Ecosystem and Landscape Restoration Project	RF	1, 5, 6, 7, 8, 21	AW, WL
Trout Creek Restoration	PP	1, 5, 6, 7, 8, 21	WL
Pine Creek Restoration	PP	1, 5, 6, 7, 8, 21	WL
Willow Creek Canyon	PP	1, 5, 6, 7, 8, 21	WL
Noxious Weed Control Activities	PP, RF	5, 6, 7, 20	WL, IM
Roberts Mountain Allotment Enclosure	PP	1, 5, 6, 7, 8, 21	WL
3-Bars East Range Enclosures	PP	1, 5, 6, 7, 8, 21	WL
Roberts Mountain WSA Road Rehabilitation	PP	5, 6, 7, 8, 10, 20, 21	WL
Allotment Management for Habitat	PP, RF	5, 6, 7, 8, 21	WL, IW
Wild Horse Management	PP, RF	1, 5, 6, 7, 8, 15, 21, 23	AW, IW
Federal Water Facilities	PP, RF	1, 5, 6, 7, 8, 15, 21, 23	AW, IW
Recreation and Wilderness			
Annual Pony Express Trail Re-Rides	PP, RF	6, 10	RC
Yearly Permits for Commercial Outfitters and Guides	PP, RF	6, 10, 13	RC
Land Speed Record Attempt on Diamond Valley Playa	RF	6, 10	RC
Dispersed Recreation	PP, RF	6, 10, 15	RC
Recreation Use Areas (Roberts Mountain WSA, Simpson Park WSA, Tonkin Springs, Roberts Mountains, Antelope Range, Simpson Park Range)	PP, RF	6, 10	RC
Hickison Petroglyph Recreation Site	PP, RF	6, 10, 15	RC
Land Development			
Eureka	PP, RF	1, 3, 4, 5, 6, 7, 9, 13, 19	AW, WL
Diamond Valley	PP, RF	1, 3, 4, 5, 6, 7, 9, 13, 19	AW, WL
Kobeh Valley	RF	1, 3, 4, 5, 6, 7, 9, 13, 19	AW, WL
Pine Valley	RF	1, 3, 4, 5, 6, 7, 9, 13, 19	AW, WL
Land Sales	PP, RF	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21	WL, AW
Mineral Development and Exploration			
Mining and Exploration Plans of Operations (30)	PP, RF	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 28, 19, 20, 21	AW

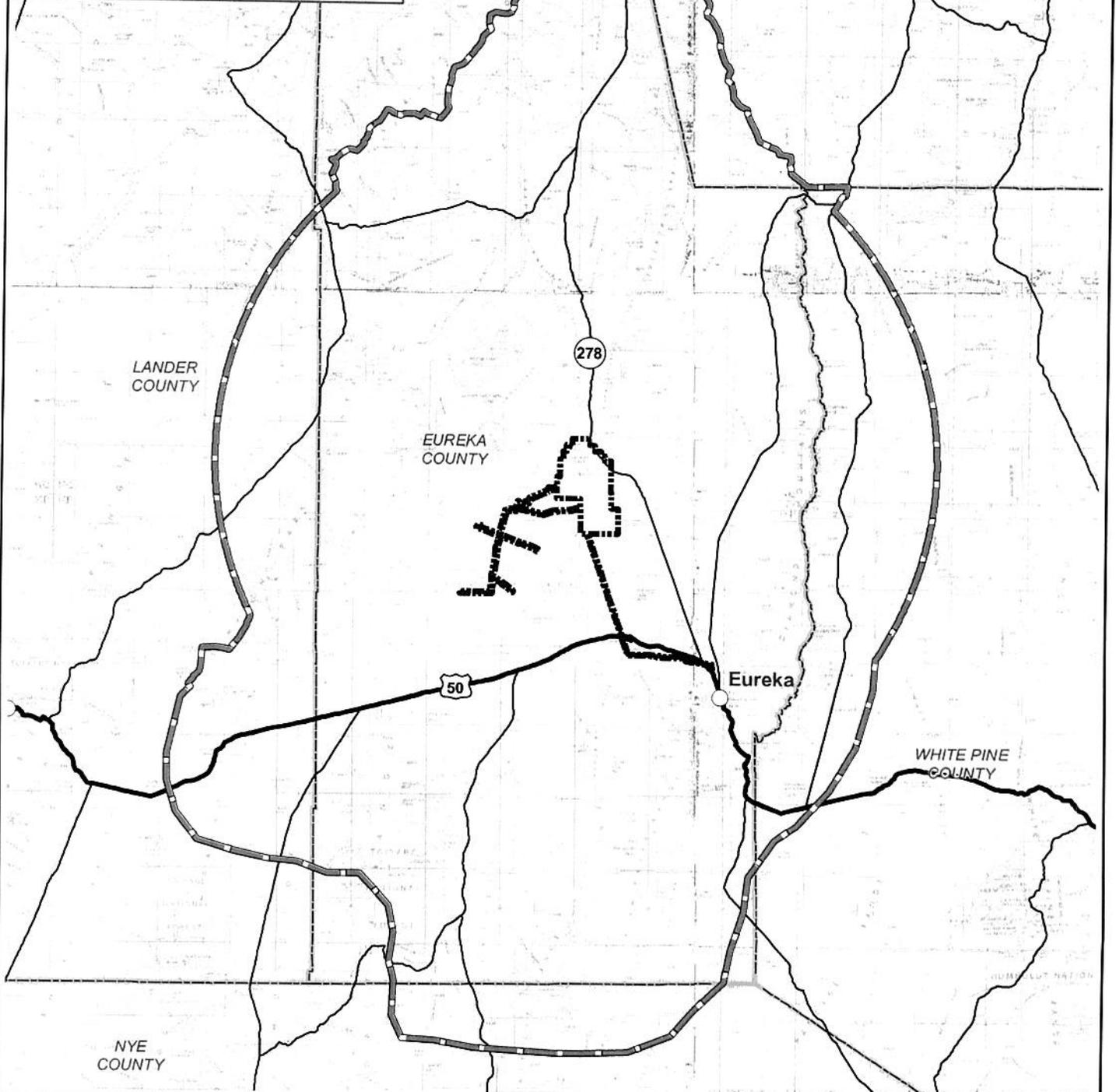
Project Descriptions	Status	Anticipated Resources That Could Be Cumulatively Impacted	Primary/ Secondary Impact Location
Exploration Notices (164)	PP, RF	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 28, 19, 20, 21	AW
Sand and Gravel Extraction Operations (35)	PP, RF	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 28, 19, 20, 21	AW
Historic Eureka Mining District	PP	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 28, 19, 20, 21	AW
Hazardous/Solid Waste and Hazardous Materials			
Mine Hazardous/Solid Waste	PP	14	PT
Mine Hazardous Materials	PP	14	PT
Landfills	PP, RF	6, 9, 15, 21	AW, WL
Oil, Gas, and Geothermal Leasing			
Oil and Gas Leases (583)	PP	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 28, 19, 20, 21	AW, MG
Oil and Gas Development (five)	PP, RF	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 28, 19, 20, 21	AW, MG
See key on next page.			
Source of Information: BLM-BM: BLM BMDO BLM-EK: BLM Elko Office BLM-EL: BLM Ely Office EML: Eureka Moly LLC NDOW: Nevada Department of Wildlife NDEP: Nevada Division of Environmental Protection NDOT: Nevada Department of Transportation	Status: PP-Past and Present Actions RF-Reasonably Foreseeable	Issues: 1-Water Resources 2-Geology and Minerals 3-Air Quality 4-Soils 5-Vegetation 6-Wildlife and Fisheries 7-Wetlands and Riparian Zones 8-Livestock Grazing and Production 9-Land Use 10-Recreation and Wilderness 11-Visual Resources 12-Auditory Resources 13-Social and Economic Values 14-Hazardous Materials 15-Cultural Resources 16-Historic Trails 17-Native American Traditional Values 18-Paleontology 19-Environmental Justice 20-Noxious Weeds, Invasive and Nonnative Species 21-Wild Horses 22-Transportation and Access 23-Forest Products	Location: AW-Air and Water Basins GA-Grazing Allotments HA-Herd Area IW-Immediate Watershed LU-Land Use and Access MG-Minerals and Geology NA-Native American PA-Project Area PT-Project Area and Transportation RC-Recreation SE-Social and Economic WL-Wildlife and Special Status Species

Figure 4.2.3 illustrates the cumulative projects data collection area. Table 4.2-3 outlines the acres of surface disturbance associated with each of the actions considered in the cumulative impact area of analysis illustrated in Figure 4.2.3. The acreage values in Table 4.2-3 are totals under each category. Project-specific acres within each resource CESA are discussed under that resource. Table 4.2-4 outlines the activities and disturbance associated with the Native American Traditional Concerns CESA.



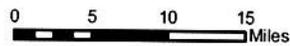
BATTLE MOUNTAIN DISTRICT OFFICE
 Mount Lewis Field Office
 50 Bastian Road
 Battle Mountain, Nevada 89820

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.



EXPLANATION

- Project Area Boundary
- Cumulative Projects Data Collection Area



DESIGN: EMLLC	DRAWN: CVD/GSL	REVIEWED: RFD
CHECKED: .	APPROVED: RFD	DATE: 08/01/2012
FILE NAME: p1635_Fig4-2-3_CumulativeCESAs_8111.mxd		

BUREAU OF LAND MANAGEMENT
MOUNT HOPE PROJECT

DRAWING TITLE:
Cumulative Projects Data Collection Area (except Native American and Socioeconomics)
Figure 4.2.3

Table 4.2-3: Surface Disturbance¹ Associated with Projects within the Cumulative Projects Data Collection Area

Project Descriptions	Past and Present (acres)	RFFA (acres)	Total (acres)
Grazing, Agriculture, and Forest Product Activities			
Open Range Operations	nq	nq	nq
Fenced Feeding Operations	nq	nq	nq
Range Improvements (fences, cattle guards, wells, windmills, pipeline/trough, springs, water pumps, noxious weed control)	nq	nq	nq
Irrigation Facilities	156	0	156
Irrigated Crops	28,580	760	29,340
Personal Fire Wood and Christmas Tree Harvesting	nq	nq	nq
Commercial Fire Wood Harvesting	nq	nq	nq
Commercial Pine Nut Harvesting	nq	nq	nq
Public (including Native American Traditional Values) Pine Nut and Woodland Product Harvesting	nq	nq	Nq
Green Wood Cutting	nq	nq	Nq
Subtotal	28,736	760	29,496
Utilities and Infrastructure			
Powerlines	9,115	413	9,528
Telephone	4,930	34	4,964
Communication Site	231	1	232
Paved Roads	12,315	nq	12,315
Unpaved Roads	1,818	nq	1,818
Railroads	380	0	380
Public Water and Waste Water Facilities	489	0	489
Wind Generation	21,233	0	21,233
Other Federal Facilities	804	0	804
Reservoirs	60	0	60
Community Facilities and Infrastructure	nq	0	nq
Subtotal	51,375	448	51,823
Wildland Fires, Fuels Management, and Reseeding			
Henderson-Romano Project Fuels Treatment	0	23,200	23,200
Henderson Creek Project Fuels Treatment	0	1,000	1,000
Sulphur Springs Fuels Treatment	0	4,200	4,200
Mahogany Hills-Spring Valley Fuels Treatment	0	21,500	21,500
Fenstermaker Wash Project Fuels Treatment	0	35,500	35,500
Northwest Diamond Valley Fuels Reduction	1,349	0	1,349
Tonkin Project Fuels Treatment	350	0	350
Red Hills Fuels Reduction	1,000	500	1,500
Seven Mile Fuels Reduction	40,984	0	40,984
Eureka-South Diamond Valley Fuels Reduction	2,087	0	2,087
Wildland Fires	247,500	436,600	247,500

Project Descriptions	Past and Present (acres)	RFFA (acres)	Total (acres)
Subtotal	283,270	522,500	805,770
Habitat Stabilization, Rehabilitation, and Wild Horse Management Activities			
3-Bars Ecosystem and Landscape Restoration Project ²	nq	nq	nq
Trout Creek Restoration	nq	nq	nq
Pine Creek Restoration	nq	nq	nq
Willow Creek Canyon	2,000	0	2,000
Noxious Weed Control Activities	306	nq	306
Roberts Mountain Allotment Exclosure	48	0	48
3-Bars East Range Exclosure	nq	0	0
Roberts Mountain WSA Road Rehabilitation	5	0	5
Allotment Management for Habitat	867	44,094	44,961
Federal Water Facilities	22	0	22
Subtotal	3,248	44,094	47,342
Recreation and Wilderness			
Annual Pony Express Trail Re-Rides	nq	nq	nq
Yearly Permits for Commercial Outfitters and Guides	nq	nq	nq
Land Speed Record Attempt on Diamond Valley Playa	nq	nq	nq
Dispersed Recreation	nq	nq	nq
Recreation Use Areas (Roberts Mountain WSA, Simpson Park WSA, Tonkin Springs, Roberts Mountains, Antelope Range, Simpson Park Range)	nq	nq	nq
Hickison Petroglyph Recreation Site	5	0	5
Subtotal	5	0	5
Land Development			
Eureka	880	0	880
Diamond Valley	700	0	700
Kobeh Valley	0	280	280
Pine Valley	0	480	480
Land Sales	0	5,000	5,000
Other	8,637	97	8,734
Subtotal	10,217	5,857	16,074
Mineral Development and Exploration			
Mining and Exploration Plans of Operations (27)	12,758	10,143	22,901
Exploration Notices (163)	368	24	392
Sand and Gravel Extraction Operations (41)	1,759	0	1,759
Historic Eureka Mining District (estimated)	200	0	200
Subtotal	15,085	10,167	24,442
Hazardous/Solid Waste and Hazardous Materials			
Mine Hazardous/Solid Waste	0	0	0
Mine Hazardous Materials	0	0	0
Landfills	40	80	120

Project Descriptions	Past and Present (acres)	RFFA (acres)	Total (acres)
Subtotal	40	80	120
Oil, Gas, and Geothermal Leasing			
Oil and Gas Leases (583)	0	573	573
Oil and Gas Development (five)	287	0	283
Subtotal	287	573	856
Total	392,263	584,479	975,928

nq - not quantified.

1 – Surface disturbance includes the actual disturbance of the ground or the removal of vegetation.

2 – This project encompasses an area that is approximately 750,000 acres. Currently an EIS is being prepared for the project. At this time no activities have officially been determined.

Table 4.2-4: Past, Present, and Reasonably Foreseeable Future Actions for the Native American Traditional Concerns Cumulative Effects Study Area¹

Action	Past and Present Approved Disturbance (acres)	RFFA Projected Disturbance (acres)	Total Approved/ Projected Disturbance (acres)	Dewatering / Ground Water Consumption		Located in Piñon-Juniper or Piñon Communities ²	
				Yes	No	Yes	No
Atlas Gold Bar	1,320	0	1,320		X	X	
Black Rock Canyon Mine	117	0	117		X		X
Bootstrap Project	1,505	0	1,505		X		X
Buckhorn Mine	820	0	820		X	X	
Carlin Mine	1,385	0	1,385		X		X
Clipper Mine	400	0	400		X		X
Cortez Mine	1,662	0	1,662		X		X
Gold Acres	881	50	931		X		X
Hilltop Mine	92	0	92		X		X
Horse Canyon	698	0	698		X	X	
Pipeline Project	7,616	0	7,616	X			X
Cortez Hills	6,792	0	6,792	X		X	
Robertson Mine	285	0	285		X		X
Cortez Silver Mining District	92	0	92		X	X	
EML Mount Hope	8,355	0	8,355	X		X	
Elder Creek Mine	143	0	143		X		
South Operations Area Project	5,750	0	5,750	X			X
Goldstrike/Betze Project	4,379	0	4,379	X			X
Greystone Mine	242	0	242		X	X	
Ivanhoe Project/Hollister Project	342	0	342	X			X
Leeville Project	486	0	486	X			X
Meikle Mine	92	0	92	X			X
Arturo/Storm Project	124	8,148	8272	X			X
Mule Canyon Mine	2,931	0	2,931	X			X

Action	Past and Present Approved Disturbance (acres)	RFFA Projected Disturbance (acres)	Total Approved/ Projected Disturbance (acres)	Dewatering / Ground Water Consumption		Located in Piñon-Juniper or Piñon Communities ²	
				Yes	No	Yes	No
Rain/Emigrant Project	383	0	383	X			X
Subtotal	38,092	8,198	40,968	--	--	--	--
BLM Fuels Reduction Projects ³	5,641	0	5,641		X	X	X
Wildland Fires ⁴	622,311	0	622,311		X	X	X
Agriculture Development ⁵	9,750	0	9,750	X			X
Carlin Water Supply	2	0	2	X			X
Eureka Water Supply	2	0	2	X			X
Crescent Valley Water Supply	2	0	2	X			X
Subtotal	637,708	0	637,708	--	--	--	--
Total	683,315	8,198	692,145	--	--	--	--

This table is based on data and information taken directly from the Cortez Hills Expansion Project FEIS (BLM 2008b) and modified to include the Cortez Hills Expansion Project and the Mount Hope Project.

² P-J and P Communities are Piñon-Juniper and Piñon Vegetation Communities, as defined in the GAP data set.

³ Inclusive of acreage associated with the Crescent Valley Wildland Urban Interface Fire Defense System, Tonkin Hazardous Fuels Reduction Project, and Red Hills Hazardous Fuels Reduction Project. Of the total acreage, planned prescribed burns would affect up to 2,537 acres of piñon-juniper woodland, and 800 acres of piñon-juniper would be thinned.

⁴ Reflects acreage of vegetation affected by wildland fires from 1998 through 2006. The acreage is inclusive of approximately 27,804 acres of fire affected piñon-juniper woodland.

⁵ Surface disturbance associated with agricultural development is based on the acreage under irrigation and assumes that a change in vegetation and habitat equates to surface disturbance. Acreage values were based on a February 15, 1998, special hydrographic abstract for Hydrographic Basin No. 054 from the NDWR. These values are based on permitted or authorized use of water and may not reflect actual use in a given year. Potential agricultural development outside of Crescent Valley has not been quantified.

Source: BLM 2008b.

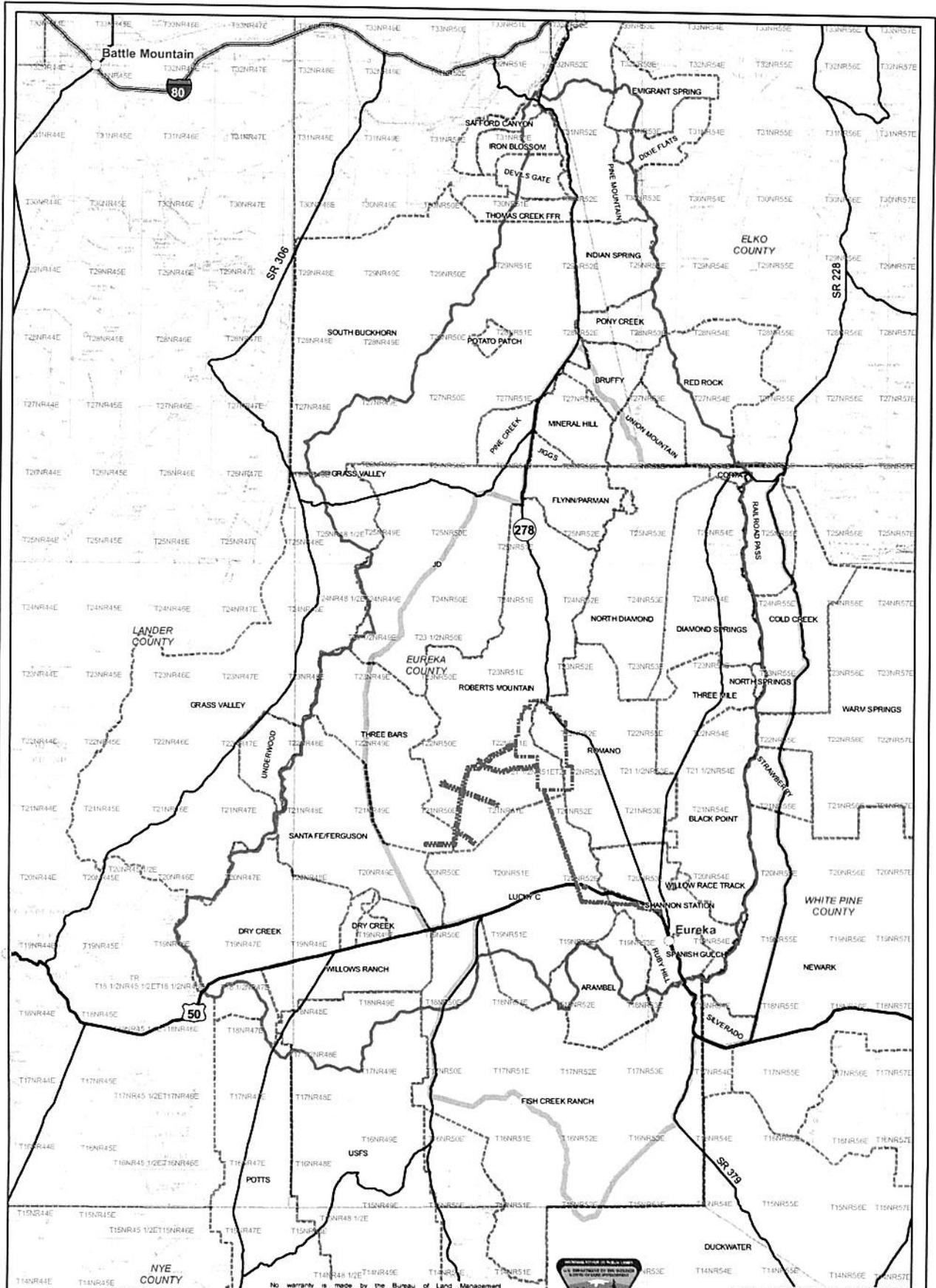
4.3 Past, Present, and Reasonably Foreseeable Future Actions

4.3.1 Grazing, Agriculture, and Forest Products

4.3.1.1 Past and Present Actions

Livestock grazing has been and continues to be a dominant land use in Eureka County and the adjoining portions of Elko, Lander, White Pine, and Nye Counties. Multiple grazing allotments have been permitted and administered by the BLM over approximately the past half century. Portions of 49 grazing allotments or federal fenced ranges exist within the area of all the CESAs (Figure 4.3.1). The carrying capacity, which is assumed to be the long-term use by livestock, wild horses, and wildlife, of these 49 grazing allotments is approximately 131,311 AUMs. The capacity of these allotments has been adjusted over the years in response to mineral development, drought, wildland fires, availability of stock water, and rangeland condition.

Surface water sources that support livestock grazing and agriculture within the CESAs include reservoirs, perennial creeks, springs, and seeps. Improved water sources include developed springs, stock wells, stock ponds, water pipelines, and troughs. Livestock will generally congregate near these features. Cow-calf pairs, heifers, steers, cows, and sheep graze on residual forage in alfalfa fields, irrigated pastures, and rangeland within Eureka County and the adjoining



EXPLANATION

- Project Area Boundary
- Air Quality CESA
- Grazing Allotments
- Wildlife and Fisheries CESA



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. The product was developed through digital means and may be updated without notification.



BATTLE MOUNTAIN DISTRICT OFFICE
 Mount Lewis Field Office
 50 Bastian Road
 Battle Mountain, Nevada 89820

DESIGN: EMLLC	DRAWN: CVD/GSL	REVIEWED: RFD
CHECKED: -	APPROVED: RFD	DATE: 08/01/2012
FILE NAME: p1635_Fig4-3-1_CumulativeGrazingAllotments.mxd		

BUREAU OF LAND MANAGEMENT
MOUNT HOPE PROJECT

DRAWING TITLE:
Grazing Allotments within Air Quality and Wildlife and Fisheries CESAs Map
 Figure 4.3.1



portions of Elko, Lander, White Pine, and Nye Counties. Existing livestock water use includes 613 stock water rights in the three hydrographic basins at a projected total rate of 1,447 afy. In addition, a substantial amount of four-strand (three barbed and one smooth wire on the bottom) wire fencing has been constructed within the CESAs. **Past and present range and habitat improvement projects have resulted in changes to vegetation communities;** the actual acreage for this has not been quantified; however, some of these uses are range improvements that include fences, cattleguards, noxious weed control, water troughs, spring improvements, wells, reservoirs, windmills and tanks, and pipelines. Figure 4.3.2 identifies the number of range improvements by township within the CESAs.

Areas under irrigation in Diamond Valley were **approximately 24,357 acres in 2011 (NDWR 2012)**. Existing (active or recently active) agricultural development in Diamond Valley, identified using October 13, 2006, aerial photographs (Google Earth™), appears to remain at approximately **24,357 acres**. Water use for irrigation increased from approximately 12,000 afy in 1965 to approximately 64,000 afy in 1990. Current water rights **have been identified as of June 2012, using NDWR data, at approximately 134,240 afy from underground sources. The perennial yield is 30,000 acre-feet per year.**

Areas under irrigation in Kobeh Valley were approximately **280 acres in 2011 (NDWR 2012)**. Existing agricultural development in Kobeh Valley, identified as of December 23, 2007, using aerial photographs, appears to be approximately 1,200 acres. Current water rights have been identified as of **June 2012, using NDWR data, at approximately 12,478 acre-feet per year from underground sources. The perennial yield for Kobeh Valley is 16,000 afy.**

Existing agricultural development in Pine Valley identified as of December 23, 2007, using aerial photographs, appear to remain at approximately 5,100 acres. Current water rights have been identified as of **June 2012, using NDWR data, as approximately 16,473 acre-feet per year from underground sources. The perennial yield for Pine Valley is 20,000 afy.**

Commercial pine nut harvesting occurs under permits issued by the BLM MLFO. Figure 4.3.3 shows the areas where this type of harvesting is permitted within the Native American Traditional Concern CESA, which comprises 382,428 acres and includes 167,441 acres of piñon-juniper and piñon only vegetation communities. The most recent highly productive year for commercial harvesting was in 1998 when 50,000 pounds of nuts were harvested and then again in 2004. Between these two years the production of pine nuts was very low. Yearly commercial pine nut harvesting is very sporadic, based on the tree production of cones and nuts. Also shown on this figure are the areas of piñon-juniper and piñon only vegetation communities, which comprise a total of 364,934 acres. Approximately 46 percent of these vegetation communities are subject to commercial harvest

Other forest product harvesting activities include, but are not limited to, the commercial and personal cutting of piñon and juniper for fire wood, the personal cutting of piñon for Christmas trees, the greenwood cutting of primarily juniper for fence posts, and commercial and personal harvesting pine nuts.

4.3.1.2 Reasonably Foreseeable Future Actions

Livestock grazing is expected to continue at management levels established in the various grazing allotments including the vicinity of the Proposed Action. Short-term (typically two to four years) adjustments to livestock numbers are expected in response to wildland fires, which affect forage levels. The following projects are proposed as part of ongoing livestock management programs at the BLM Mount Lewis, Tuscarora, and Egan Field Offices that would occur in the future, separate from mining-related activities:

- Livestock and drift fence construction;
- Water development (i.e., springs and wells);
- Permanent water haul locations;
- Sagebrush thinning;
- Seeding;
- Pipeline construction;
- Vegetation manipulation;
- Poisonous plant (i.e., tall larkspur) noxious weed population control;
- Fence relocation; and
- Reservoir construction.

It is reasonable to expect that future commercial pine nut harvesting would continue to be sporadic, based on the tree's production of cones and nuts. It is reasonable to expect that the BLM would continue to allow for forest product harvesting activities, including the cutting of piñon and juniper for firewood, the cutting of piñon for Christmas trees, as well as greenwood cutting of primarily juniper for fence posts.

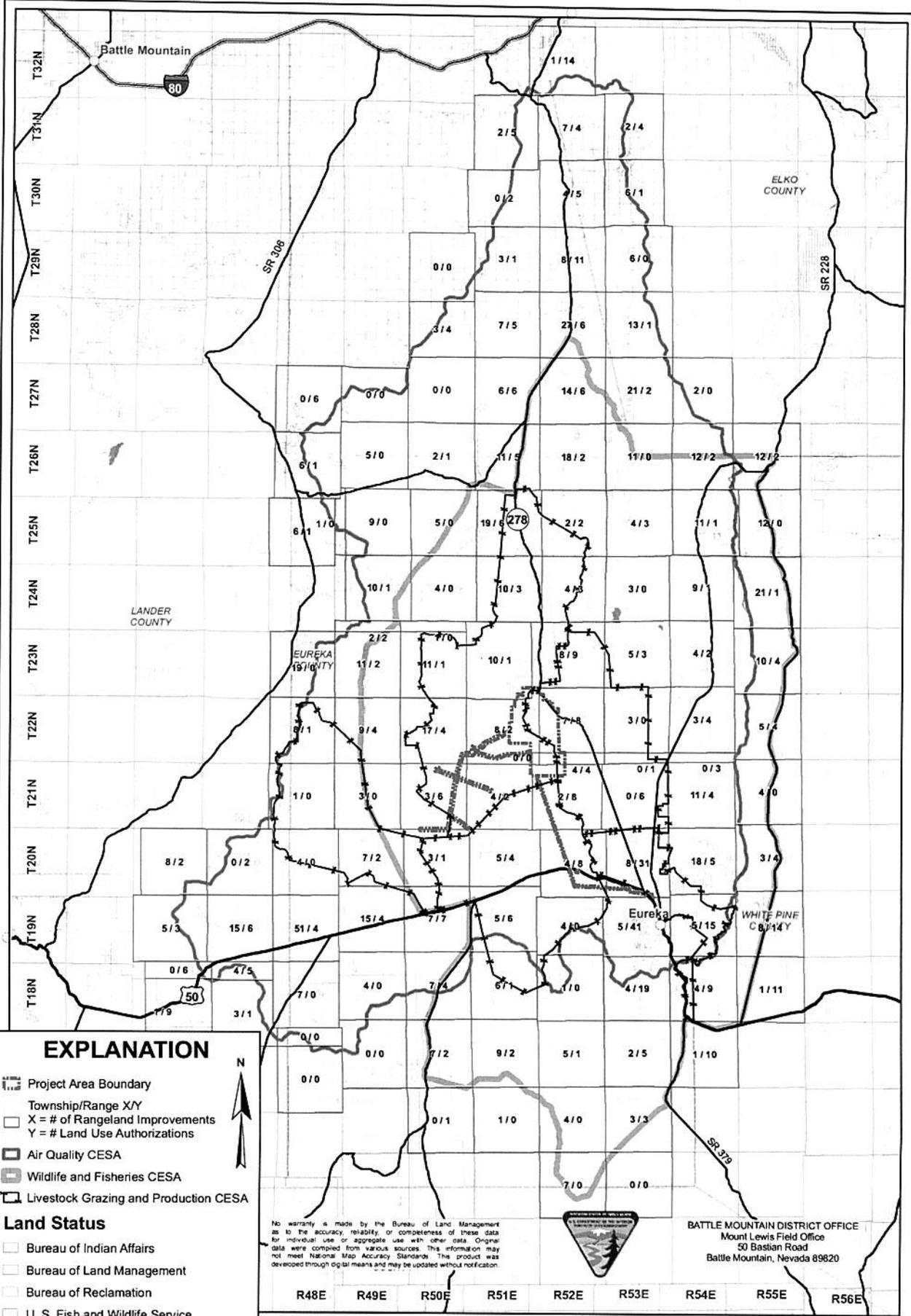
Continued agricultural activities in Diamond Valley, Kobeh Valley, and Pine Valley are reasonably expected to occur in the form of flood and pivot irrigation.

4.3.2 **Utilities and Distribution**

4.3.2.1 Past and Present Actions

Past utility and distribution actions include the development of roads, powerlines, and telecommunications, as well as public water supply and waste water systems. Roads have been developed by the State of Nevada (U.S. Highway 50, SR 278, and SR 892), Eureka, Lander, White Pine and Elko Counties, the BLM, and the USFS. The Town of Eureka is located in southeastern Eureka County. Individual ranches and farms comprise the remainder of the inhabited areas in southern Eureka County and the surrounding counties of Lander, Nye, White Pine, and Elko.

Three general types of roads have been developed within Eureka County and the adjoining portions of Elko, Lander, White Pine, and Nye Counties: paved roads, gravel surface roads, and dirt roads. Based on aerial photo review available from Google Earth™ and the Eureka County Road Map (Eureka County 2005), there are approximately 254 miles (12,315 acres) of paved roads in the CESAs, including U.S. Highway 50, SR 278, SR 892, and SR 379. In addition, there are approximately 60 miles of paved county roads in the Diamond Valley area. Paved roads in the Town of Eureka have been grouped with the town, which is discussed under Section 4.3.6.



EXPLANATION

- Project Area Boundary
- Township/Range X/Y
- X = # of Rangeland Improvements
Y = # Land Use Authorizations
- Air Quality CESA
- Wildlife and Fisheries CESA
- Livestock Grazing and Production CESA

Land Status

- Bureau of Indian Affairs
- Bureau of Land Management
- Bureau of Reclamation
- U. S. Fish and Wildlife Service
- U. S. Forest Service
- State of Nevada
- Private
- Water

No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. The product was developed through digital means and may be updated without notification.

BATTLE MOUNTAIN DISTRICT OFFICE
Mount Lewis Field Office
50 Bastian Road
Battle Mountain, Nevada 89620

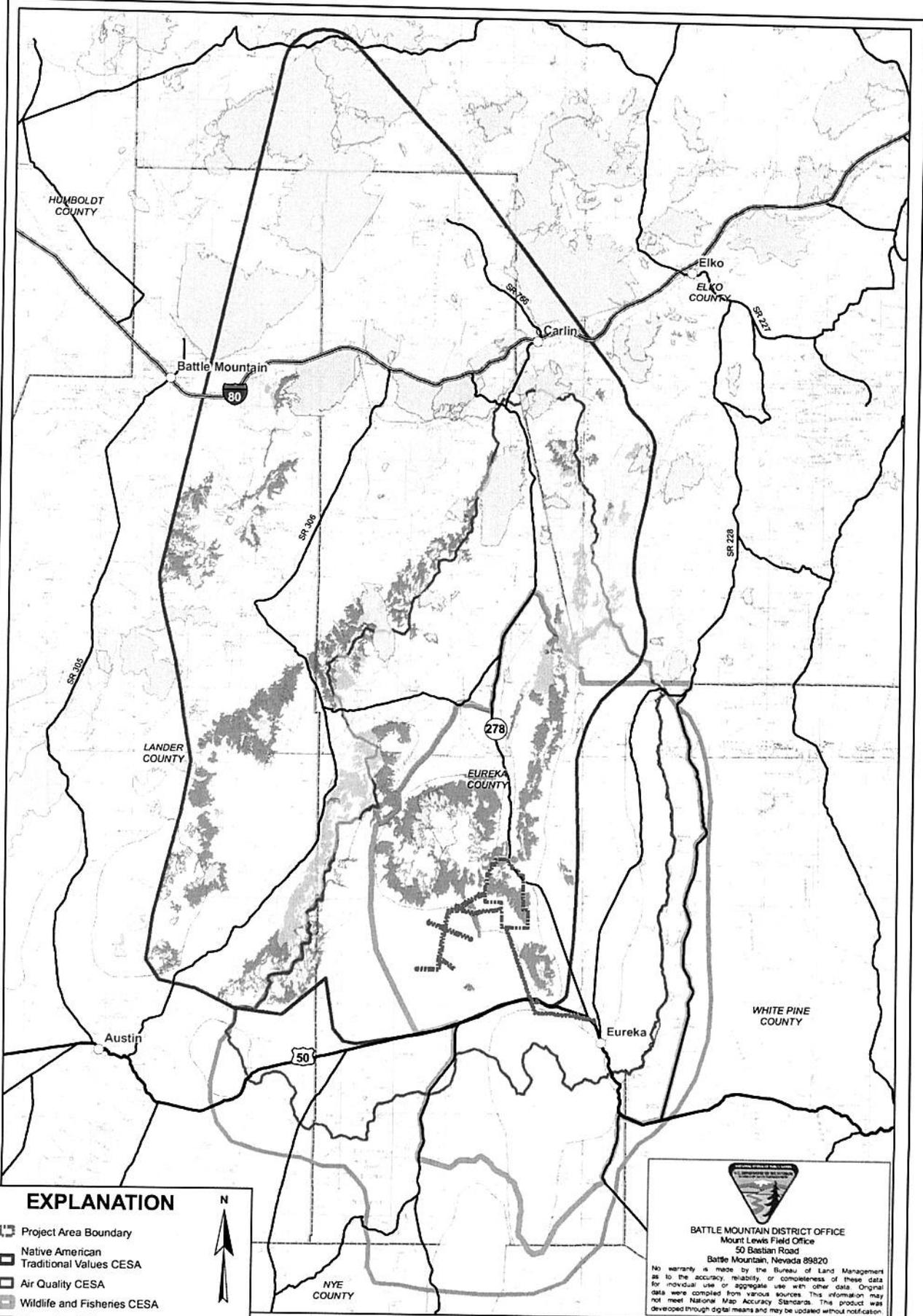
R48E R49E R50E R51E R52E R53E R54E R55E R56E

DESIGN: EMLLC	DRAWN: CVD/GSL	REVIEWED: RFD
CHECKED: -	APPROVED: RFD	DATE: 08/08/2012
FILE NAME: p1635_Fig4-3-2_RangelandLanduse.mxd		

BUREAU OF LAND MANAGEMENT
MOUNT HOPE PROJECT

DRAWING TITLE:
Rangeland Improvements and Land Use Authorizations
Figure 4.3.2





EXPLANATION

- Project Area Boundary
- Native American Traditional Values CESA
- Air Quality CESA
- Wildlife and Fishenes CESA
- Recreation CESA
- Wildland Fire Activity (1999-2010)
- Piñon/Juniper Woodland
- Piñon Woodland
- Commercial Pine Nut Harvest Areas



DESIGN: EMLLC	DRAWN: CVD/GSL	REVIEWED: RFD
CHECKED: -	APPROVED: RFD	DATE: 08/01/2012
FILE NAME: p1635_Figs-3-3_PyrorVegInNativeAmericanCESA.mxd		



BATTLE MOUNTAIN DISTRICT OFFICE
 Mount Lewis Field Office
 50 Bastian Road
 Battle Mountain, Nevada 89820

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. The product was developed through digital means and may be updated without notification.

BUREAU OF LAND MANAGEMENT
MOUNT HOPE PROJECT

DRAWING TITLE:
Piñon-Juniper Vegetation Communities, Areas of Commercial Pine Nut Harvesting, and Wildland Fire Activity within the Native American Traditional Values CESA

Figure 4.3.3

Gravel and minor county roads are located throughout Eureka County and the surrounding counties in the CESAs and total approximately 750 miles (1,818 acres). There are an undetermined number of miles of dirt roads on public lands and NFS lands located within the CESAs in Eureka County and the surrounding counties.

Two major transmission powerlines are located in Eureka County, distributing power in the State of Nevada as part of the power grid. One is the Falcon-Gondor line that travels from north of Beowawe, Nevada, through the Project Area to U.S. Highway 50 and then east to Ely, Nevada. The other main line is an east-west line that parallels U.S. Highway 50. In addition, there are power distribution lines in Diamond Valley and Eureka. A powerline from Crescent Valley travels south to the Tonkin Springs Mine and then to the southwestern edge of the Roberts Mountains. Based on aerial photo review available from Google Earth™, there are approximately 282 miles (3,418 acres) of transmission lines in the CESAs. In addition, numerous lower voltage distribution lines provide power to two communities, ranches, and commercial activities located throughout Diamond and Kobeh Valleys. These lower voltage lines have not been specifically inventoried.

Within the CESAs, the BLM has issued approximately 375 authorizations for the development of telephone and fiber optic lines, powerlines, communication sites, pipelines, weather stations, global positioning system (GPS) sites, and wells. Figure 4.3.2 identifies the number of authorizations by Township within the CESAs.

The Town of Eureka and the Devil's Gate General Improvement District in Diamond Valley have a community water supply system, which is supplied primarily from ground water wells in Diamond Valley, as well as springs in the Pinto Summit area. There are currently approximately 1,700 afy of water rights that are designated for municipal use. There are small water supply systems at the Ruby Hill Mine and the Devils Gate Area in Diamond Valley, at Tonkin Springs in Pine Valley, and the City of Carlin. All other potable water within the CESAs is provided by individual domestic wells.

There are two major travel routes within the CESAs: U.S. Highway 50 and SR 278. As discussed above, there are a number of county roads within the CESAs. Based on data provided by the NDOT, SR 278 has approximately 580 daily trips within Diamond Valley, and approximately 270 of these trips continue north into Pine Valley and the remainder appear to be confined to Diamond Valley. U.S. Highway 50 appears to have 760 daily trips west of Eureka. Traffic around Eureka on U.S. Highway 50 east of the junction with SR 278 increases to 1,150 daily trips and in Eureka the daily trips increase to 1,950. Traffic on U.S. Highway 50 east of Eureka decreases to 560 daily trips. It is reasonable to assume that there are undocumented daily traffic trips on the county roads that are not represented in the traffic data from the NDOT.

4.3.2.2 Reasonably Foreseeable Future Actions

Development of additional roads is reasonable to anticipate; however, these roads are likely to be dirt roads created by recreational use of the public lands in the CESAs. The Town of Eureka is planning to expand beyond its current limits of development. Need for new transmission lines within this portion of the State of Nevada is not anticipated; however, it is reasonable to expect that additional distribution lines would be constructed.

It is reasonable to expect that traffic would increase in volume on the two major travel routes (U.S. Highway 50 and SR 278) in the CESAs, as well as on the other county roads in proportion to an expected increase in economic activity and population growth.

Wind power generation projects are considered RFFAs. These types of projects could be developed in the Diamond Mountains. Wind power generation projects generally require the installation of a number of wind turbines mounted on towers that range from 100 to 300 feet tall. The turbines are connected to the utility grid with transmission lines that are generally above ground. In addition, a network of roads is necessary for construction and maintenance of the turbines. The land around the turbines is generally fenced to limit public access and use, primarily for safety reasons. An area of up to 640 acres may be fenced.

4.3.3 Wildland Fires, Fuels Management, and Reseeding

4.3.3.1 Past and Present Actions

Wildland fires within the Battle Mountain District burned an average of approximately 5,900 acres per year over the ten-year period from 1988 to 1998, with an average of 33 fires per year. The 1999 fire season far exceeded these averages, with 84 wildland fires burning 274,500 acres. During the 2000 fire season, 71 wildland fires burned 7,440 acres.

There are 15 fire management units (FMUs) located within or overlapping the CESAs, which includes the Battle Mountain District and Elko Districts: Antelope Range; Battle Mountain; Big Smoky; Carico Lake; Charleston; Cortez; Crescent Valley; Diamond Mountains; Eureka/Diamond Valley; Fish Creek Range/Shoshone Mountains; Monitor/Smoky; Reese River/Grass Valley; Roberts; 3 Bars; and Tuscarora. Between 2001 and 2008, 79 wildland fires within the 15 FMUs burned 402,418 acres within the CESAs (Figure 4.3.3). A majority of the wildland fires were caused by lightning and are located in the northern portion of the Native American Traditional Values CESA. In addition, a few wildland fires occurred in the northern portion of the Water and Air CESAs, and the western margin of the Native American Traditional Values CESA. A total of 3,289 acres were seeded within the 2006 and 2007 burned areas in the CESAs within the MLFO.

In addition to the wildland fires, there have been a number of vegetation treatments or fuels reduction projects in the CESAs. These projects include the Red Hills Hazardous Fuels Reduction Project, the Tonkin Hazardous Fuels Reduction Project, the Seven Mile Hazardous Fuels Reduction Project (Phase I and II), the Eureka-South Diamond Wildland Urban Interface/Fire Defense Systems Project, and the North Diamond Allotment Vegetation Treatment.

The Red Hills project area encompasses 3,671 acres. When complete, this project will have resulted in broadcast prescribed fire on a total of 1,700 to 2,537 acres (46 to 70 percent of the Red Hills project area), up to 100 acres treated by pile or slash burning, and up to 400 acres treated utilizing mechanical methods.

The Decision Record for the Sulphur Springs Project was signed on September 17, 2009. This project will be implemented in phases and will not treat more than 2,000 acres per year over the life of the project. The project will treat 500 to 1,000 acres of piñon-juniper and sagebrush

vegetation with prescribed fire in a mosaic pattern, and treat 6,000 to 7,000 acres of piñon-juniper and sagebrush vegetation with mechanical methods (i.e., chainsaw, mastication, mowing, chipping) to create fuel breaks.

The Tonkin project encompasses 2,400 acres in the Tonkin Springs area at the northeast end of the Simpson Park Mountains. Approximately 200 acres of sagebrush habitat have been treated by mowing to create fuel breaks using a rotary mower towed by a tractor or a bull-hog. An additional 800 acres of piñon-juniper area have been thinned using chainsaws, a bull-hog, or a feller/buncher. The activity fuels generated by thinning the piñon-juniper were made available for firewood and fence posts. Any activity fuels that were not disposed of in this manner were either chipped or disposed of through pile burning. The footprint for pile burning did not exceed 200 acres.

The Seven Mile project is located approximately 30 miles southwest of Eureka, Nevada, on public lands administered by the MLFO and NFS lands administered by the USFS. The first phase of the project implemented various fuels management methods and techniques to create a series of fuel breaks. Up to approximately 3,323 acres were treated within the project area. The fuel breaks range in size from 131 acres to 570 acres. The second phase of the project is ongoing and consists of prescribed burning a maximum of 2,000 acres of BLM-administered land and 10,000 acres of NFS land annually. In addition, the BLM is also conducting nonfire preparatory treatment on 100 to 500 acres annually. Over the duration of the project, a maximum of approximately 18,794 acres will be treated on the BLM-administered lands and up to approximately 22,190 acres will be treated on the NFS lands for a maximum total of approximately 40,984 acres.

The Eureka-South Diamond Valley project is ongoing with up to 2,087 acres within the 7,400-acre project area to be treated utilizing various methods which include the following: high intensity low frequency grazing; green stripping (chipping or cutting and removing fuels); and mechanized or manual fuels removal using a feller/buncher or chainsaw.

The Northwest Diamond Valley project consists of five areas that measure 1,200 acres each. Treatments include reseeding burned areas, thinning, mowing, and reseeding sagebrush utilizing mechanical and chemical methods. The treatment area totals 6,000 acres for this project.

Approximately 2,000 acres of piñon-juniper were treated in the Willow and Vinini Creek drainages and the Henderson Summit area by the Bootstraps crew in 2008 and 2009 (BLM 2007). Under the Sulphur Springs Hazardous Fuels Reduction Project up to 3,000 acres of piñon-juniper will be removed or thinned and approximately 1,000 acres of greenwood will be cut at a rate of approximately 100 acres per year (BLM 2009).

4.3.3.2 Reasonably Foreseeable Future Actions

Fire suppression and treatments would continue to be an important component of land management within the CESAs as wildland fires are expected to continue. Wildland fires are expected to occur within the 15 FMUs and are likely to include areas previously burned and seeded. RFFAs also include additional fuels treatment projects, which have been proposed as outlined below.

Henderson-Romano Project:

- Treat 12,700 to 22,200 acres of piñon-juniper-sagebrush vegetation with prescribed fire in a mosaic pattern; and
- Treat up to 1,000 acres of piñon-juniper-sagebrush vegetation with mechanical methods (i.e., chainsaw, mastication, mowing, chipping) to create fuel breaks.

Henderson Creek Project:

- Treat up to 1,000 acres of piñon-juniper-sagebrush vegetation with mechanical methods (i.e., chainsaw, mastication) to create fuel breaks.

Mahogany Hills-Spring Valley:

- Treat 8,400 to 19,500 acres of piñon-juniper-sagebrush vegetation with prescribed fire in a mosaic pattern; and
- Treat up to 2,000 acres of piñon-juniper-sagebrush vegetation with mechanical methods (i.e., chainsaw, mastication, mowing, chipping) to create fuel breaks.

Fenstermaker Wash Project:

- Treat 14,000 to 33,500 acres of piñon-juniper-sagebrush vegetation with prescribed fire in a mosaic pattern; and
- Treat up to 2,000 acres of piñon-juniper-sagebrush vegetation with mechanical methods (i.e., chainsaw, mastication, mowing, chipping) to create fuel breaks.

It is reasonable to expect that future commercial pine nut harvesting would continue to be sporadic based on the trees' production of cones and nuts.

It is reasonable to expect that the BLM and local fire districts would conduct fire suppression activities when wildland fires occur. The scale and scope of those activities would be proportional to the size of the wildland fire and proximity to structures.

4.3.4 Habitat Stabilization, Rehabilitation, and Wild Horse Management Activities

4.3.4.1 Past and Present Actions

Past wildlife management actions have focused on the enumeration of wildlife game species and the management of these species for harvest.

The BLM Tuscarora Field Office has initiated activities to complete stream restoration projects on Trout Creek and Pine Creek.

The Pine Creek restoration project was conducted in 1992 and 1993 and included the reach from the Rand Ranch upstream to the confluence with Trout Creek. Head gates were installed, portions of the stream were fenced, and culverts were installed. The area involved in the restoration project has been recolonized by willows and the area is now stable. The cattle are allowed in the excluded area during the frozen winter months to feed. The cattle are limited in the amount of time spent in the riparian area. Wildland fires burned the riparian area during the 2007 fire season.

The Trout Creek restoration project was conducted in the mid-1980s and included four exclosures in the middle and upper reaches of Trout Creek. Trout Creek supports Lahontan cutthroat trout/rainbow trout hybrids. In 2002, the BLM constructed an additional exclosure along the lower reaches as part of an effort to protect areas seeded following the Bailey Fire. In 2004, the BLM completed fencing segments between the exclosures in an effort to create a riparian pasture. Other habitat restoration activities included the planting of mountain alder (*Alnus* sp.), aspen, and chokecherry along the stream channel in the four exclosures between 1994 and 2000.

The Willow Creek Canyon project would involve the removal of piñon and juniper trees over a 2,000-acre area within the Willow Creek drainage. Most trees that would be cut would be less than 12 feet high and six inches in diameter at breast height. The cut trees would be left where they are felled.

Within the Immediate Watershed CESA there are six areas that total approximately 21 acres of identified weeds that have been chemically treated and are monitored.

The Roberts Mountain Allotment exclosure consists of fencing along a four-mile stretch of Roberts Creek and associated riparian area in the southeast quarter of Section 35, T23N, R50E. The exclosure was constructed in 1990, and maintenance was last completed in 2004.

The 3 Bars East Range Exclosure consists of fencing that was completed in 1967 in Sections 22, 27, and 34, T23N, R49E, and Sections 4 and 9, T22N, R49E.

The Roberts Mountain WSA rehabilitation would involve the reclamation of unauthorized land uses within the WSA. This reclamation would include, but not be limited to, recontouring, scarification, and barricading of incursions and inventoried routes.

BLM wildlife management objectives in the 31 allotments that overlap with the wildlife, special status species, and migratory birds CESA are specifically defined in the Shoshone-Eureka, Egan, and Elko Rangeland Program Summaries (RPSs) and are outlined in Table 4.3-1. Within the wildlife, special status species, and migratory birds CESA, a short-term goal is to improve 867 acres of big game habitat to good condition. An overall objective is to manage rangeland habitats to maintain or enhance greater sage-grouse leks and nesting areas.

Four wild horse gathers have been completed within the Roberts Mountain HMA in 1987, 1995, 2001, and 2008. Prior to 2008, no formal gathers of wild horses had been conducted within the Whistler Mountain HMA by the BLM. In 2001, drought stressed horses were removed from the Whistler Mountain HMA in conjunction with the Roberts Mountain gather. The Kobeh Valley area outside the Fish Creek HMA was also gathered in 1994. Gathers of the Kobeh Valley outside the Fish Creek HMA were also completed in 2008.

Table 4.3-1: Summary of Allotments within the Wildlife, Special Status Species, and Migratory Birds Cumulative Effects Study Areas

Allotment ¹	Field Office	Active Livestock Use (AUMs) ⁴	Wildlife Use (AUMs)	Wildlife Management Objectives
Fish Creek Ranch (I)	ML	4,013	2,441	Utilization of riparian habitat to be improved would not exceed 50 percent of key species ² . In the short term, improve 322 acres of riparian habitat in the allotment to good condition. Utilization of key browse species not to exceed 50 percent in terrestrial big game habitat areas ^{2,3} . In the long term, provide habitat to support 3,199 AUMs of big game use, in conformance with other objectives of the RMP. Manage rangeland to maintain or enhance greater sage-grouse strutting and nesting areas, in conformance with other objectives of the RMP.
Arambel (C)	ML	1,349	1,400	Utilization of key browse species not to exceed 50 percent in terrestrial big game habitat areas ^{2,3} . In the long term, increase big game habitat to support 1,450 AUMs of big game use, in conformance with other objectives of the RMP. Manage rangeland to maintain or enhance greater sage-grouse strutting and nesting areas, in conformance with other objectives of the RMP.
Ruby Hill (M)	ML	1,286	82	Utilization of key browse species not to exceed 50 percent in terrestrial big game habitat areas ^{2,3} . In the long term, provide habitat to support 85 AUMs of big game use, in conformance with other objectives of the RMP. Manage rangeland to maintain or enhance greater sage-grouse strutting and nesting areas, in conformance with other objectives of the RMP.
Shannon Station (I)	ML	3,167	1,391	Utilization of key browse species not to exceed 50 percent in terrestrial big game habitat areas ² . In the long term, provide habitat to support 1,135 AUMs of big game use, in conformance with other objectives of the RMP. In the long term, within the Diamond Hills Habitat Management Plan (HMP) Area, improve 3,656 acres of terrestrial big game habitat to good, and 199 acres to excellent condition. Manage for upward trends on 4,021 acres ³ . Manage rangeland to maintain or enhance greater sage-grouse strutting and nesting areas, in conformance with other objectives of the RMP.
Silverado	EG	338	0	None.
Newark	EG	4,885	1,262	Protect greater sage-grouse breeding complexes by maintaining the big sagebrush sites within two miles of active strutting grounds for mid to late seral stage with a minimum of 30 percent shrub composition by weight. Protect ferruginous hawk nest sites by limiting utilization to 50 percent on winterfat flats within two miles of nest sites. Maintain habitat condition of meadows and riparian areas in good or better condition for mule deer and upland game by not exceeding utilization levels on perennial grasses (55 percent) and shrubs (45 percent) along streams and mesic meadows. Improve 3.5 miles of stream riparian habitat from poor/fair to good or better condition.
Strawberry	EG	1,032	0	None.

Allotment ¹	Field Office	Active Livestock Use (AUMs) ⁴	Wildlife Use (AUMs)	Wildlife Management Objectives
Warm Springs	EG	7,744	10,284	<p>Improve and maintain habitat condition of meadows and riparian areas from poor to good or better condition for mule deer and upland game. Utilization levels will not exceed 55 percent on perennial grasses and 45 percent on shrubs along stream riparian areas and mesic meadows. Limit utilization of browse species in critical deer winter range to a maximum of 45 percent of current annual growth.</p> <p>Protect greater sage-grouse breeding complexes by maintaining the big sagebrush sites within two miles of active strutting grounds for mid to late seral stage with a minimum of 30 percent shrub composition by weight.</p> <p>Protect ferruginous hawk nest sites by limiting utilization to 50 percent on winterfat flats within two miles of nest sites.</p> <p>Improve three miles of stream riparian habitat condition from poor/fair to good or better (Deadman and Old Deadman Creeks).</p>
Cold Creek	EG	5,094	832	<p>Maintain habitat condition of meadows and riparian areas from poor to good or better condition for mule deer and upland game by not exceeding utilization levels on perennial grasses (55 percent) and shrubs (45 percent) along stream riparian areas and mesic meadows.</p> <p>Protect greater sage-grouse breeding complexes by maintaining the big sagebrush sites within two miles of active strutting grounds for mid to late seral stage with a minimum of 30 percent shrub composition by weight.</p> <p>Protect ferruginous hawk nest sites by limiting utilization to 50 percent on winterfat flats within two miles of nest sites.</p> <p>Maintain and improve 9.25 miles of stream riparian habitat to good or better condition.</p>
North Springs	ML			Part of Three-Mile in the RPS.
Willow Racetrack (M)	ML	250	0	None.
Railroad Pass	EG	1,364	682	<p>Maintain habitat condition of meadows and riparian areas in good or better condition for mule deer and upland game.</p> <p>Protect greater sage-grouse breeding complexes by maintaining the big sagebrush sites within two miles of active strutting grounds for mid-late seral stage with a minimum of 30 percent shrub composition by weight.</p> <p>Protect ferruginous hawk nest sites by limiting utilization to 50 percent on winterfat flats within two miles of nest sites.</p> <p>Maintain 0.25 mile of stream riparian in good or better condition.</p>
Corta	ML			Managed with the Railroad Pass Allotment.

Allotment ¹	Field Office	Active Livestock Use (AUMs) ⁴	Wildlife Use (AUMs)	Wildlife Management Objectives
Diamond Springs (I)	ML	3,179	1,433	Utilization of riparian habitat to be improved would not exceed 50 percent on key species ² . In the short term improve 69 acres within the Diamond Hill HMP Area to good condition. Utilization of key browse species not to exceed 50 percent in terrestrial big game habitat areas ² . In the long term, provide habitat to support 1,158 AUMs of big game use, in conformance with other objectives of the RMP. In the long term, within the Diamond Hills HMP Area, improve 3,136 acres of terrestrial big game habitat to good and 523 acres to excellent condition. Manage upward trends on 3,920 acres ³ . In the short term, within the Diamond Hills HMP Area, improve 35 acres of riparian/waterfowl habitat to good condition ³ . In the long term, within the Diamond Hills HMP Area, improve 40 acres of riparian/waterfowl habitat to good condition ³ . Manage rangeland to maintain or enhance greater sage-grouse strutting and nesting areas, in conformance with other objectives of the RMP.
Union Mountain (I)	TU	1,488	469	Manage rangeland habitat and forage condition to support 1,110 AUMs for reasonable numbers of mule deer. Maintain or improve to at least good condition all mule deer crucial habitat. Manage rangeland to protect or enhance crucial greater sage-grouse strutting or nesting habitat. Improve and maintain meadow and riparian areas for mule deer and greater sage-grouse. Utilization levels will not exceed 50 percent on meadow and riparian areas.
Bruffy (I)	TU	1,731	231	Manage rangeland habitat and forage condition to support 460 AUMs for reasonable numbers of mule deer. Maintain or improve to at least good condition all mule deer crucial habitat. Manage rangeland to protect or enhance crucial greater sage-grouse strutting or nesting habitat. Improve and maintain meadow and riparian areas for mule deer and greater sage-grouse. Utilization levels will not exceed 30 percent on meadow and riparian areas.
Mineral Hill (I)	TU	1,555	137	Manage rangeland habitat and forage condition to support 276 AUMs for reasonable numbers of mule deer. Maintain or improve to at least good condition all mule deer crucial habitat. Manage rangeland to protect or enhance crucial greater sage-grouse strutting or nesting habitat. Improve and maintain meadow and riparian areas for mule deer and greater sage-grouse. Utilization levels will not exceed 50 percent on meadow and riparian areas.
Flynn/Parman (I)	ML	1,399	582	Utilization of key browse species not to exceed 50 percent in terrestrial big game habitat areas ^{2,3} . In the long term, provide habitat to support 565 AUMs of big game use, in conformance with other objectives of the RMP. Manage rangeland to maintain or enhance greater sage-grouse strutting and nesting areas, in conformance with other objectives of the RMP.

Allotment ¹	Field Office	Active Livestock Use (AUMs) ⁴	Wildlife Use (AUMs)	Wildlife Management Objectives
JD (M)	ML	8,200	594	Fenced riparian habitat along Tonkin Creek will receive no utilization. In the short term, improve 0.8 mile of riparian/aquatic habitat to good condition on Tonkin Creek including ten acres of riparian habitat. Utilization of key browse species not to exceed 50 percent in terrestrial big game habitat areas ^{2,3} . In the long term, provide habitat to support 1,289 AUMs of big game use, in conformance with other objectives of the RMP. Manage rangeland to maintain or enhance greater sage-grouse strutting and nesting areas, in conformance with other objectives of the RMP.
Roberts Mountain (I)	ML	13,238	1,735	Utilization of riparian habitat to be improved would not exceed 50 percent on key species ² . In the short term, improve 15 miles of riparian or aquatic habitat to good condition on the following streams: seven miles of Roberts Creek; five miles of Vinini Creek; and three miles of Henderson Creek, including 180 acres of associated riparian habitat and 43 acres of other riparian habitat in the allotment. Utilization of key browse species not to exceed 50 percent in terrestrial big game habitat areas ² . In the long term, provide habitat to support 2,450 AUMs of big game use, in conformance with other objectives of the RMP. Manage rangeland to maintain or enhance greater sage-grouse strutting and nesting areas, in conformance with other objectives of the RMP. In the long term, within the Roberts Mountain HMP Area, improve 9,850 acres of terrestrial big game habitat to good and 473 acres to excellent condition. Stop downward trends on 3,256 acres and manage for upward trends on 10,811 acres ³ .
North Diamond (C)	ML	4,151	436	Utilization of key browse species not to exceed 50 percent in terrestrial big game habitat areas ^{2,3} . In the long term, provide habitat to support 423 AUMs of big game use, in conformance with other objectives of the RMP. Manage rangeland to maintain or enhance greater sage-grouse strutting and nesting areas, in conformance with other objectives of the RMP.
Three Mile (I)	ML	1,001	496	Utilization of key browse species not to exceed 50 percent in terrestrial big game habitat areas ² . In the long term, provide habitat to support 401 AUMs of big game use, in conformance with other objectives of the RMP. In the long term, within the Diamond Hills HMP Area, improve 2,004 acres of terrestrial big game habitat to good, and 23 acres to excellent condition. Stop downward trends on 466 acres and manage for upward trends on 2,097 acres ³ . Manage rangeland to maintain or enhance greater sage-grouse strutting and nesting areas, in conformance with other objectives of the RMP.
Romano (I)	ML	2,887	519	Utilization of key browse species not to exceed 50 percent in terrestrial big game habitat areas ^{2,3} . In the long term, provide habitat to support 533 AUMs of big game use, in conformance with other objectives of the RMP. Manage rangeland to maintain or enhance greater sage-grouse strutting and nesting areas, in conformance with other objectives of the RMP.

Allotment ¹	Field Office	Active Livestock Use (AUMs) ⁴	Wildlife Use (AUMs)	Wildlife Management Objectives
Black Point (I)	ML	4,633	2,450	Utilization of riparian habitat to be improved would not exceed 30 percent on key species ² . In the short term, improve 5.4 miles of riparian/aquatic habitat to good condition on the following streams: 3.2 miles of Cottonwood Creek; and 2.2 miles of Hildebrand Creek, including 65 acres of associated riparian habitat and 100 acres of other riparian habitat in the allotment. Utilization of key browse species not to exceed 50 percent in terrestrial big game habitat areas ² . In the long term, provide habitat to support 1,979 AUMs of big game use, in conformance with other objectives of the RMP. In the long-term, within the Diamond Hills HMP Area, improve 8,246 acres of terrestrial big game habitat to good and 375 acres to excellent condition. Manage for upward trends on 8,996 acres ³ . Manage rangeland to maintain or enhance greater sage-grouse strutting and nesting areas, in conformance with other objectives of the RMP.
Spanish Gulch	ML			Managed with Shannon Station.
Lucky C (C)	ML	3,054	570	Utilization of key browse species not to exceed 50 percent in terrestrial big game habitat areas ^{2,3} . In the long term, provide habitat to support 673 AUMs of big game use, in conformance with other objectives of the RMP. Manage rangeland to maintain or enhance greater sage-grouse strutting and nesting areas, in conformance with other objectives of the RMP.
Santa Fe/ Ferguson (I)	ML	2,365	38	Utilization of key browse species not to exceed 50 percent in terrestrial big game habitat areas ² . In the long term, provide habitat to support 285 AUMs of big game use, in conformance with other objectives of the RMP. In the long term, within the Simpson Park HMP Area, improve 4,904 acres of terrestrial big game habitat to good and 157 acres to excellent condition. Stop downward trends on 1,308 acres and manage for upward trends on 5,257 acres ³ . Manage rangeland to maintain or enhance greater sage-grouse strutting and nesting areas, in conformance with other objectives of the RMP.
3 Bars (I)	ML	4,589	1,000	Fenced meadows will receive no livestock utilization until the riparian habitat has achieved good condition. Thereafter, utilization not to exceed 35 percent on sedge and grasses along the stream bank. Utilization of unfenced riparian habitat to be improved and managed for good condition is 50 percent or less on key species ² . In the short term, improve and maintain in good condition 78 acres of riparian habitat. Utilization of key browse species not to exceed 50 percent in terrestrial big game habitat areas ² . In the long term, provide habitat to support 1,415 AUMs of big game use, in conformance with other objectives of the RMP. In the long term, within the Simpson Park HMP Area, improve 1,724 acres of terrestrial big game habitat to good, and 83 acres to excellent condition. Stop downward trends on 570 acres and manage for upward trends on 1,893 acres ³ . In the long term, within the Roberts Mountain HMP Area, improve 5,075 acres of terrestrial big game habitat to good and 243 acres to excellent condition. Stop downward trends on 1,678 acres and manage for upward trends on 5,570 acres ³ . Manage rangeland to maintain or enhance greater sage-grouse strutting and nesting areas, in conformance with other objectives of the RMP.

Allotment ¹	Field Office	Active Livestock Use (AUMs) ⁴	Wildlife Use (AUMs)	Wildlife Management Objectives
Duckwater (I)*	EG	7,415	1,753	Manage rangeland habitat and forage condition to support reasonable numbers of wildlife as follows: deer 2,313 AUMs; and antelope 510 AUMs. Maintain or improve mule deer and antelope habitats to good or better condition. Improve and maintain habitat condition of meadow and riparian areas in poor/good condition to good or better for pronghorn antelope, mule deer, and upland game. Utilization levels will not exceed 55 percent on perennial grasses and grass-like species and 45 percent on shrubs along stream riparian areas and mesic meadows. Protect greater sage-grouse breeding complexes. Protect ferruginous hawk nest sites.
South Buckhorn (I)*	TU	7,497	566	Manage rangeland habitat and forage condition to support 2,058 AUMs for reasonable numbers of mule deer. Maintain or improve to at least good condition all mule deer crucial habitat. Manage rangeland to protect or enhance crucial greater sage-grouse strutting or nesting habitat. Improve and maintain meadow and riparian areas for mule deer and greater sage-grouse. Utilization levels will not exceed 50 percent on meadow and riparian areas.
Willow Ranch (M)*	ML	3,621	8	In the long term, provide habitat to support 159 AUMs of big game use, in conformance with other objectives of the RMP. Manage rangeland habitat to maintain or enhance greater sage-grouse strutting and nesting areas, in conformance with other objectives of the RMP.
Totals		102,525	31,391	

1 - Parenthetical after allotment name refers to BLM condition: I - improve the current unsatisfactory condition; M - maintain the current satisfactory condition; C - manage in a custodial fashion. ML = Mount Lewis Field Office; EG = Egan Field Office; TU = Tuscarora Field Office.

2 - Utilization limits refer to use by all herbivores. The utilization limits alone may only maintain existing conditions, but when coupled with other management practices, such as deferment and rest rotation grazing, are expected to allow for improvement of conditions.

3 - For those acres not identified for improvement, ecological conditions, wildlife habitat, and wild horse and burro habitat will be managed to prevent downward trends.

4 - AUMs were compiled from BLM FMUD and BLM grazing permits.

* - The asterisk identifies those allotments for which less than approximately one percent of the allotment is within the wildlife, special status species, and migratory birds CESA.

As noxious weed infestations are identified and determined a priority, the BLM and the Eureka County Weed District conduct weed control activities in the form of chemical treatment (Figure 4.3.4).

4.3.4.2 Reasonably Foreseeable Future Actions

The 3-Bars Ecosystem and Landscape Restoration Project is a landscape scale restoration project that seeks to restore and enhance key vegetative communities, ecosystem functionality, and reduce fire risk over a 750,000-acre portion of central Eureka County. The need for change has been identified and documented using an interdisciplinary approach. Many factors have

contributed to the overall decline of the 3 Bars ecosystem. Collectively, these factors incrementally increased the risk of loss of important ecosystem components. These components include the following: wildlife and habitat components; woodland and rangeland values; wetland and riparian components; as well as the integrated components that define Native American Traditional Values and cultural resource significance. Treatments would be proposed that address multiple objectives with multiple resource benefits. Treatments would potentially use a combination of passive, mechanical, chemical methods as well as prescribed fire applications to meet predetermined resource objectives. **An Administrative Draft EIS is expected, at the present time, in the third quarter of 2012 for the 3 Bars project.**

It is reasonable to assume that weed identification, treatment, and monitoring would continue within the Immediate Watershed CESA.

Within the wildlife, special status species, and migratory birds CESA, as identified in the Shoshone-Eureka, Egan, and Elko RPSs and outlined in Table 4.3-1, a long-term goal is to increase AUMs available to wildlife by 5,601 AUMs and to improve 34,939 acres of big game habitat to good condition and 1,877 acres to excellent condition. Another long-term goal is to stop the downward trend on 7,278 acres and manage for upward trends on 38,544 acres.

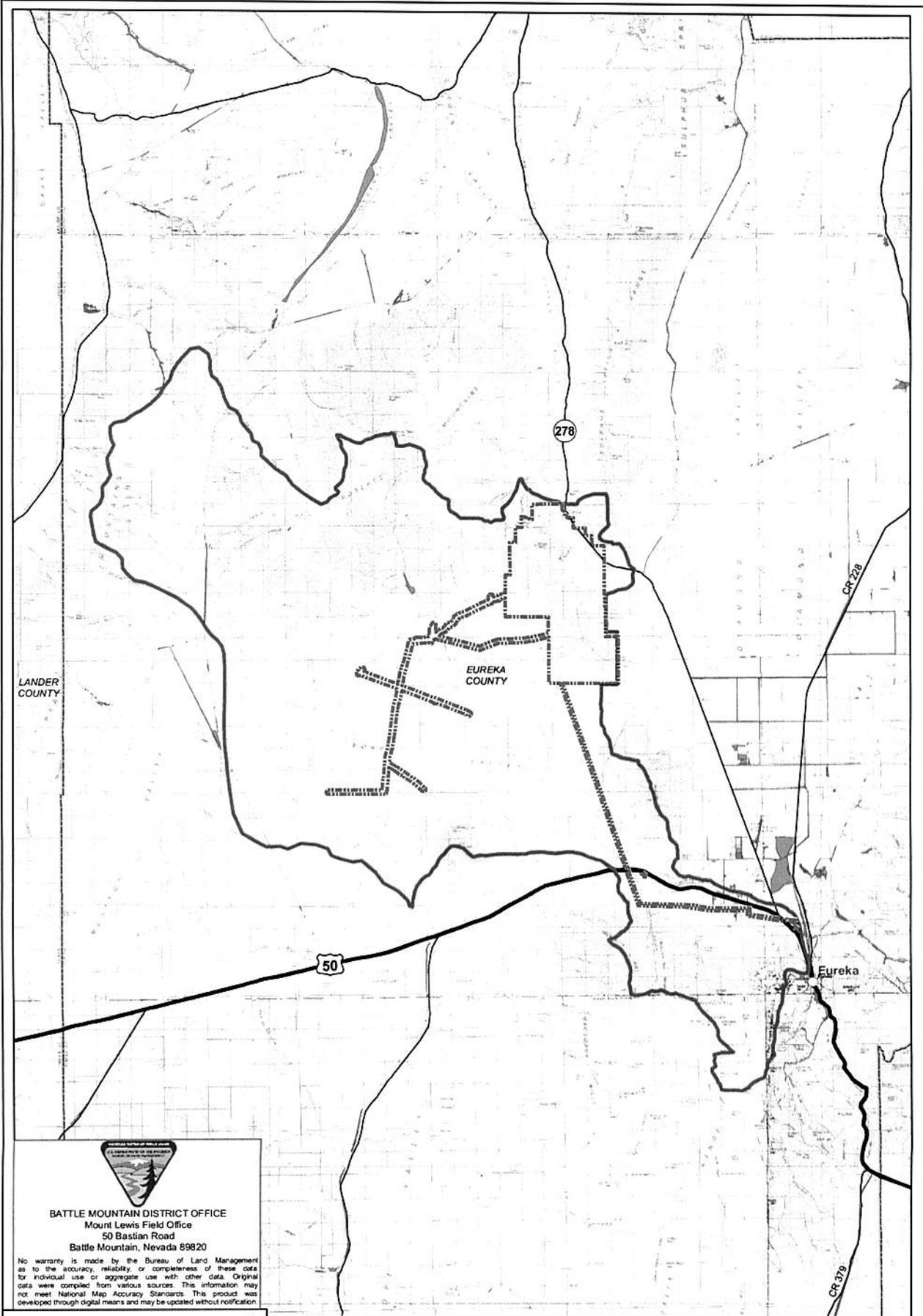
It is reasonable to expect that the BLM would continue wild horse management activities in the form of gathers, AML review and adjustment, and implementation of habitat improvement projects.

4.3.5 Recreation

4.3.5.1 Past and Present Actions

Dispersed recreation opportunities include sightseeing, pleasure driving, rock collecting, photography, winter sports, OHV use, mountain biking, picnicking, camping, fishing, hunting, and hiking. This wide range of opportunities is possible because virtually all of the public lands in the CESAs are accessible and offer a variety of settings suitable for different recreational activities. Developed recreational facilities are located at the Hickison Petroglyph Recreation Site, which is located approximately 24 miles east of Austin, Nevada, along U.S. Highway 50. The opportunities include petroglyph viewing, hiking, picnicking, hunting, horseback riding, and camping. Originally developed in 1968, the site has 16 camp sites, four picnic sites, three restrooms, and a 0.3 mile interpretive trail. One to five special recreation permits are approved each year. The majority of special recreation permits are for guided hunts. In addition, there is a Pony Express re-ride each year in June along the Pony Express National Historic Trail.

Dispersed recreational activities have not required major improvements for recreational purposes, as existing roads and trails are the primary facilities associated with these activities. Surface disturbance has occurred as a result of recreation activities and is either accounted for under other categories or the disturbance has not been quantified. There are three reservoirs in Pine Valley (Tonkin, Lower Tonkin, and JD), which total 60 acres and are on private and public lands.




BATTLE MOUNTAIN DISTRICT OFFICE
 Mount Lewis Field Office
 50 Bastian Road
 Battle Mountain, Nevada 89820

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

EXPLANATION

-  Project Area Boundary
-  Invasive Non-Native Species CESA
-  Weed Treatment Areas



0 1 2 4 6 8 Miles

DESIGN: EMLLC	DRAWN: CVD/GSL	REVIEWED: RFD
CHECKED: []	APPROVED: RFD	DATE: 08/01/2012
FILE NAME: p1635 Fig4-3-4 NoxiousWeeds.mxd		

BUREAU OF LAND MANAGEMENT
MOUNT HOPE PROJECT

DRAWING TITLE
Noxious Weed Occurrences within the Invasive Non-Native Species CESA
 Figure 4.3.4

4.3.5.2 Reasonably Foreseeable Future Actions

Recreational use within the CESA is likely to increase proportionally to changes in population, with dispersed outdoor recreational activities being the predominant type of recreation. In addition, construction is underway to develop a 30- to 50-mile hiker/equestrian trail system in the Simpson Park Range immediately north of the Hickison Petroglyph Recreation Site. An associated trailhead is completed. Equestrian camping facilities are also being contemplated in the area immediately adjacent to the existing campground. The design or layout of these proposed developments has not been developed.

4.3.6 Land Development

4.3.6.1 Past and Present Actions

The Town of Eureka comprises approximately 880 acres. The majority of the town area lies to the west of U.S. Highway 50. In addition, approximately 700 acres have been identified for residential or commercial development in the Diamond Valley area. The Town of Eureka and the Diamond Valley community consist of roads, residences, commercial and public buildings, powerlines, fences, and other related development.

In the current RMP, approximately 23,000 acres within Diamond Valley and the Project Area have been identified for disposal; however, no specific proposals for disposal have been identified.

Currently and in the past there have been minimal industrial activities within the CESAs with the exception of the mineral development activities discussed under Section 4.3.7. **There are also cement batch plants in the Town of Eureka and Diamond Valley.**

4.3.6.2 Reasonably Foreseeable Future Actions

Future public land sales are considered possible under RFFAs. The BLM is currently evaluating a proposed 150-acre land sale associated with the Ruby Hill Mine. Other potential land sales could include lands associated with community development or specific resource development projects, such as the Proposed Action. Any future land sales that were not within disposal areas identified in the current RMP would be subject to congressional requirements in the implementing legislation. Public lands converted to private ownership would be subject to all applicable state environmental laws. If a land sale involved community development land, there would likely be a future change in use from wildlife habitat to residential and commercial development. If a land sale involved a resource development project, current resource activities would likely continue into the future with possible expansion. Long-term use of the land after the resource activity has been completed may be an activity or use other than livestock grazing and production and wildlife habitat, which would be the use if the land remained under BLM management. Long-term use of privatized land would be subject to any covenants agreed to at the time of sale. There is potential for the development of a residential area on private land in Kobeh Valley at the Bartine Ranch and in Pine Valley at the JD Ranch.

A major portion of the Project Area is identified in the RMP for disposal; therefore, it is reasonable that this portion of the Project Area would become private land through a RFFA by

the BLM to sell the land. Information on areas identified for disposal can be found on the BLM MLFO website (http://www.blm.gov/nv/st/en/fo/battle_mountain_field/blm_programs/planning/resource_management.html).

4.3.7 Mineral Development and Exploration

4.3.7.1 Past and Present Actions

Based on information from the Eureka County and White Pine County reports by the Nevada Bureau of Mines and Geology, there are ten historic mining districts that occur within the geology and minerals CESA in Eureka County: Alpha; Antelope; Diamond; Eureka; Fish Creek; Lone Mountain; Mineral Hill; Mount Hope; Roberts; and Union (Roberts et al. 1967). There is one historic mining district that occurs within the geology and minerals CESA in White Pine County, Newark (Hose and Blake 1976). The Alpha District is located in the Sulphur Springs Range north of the Project Area. It was likely active prior to 1900; however, records indicate a small production of Ag, with Pb, Zn, and Cu between 1909 and 1917. The Antelope District is located on the western flank of the Roberts Mountains and was discovered in the 1860s or 1870s. In 1950 and 1951 production included 261 ounces of Ag, as well as Pb and Zn for a total value of \$25,604 (1952 dollars). The Diamond District is located north of the Town of Eureka on the west flank of the Diamond Mountains and was discovered in 1864. Very limited mining occurred prior to 1936. Between 1936 and 1955, 31 ounces of Au and 51,898 ounces of Ag, as well as Cu, Pb, and Zn were produced for a total value of \$184,520 (1955 dollars).

The Eureka District, which is located in the vicinity of the Town of Eureka, was the most productive district in the area with a total production value of \$122 million (1962 dollars). Production included Au (148,283 ounces), Ag (3,173,838 ounces), Cu (2,079,408 pounds), Zn (14,276.131 pounds), and Pb (60,589,509 pounds).

The Fish Creek District is located southwest of the Town of Eureka in the Fish Creek Range and the Mahogany Hills and was discovered in the late 1800s. Production has been very limited. In 1938, Ag (238 ounces) and Pb were produced at a value of \$400 (1938 dollars). In 1955, Au (233 ounces) and Pb were produced at a value of \$1,239 (1955 dollars).

The Lone Mountain District is located on the north flank of Lone Mountain and was discovered in 1920. Production of Zn (4,952,627 pounds) along with Ag (4,040 ounces), Cu, and Pb from 1938 to 1964 had a value of \$781,102 (1964 dollars).

The Mineral Hill District is located on the northwest flank of the Sulphur Springs Range and was discovered in 1868. Production in the district occurred through 1938 with Au (145 ounces), Ag (71,250 ounces), Cu, Pb, and Zn. The total value of the production was \$2,500,662 (1938 dollars).

The Mount Hope District is located on the southeast flank of Mount Hope and is the location of the Project. The district was discovered in 1870. Production occurred between 1941 and 1947 with the principal product being Zn (10,189,454 pounds), along with Au (83 ounces), Ag (63,697 ounces), Cu (57,675 pounds), and Pb (441,103 pounds). The total value was \$1,335,393 (1947 dollars).