BLM

Sierra Front Field Office, Nevada

FINAL ENVIRONMENTAL ASSESSMENT

American Flat Road/Lucerne Access Right-of-Way Amendment (NVN 091237)

Comstock Mining, LLC

DOI-BLM-NV-C020-2013-0005-EA

U.S. Department of the Interior
Bureau of Land Management
Carson City District
Sierra Front Field Office
5665 Morgan Mill Road
Carson City, NV 89701
775-885-6000

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It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

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LIST OF ACRONYMS AND ABBREVIATIONS

°F	Degrees Fahrenheit
AADT	Average Annual Daily Traffic
$\mu g/m^3$	Micrograms Per Cubic Meter
ACHP	Advisory Council on Historic Preservation
AMSL	Above Mean Sea Level
APE	Area of Potential Effect
BAPC	Bureau of Air Pollution Control
BCA	Bureau of Corrective Actions
BLM	Bureau of Land Management
BMP	Best Management Practice
BMRR	Bureau of Mining Regulation and Reclamation
BWPC	Bureau of Water Pollution Control
CEQ	Council on Environmental Quality
CESA	Cumulative Effects Study Area
CFR	Code of Federal Regulations
CHDC	Comstock Historic District Commission
CO_2	Carbon Dioxide
COT	Color-Of-Title
CRMP	Consolidated Resource Management Plan
CRMS	Carson River Mercury Superfund
FPOD	Final Plan of Development
EA	Environmental Assessment
EO	Executive Order
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
EPM	Environmental Protection Measure
FEA	Final Environmental Assessment
FESA	Federal Endangered Species Act of 1973
GHG	Greenhouse Gas
gpm	Gallons Per Minute
HOM	Houston Oil and Minerals Corp.
HPTP	Historic Properties Treatment Plan
IWMP	Integrated Weed Management Plan
JBR	JBR Environmental Consultants, Inc.
LR2000	Land and Mineral Legacy Rehost 2000 System
MBTA	Migratory Bird Treaty Act of 1918
MSHA	Mine Safety and Health Administration
MOA	Memorandum of Agreement
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
NRCS	National Resources Conservation Service

NRHP	National Register of Historic Places
NRS	Nevada Revised Statutes
OHV	Off-Highway Vehicle
PLSS	Public Land Survey System
$PM_{2.5}$	Particulate Matter with Diameters Less Than or Equal to 2.5 Micrometers
PM_{10}	Particulate Matter with Diameters Less Than or Equal to 10 Micrometers
RFFA	Reasonably Foreseeable Future Action
ROWA	Right-of-Way Amendment
ROW	Right-of-Way
SAP	Sampling and Analysis Plan
SHPO	State Historic Preservation Office
SUP	Special Use Permit
UCMC	United Comstock Mines Company
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service
V&T	Virginia & Truckee
VOC	Volatile Organic Compound
WOUS	Waters of the United States
WPCP	Water Pollution Control Permit
WTNC	Washoe Tribe of Nevada and California
YPT	Yerington Paiute Tribe

FINAL ENVIRONMENTAL ASSESSMENT
AMERICAN FLAT ROAD/LUCERNE ACCESS
RIGHT-OF-WAY AMENDMENT
COMSTOCK MINING, LLC

1.0 INTRODUCTION

1.1 BACKGROUND

On May 21, 2012, the Bureau of Land Management (BLM), Sierra Front Field Office issued a "Notice to Cease and Desist" letter to Comstock Mining Inc. for alleged use and development of public land without authorization, prevention or obstruction of free passage or transit over or through public lands in violation of Federal Land Management Policy Act of 1976 (United States Code [U.S.C.] 1701 et seq.), the Act of February 25, 1885 (43 U.S.C. 1063), and the regulations at 43 Code of Federal Regulations (CFR) 2808.10 ("What is Trespass?) and 9239.2-5 ("Settlement and Free Passage of Public Lands Not to be Obstructed"). On June 6, 2012, the BLM issued a "Notice of Trespass" letter to Comstock Mining Inc. and assigned the trespass to BLM case file NVN 091117. These notices involved the use of the American Flat Road between State Route 342 and Comstock Mining Inc. heap leach processing facility in American Flat, the Lucerne Haul Road and "bypass road" through "Lot 51[1]," and a segment of public land north of the Lucerne Pit. The Notice of Trespass letter outlined the means to settle the case which included the following:

- Cease the use, development, and restriction of access on and across public lands until Comstock Mining Inc. receives an authorization from the BLM;
- Pay fair market value for the rent for use of public lands, provide rehabilitation and stabilization if lands damaged, and pay the administrative costs incurred by the BLM;
- Complete a cultural resources inventory of the affected area;
- Once the trespass is resolved, apply for the authorization to use the public lands;
- Submit to the BLM an application to make modifications to any road features as a part of a "long-term" right-of-way (ROW); and
- To resolve the dispute with regards to "Lot 51," seek a resolution through the Color-of-Title (COT) Act.

[1] "Lot 51" is a Storey County designation for Assessor Parcel Number 002-131-001 (Gold Hill Townsite, Block 8, Range D, Lot 51). According to a BLM Cadastral survey completed in May 2016, the legal description for "Lot 51" is T16N, R21E, Section 5, Lot 24 and Section 6, Lot 13 for approximately 23.76 acres.

On June 25, 2012, Comstock Mining, LLC[2] submitted to the BLM a SF-299 application ("Application for Transportation and Utility Systems and Facilities on Federal Lands") for their use of the American Flat Road. On July 2, 2012, the BLM sent correspondence to Comstock Mining, LLC for the processing fee for the requested ROW, and also sent the unsigned ROW grant to Comstock Mining, LLC for their signature.

On July 6, 2012, the BLM notified Comstock Mining Inc. that it had satisfied the conditions to resolve the trespass case, and the case file (NVN 091117) was closed. Also on July 6, 2012, the BLM issued a "interim[3]" ROW grant to Comstock Mining, LLC for their use of the American Flat Road through December 31, 2014. The ROW (NVN 091237[4]), authorized Comstock Mining, LLC to transport ore from their mining operation in the Billie the Kid and Lucerne pits, to their existing heap leach processing facility located in American Flat. The ROW was approved under several conditions including: Comstock Mining, LLC was permitted to use highway-approved vehicles only; and Comstock Mining, LLC was not authorized to conduct any new construction, expansion, restriction of access to the public, or addition to existing berms/creation of new berms along the American Flat Road. A condition of the ROW was that Comstock Mining, LLC would submit a new ROW amendment (ROWA) application in order to make modifications or improvements to the roads subject of NVN 091237.

Comstock Mining, LLC began its use of the American Flat Road under the approved ROW on July 6, 2012. On August 2, 2012, Comstock Mining, LLC commenced surface mining in the Billie the Kid Pit, and hauled ore northbound on State Route 342 with 16.5-ton haul trucks[5]. Haul trucks then traveled southwest on the American Flat Road to an existing heap leach processing facility in American Flat. On February 13, 2013, the BLM allowed a Class 1 COT claim[6] to proceed for a parcel known as "Lot 51" (NVN 091521). As a result, Comstock Mining, LLC shifted all haul traffic from northbound State Route 342 to the existing Lucerne Haul Road (non-exclusively) through "Lot 51," then onto the American Flat Road southwest to their heap leach processing facility. Comstock Mining, LLC also changed the type of haul truck from 16.5-ton haul trucks to 38-ton articulated trucks.

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[2] Comstock Mining, LLC is the wholly-owned subsidiary of Comstock Mining Inc. Since the entity of Comstock Mining Inc. (Inc.) owns all of the entity of Comstock Mining, LLC (LLC), all activity that happens in LLC rolls up to Inc. They are treated as one consolidated company for tax purposes and for Security and Exchange Commission reporting purposes as the consolidated ownership is the same. BLM case file records also refer to "Northern Comstock, LLC," which also is a subsidiary of Comstock Mining Inc.

[3] Under Title V of the Federal Land Management Policy Act, a ROW may be issued up to 30 years.

[4] BLM documents and databases continue to use multiple versions of serial numbers for case files. Differences in serial number nomenclature will occur throughout this document, and one use may be slightly different than one found in the case file or on the Master Title Plats.

[5] All haul truck capacities are based on empty gross vehicle weight.

[6] A Class 1 Color-of-Tile claim is non-discretionary. In 1953 the United States Congress amended the 1928 act which directed Class 1 COT claims to be mandatory.

Comstock Mining, LLC currently uses the American Flat Road for employee, service, and utility vehicles between State Route 342 and "Lot 51." Their existing administrative offices are located on the American Flat Road on Comstock Mining, LLC owned land, just west of State Route 342. Although authorized under their existing ROW, Comstock Mining, LLC does not currently haul mined ore on the portion of the American Flat Road between State Route 342 and "Lot 51."

On July 11, 2012, and amended on August 3, 2012, Comstock Mining, LLC submitted to the BLM a ROWA application and draft plan of development (POD). In the ROWA and as described in the final POD (FPOD) (CM, 2016), Comstock Mining, LLC requested authorization from the BLM to construct, maintain, and use the existing Lucerne Haul Road across public land segments and to designate it as an exclusive use road for public safety. The ROWA also included proposed modifications to the existing American Flat Road through the separation of haul traffic from public traffic for public safety, and reclamation of an existing road to the former American Flat Mill site no longer in use. This ROWA would also provide long-term and comprehensive access across public land segments to mining on private lands.

On June 4, 2014, Comstock Mining, LLC submitted to the BLM a SF-299 application to renew ROW NVN 091237. The original ROW was renewed on October 6, 2014, without changes and was extended until December 31, 2017. The extension of the "interim" ROW issued on July 6, 2012 was determined to be necessary by the BLM due to the lengthy time involved with the compliance of the ROWA under the National Historic Preservation Act (NHPA).

The Project is located in Gold Hill, Storey County, Nevada, legally described as Township 16 North, Range 21 East (T16N, R21E), Sections, 5, 6, 8, 9, and 16 (within), Mount Diablo Base and Meridian (Figure 1). The location of the Project Area for the Proposed Action, which encompasses approximately 88 acres of public and private lands, is depicted in Figure 2A.

The Project Area has a long history of modern mining activities, including open pit mining, haul road construction, modification and use, and mining exploration activities. Portions of the American Flat Road have likely existed in one form or another since the 1920's (the time of the operation of the American Flat Mill). Photographic records and aerial imagery have documented the existence of the American Flat Road since 1978. At that time Houston Oil and Minerals Corp. (HOM) processed mined ore from the Imperial Mine located in Gold Hill with their 1,000-ton processing facility in American Flat[7]. Other operators that continued to construct, modify, and use the road system in the Project Area included United Mining Corp. between 1983 and

[7] Prior to November 26, 1980, mining and exploration activities were not subject regulations under 43 CFR 3809 (45 Fed. Reg. 78,902). Therefore, mining and exploration activities were not subject to Notice requirements until that time, and were not subject to compliance under the National Environmental Policy Act (NEPA) or NHPA.

1985 (which also operated the HOM mill), Oliver Hills Mining Company in 1991, and The Plum Mining Co., LLC in 1999.

The "bypass road" through "Lot 51" was constructed by The Plum Mining, Co., LLC in 1999 as a part of their mining operation in the Billie the Kid Pit[8]. The road through "Lot 51" (aka "Lucerne Haul Road"), in use today by Comstock Mining, LLC, was originally constructed in 2005 by The Plum Mining, Co. LLC. The configuration of the Lucerne Haul Road through "Lot 51" has existed in its current alignment since 2006. The construction of the heap leach processing facility in American Flat currently in use by Comstock Mining, LLC occurred between 2003 and 2004 by The Plum Mining Co., LLC.

Other modern activities in the Project Area include: public access via the American Flat Road for sightseeing at the former American Flat Mill site, the Virginia and Truckee (V&T) Railroad, the Gold Hill (Masonic) Cemetery; and access to several private residences located in American Flat.

Land tenure in the Project Area is highly fragmented due to decades of mining patents being issued to various operators. Rectangular shaped mining patents have left many public land segments fragmented and discontinuous. The BLM has previously identified all public lands (approximately 19,000 acres) within Storey County as available for disposal (conveyance out of federal ownership) in the Carson City Field Office Consolidated Resource Management Plan (CRMP) (BLM, 2001). Disputes regarding the ownership of lands in Storey County occur on an intermittent basis. In July 2016 the BLM completed a Class 1 COT claim for a 23.76-acre parcel known as "Lot 51," which is located in the Project Area. Additional public lands in the Project Area would be conveyed out of federal ownership as a part of "Restoring Storey County," included in the National Defense Authorization Act, enacted into law on December 19, 2014. The result of this land conveyance would transfer out of federal ownership approximately 1,745 acres in Storey County, including approximately 12 acres of public lands within the Project Area.

1.2 PURPOSE AND NEED FOR THE PROJECT

The BLM's need is to respond to Comstock Mining, LLC's application to amend ROW grant NVN 091237. The ROWA would allow the construction, maintenance, and use of the American Flat Road as well as the Lucerne Haul Road across public land segments administered by the BLM between the Lucerne Pit and heap leach processing facility in American Flat. The Lucerne Haul Road would also be designated as exclusive use for public safety.

[8] Revised 43 CFR 3809 regulations (65 Fed. Reg. 69,998) became effective on January 20, 2001. Prior to that time, mining could occur on public lands under a Notice. Mining activities under a Notice did not require compliance under the NEPA or NHPA. As a result of these regulations, effective in 2003 a Plan of Operations must be submitted for mining activities on public lands.

The purpose of the Project is to provide a safe roadway across public land segments that can accommodate oversized haul trucks in order to deliver ore from the Lucerne Pit to the heap leach processing facility, both located on private land. The BLM has prepared this Final Environmental Assessment (FEA) in accordance with the NEPA and to assist in deciding whether to grant the requested ROWA. An Environmental Assessment (EA) is intended to be an overview of environmental concerns, not an exhaustive study of all environmental issues.

1.3 SCOPING AND ISSUES IDENTIFICATION

On December 5, 2012, the Project was evaluated by the BLM's interdisciplinary team. Issues that were raised during the review included: public access; air quality; noise; cultural and historical resources; soils; water resources; wildlife; vegetation; and visual quality.

Public Scoping

On January 16, 2013, the BLM announced the schedule for the public scoping period and date of the public workshops. The press release was published in the *Reno-Gazette Journal*, *KTNV Channel 2 News*, the *Elko Daily Free Press*, and the *Virginia City News*. On January 17, 2013, the BLM initiated a 30-day scoping period. The public scoping period ran until February 19, 2013. The original end date of the scoping period was identified as February 16 in the Dear Reader letter, and was later extended by the BLM until February 19 to accommodate the President's Day holiday on February 18. A news release was distributed to the Carson City and Reno media outlets providing the public with notification. The BLM received 41 letters from the public to consider.

The following two public scoping workshops were held from 6:30 p.m. to 8:30 p.m.:

- Tuesday, January 22, 2013, BLM Carson City District Office, 5665 Morgan Mill Road, Carson City, Nevada; and
- Tuesday, January 29, 2013, Piper's Opera House, 12 North B Street, Virginia City, Nevada.

The workshops were held in open house format. The attendees were provided with a scoping handout that included the Project description, an explanation of how to comment, resources considered for analysis, and preliminary identification of resource issues. Attendees were also provided with the scoping comment form and a handout explaining the Project's compliance with Section 106 of the NHPA. The scoping comment form included a place to indicate a desire to be on the mailing list. Respondents who requested to be placed on the mailing list were added to the list.

Posters were used to depict the proposed Project, explain the NEPA and NHPA processes, and provide direction on how to comment. Representatives from the BLM, Comstock Mining, LLC, and JBR Environmental Consultants, Inc. (JBR), now Stantec Consulting Services Inc. (Stantec), were present at the workshops to answer questions and discuss the Project.

To help document the attendance at the workshops, people were asked to sign in, although it was not required. Table 1-1 shows the number of sign-ins at each scoping workshop.

Table 1-1 Scoping Workshop Sign-In

Date	Location	Number Signed In
January 22, 2013	Carson City, Nevada	32
January 29, 2013	Virginia City, Nevada	43

The BLM conducted three briefings for the Project. These were held on Monday, January 7, 2013, at 9 a.m. at the Lyon County Commissioner's Meeting, Tuesday January 15, 2013, at 2 p.m. at the Storey County Commissioner's Meeting, and Thursday January 17, 2013, at 6 p.m. at the Storey County Planning Commission meeting. These presentations were informational in nature and no comments were solicited; however, the BLM responded to questions on the Project from the Commissioners.

The BLM issued a Scoping Report on March 28, 2013. Interested parties were mailed a letter directing them to the Project's website for an electronic copy of the report.

Public Involvement Under the NHPA

The BLM initiated consultation with the Yerington Paiute Tribe (YPT) and the Washoe Tribe of Nevada and California (WTNC) under the provisions of Section 106 of the NHPA on February 8, 2013. No religious concerns have been identified by the tribes for this Project.

On February 8, 2013, the BLM provided early information to the Advisory Council on Historic Preservation (ACHP), and initiated consultation under the provisions of Section 106 of the NHPA, for the purposes of describing the Project's preliminary Area of Potential Effect (APE), with the WTNC, the YPT, the National Park Service (NPS), the Comstock Historic District Commission (CHDC), Nevada State Historic Preservation Office (SHPO), and the Storey County Certified Local Government (County). Consultation with NPS was initiated in accordance with Section 110 of the NHPA due to the Project's location within a National Historic Landmark. However, the NPS did not choose to participate in consultation for this Project. On January 13, 2014, the BLM sent revised APE maps (as shown in Figure 12) and Project description to the SHPO, ACHP, WTNC, YPT, and an individual identified as a

consulting party (Larry Wahrenbrock). This updated information was provided to NPS on May 9, 2014.

On May 9, 2014, the BLM sent correspondence to the NPS, YPT, WTNC and an individual identified as a consulting party (Larry Wahrenbrock) with information on the BLM's draft determinations of eligibility and effect for the Project and an invitation to comment. On June 4, 2014, BLM provided a field meeting and tour of portions of the Project area and cultural resources sites, as requested by the individual identified as a consulting party (Larry Wahrenbrock), in order to facilitate comments on the BLM's draft determinations of eligibility and effect. On June 10, 2014, the BLM sent correspondence to the SHPO providing the BLM's determinations of eligibility and effect, seeking concurrence on those determinations, and inviting the SHPO to consult to resolve adverse effects under the NHPA through a Memorandum of Agreement (MOA). On June 12, 2014, the BLM sent correspondence to the ACHP with the BLM's determination on potential adverse effects and an invitation to consult to resolve adverse effects through a MOA.

On August 14, 2014, the BLM invited identified consulting parties to participate in the development of the draft MOA. Table 1-2 lists the consulting parties and whether they accepted the invitation to participate in the process.

Table 1-2 MOA Consulting Parties

Agencies, Tribes, and Individuals	Invited	Status	Signatories*
Advisory Council on Historic Preservation	√	Participated	√
Comstock Cemeteries Foundation	√	Participated	√
Comstock Historic District Commission	√	Participated	√
Comstock Mining, LLC	√	Participated	√
Larry Wahrenbrock	√	Participated	-
National Park Service (Western Regional Office)	√	Did Not Participate	-
State Historic Preservation Officer	√	Participated	√
Storey County	√	Participated	-
Washoe Tribe of Nevada and California	√	Did Not Participate	-
Yerington Paiute Tribe	√	Did Not Participate	-

*Mandatory signatories for the MOA are the BLM, the SHPO, and the ACHP.

On October 8, 2014, October 27, 2014, and April 1, 2015, the BLM held conference calls/meetings with the consulting parties to develop a draft MOA. Consulting parties had the opportunity to review and provide input on the draft MOA from April 13 through May 14, 2015. On September 2, 2015, the consulting parties were provided a final draft of the MOA and requested to provide to the BLM any remaining comments on the MOA by October 27, 2015. The BLM did not receive any comments on the draft MOA from the consulting parties. The

public had the opportunity to provide input on the draft MOA between September 21 and October 20, 2015. The BLM did not receive any public comments on the draft MOA. The MOA was executed on February 17, 2016, and is attached to this FEA (Attachment D).

1.4 DECISION TO BE MADE

The BLM has received a ROWA application and FPOD (CM, 2016) from Comstock Mining, LLC. The FPOD is included as an attachment to this FEA (Attachment C). The BLM Authorized Officer would decide which access alternative presents the best option for meeting the purpose and need, and whether to add terms and conditions (stipulations) to the selected alternative. The Authorized Officer could decide to deny the amendment application. The requested ROWA term would be for 30-years. The ROWA term would supersede the term and conditions of the existing ROW originally issued on July 6, 2012.

1.5 LAND USE PLAN CONFORMANCE

The Project is in conformance with the CRMP dated May 2001 (BLM, 2001) and with the BLM's mission statement regarding multiple use of the public lands. The CRMP provides management strategies for the protection of natural resources on public lands in Nevada and provides guidance on the decision-making process for Project conformance to the CRMP. Comstock Mining, LLC identified and developed construction and operation methods that conform to the measures outlined in the CRMP.

The CRMP reiterates selected provisions of the 43 CFR 2800.0-2 - Rights-of-Way – Objectives.

1. It is the objective of the Secretary of the Interior to grant rights-of-way and temporary use permits, covered by the regulations in this part, to any qualified individual, business entity, or governmental entity and regulate, control and direct the use of said rights-of way on public land so as to:

   A. Protect the natural resources associated with the public lands and adjacent private property or other lands administered by a government agency.

   B. Prevent unnecessary or undue environmental damage to the lands and resources.

   C. Promote the utilization of rights-of-way in common with respect to engineering and technological compatibility, national security and land use plans.

   D. Coordinate to the fullest extent possible, all actions taken pursuant to this part with State and local governments, interested individuals, and appropriate quasi-public entities.

The CRMP also specifies Standard Operating Procedures for granting ROWs. Applicable administrative actions include (LND-7):

"Exchanges and minor non-Bureau realty proposals will be considered where analysis indicates they are beneficial to the public."

1.6 Relationship to Statutes, Regulations, Permits, and Other Plans

The Proposed Action and No Action/Current Management Alternative are in compliance with the following:

- Federal Land Policy and Management Act of 1976 - which provides the authority for issuing a ROWA;
- NEPA – granting a ROWA is a "major federal action;"
- Migratory Bird Treaty Act of 1918 (as amended) (MBTA); and
- NHPA – granting a ROWA is an "undertaking."

The Non-Federal Alternative would also comply with the above laws, to the extent applicable to private lands.

Table 1-3 lists federal, State, and county permits or authorizations Comstock Mining, LLC is currently operating under.

Table 1-3 Comstock Mining, LLC's Existing Permits

Agency	Permit Name	Permit Number (or ID) Issued
NDEP-BAPC	Mercury Operating Permit to Construct	AP1041-2690
	Operating Permit to Construct	AP1041-2761
NDEP-BAPC	Class 1-A Permit	AP1041-2761
NDEP-BCA	Sampling and Analysis Plan, Areas affected by Carson River Mercury Site	
	State Petroleum Fund	Facility ID# 3-000182
NDEP-BMRR	Water Pollution Control Permit	NEV2000109
	Reclamation Plan	0196
	Reclamation Plan	0315
NDEP-BWPC	General Stormwater Permit - Mining	NVR300000
	Onsite Sewage Disposal Systems	GNEVOSDS09
NDOW	Industrial Artificial Pond Special License and Permit	S 35572
EPCRA	Toxic Release Inventory	RCRA ID# NVR 000 087 411
	Hazardous Material Storage Permit	1458-2906 20830/15050
BLM	Temporary ROW	NVN 091237
	Notice	86559, 93083

Agency	Permit Name	Permit Number (or ID) Issued
Storey County Community Development	Special Use Permit - Mining	SUP 2000-222-A-54
Storey County Sheriff Department	Business License	License # 13-6446 Acct # 15413
Department of Conservation and Natural Resources - SHPO - Comstock Historic District Commission	Certificate of Appropriateness, various	Facility ID # 800-000-94

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

The Proposed Action would include the improvement of existing roads to facilitate the safe transportation of mined ore between the Lucerne Pit and the existing heap leach processing facility for approximately 30 years and the construction and improvement of non-exclusive road segments to facilitate access to public land (Figure 2A). Currently, Comstock Mining, LLC is hauling ore with 38-ton haul trucks from the Lucerne Pit and onto the southwest section of the American Flat Road. Mine-related traffic is also traveling north from Lucerne Pit onto State Route 342 to the north section of the American Flat Road where Comstock Mining, LLC's administrative offices are located. All current use of the roads is by highway-rated vehicles. The roads are open and available for public use and as access to the former American Flat Mill site, the V&T Railroad, the Gold Hill (Masonic) Cemetery, and to several private residences (most owned by Comstock Mining, LLC). In order to ensure public safety, Comstock Mining, LLC proposes to have exclusive use of the Lucerne Haul Road. The American Flat Road would be realigned in one segment to allow for public access (Figure 4). This would separate public traffic from exclusive use haul traffic on the Lucerne Haul Road.

As part of the Proposed Action, Comstock Mining, LLC proposes to:

- Improve the north section of the American Flat Road as well as improve the junction with the American Flat Road and the Cemetery Spur Road near the Gold Hill (Masonic) Cemetery for public safety;
- Construct two walls to avoid impacts to sensitive resources from public and Project-related traffic on the American Flat Road;
- Separate mine traffic by connecting the north section of the American Flat Road to the existing public access road and connecting the Lucerne Haul Road to the south section of the American Flat Road for public safety;
- Designate the Lucerne Haul Road as exclusive to mining traffic;
- Improve the exclusive use road (Lucerne Haul Road) and non-exclusive use road (American Flat Road) where they are adjacent to each other;
- Create and maintain berms along the Lucerne Haul Road that are compliant with Mine Safety and Health Administration (MSHA) regulations for safety;
- Reclaim the road that runs south from the American Flat Road to the former American Flat Mill site;

- Improve the public access road east of the existing heap leach processing facility for safe public access to the former American Flat Mill site and public lands to the south;

- Safely manage traffic at the intersection of the American Flat Road and the Lucerne Haul Road with stop signs for traffic on the Lucerne Haul Road; and

- Realign and improve the public access road to the east of the heap leach processing facility at its intersection with the Lucerne Haul Road for safety.

The Project Area is the American Flat and the Lucerne Haul roads and a road to the former American Flat Mill site (Figure 2A). The Project Area consists of approximately 88 acres, including 50 acres of public lands and 38 acres of private land (Figure 2A). The Gold Hill Townsite Lots 33 and 35 consisting of town lots patented from December 1872 (Block 8, Range D, Lot 35) and February 1873 (Block 8, Range D, Lot 33 [Comstock Mining, LLC administrative offices]) and "Lot 51" have been calculated as private lands (Figure 20).

Within the 88 acre Project Area, there could be up to 49 acres of surface disturbance on public and private lands (Figure 2A). All surface disturbance on public lands would be within the ROWA Area (Figure 2B).

Under the Proposed Action, the American Flat Road would be realigned and lengthened to allowed for continued public access into American Flat (Figure 2A). Under the Proposed Action, the configuration and length of the Lucerne Haul Road would be unchanged, although it would be dedicated exclusively to haul traffic. Table 2-1 includes the existing and proposed lengths for the American Flat Road and Lucerne Haul Road.

Table 2-1 Existing and Proposed Road Lengths*

	Existing Length (feet)	Proposed Length (feet)
American Flat Road	6,143	6,450
Lucerne Haul Road	8,550**	8,550***

*Lengths are calculated for public and private lands.
**The non-exclusive haul road is a combination of the existing Lucerne Haul Road and the American Flat Road between the Lucerne Pit and the heap leach processing facility in American Flat, for a total of 8,550 feet.
***The exclusive haul road would be dedicated to haul traffic only between the Lucerne Pit and the heap leach processing facility in American Flat.

Table 2-2 includes the existing ROW and proposed ROWA lengths and widths for the American Flat and Lucerne Haul road corridors. The proposed ROWA Area consists of approximately 26 acres of public lands. All proposed surface disturbing activities would occur in the ROWA Area (Figure 2B).

Table 2-2 Existing ROW and Proposed ROWA Dimensions

	Existing ROW Length (feet)	Existing ROW Width (feet)	Proposed ROWA Length (feet)	Proposed ROWA Width (feet)
American Flat Road	6,140	30	5,341*	100-200
Lucerne Haul Road	N/A	N/A	3,785	150

*Does not include approximately 311 feet of the American Flat Road that crosses through the Gold Hill Townsite Lots 33 and 35 and approximately 890 feet of the American Flat Road that crosses through "Lot 51" (see Figures 2B and 20).

Under the Proposed Action, the number of round trips per day would be up to 100 round trips per day. It is anticipated that 60-ton haul trucks would be utilized. The BLM has evaluated the effects of the Proposed Action from a worst case scenario: 100 round trips per day with 60-ton haul trucks. Due to operational changes from surface to underground mining, and use of haul trucks with larger capacity, actual round trips per day may decrease over the life of the ROWA.

Project-related traffic (i.e., contractors, mine staff, deliveries) would continue to utilize American Flat Road to access the Project Area from State Route 342. No haul traffic is proposed for the American Flat Road between State Route 342 and "Lot 51" under the Proposed Action (Figure 2A).

2.1.1 Project Features

2.1.1.1 Realign American Flat Road

"Cemetery Spur Road" and American Flat Road near State Route 342

Comstock Mining, LLC proposes to improve the north section of the American Flat Road as well as the Cemetery Spur Road near the Gold Hill (Masonic) Cemetery by widening to improve sight distances for public safety (Figure 2A). In order to avoid impacts to sensitive resources from Project-related traffic on the American Flat Road, Comstock Mining, LLC proposes to construct two walls (Figure 2A). One wall would be constructed southeast of the cemetery and would measure up to seven feet in height and approximately 257 feet in length. The second wall would have three sides and be U-shaped. The walls would be constructed to avoid any areas with sensitive resources and be constructed out of native rock from the Lucerne Pit. To accommodate the walls, the slopes of the road in these areas would be adjusted to a 2:1 slope. These walls would be constructed within the width of the proposed ROWA.

American Flat Road Adjacent to the Lucerne Haul Road

For public safety, public traffic and haul traffic would be completely separated by utilizing a new alignment of the American Flat Road. Public traffic would use the realigned American Flat Road as shown on Figure 4. Where the public access road (American Flat Road) and Lucerne Haul Road would be adjacent, the two roads would be on different elevations and would be separated by a slope (Figure 5). The new alignment (for approximately 912 feet) is located directly upgradient of the existing road and serves as a natural location to reroute the American

Flat Road. Figure 6 illustrates a typical cross-section of the American Flat and Lucerne Haul roads.

American Flat Road/Lucerne Haul Road Intersection

A new curve on the realigned American Flat Road would facilitate public traffic turning south headed towards the former American Flat Mill site. The curve would follow the same typical cross section and would match the design criteria of the public access road.

The existing road heading south from this curve would be improved and where it nears the Lucerne Haul Road, it would be realigned to the east. The intersection currently lies at an angle and does not allow good sight distances. The realignment would make the intersection approximately perpendicular and move the intersection away from the entrance to the mine processing area. The new configuration would allow for improved sight distances for the public and haul traffic. The north side of the American Flat Road would be moved to the east to align with the south portion of the American Flat Road to minimize surface disturbance. Signage would be placed at the intersection to control the flow of traffic (Figure 7). Haul traffic on the Lucerne Haul Road would be required to stop at this intersection, while public traffic on the realigned American Flat Road would not be required to stop (Figure 8).

2.1.1.2 Lucerne Haul Road

The exclusive use Lucerne Haul Road would be approximately 8,550 feet in length (from the Lucerne Pit to the heap leach processing facility). The exclusive use Lucerne Haul Road would include three segments of public land for approximately 988 feet in the pit area. The length of the public land segments (from north to south) are approximately 190 feet, 59 feet, and 739 feet long (Figure 3).

The exclusive use Lucerne Haul Road would comprise a combined total of approximately 62 acres. The Lucerne Haul Road would be improved to include five-foot tall berms on the outside, as required by the MSHA. The berms would be 15 feet wide at the base and would accommodate up to 60-ton haul trucks. The running surface of the road would be approximately 42 feet. If haulage equipment changes in the future, then the berms would be modified according to MSHA standards. Any additional rock and soil needed to surface the road or build berms would come from native on-site materials on private land. Temporary use areas would not be needed.

The cross-section, elevation, and alignment of the road within the wedges in the pit area would be in constant flux. The geometry of the pit around these wedges would be changing constantly. This would result in the need to change the orientation of the access roads traversing these

wedges. It is anticipated that each wedge in its entirety would be disturbed as part of the Proposed Action. The roads would remain in compliance with MSHA design requirements.

2.1.1.3 Other

Road Reclamation

A road heading south towards the former American Flat Mill site (Figure 2A) would be reclaimed applying the specifications outlined in the Comstock Mining, LLC Reclamation Permit No. 0196. Reclamation of this road would include approximately two acres of proposed surface disturbance associated with reclamation activities to previously disturbed ground. The need to reclaim this road is for public safety. The road currently abuts the American Flat Road on the southside. The road also would abut the proposed exclusive use Lucerne Haul Road. Public traffic heading north on the road would enter onto the haul road near a curve with limited sight of distance. With the reclamation of this road, the public would use alternative access to the former American Flat Mill site.

Traffic Control

Traffic signs would be placed for public safety and to direct traffic (Figures 7 and 8). Signage would identify the public access along the American Flat Road, while the Lucerne Haul Road would be designated for use by mine traffic only. Under the Proposed Action, public access along the American Flat Road would remain unchanged near the intersection with State Route 342. Public traffic would continue on the American Flat Road, with portions realigned, as shown on Figure 2A.

State Route 342

Comstock Mining, LLC would continue to use State Route 342 for light vehicle traffic. Comstock Mining, LLC's use of State Route 342 is subject to State regulations, but not special permitting by the Nevada Department of Transportation (NDOT). Comstock Mining, LLC's use of State Route 342 is not subject to BLM decision-making.

2.1.2 Project Construction

2.1.2.1 Construction Standards

All roads within this ROWA would be maintained to comply with Comstock Mining, LLC's Air Quality Permit AP1041-2761 and Stormwater General Permit NVR300000. Additionally, roads that are accessible by the public would be constructed to standards required by the BLM and Storey County, while roads that are specific to mining traffic would be constructed and maintained to standards required by the MSHA. Additional improvements to any roads under the ROWA beyond those Project features listed in Section 2.1.1 would be submitted to the BLM for separate authorization.

2.1.2.2 Equipment

Comstock Mining, LLC would perform the proposed construction and improvement of roads in the Project Area most likely utilizing the following equipment:

- One excavator;
- One D-9R bulldozer;
- Up to three 631 scrapers;
- One water truck;
- 815 or 825 compactor; and/or
- 140H motor grader.

2.1.2.3 Work Force

The estimated size of the road construction work force is expected to be eight persons to operate the equipment listed in Section 2.1.2.2 and two additional personnel.

The number of vehicles is expected to consist of three vehicles, with four personnel traveling in each vehicle plus one truck for the construction foreman.

2.1.3 Access to and along the ROWA during Construction

Access to the American Flat Road at the intersection with State Route 342 during construction would have traffic control as specified in the NDOT permit and traffic control plan for the construction of the modified road. The realigned segment of the American Flat Road would have construction access from the existing American Flat Road. The segment would only have construction traffic until the alignment is complete. Upon completion of the realignment, access to the Lucerne Haul Road would be limited and public traffic would be directed to the new alignment.

2.1.4 Drainage Facilities

Roadside ditches would be sized according to 100-year, 24-hour storm flows. Drainage culverts and crossings would remain in current locations where practicable but may be modified and/or lengthened to accommodate needs of the improved cross section. Re-aligned sections of road would carry storm flow in roadside ditches and cross storm flow through culverts positioned in a manner to attempt to keep flow patterns as close to existing as practicable.

2.1.5 Operation and Maintenance

All roads would be maintained continuously, and daily inspections would be made during work days. If the roads are inactive for any period of time, they would be inspected prior to use.

While the roads are being used by Comstock Mining, LLC, water trucks would control dust in accordance with the Nevada Division of Environmental Protection (NDEP) Bureau of Air Pollution Control (BAPC) Air Permit. Dust control additives and licensed water trucks would be used on the roads in the Project Area.

The construction of the roadways and the operation and maintenance of the roads would primarily be during daylight hours but mine operations and use of the road would be 24 hours per day.

Ditches and drains would be installed as necessary to maintain compliance with the NDEP Bureau of Water Pollution Control (BWPC) Storm Water Pollution Prevention Plan.

Control, warning, and directional traffic signs would be used as necessary. Speed limits, left hand traffic signals, and control signs would be posted at all entrances to the mine site. Locations of proposed signs are illustrated on Figures 7 and 8. Figure 9 shows the legend for the signs illustrated on Figures 7 and 8.

For maintenance work and snow removal on the Lucerne Haul Road, Comstock Mining, LLC maintenance and snow removal equipment would include, but is not limited to, the following: graders; loaders; and/or bulldozers.

Road watering activities may include ripping the surface to a depth of two inches, blading the road smooth, and then applying dust suppression, which would significantly reduce the required number of passes with a water truck.

Comstock Mining, LLC is required to prepare and maintain an Emergency Response Plan by both MSHA and the State of Nevada Emergency Response Commission. This plan is on file with the NDEP Bureau of Mining Regulation and Reclamation (BMRR).

The use of industrial wastes and toxic substances in the improvement of the road would not be necessary. Any hazardous materials used during the construction, maintenance, use, or reclamation of this ROWA would be handled in full compliance with applicable law. No seasonal restrictions for road improvements are anticipated.

No fill would be placed during freezing temperature when compaction requirements cannot be met due to frozen water content in the soil.

2.1.6 Reclamation

The Lucerne Haul Road within the Project Area would be reclaimed upon termination of the ROWA during mine closure, unless the BLM or State agencies request that the road remain open for future access. If portions of the Lucerne Haul Road remain open for public traffic, the roadbed width would be decreased to approximately 24 feet wide for continuous maintenance. Portions of the road that would be needed for site monitoring and maintenance during the post-closure period would remain until final reclamation bond release is attained. The American Flat Road would remain in its new alignment to allow for access to American Flat and would not be reclaimed at the end of the Project.

The roads that would be reclaimed would be deep ripped to reduce compaction. Roads with significant cut or fill would be graded to blend into the surrounding topography and to generally re-establish the existing drainage patterns. Culverts would be removed or buried and drainage crossings would be reshaped to approximate the original drainage. Riprap or other armoring methods would be used if drainage stabilization is necessary to limit scouring of re-established channels. Approximately six inches of topsoil would be applied to the regraded road surfaces and reseeded using the proposed seed mix. The seeding would preferably be carried out in the fall after the first rainfall and before the winter precipitation. Dragging a light chain over the seeded surfaces would provide sufficient soil cover for the seed. If seeding is not carried out immediately after the road is regraded, the regraded surfaces would be scarified prior to seeding. Reclamation of the private land portions of the Lucerne Haul Road in-pit is not proposed. Comstock Mining, LLC proposes to utilize portions of existing roads to access the proposed groundwater monitoring wells following mine reclamation.

2.1.7 Environmental Protection Measures

Comstock Mining, LLC would implement the following Environmental Protection Measures (EPMs) during the life of the Project, to prevent undue or unnecessary degradation. These practices, described briefly below, would be considered part of the operating procedures.

2.1.7.1 Air Quality

Dust control activities that would be applied to the Project are outlined in the NDEP-BAPC Surface Area Disturbance Fugitive Dust Control Plan (Attachment A). Road watering activities may include ripping the surface to a depth of two inches, blading the road smooth, and then applying water with a water truck for dust suppression.

2.1.7.2 Vegetation

If vegetation needs to be removed during construction, operation, and maintenance of the Proposed Action, then the vegetation would be chipped and removed from the work site.

Vegetation on approximately 29.7 acres not previously disturbed would be removed within the area of proposed disturbance.

2.1.7.3 Cultural Resources

Under the NHPA, "historic properties" are cultural resources (archaeological sites, features, buildings or structures) that are eligible for, or listed on, the National Register of Historic Places (NRHP). The term "contributing" is used when a cultural resource adds to the eligibility or listed status of a larger historic property, in this case, the Virginia City National Historic Landmark and National Historic District[9].

In order to avoid, minimize, or mitigate adverse effects to historic properties present in the APE (Section 3.2.1.1), a MOA, developed in consultation with the SHPO and other consulting parties, has been executed.

As a signatory to the MOA, Comstock Mining, LLC would be bound during Project implementation to the conditions in the executed MOA. The executed MOA outlines the methods used to avoid impacts to historic properties during surface disturbing activities. Where avoidance is not possible, the MOA outlines the ways in which the impacts would be minimized and mitigated. The details and specific actions to be taken to mitigate adverse effects are included in the Historic Properties Treatment Plan (HPTP) as defined in the MOA. In accordance with the provisions of the MOA, an unanticipated discovery plan would be followed, if needed, during Project activities.

2.1.7.4 Wildlife including Migratory Birds

A pre-disturbance nest survey would be conducted by a qualified biologist prior to initiating any surface disturbance associated with Project activities during the avian breeding season (March 1 through July 31 for raptors and May 15 through July 15 for other migratory birds). Pre-disturbance surveys for migratory birds are only valid for 14-days. If the disturbance for the specific location does not occur within 14-days of the survey another survey would be performed. If nests are located, or if other evidence of nesting (i.e., mated pairs, territorial defense, carrying nest material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species and the location of the nest) would be delineated after consultation with the BLM wildlife biologist and the buffer area avoided to prevent destruction or disturbance to nests or birds until they are no longer actively breeding or rearing young, or until the young have fledged. The site characteristics to be used to determine the size of the buffer area are as follows: a) topographic screening; b) distance from disturbance

[9] The terms "National Historic District" and "National Register District" are interchangeable and refer to the same geographic location. These terms have also been combined into "National Register Historic District" which also refers to the same geographic location.

to nest; c) the size and quality of foraging habitat surrounding the nest; d) sensitivity of the species to nest disturbances; and e) the protection status of the species.

In order to avoid impacts to wildlife, Project-related traffic would observe prudent speed limits along roads in the ROWA.

2.1.7.5 Noxious, Invasive Plant Species

Comstock Mining, LLC's Integrated Weed Management Plan (IWMP) (Attachment B) would be implemented throughout the Project Area. The IWMP includes strategies for prevention of noxious weed infestations, Best Management Practices (BMPs), and setting priorities for treatments of existing infestations. For the application of approved herbicides on public lands, all treatments would be carried out in compliance with Informational Bulletin 2012-022 and the Carson City District IWMP (BLM, 2015).

2.2 ALTERNATIVES TO THE PROPOSED ACTION

For an alternative to be considered reasonable under the NEPA, it must meet the purpose and need statement (Section 1.2). According to the Council on Environmental Quality's (CEQ's) Forty Questions (question 2a), "Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant."

For this FEA, two alternatives to the Proposed Action are analyzed.

2.2.1 No Action/Current Management Alternative

The purpose of the No Action/Current Management Alternative is to provide the baseline of existing conditions[10]. On the basis of this alternative, this FEA is able to evaluate the degree of change from the current situation to what would occur under implementation of any other alternative. The configuration of the road system in the Project Area has not changed since the analysis for this FEA was initiated in December 2012. In February 2013, the BLM allowed Comstock Mining, LLC to shift haul truck traffic from State Route 342 onto the Lucerne Haul Road through "Lot 51." As a result, Comstock Mining, LLC changed the type of haul trucks used from 16.5-ton trucks to 38-ton articulated trucks (in use today). The BLM has evaluated the effects of the No Action/Current Management Alternative from a worst case scenario: 118 round trips per day by 38-ton haul trucks.

Comstock Mining, LLC under the No Action/Current Management Alternative would continue to haul ore on the non-exclusive Lucerne Haul and American Flat roads to the heap leach

[10] The BLM established the baseline for this ROWA Project as December 2012, when the BLM kicked-off the NEPA analysis for this ROWA.

processing facility. No new road modifications would be authorized. The existing ROW (NVN 091237) is currently set to expire on December 31, 2017. The existing ROW is 30 feet wide by approximately 6,140 feet in length (approximately four acres of public lands).

Up to 118 round trips per day by 38-ton haul trucks could continue to haul ore, in addition to traffic for water trucks, fuel trucks, contractor support vehicles, blasting trucks, track and tire mounted drills, and private cars, trucks, and vans on the Lucerne Haul Road (non-exclusively) and the southwest section of the American Flat Road (non-exclusively) (Figure 10). Following expiration of ROW (NVN 091237), Comstock Mining, LLC would have to find alternate access from the Lucerne Pit for ore processing.

2.2.2 Non-Federal Alternative

Under the Non-Federal Alternative, the existing ROW (NVN 091237) would expire on December 31, 2017, or the BLM could issue a decision not to issue the ROWA for a 30-year term (implement the No Action/Current Management Alternative). In either case Comstock Mining, LLC could implement the Non-Federal Alternative. Under the Non-Federal Alternative, Comstock Mining, LLC would construct a new heap leach processing facility located on private land in Section 16, T16N, R21E, in Lyon County on State Route 341 approximately two miles south of the Lucerne Pit (Figure 11). Under this alternative, Comstock Mining, LLC would decommission the existing heap leach processing facility located on private land in American Flat. As part of decommissioning, Comstock Mining, LLC would discontinue hauling ore to the existing heap leach processing facility, but would continue to leach until material on the existing heap leach pad is exhausted. When the material on the existing pad is exhausted, Comstock Mining, LLC would reclaim the heap leach pad according to NDEP-BMRR reclamation requirements. Comstock Mining, LLC would haul ore from the Lucerne Pit on private land to the new heap leach processing facility located on private land in Lyon County by traveling southbound on State Route 341/342 through Silver City. Under this alternative, Comstock Mining, LLC may obtain Occupancy Permits from the NDOT, which may include paved aprons. Under the Non-Federal Alternative, there would be up to 118 round trips per day by 16.5-ton haul trucks between the Lucerne Pit and the heap leach processing facility in Spring Valley on State Route 341/342.

The heap leach processing facility would consist of the same features as the existing heap leach processing facility located on private land in American Flat, and currently utilized by Comstock Mining, LLC for processing. The heap leach processing facility would include the following features and associated disturbances: approximately 2.69 acres associated with ponds; approximately 0.32 acre associated with a Merrill Crowe plant; an office park consisting of a mine dry, lab building, and shop covering approximately 0.42 acre; approximately 12.32 acres associated with an access road; approximately 5.23 acres associated with the laydown yard;

approximately 2.6 acres associated with crushers; and 17.52 acres associated with the heap leach pad. Total surface disturbance associated with construction and operation of this heap leach processing facility would include 41 acres. A schematic drawing showing the approximate layout of these facilities is shown on Figure 11. The area analyzed for this alternative includes State Route 341/342 from the American Flat Road south for two miles through Silver City to the new heap leach processing facility in Spring Valley (Figure 11).

Under the Non-Federal Alternative, Comstock Mining, LLC would maintain their administrative offices west of State Route 342 on the American Flat Road. In order to access the new heap leach processing facility, mine employee and utility traffic would travel between the American Flat Road and Spring Valley on State Route 341/342 through Silver City (Figure 11). The increased traffic between the administrative offices and the new heap leach processing facility would consist of approximately 75 round trips per day. As employee and utility traffic is considered casual use, Comstock Mining, LLC's use of the American Flat Road to the administrative offices would not require BLM authorization (see 43 CFR 3809.5 and 43 CFR 3809.10 [a]).

Implementation of a Non-Federal Alternative by Comstock Mining, LLC is plausible. Comstock Mining, LLC has land holdings in Spring Valley sufficient in size to construct a new heap leach processing facility. Comstock Mining, LLC has previously used State Route 342 between the Lucerne Pit and the American Flat Road with highway-approved 16.5-ton haul trucks to transport mined ore to the existing processing facility in American Flat. Use of State Route 342/341 would be subject to any requirements set by the NDOT. Equipment and components of the existing heap leach processing facility could be relocated/reused at the new facility in Spring Valley. There are no State or county laws or regulations that prohibit such a facility in Spring Valley/Lyon County. Although this alternative is located on private land, the CEQ's Forty Questions (question 2b) states that alternatives outside the legal jurisdiction of the lead agency should be analyzed if they are reasonable. Additionally, it is not required that an alternative have all the necessary permits in place for analysis.

2.3 ALTERNATIVES CONSIDERED AND ELIMINATED FROM DETAILED ANALYSIS

2.3.1 American Flat Toll Road Access Alternative

Under the American Flat Toll Road Access Alternative, Comstock Mining, LLC would haul ore to the heap leach processing facility from the Lucerne Pit by traveling north on State Route 342. Haul traffic would exit west and then south on the American Flat Road, turning onto the American Flat Toll Road, located adjacent to the Gold Hill (Masonic) Cemetery. This alternative was eliminated from detailed analysis because of a sharp curve in the road would be unsafe for haul traffic, and potential adverse effects to the cemetery.

2.3.2 Ancillary Road Improvement Alternative

An alternate configuration of the exclusive haul road was considered that would have improved an existing ancillary road (constructed by HOM in 1978) located south of the existing American Flat Road and connecting it to the Lucerne Haul Road making a single road for use by mine traffic only. This exclusive use road would be separated from the north section of American Flat Road (for public access) by an enlarged outside berm. This alternative was eliminated from detailed analysis as a part of Project redesign due to the presence of a historic site.

These alternatives were described and included in scoping figures. As described above, these alternatives have been dismissed and were not carried forward for analysis.

3.0 AFFECTED ENVIRONMENT

This section identifies and describes the existing environmental resources in the area of analysis for the Proposed Action, Non-Federal Alternative, and the No Action/Current Management Alternative. The description provides baseline information that can be used to compare and evaluate potential impacts on the human environment that may result from implementation of the alternatives.

Area Analyzed for Each Alternative

Proposed Action

The Project Area for the Proposed Action is the American Flat and Lucerne Haul roads and a road to the former American Flat Mill site (Figure 2A). The Project Area consists of approximately 88 acres, including 50 acres of public lands and 38 acres of private land. The Project Area includes the American Flat Road corridor approximately 200 feet wide by 6,450 feet long and the Lucerne Haul Road corridor approximately 300 feet wide by 8,550 feet long (Figure 2A).

The Project Area for cultural resources (Section 3.2.1.1) for the Proposed Action is the Direct/Indirect Effects APE, an area consisting of approximately 178 acres, including 132 acres of public lands and 46 acres of private lands (Figure 12). The Direct/Indirect Effects APE is a corridor 500 feet wide along the American Flat and Lucerne Haul roads. To assess the visual, auditory, olfactory, and other indirect impacts from the Proposed Action to cultural resources, the BLM developed in consultation with the SHPO, a Viewshed APE, which encompasses approximately 2,161 acres, including 1,271 acres of public and 890 acres private lands (Section 3.2.1.2) (Figure 12).

All proposed surface disturbing activities would occur within the Project Area and within the maximum extent of disturbance that was analyzed (Figure 2A). The ROWA Area itself (the area the BLM would authorize for use by Comstock Mining, LLC under the Proposed Action) is located entirely within the Project Area (Figure 2B).

No Action/Current Management Alternative

The analysis area for the No Action/Current Management Alternative is the existing area for ROW NVN 091237, which is a corridor along the American Flat Road from the intersection of State Route 342 southwest to the entrance of the heap leach processing facility in American Flat (Figure 10). The ROW corridor is approximately 6,140 feet by 30 feet. The analysis area consists of approximately four acres of public land, and less than one acre of private land. The APE for ROW 091237 was the same as the analysis area described above.

Non-Federal Alternative

The analysis area for the Non-Federal Alternative includes Comstock Mining, LLC's administrative offices on the American Flat Road, a three mile stretch of State Route 342 south through Silver City to Spring Valley, and private land in Spring Valley. The analysis area consists of approximately 724 feet of the American Flat Road (by 30 feet), approximately three miles of State Route 342 (width of the highway), and approximately 2,976 feet between the Lucerne Pit and the intersection of State Route 342 (by 50 feet). The analysis area for the Non-Federal Alternative also includes a 41-acre area that could accommodate an alternate heap leach processing facility in Spring Valley (Figure 11). As the Non-Federal Alternative does not constitute a federal "undertaking" no APE for cultural resources applies to this alternative.

Elevations range from approximately 5,400 feet above mean sea level (AMSL) to 6,000 feet AMSL. The average maximum temperature in Virginia City is 59.9 degrees Fahrenheit (°F), the average minimum temperature is 39.3°F, average total precipitation is 12.54 inches, and average total snowfall is 56.5 inches (WRCC, 2013). Habitat in the Project Area includes vegetation dominated by mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*), singleleaf pinyon (*Pinus monophylla*), Utah juniper (*Juniperus osteosperma*), low sagebrush (*A. arbuscula*), ephemeral drainages, as well as disturbed areas. The Project is located within the Virginia City National Historic Landmark and National Historic District.

The BLM is required to address specific elements of the environment that are subject to requirements in statute, regulation or by executive order (BLM, 2008). Table 3-1 lists the elements that must be addressed through environmental analysis and indicates whether the alternatives affect those elements. Other resources of the human environment that have been considered for analysis are listed in Table 3-1.

Table 3-1 Supplemental Authorities

Element/Resource*	Present (Yes/No)	Affected (Yes/No)	Rationale
Air Quality	Y	Y	Carried forward for analysis. See Section 3.1.
Areas of Critical Environmental Concern	N	N	Resource not present.
Cultural Resources	Y	Y	Carried forward for analysis. See Section 3.2.
Environmental Justice	N	N	Resource not present.
Farm Lands (prime or unique)	N	N	Resource not present.
Floodplains	N	N	Resource not present.
Noxious, Invasive Plant Species	Y	Y	Carried forward for analysis. See Section 3.3.
Migratory Birds	Y	Y	Carried forward for analysis. See Section 3.4.
Native American Religious Concerns	N	N	The BLM contacted interested tribes on February 9, 2013, regarding the Project. Additionally, letters were sent to interested tribes on January 13, 2014. To date no religious issues with the Project have been identified. Both tribes did not choose to participate in the development of the MOA.
Threatened or Endangered Species (animals)	N	N	Resource not present.
Threatened or Endangered Species (plants)	N	N	Resource not present.
Wastes, Hazardous or Solid	Y	Y	Carried forward for analysis. See Section 3.5.
Water Quality (Surface/Ground)	Y	Y	Carried forward for analysis. See Section 3.6.
Wetlands/Riparian Zones	N	N	Resource not present. The nearest wetlands are located west of the existing heap leach processing facility.
Wild and Scenic Rivers	N	N	Resource not present.
Wilderness/WSA	N	N	Resource not present.

*See H-1790-1 (January 2008) Appendix 1 Supplemental Authorities to be Considered. Supplemental Authorities determined to be Not Present or Present/Not Affected need not be carried forward or discussed further in the document. Supplemental Authorities determined to be Present/May Be Affected may be carried forward in the document.

Other elements of the human environment that have been considered for this FEA are listed in Table 3-2. Resources that may be affected by the Proposed Action or Alternatives are further described in the FEA. Rationales for those resources that would not be affected by the Proposed Action are listed.

Table 3-2 Resources or Uses Other Than Supplemental Authorities

Resource or Issue*	Present Yes/No	Affected Yes/No	Rationale
Special Status Species (animals)	Y	Y	Carried forward for analysis. See Section 3.7.
Special Status Species (plants)	N	N	Resource not present.
Fire Management/Vegetation	N	N	Resource not present.
Forest Resources	N	N	Resource not present.
General Wildlife	Y	Y	Carried forward for analysis. See Section 3.8.
Global Climate Change	Y	N	Although there is a public and scientific debate about human-caused contributions to global climate change, no methodology currently exists to correlate greenhouse gas emissions (GHG) from the alternatives, and to what extent these contributions would contribute to global climate change.
Greenhouse Gas Emissions	Y	Y	Carried forward for analysis. See Section 3.1.
Land Use Authorizations	Y	Y	Carried forward for analysis. See Section 3.9.
Lands with Wilderness Characteristics	N	N	Resource not present.
Livestock Grazing	N	N	Resource not present.
Minerals	Y	Y	Carried forward for analysis. See Section 3.9.
Paleontological	N	N	Resource not present.
Recreation	Y	Y	Carried forward for analysis. See Section 3.10.
Socioeconomics	Y	Y	Carried forward for analysis. See Section 3.11.
Soils	Y	Y	Carried forward for analysis. See Section 3.12.
Travel Management	Y	Y	Carried forward for analysis. See Section 3.10.
Vegetation	Y	Y	Carried forward for analysis. See Section 3.13.
Visual Resources Management	Y	N	The Project Area is within Visual Resources Management Class IV as designated by the CRMP, which allows for major changes to the visual character of the area; the alternatives are consistent with Class IV (Figure 19). Visual Resource Management classification does not apply to private lands.
Wild Horses and Burros	N	N	The Project Area is not within a Herd Management Area; wild horses seen in the Project Area are State estray horses and are not under the management of the BLM.

* Resources or uses determined to be Not Present or Present/Not Affected need not be carried forward or discussed further in the document. Resources or uses determined to be Present/May Be Affected may be carried forward in the document.

3.1 AIR QUALITY

Air Quality

Federal and State governments have established ambient air quality standards for criteria air pollutants, including carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter with diameters less than or equal to 2.5 micrometers ($PM_{2.5}$), ozone, and lead. Ozone is typically not emitted directly from emission sources, but at ground level, it is created by a chemical reaction

between ozone precursors, including oxides of nitrogen and volatile organic compounds (VOCs). The United States Environmental Protection Agency (EPA) regulates emissions of VOCs.

With respect to National Ambient Air Quality Standards, the EPA classifies all locations in the United States as either "attainment" (including "unclassified"), "non-attainment", or "maintenance" areas. These classifications are determined by comparing actual monitored air pollutant concentrations with their applicable federal standards.

Greenhouse Gas Emissions

Ongoing scientific research has identified the potential impacts of anthropogenic (man-made) GHG emissions and changes in biological carbon sequestration due to land management activities on global climate. Through complex interactions on a regional and global scale, these GHG emissions and net losses of biological carbon sinks cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by the earth back into space. Although GHG levels have varied for millennia, recent industrialization and burning of fossil carbon sources have caused carbon dioxide (CO_2) concentrations to increase dramatically, and are likely to contribute to overall global climatic changes. The Intergovernmental Panel on Climate Change recently concluded that “warming of the climate system is unequivocal” and “most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations.”

Several activities contribute to the phenomena of climate change, including emissions of GHGs (especially CO_2) from fossil fuel development, large wildland fires, and activities using combustion engines, changes to the natural carbon cycle, and changes to radiative forces and reflectivity (albedo). It is important to note that GHGs would have a sustained climatic impact over different temporal scales. For example, recent emissions of CO_2 can influence climate for 100 years. The leading causes of GHG emissions in Nevada can be attributed to electrical generation, transportation, resident/commercial fuel use, and wildland fires. Nevada historical data measured since 2005 indicated CO_2 to represent approximately 91 percent of GHG emissions with methane, nitric oxide, and hydrofluorocarbons/perfluorocarbons representing approximately four percent, three percent, and two percent, respectively (NDEP-BAQP, 2008). By 2020, transportation is expected to account for 33.2 percent of statewide GHG emissions. Main contributors near the Project Area would include residential and tourism traffic.

3.1.1 Proposed Action

The Project Area is located in Storey County, which is in attainment for all criteria air pollutants (EPA, 2013). The closest air monitoring station to the Project Area is in Carson City, approximately nine miles southwest of the Project Area, and is operated by the NDEP Bureau of Air Quality Planning. Ozone, CO_2, and $PM_{2.5}$ are measured at this station. The most recent data

(from 2010) indicate concentrations for most pollutants are within standards. There was an exceedance of the 65 micrograms per cubic meter ($\mu g/m^3$) standards for $PM_{2.5}$ in 2005 (NDEP BAQP, 2013).

Emissions within the Project Area include vehicle combustion emissions, fugitive dust from travel on unpaved roads, and wildland fires. Under the Proposed Action, Comstock Mining would operate approximately 100 round trips per day from the Lucerne Pit to the heap leach processing facility with up to 60-ton haul trucks.

3.1.2 No Action/Current Management Alternative

The area analyzed for the No Action/Current Management Alternative is located in Storey County, which is in attainment for all criteria air pollutants (EPA, 2013).

Emissions within the area analyzed for the No Action/Current Management Alternative include vehicle combustion emissions and fugitive dust from travel on unpaved roads. Under this alternative, Comstock Mining, LLC would continue to operate up to 118 round trips per day with 38-ton haul trucks. Vehicular emissions are the main contributors to GHG emissions in the area analyzed for the No Action/Current Management Alternative.

3.1.3 Non-Federal Alternative

The area analyzed for the Non-Federal Alternative is located in Storey and Lyon counties, which are in attainment for all criteria air pollutants (EPA, 2013).

Emissions within the area analyzed for the Non-Federal Alternative include vehicle combustion emissions from administrative and haul traffic on State Route 341/342 between the American Flat Road and Spring Valley, as well as emissions and fugitive dust from travel on unpaved roads. Comstock Mining, LLC would operate up to 118 trucks round trip per day from the Lucerne Pit through Silver City to the proposed heap leach processing facility in Spring Valley with 16.5-ton haul trucks. Vehicular emissions are the main contributors to GHG emissions in the area analyzed for the Non-Federal Alternative.

3.2 CULTURAL RESOURCES

3.2.1 Proposed Action

3.2.1.1 Direct/Indirect Effects APE

The APE for the Project has been inventoried for cultural resources following Nevada BLM Guidelines and Standards for Archaeological Inventory (Guidelines, BLM, 2012), and for architectural resources following the Nevada SHPO Section 106 Architectural Survey and Inventory Guidelines (SHPO, 2012). The Direct/Indirect Effects APE includes a 500-foot wide buffer around the American Flat and Lucerne Haul roads (Figure 12). The BLM determined that

the 500-foot-wide Direct/Indirect Effects APE was adequate to include all planned ground disturbance (including downslope movement of sediment) in the 300-foot-wide ROWA, with a 100-foot buffer on each side of the ROWA. The full results of the cultural and architectural resources inventory are reported in *Comstock Mining, LLC's Baseline Study: Cultural Resources Inventory, Storey and Lyon County, Nevada*, BLM Report CRR3-2643 (Spidell et al., 2014).

There are four criteria, developed by the NPS, that are applied to evaluate properties for eligibility for inclusion in the NRHP (listed below as a through d). The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or (b) that are associated with the lives of persons significant in our past; or (c) that embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or (d) that have yielded, or may be likely to yield, information important in prehistory or history.

The cultural resources inventory identified a total of 33 archaeological and architectural sites within the Direct/Indirect Effects APE. Of these sites, 29 are historic in age, while four are multi-component and exhibit a historic and prehistoric component. For those sites that have both a historic and prehistoric component, each component was individually evaluated for the NRHP.

Of the 33 sites located within the Direct/Indirect Effects APE, 12 have been determined eligible to the NRHP. Eleven of these sites are historic, and of these, one has a small prehistoric component that is not eligible. One historic property is prehistoric with a small historic component that is not eligible. Nine of the 11 eligible historic sites have been determined as contributing elements of the Virginia City National Historic Landmark and National Historic District.

3.2.1.2 Viewshed APE

The Viewshed APE includes Grinders Bend at the north, Devil's Gate at the Lyon/Storey County line at the south, and the V&T Railroad grade on the west, and the ridge east of State Route 342 on the east. For this Project, the Viewshed APE is approximately 2,160 acres of public and private lands (Figure 12). Within the Virginia City National Historic District are historic buildings concentrated in five communities: Virginia City; the Divide; Gold Hill; Silver City; and Dayton. In all, there are 382 buildings and structures that contribute to the Historic District (James, 1991). The main factors dictating whether these buildings contribute to the National Historic District are aspects of integrity that are dependent on the surrounding landscape. The

seven aspects of integrity, as defined by the NPS, are location, design, setting, materials, workmanship, feeling, and association. The aspects of setting, feeling, association can potentially be affected by modern use of the region (McClelland et al., 1999; Noble and Spude, 1997). The Viewshed APE includes consideration of these historic properties that are within the viewshed of the Proposed Action.

Gold Hill, where 32 of the 382 contributing historic properties to the Virginia City National Historic District are located, is situated at a higher elevation than the Project Area. The elevated location of Gold Hill above the Project Area provides a good vantage point to view the current mining operation in Gold Canyon and associated traffic on the haul road. There were 18 geographic locations identified and visited as part of the cultural resources inventory and assessment that correspond to contributing historic properties or grouping of historic properties within the National Historic District. The Project Area is visible from 13 of the 18 geographic locations visited. In American Flat, the Proposed Action is visible from two of the 18 points visited. The Proposed Action is not visible from Silver City, due to the physical barrier provided by Hartford Hill and Devils Gate. Within Silver City are 48 of the 382 contributing properties to the Virginia City National Historic District.

3.2.2 No Action/Current Management Alternative

Eight cultural resources determined eligible for the NRHP are located along American Flat Road. No new surface disturbing activities are authorized under the existing ROW. When the BLM approved the ROW on July 2, 2012, the BLM determined that no historic properties would be adversely affected by the ROW.

3.2.3 Non-Federal Alternative

The Non-Federal Alternative would be accomplished without the use of public lands and would not constitute an "undertaking" as defined by Section 106 of the NHPA. Five archaeological resources are located within the area analyzed for the Non-Federal Alternative. Of the five archaeological sites, three are historic, one is prehistoric, and one is a multi-component site with an historic and prehistoric component. Each component was individually evaluated for the NRHP (Spidell et al., 2014). There are no known archaeological sites located along the segment of State Route 341/342 that would be utilized for haul traffic as part of this alternative.

Of the four historic sites, one has been determined eligible for the NRHP. Of the two prehistoric sites or site components located within the Non-Federal Alternative, none has been determined as eligible for the NRHP.

The Non-Federal Alternative, if constructed in Spring Valley, would not be visible from any of the locations visited during the cultural resources inventory and assessment. The lands being

considered for the Non-Federal Alternative are obscured from all of the photo points in Gold Hill and Silver City by a low ridge located on the eastern slope of Grizzly Hill, which separates Gold Canyon from Spring Valley.

3.3 NOXIOUS, INVASIVE PLANT SPECIES

3.3.1 Proposed Action

Within Nevada, noxious weeds are defined in the Nevada Revised Statutes (NRS) 555.005 as "any species of plant which is, or is likely to be, detrimental or destructive and difficult to control or eradicate". The Nevada Department of Agriculture's Noxious Weed website (http://agri.state.nv.us/PLANT_NoxWeeds_index.htm) provides a list of all weeds currently listed as noxious for the State of Nevada.

Several State of Nevada noxious weeds are known to occur in or near the Project Area. These include the following: diffuse knapweed (*Centaurea diffusa*); Russian knapweed (*Acroptilon repens*); hoary cress (*Cardaria draba*); Scotch thistle (*Onopordum acanthium*); tamarisk (*Tamarix ramosissima*); tall whitetop (*Lepidium latifolium*); Canada thistle (*Cirsium arvense*); Medusa head (*Elymus caput-medusae*); and poison hemlock (*Conium maculatum*). Cheatgrass (*Bromus tectorum*), hairy whitetop (*Cardaria pubescens*), and bull thistle (*Cirsium vulgare*) have also been identified within the area surveyed. In a survey conducted in May 2013, Scotch thistle and tall whitetop were located in the Project Area (JBR, 2013a).

A comprehensive IWMP was developed by JBR for Comstock Mining, LLC in June 2012 (JBR, 2012a). This plan includes a detailed overview for weed management approaches, descriptions of and life histories for weed species in area surveyed, priorities for weed treatments, management actions, and includes a weed Management Maintenance Calendar.

3.3.2 No Action/Current Management Alternative

Scotch thistle and tall whitetop were located within the existing 30-foot ROW on the American Flat Road (JBR, 2013a). No noxious weeds were located along State Route 342.

3.3.3 Non-Federal Alternative

Tall whitetop and tamarisk were located along roads and in drainages within the area analyzed for this alternative (JBR, 2013a).

3.4 MIGRATORY BIRDS

3.4.1 Proposed Action

Migratory birds include species of birds that may breed in the Project Area and then would migrate south, out of the area, prior to the onset of winter. Migratory birds are protected under the MBTA. On January 11, 2011, President Clinton signed Executive Order (EO) 13186 placing

emphasis on the conservation and management of migratory birds. EO 13186 addresses the responsibilities of federal agencies to protect migratory birds by taking actions to implement the MBTA. BLM management for migratory bird species on public lands is based on Instruction Bulletin No. 2010-110 (BLM, 2010). This Instruction Bulletin transmits the 2010 Memorandum of Understanding between the BLM and the United States Fish and Wildlife Service (USFWS) for the conservation of migratory bird populations. BLM priority migratory birds include migratory birds that are either those species listed in the periodic report Birds of Conservation Concern (USFWS, 2008) or identified by the USFWS Division of Migratory Bird Management as "game birds below desired condition".

The Intermountain West avifaunal biome where the Project Area occurs is the center of distribution for numerous western birds. Over half of this biome's Species of Continental Importance have 75 percent or more of their population here. Many breeding species from this biome migrate to winter in central and western Mexico or in the Southwestern biome (Rich et al., 2004). Shrub-nesting species comprise the largest number of Species of Continental Importance in this biome (Rich et al., 2004).

A number of migratory bird species have the potential to occur in the Project Area, or make use of particular habitat features at different times of the year. Vegetation communities located within the Project Area that provide habitat for migratory birds include low sagebrush, mountain big sagebrush, and disturbed/sagebrush vegetation communities (ESA, 2013a). During field surveys in 2011, the following species were observed in and around the Project Area: mountain bluebird (*Sialia mexicana*); western scrub-jay (*Aphelocoma californica*); cliff swallow (*Petrochelidon pyrrhonota*); black-billed magpie (*Pica hudsonia*); California quail (*Callipepla californica*); black-throated gray warbler (*Dendroica nigrescens*); rock wren (*Salpinctes obsoletus*); red-tailed hawk (*Buteo jamaicensis*); turkey vulture (*Cathartes aura*); and Swainson's hawk (*Buteo swainsoni*). Western tanager (*Piranga ludoviciana*) was observed along the riparian corridor of the American Ravine (ESA, 2013a). Field surveys conducted in 2011 covered an area larger than the Project Area.

3.4.2 No Action/Current Management Alternative

Available nesting and foraging habitat for migratory birds within the existing 30-foot ROW on the American Flat Road is very limited due to the existing disturbance and lack of vegetative cover.

3.4.3 Non-Federal Alternative

A corridor of low quality migratory bird habitat consisting of heavily disturbed vegetation is present along State Route 341/342 between the American Flat Road and the new heap leach processing facility in Spring Valley. Surface disturbance associated with building the new heap

leach processing facility under the Non-Federal Alternative would be within the low sagebrush and desert scrub communities, both communities provide nesting and foraging habitat for migratory birds. Impacts to migratory birds from traffic on State Route 341/342 under this alternative may include noise and mortality from vehicular collisions. The following bird species were observed during the 2011 field surveys in the area analyzed for the Non-Federal Alternative and vicinity: mountain bluebird; western scrub-jay; cliff swallow; black-billed magpie; California quail; black-throated gray warbler; numerous sparrow species; rock wren; red-tailed hawk; turkey vulture; and Swainson's hawk (ESA, 2013b).

3.5 HAZARDOUS AND SOLID WASTES

3.5.1 Proposed Action

Solid waste generated by the Project would include any cleared vegetation. Vegetation material may be chipped or shredded and spread over the ROWA as mulch erosion control as an alternative to disposal off-site. All solid waste generated during construction would be removed from the site, and if appropriate, hauled to a landfill for disposal. The Proposed Action would not generate, use, or dispose of any hazardous waste. Diesel fuel, oil, and lubricants would be used on vehicles traveling on roads in the Project Area; however, these hazardous wastes would not be stored in the Project Area.

Existing contamination from previous mining operations exists in the Project Area. This has become the Carson River Mercury Superfund (CRMS) site. Contaminants include mercury, lead, and arsenic. Hazardous materials existing in the Project Area and vicinity are being addressed through the NDEP-Bureau of Corrective Actions (BCA) due to the proximity of the Project Area to the CRMS site. Comstock Mining, LLC is not a responsible party for the CRMS, but is voluntarily collaborating with NDEP-BCA and EPA on a Sampling and Analysis Plan (SAP) for areas potentially affected by CRMS on private lands. The SAP describes soil sampling, laboratory analytical tests, and cleanup plans, as needed. If sampling is needed on public lands, Comstock Mining, LLC would seek separate authorization from the BLM.

3.5.2 No Action/Current Management Alternative

Under the No Action/Current Management Alternative, hazardous and solid wastes would be managed along the American Flat Road consistent with the existing ROW until it expires. Diesel fuel, oil, and lubricants are used; however, they are not stored in the area analyzed for the No Action/Current Management Alternative. Existing hazardous materials are the same as those for the Proposed Action.

3.5.3 Non-Federal Alternative

Existing hazardous materials for the area analyzed for the Non-Federal Alternative are the same as those for the Proposed Action.

3.6 WATER QUALITY (SURFACE/GROUND)

3.6.1 Proposed Action

3.6.1.1 Groundwater Resources

The Project Area is located within the Carson River Basin – Dayton Valley Hydrographic Area. The Project Area is located within a structural block fault basin. Tertiary and Quaternary basin fill deposits composed of unconsolidated clay, silt, sand, and gravel within the fault basin are the primary aquifer in the area (Schaefer and Whitney, 1992).

Aquifers in this area are generally unconfined and groundwater flow is generally west to east. Depth to groundwater varies from more than 200 feet (close to the mountain fronts) to near surface (close to the Carson River). Average depth to water is approximately 60 feet (Schaefer and Whitney, 1992). The Gash (production water) well was drilled to a depth of 260 feet in the southwest corner of Comstock Mining, LLC's existing heap leach processing facility on April 30, 2004, by a previous operator. Groundwater was encountered at about 100 feet below ground surface. Initially, the well was artesian, creating a flow out of the top of the casing.

3.6.1.2 Surface Water Resources

The Carson River, approximately six miles south of the Project Area, is the major perennial drainage in the vicinity. The American Ravine features a perennial creek that flows along the southern side of the Project site. Surface flow is generally toward the southeast (Schaefer and Whitney, 1992).

JBR performed field investigations from November 14 through 16, 2011, evaluating the potential jurisdictional status of channels and delineating waters of the United States for Comstock Mining, LLC. JBR inventoried all drainages and drainage-like features within the survey area to determine potential tributary connection to the Carson River, a traditional navigable water and jurisdictional drainage.

Three drainages have a connection with the Gold Canyon drainage and four drainages have a connection with the Daney Canyon drainage, both of which are documented to have a connection with the Carson River (Figure 13). The U.S. Army Corps of Engineers provided a jurisdictional determination on April 14, 2014, for approximately 2,757 acres of Comstock Mining, LLC properties. Approximately 5.67 acres of Waters of the United States (WOUS) are regulated under Section 404 of the Clean Water Act since they are streams, adjacent wetlands, and springs with a relatively permanent connection or significant nexus to the Carson River, a Navigable-in-Fact Water of the United States. Eight drainages do not exhibit indicators of an ordinary high water mark and would not be subject to regulation under Section 404 of the Clean Water Act (JBR, 2012b). Although some drainages within the vicinity of the Project Area are not subject to

regulation under the Clean Water Act, they are still under regulation by the State of Nevada. All impacts to waters of the State within the vicinity of the Project Area must adhere to the regulations set forth by the NDEP. No WOUS occur on public lands or in the Project Area.

The Gold Canyon drainage is the drainage located east of State Route 342 and is direct tributary to the Carson River. The American Ravine drainage is the closest drainage to the Project Area and is located approximately 150 feet south of the former American Flat Mill site (Figure 14). The American Ravine drainage originates from several spring sources in the mountains surrounding American Flat and is one of the three drainages with a connection to Gold Canyon (JBR, 2012b).

3.6.2 No Action/Current Management Alternative

3.6.2.1 Groundwater Resources

Groundwater resources present in the area analyzed for the No Action/Current Management Alternative are the same as described for the Proposed Action.

3.6.2.2 Surface Water Resources

Surface water resources present in the area analyzed for the No Action/Current Management Alternative are the same as described for the Proposed Action.

3.6.3 Non-Federal Alternative

3.6.3.1 Groundwater Resources

The Non-Federal Alternative is located in the same hydrographic basin at the Proposed Action. According to the Nevada Division of Water Resources, there is no well log information for the area analyzed for the Non-Federal Alternative (NDWR, 2013).

3.6.3.2 Surface Water Resources

Total surface disturbance associated with construction and operation of this heap leach processing facility would include 41 acres and be located in Amazon Gulch, which is a jurisdictional drainage that connects with Daney Canyon. Daney Canyon is documented to have a connection with the Carson River (JBR, 2012b).

3.7 SPECIAL STATUS SPECIES (ANIMALS)

3.7.1 Proposed Action

BLM Manual 6840 provides policy and guidance for the conservation of BLM sensitive species and the ecosystems upon which they depend on public lands. BLM Sensitive species are: 1) species listed or proposed for listing under the federal Endangered Species Act of 1973 (FESA); and 2) species requiring special management considerations to promote their conservation and

reduce the likelihood and need for future listing under the FESA, which are designated as sensitive by the State BLM Director(s).

Prior to conducting field surveys, a list of special status wildlife species was reviewed and it was utilized to evaluate which species may potentially occur in or near the Project Area (Table 3-3).

Table 3-3 Sensitive Animal Species with Potential to Occur in the Project Area

Common Name (*Scientific Name*)	Listing Status (Federal/State/BLM)	General Habitat	Potential to Occur in Project Area
Birds			
Golden eagle *Aquila chrysaetos**	--/Yes/N	Nests on cliffs of all heights and in larger trees near open areas. Occurs in rolling foothills, mountain terrain, sage-juniper flats, and rugged open habitats with canyons and escarpments. Preys mostly on small mammals.	Medium potential. Suitable foraging habitat is present within the Project Area although no known occurrences have been recorded.
Swainson's hawk *Buteo swainsoni**	--/Yes/N	Open grasslands, sagebrush flats, desert scrub, low foothills, and fringes of pinyon-juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice.	High potential. Suitable habitat is present and one individual was observed perching on a potential nest south of the Project Area.
Greater sage-grouse *Centrocercus urophasianus*	FC/Yes/N,C	Restricted to flat/rolling terrain vegetated by sage-brush, upon which it depends for both food and shelter.	Low potential. Suitable habitat is present within the Project Area, although no known occurrences have been recorded within the Project Area and no priority, general, or other habitat management areas have been designated in the Project Area.
Yellow-billed cuckoo (Western U.S. Distinct Population Segment) *Coccyzus americanus*	FC/Yes/S	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Unlikely. No suitable habitat within the Project Area. Limited habitat is present nearby along the riparian corridor of the American Ravine.
Pinyon jay *Gymnorhinus cyanocephalus**	--/Yes/N	The pinyon jay is a permanent resident of pinyon-juniper woodlands and low-elevation ponderosa pine forests.	Medium potential. Suitable habitat is present within the Project Area although no known occurrences have been recorded.
Yellow-breasted chat *Icteria virens*	--/Yes/N	Inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 feet of ground.	Unlikely. No suitable habitat within the Project Area.

Common Name (*Scientific Name*)	Listing Status (Federal/State/BLM)	General Habitat	Potential to Occur in Project Area
Loggerhead shrike *Lanius ludovicianus**	--/Yes/N	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub, and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	Medium potential. Suitable habitat is present within the Project Area although no known occurrences have been recorded.
Lewis's woodpecker *Melanerpes lewis*	--/Yes/N	Breeds in open forest and woodland with an open canopy and brushy understory. Requires dead trees for nest cavities.	Unlikely. No suitable habitat within the Project Area.
Vesper sparrow *Pooecetes gramineus*	--/Yes/N	Inhabitants of open areas, vesper sparrows reside in cultivated fields, grasslands, fallow fields, and pastures. Vesper sparrow habitats are typically sparsely vegetated with patches of bare ground, low vegetation (1 to 8 inches), and scattered shrubs or saplings.	Low potential. There may be limited suitable habitat in the sagebrush and pinyon-pine communities.
Mammals			
Townsend's big-eared bat *Corynorhinus townsendii**	--/Yes/N,C	Found in rocky areas where abandoned mines and buildings and caves are available.	High potential. Suitable habitat is present and there is a recorded occurrence near the Project Area.
Western small-footed myotis *Myotis ciliolabrum**	--/--/N,C	Wide range of habitats mostly arid wooded & brushy uplands near water. Seeks cover in caves, buildings, mines & crevices. Prefers open stands in forests and woodlands. Requires drinking water. Feeds on a wide variety of small flying insects.	Medium potential. Suitable foraging habitat is present within the Project Area although no known occurrences have been recorded.
Pallid bat *Antrozous pallidus**	--/Yes/N	Found in crevices on rocky outcrops and cliffs, mines, trees, and human structures.	High potential. Suitable habitat is present and there is a recorded occurrence near the Project Area.

Common Name (*Scientific Name*)	Listing Status (Federal/State/BLM)	General Habitat	Potential to Occur in Project Area
Brazilian free-tailed bat *Tadarida brasiliensis**	--/Yes/N	Roosts in cliff faces, mines, caves, buildings, bridges, and hollow trees. May form large colonies.	High potential. Suitable habitat is present and there is a recorded occurrence near the Project Area.

*Species with medium or high potential to occur in the area surveyed.

KEY:

Federal (USFWS):
FE = Listed as Endangered by the federal government
FT = Listed as Threatened by the federal government
FC = Candidate for listing by the federal government

State:
Yes = Species protected under NRS 501

BLM Species Classification:
S = Nevada Special Status Species - USFWS listed, proposed or candidate for listing
N = Nevada Special Status Species - designated Sensitive by State Office
C = California Special Status Species (see definition S and N)
– = No Listing

Source: ESA, 2013a; JBR, 2013c.

Reconnaissance-level pedestrian and vehicle surveys were conducted by wildlife biologists on June 6 through 10, 2011, to determine the presence of and potential for special-status wildlife species to occur at and in the vicinity of the Project Area. Wildlife habitat types were mapped and described, and any potential special-status wildlife habitat was assessed and recorded. Raptor surveys were conducted by helicopter on June 21, 2012. The survey area and five-mile buffer were flown and searched for raptor nests.

Golden Eagle

The golden eagle is an uncommon permanent resident and migrant throughout Nevada. Golden eagles nest in open areas on cliffs and in large trees, often constructing multiple nests in one breeding territory (Zeiner et al., 1988-1990). They forage in open terrain such as grasslands, deserts, savannahs, and early successional stages of forest and shrub habitats (Zeiner et al., 1988-1990). During raptor surveys of the Project Area and a five-mile buffer, four golden eagle nests were observed. Two of the nests were active and contained young. The active nests were approximately 1.4 miles north and 6.1 miles south from the Project Area. The open sagebrush habitat and mountainous areas adjacent to the Project Area could provide potential habitat for this species.

Swainson's Hawk

The Swainson's hawk is a long-distance migrant species. Nests are generally found in scattered trees or along riparian systems adjacent to agricultural fields or pastures, but the species will also nest in tall shrubs and trees in proximity to developments near foraging habitat. Prey species mainly include small mammals, reptiles, and insects. Most young have fledged the nest by the end of July and are relatively independent of parental protection. However, fledged young

remain with their parents until they migrate in the fall. Migration to the wintering grounds generally occurs around September (Zeiner et al., 1988–1990).

The open sagebrush habitat and mountainous areas within the Project Area and vicinity, as well as the mature trees along the American Ravine riparian corridor, provide suitable habitat for this species. An adult Swainson's hawk was observed roosting on a mature pine (*Pinus* spp.) on the side of a small mountain in Lyon County located approximately two miles south of the Project Area (ESA, 2013a).

Greater Sage-Grouse

Portions of the Project Area contain habitat components associated with greater sage-grouse including sagebrush. However, the area is outside the mapped suitable wintering, brood rearing, and nesting habitat areas. According to the Greater Sage-Grouse Conservation Plan for Nevada and Eastern California, the Project Area is not located within a recognized Population Management Unit for greater sage-grouse and there are no known greater sage-grouse populations or leks in or near the Project Area. While the sagebrush communities may provide suitable habitat for greater sage-grouse, the BLM has reviewed the priority, general, and other habitat management areas and the Project Area does not lie within any of these designated areas.

Pinyon Jay

This species occurs in western North America from central Oregon to northern Baja California and east as far as western Oklahoma though it wanders further afield out of the breeding season. It lives in foothills where two-needle pinyon (*Pinus edulis*) and singleleaf pinyon occur.

This species is highly social, often forming very large flocks of 250 or more birds, and several birds always seem to act as sentries for the flock, watching out for predators while their companions are feeding. The seed of the pinyon pine is the staple food but they supplement their diet with fruits and berries. Insects of many types are also eaten and sometimes caught with its feet. The nest is always part of a colony but there is never more than one nest in a tree. Sometimes the colony can cover quite extensive areas with a single nest in each tree (usually juniper, live oak, or pine). The pinyon pine communities adjacent to the Project Area would provide suitable habitat for this species.

Loggerhead Shrike

Loggerhead shrikes are a semi-permanent resident California species that occurs in abundance in the Central Valley and Central Coast where shrub habitats and open woodlands are available. Shrikes generally forage on the fringes of open habitats where suitable hunting perches are available. This species typically hunts from dead trees, tall shrubs, utility wires and fences, impaling their prey on sharp twigs, thorns, or barbed wire.

The loggerhead shrike can be found from southern Canada through the lower 48 states to southern Mexico. Virginia, southern Illinois, and northern California form the northern edge of their winter range. Shrikes are common throughout California and are expected to occur in low to moderate densities throughout the Project Area and vicinity where shrubby wooded habitat provides adequate cover and nesting sites.

Within the Project Area, loggerhead shrike may be encountered near wooded drainages or areas with moderate to dense shrub cover. Habitat near the Project Area occurs sporadically in and next to the American Ravine and some of the ephemeral drainages.

Sage Thrasher

The sage thrasher is an elusive bird and, when disturbed, will frequently run on the ground rather than take flight. Sage thrashers inhabit open, shrub-steppe country. They appear to prefer areas dominated by sagebrush or bitterbrush, with native grasses intermixed, generally avoiding cheatgrass-dominated landscapes. After breeding season, they move into thickets, and are often found along creek drainages.

The sagebrush communities throughout the Project Area would provide low quality habitat for this species.

Townsend's Big-eared Bat

Townsend's big-eared bats have been reported in a wide variety of habitat types including coniferous forests, mixed mesophytic forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat, ranging from sea level to 10,800 feet AMSL. Their most typical habitat is arid western desert scrub and pine forest regions.

Townsend's big-eared bats occur throughout the west though their distribution is strongly correlated with the availability of caves and cave-like roosting habitat, including abandoned mines. Habitat is widely available throughout the vicinity of the Project Area in the abandoned mine shafts and buildings. There were several recorded observations within the vicinity of the Project Area in 1970 and 1972, as well as in 2012 by Nevada Department of Wildlife (NDOW) biologists inspecting shafts and adits for suitable habitat.

Western Small-footed Myotis

Small-footed myotis is distributed in deserts, chaparral, riparian zones, western coniferous forest, and pinyon-juniper forest. Individuals are known to roost singly or in small groups in cliff and rock crevices, buildings, concrete overpasses, caves, and mines.

Although there have been no recorded observations of this species, habitat is widely available throughout the vicinity of the Project Area in the abandoned mine shafts and buildings.

Pallid Bat

Pallid bats are found throughout western North America in rocky arid deserts and canyonlands, shrub-steppe grasslands, karst formations, and higher elevation coniferous forests. It is most abundant in xeric ecosystems, including the Great Basin, Mojave, and Sonoran Deserts. Pallid bats may roost alone, in small groups (two to 20 bats), or in large groups (hundreds of individuals). Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, trees, and various human structures such as bridges, barns, porches, bat boxes, and human-occupied as well as vacant buildings. Roosts generally have unobstructed entrances and exits, and are high above the ground, warm, and inaccessible to terrestrial predators (WBWG, 2005). Pallid bats have previously been found within the mines in Virginia City (BLM, 2013b).

Brazilian Free-tailed Bat

Brazilian free-tailed bats are one of the most widely distributed mammal species in the Western Hemisphere. In the western United States, the Brazilian free-tailed bat is most commonly associated with dry, lower elevation habitats, yet also may occur in a wide variety of other habitats. This species is highly colonial with maternity colonies ranging in size from a few hundred to 20 million. The most commonly used natural roosts are caved and rock crevices in cliff faces but may also use abandoned mines and tunnels, highway bridges, and large culverts (WBWG, 2005). Brazilian free-tailed bats have previously been found within the mines in Virginia City (BLM, 2011).

Potential habitat for the spotted bat, western red bat, California myotis, little brown myotis, and Yuma myotis are present in the Project Area and vicinity.

3.7.2 No Action/Current Management Alternative

Nesting and foraging habitat for special status wildlife species within the existing 30-foot ROW on the American Flat Road is very limited due to the existing disturbance and small amount of vegetation present. Carrion on the American Flat Road and State Route 342 may provide a food source for special status wildlife species.

3.7.3 Non-Federal Alternative

A corridor of disturbed vegetation is present along State Route 341/342 which would be used to access the heap leach processing facility under the Non-Federal Alternative. This corridor does not provide habitat for special status wildlife species. Surface disturbance associated with construction and operation of this new heap leach processing facility under the Non-Federal Alternative would occur within the low sagebrush and desert scrub communities. The area was

surveyed in 2011 by Environmental Science Associates and no State protected species were observed; however, the communities could provide nesting and foraging habitat for the following State protected wildlife species: pallid bat; Brazilian free-tailed bat; spotted bat; Townsend's big-eared bat; western red; sage thrasher, and loggerhead shrike.

3.8 GENERAL WILDLIFE

3.8.1 Proposed Action

The NDOW's Wildlife Action Plan characterized Nevada's vegetative land cover in eight broad ecological system groups and linked those with key habitat types, which are further refined into ecological systems characterized by plant communities or associations that support various wildlife species (NDOW, 2006). As discussed in the vegetation resources section (Section 3.13), the majority of the Project Area occurs in areas described as sagebrush. Wildlife species observed in and near the Project Area during field surveys include the following mammals: black-tailed jackrabbit (*Lepus townsendii*), and cottontail rabbit (*Sylvilagus audubonii*) (ESA, 2013a). Other mammals that have the potential to occur in the area include; Townsend's ground squirrel (*Spermophilus townsendii*), Wyoming ground squirrel (*Spermophilus elegans*), desert woodrat (*Neotoma lepida*), deer mice (*Peromyscus maniculatus*), northern grasshopper mice (*Onychomys leucogaster*), coyotes (*Canis latrans*), bobcats (*Lynx rufus*), and kit fox (*Vulpes macrotis*) (NDOW, 2006). These are the species observed during surveys; however, habitat for other wildlife species is available in the Project Area.

Additionally, bats are common in arid shrubland areas where water is available. Bat species that may be present are discussed in Special Status Species (Animals) (Section 3.7).

Big game species that have the potential to occur include mule deer (*Odocoileus hemionus*). The NDOW has mapped a portion of the Project as year round habitat for mule deer, but has not identified any mule deer migration corridors in the Project Area. The NDOW has also mapped the Project Area as potential habitat for bighorn sheep (*Ovis canadensis*), although there have been no sightings (NDOW, 2012).

Numerous bird species have been observed in, or have the potential to occur in, the Project Area. Section 3.4 (Migratory Birds) contains a list of all the bird species observed during 2011 field surveys. Additionally, raptor surveys were conducted within a five-mile buffer of the Project Area in 2012 (JBR, 2013b). Species observed during these surveys include: golden eagle, red-tailed hawk, American kestrel (*Falco sparverius*), and prairie falcon (*Falco mexicanus*).

Reptiles observed in the Project Area include gopher snake (*Pituophis catenifer*), and western fence lizard (*Sceloporus occidentalis*) (ESA, 2013a).

3.8.2 No Action/Current Management Alternative

In general, the wildlife species that use the area analyzed for the No Action/Current Management Alternative are the same as for the Proposed Action. Foraging and nesting habitat for wildlife may be located along the existing American Flat Road within the limited vegetation present on the side of the road. Additionally, carrion from collisions on the American Flat Road and State Route 342 may provide foraging opportunities for scavenging wildlife species.

3.8.3 Non-Federal Alternative

Low quality habitat for wildlife is present along State Route 341/342 which would be used to access the heap leach processing facility proposed under the Non-Federal Alternative. In general, the wildlife species that use the area analyzed for the Non-Federal Alternative are the same as for the Proposed Action. Surface disturbance associated with construction and operation of the new heap leach processing facility would include areas within the low sagebrush and desert scrub communities. These vegetation communities could provide nesting and foraging habitat for wildlife.

3.9 LAND USE AUTHORIZATIONS

3.9.1 Proposed Action

The Proposed Action is located in Storey County, Nevada. Historically, land use within the Project Area and vicinity has been for mining activities, access to public and private lands, and a variety of other activities. In addition, various utility ROWs occur within the Project Area. These ROWs are primarily for transmission lines and access. Table 3-4 is a list of ROWs within the Project Area.

Table 3-4 Rights-of-Ways and Easements in the Project Area

Description/Holder	Type of Easement	Document Number
Sierra Pacific Power Company	Power line ROW	NEV 06229
Sierra Pacific Power Company	Power line ROW	Document 47036
Sierra Pacific Power Company	Power line ROW	NVN 0 065885
Sierra Pacific Power Company	Power line ROW	NEV 042763
Comstock Mining, LLC	Road ROW	NVN 091237
V & T Railroad Reconstruction	Access Easement	Document Number 096388
V & T Railroad Reconstruction	Access Easement	Document Number 104637

Sources: Horm, 2013; BLM, 2013a; and Storey County, 2013a

The vast majority of the claims within the Project Area are controlled by Comstock Mining, LLC. The lots/claims not shown as held by Comstock Mining, LLC in the Storey County Assessor database are on the northern portion of the realigned American Flat Road. Table 3-5 is a list of the mining claims and lot numbers within the Project Area and the claim holders.

Table 3-5 Claims and Lot Numbers in the Project Area

Claim Name/Lot Number	Owner
Comstock 115	Comstock Mining, LLC
Comstock 116	Comstock Mining, LLC
Comstock Lode 122	Comstock Mining, LLC
Comstock Lode 124	Comstock Mining, LLC
Comstock Lode 126	Comstock Mining, LLC
Comstock Lode 133	Comstock Mining, LLC
Comstock 135	Comstock Mining, LLC
Comstock 137	Comstock Mining, LLC
Comstock 139	Comstock Mining, LLC
Comstock #1	Comstock Mining, LLC
Comstock #13	Comstock Mining, LLC
Comstock #17	Comstock Mining, LLC
MS 55 Keystone	Comstock Mining, LLC
MS 48 Justice	Comstock Mining, LLC
MS 117-B Chonta	Comstock Mining, LLC
MS 140 Lucerne	Comstock Mining, LLC
Hartford South Extension	Comstock Mining, LLC
Green	Comstock Mining, LLC
Billie the Kid	Comstock Mining, LLC
Hartford St. Louis Fraction	Comstock Mining, LLC
Hartford	Comstock Mining, LLC
Hartford Lucerne Fraction	Comstock Mining, LLC
Justice Lucerne Fraction	Comstock Mining, LLC
Lot 3 (Patent No. 197)	Comstock Mining, LLC
Lots 17/18	Sutro Tunnel Company
Lot 32	Comstock Mining, LLC
Lot 33 (Patent No. 204)	Comstock Mining, LLC
Lot 35 (Patent No. 202)	Comstock Mining, LLC
Lot 39	Railroad and Gold, LLC and United Mining Corp
Merrilite	Railroad and Gold, LLC
Maryland Fraction	Railroad and Gold, LLC
Alto No. 9	Railroad and Gold, LLC

Sources: BLM, 2013a; Storey County, 2013a and 2013b; GLO, 2013.

3.9.2 No Action/Current Management Alternative

The NDOT provides maintenance on the paved area and drainage area of State Route 342. The NDOT has prescriptive rights on State Route 342 from the intersection of C Street in Virginia City to the intersection of State Route 341 (Occidental Grade) in Silver City (Salazar, 2013).

3.9.3 Non-Federal Alternative

The NDOT provides maintenance on the paved area and drainage area of State Route 341/342 which would be used to access the heap leach processing facility under the Non-Federal Alternative. The proposed heap leach processing facility under this alternative would be located on private land, and any development on the private property would have to comply with the Lyon County Development Code. According to the Lyon County Assessor Map for the property, the Non-Federal Alternative is within MS 63 Kossuth Lode (Record of Survey 512207), and portions of MS 94 Silver Central and MS 80 Carson (Record of Survey 512207 and Boundary Line Adjustment 218726). There are several above ground transmission lines within or adjacent to the Project Area. These are most likely associated with ROW grants NEV 06229 and NVN 0 065885 (Horm, 2013). The NDOT provides maintenance on the paved area and drainage area of State Route 341/342. The NDOT has prescriptive rights and a deed recorded on State Route 342 from the intersection of C Street in Virginia City to the intersection of State Route 341 (Occidental Grade) in Silver City (Salazar, 2013).

3.10 Recreation and Travel Management

3.10.1 Proposed Action

Recreation

Recreational opportunities that are present in the vicinity of the Project Area include biking, running, horseback riding, and off-highway vehicle (OHV) use. Roads in the Project Area are utilized for the Virginia City 100, a 100-mile endurance ride that is located in the mountains, trails, and roads in the Virginia City/Washoe Valley area (Figure 14). The American Flat Road is utilized by the public to access the former American Flat Mill site and the V&T Railroad for sightseeing.

Sevenmile Canyon is an OHV recreational site consisting of several miles of trails located in the vicinity of Virginia City and the site of Virginia City Grand Prix motorcycle race. Jumbo Grade is a popular OHV area located east of the Project Area in Washoe Valley. Roads in the Project Area are likely utilized by the same recreational users that visit Sevenmile Canyon and Jumbo Grade (Figure 14).

Roads and trails in the Project Area are generally characterized as hard-packed, rocky, and fairly stable during periods of moderate soil moisture. A network of user-created roads is located in the vicinity of the Project (Figure 14). Roads and trails are prone to soil displacement during periods of dry (dust) or high moisture events (rutting). At an elevation of 6,200 feet AMSL, Virginia City receives more snow in the winter months than the lower elevations in Dayton, Reno, and Carson City. Subsequently, the area does not draw a significant amount of motorized use in the winter months compared to Hungry Valley (north Reno) or the lower Pine Nuts (Carson City) since road and trail access is limited due to snow levels.

Travel Management

Travel management is a comprehensive approach to the administration of travel and transportation networks of roads, primitive routes, trails, and areas. Travel management planning includes the inventory and mapping, route designations, and other measures necessary for providing access to and across public lands for a variety of uses. The BLM has the direct responsibility for travel management on the public land segments of the American Flat Road and Lucerne Haul Road. Other entities, individuals or private companies, have the direct responsibility for the management of routes on private lands. For example, the NDOT has the responsibility to manage travel on State Route 341/342.

3.10.2 No Action/Current Management Alternative

Under this alternative, Comstock Mining, LLC would continue to haul ore to the heap leach processing facility in American Flat from the Lucerne Pit by traveling on the Lucerne Haul Road non-exclusively. The area analyzed for this alternative does not provide recreational opportunities; however, the roads may be utilized by the public to access other areas for recreational opportunities.

3.10.3 Non-Federal Alternative

Although the analysis area for the Non-Federal Alternative is located on private land, there are numerous user-created roads in the vicinity. Under this alternative, a new heap leach processing facility would be constructed in Lyon County and haul traffic would travel from the Lucerne Pit along State Route 341/342 to the new heap leach processing facility in Spring Valley by going through Silver City. According to NDOT, the average annual daily traffic (AADT) for State Route 341 between U.S. Highway 50 and the intersection of State Route 341/342 was 2,700 vehicles in 2014. The AADT consists of the number passenger cars, motorcycles, buses, utility vehicles, and semi-trucks measured on an average day over a year. The AADT for State Route 342 between the intersection of State Route 341/342 (in Virginia City) and the intersection of State Route 341/342 (south of Silver City) was 1,900 vehicles in 2014 (Pers. Comm. NDOT, 2015).

3.11 SOCIOECONOMICS

3.11.1 Proposed Action

The Project Area is located in Storey County, Nevada, the second smallest county by area in Nevada. According to the United States Census Bureau, the population of Storey County in 2012 was 3,935, with 1,755 households. This is a decrease of 1.9 percent from the 2010 population of 4,010 people. The population of Storey County is 0.14 percent of Nevada's total State population (U.S. Census Bureau, 2013). The county seat of Storey County is Virginia City, which has population of 1,080 (U.S. Census Bureau, 2013). The city is a popular tourist

destination for people interested in the mining history of the West. The tourism industry, largely due to the county's mining heritage, continues to attract more than 1.6 million people a year to the county (Storey County, 2013a). The closest city to the Project Area is Silver City, approximately 0.5 mile southeast of the Project Area.

As of November 2013, the unemployment rate in Storey County was 10.6 percent, which was higher than both the Nevada rate of 9.7 percent and the United States rate of 7.9 percent (Nevada Workforce Informer, 2013). The largest private employers in Storey County as of the second quarter of 2013 were Wal-Mart, Intellisource, and Petsmart located in McCarran, Nevada, approximately 50 miles northeast of the Project Area (Nevada Workforce Informer, 2013). The average annual per capita income for Storey County is $30,512, which is more than the State average of $27,625 (U.S. Census Bureau, 2013).

Comstock Mining, LLC had an average workforce of 84 employees for 2015 involved in pit operations (geologists, engineers, environmental managers, heavy equipment operators, and ore transportation), metallurgical labs and heap leach processing (metallurgists and facility operators), and administrative staff. Salaries result in approximately $6.7 million income into the local economy. Comstock Mining, LLC currently pays approximately $299,000 to Storey County, and $7,000 to Lyon County in property taxes annually. Local contractors have received approximately $6.8 million from projects at Comstock Mining, LLC since 2012. Comstock Mining, LLC contributes one percent royalty to provide land reclamation activities and also contributes one percent royalty to historic and cultural protections. Since 2012, Comstock Mining, LLC has also contributed to community interest projects including approximately $120,000 for an Environmental Monitoring System, approximately $2 million for abandoned mine shaft closure and SR 342 relocation, and over $3 million in CRMS soil sampling and clean up (Pers. Comm. Comstock, 2015).

A temporary workforce of eight employees or contractors would utilize services in Virginia City and likely commute to the Project Area from their homes in Storey, Lyon, or Carson City counties. Additionally, the Project would support services and utilize products from Carson City and Washoe counties.

3.11.2 No Action/Current Management Alternative

The workforce for this alternative would not change from existing conditions.

3.11.3 Non-Federal Alternative

Under the Non-Federal Alternative, mining activities would continue with processing moved from American Flat to a new heap leach processing facility located on private land in Spring Valley. A temporary workforce would be employed to construct the new heap leach processing

facility, which would consist of approximately 115 employees or contractors. A smaller workforce consisting of approximately 30 individuals would remain to operate the heap leach processing facility following construction. The operations workforce would be the same as the workforce currently operating the existing heap leach processing facility.

The nearest town to the heap leach processing facility is Silver City. Based on the U.S. Census Bureau, the town of Silver City has an estimated population size of 183 in approximately 123 households. The median age of residents is estimated to be 43.6 years old. An estimated 110 residents are in the labor force, and 58 are estimated to be unemployed. The estimated average annual per capita income for Silver City is $63,741 (U.S. Census Bureau, 2015).

3.12 SOILS

3.12.1 Proposed Action

According to the National Resources Conservation Service (NRCS) soils database, there are the following three soil associations within the Project Area: Springmeyer-Reno association (120); Pits-Dumps complex (602); and Reywat-Ister-Rock outcrop association (740).

The Springmeyer-Reno association soils are typically well drained and consist of gravelly loam, gravelly find sandy loam, cobbly fine sandy loam, clay, cemented material, and very gravelly loamy sand. Water capacity ranges from low to moderate (4.6 inches for Reno and 7.9 for Springmeyer) (USDA, 2013a).

The Pits-Dumps complex occurs on previously disturbed land.

The Reywat-Ister-Rock outcrop association soils are generally well drained and consist of cobbly loam, very gravelly clay loam, very stony sandy loam, very stony sandy clay loam, and very stony clay loam before reaching bedrock. Water capacity ranges from very low to low (2.4 inches for Reywat and 4.3 inches for Ister) (USDA, 2013b).

3.12.2 No Action/Current Management Alternative

Soils located in the area analyzed for the No Action/Current Management Alternative are the same as those described for the Proposed Action.

3.12.3 Non-Federal Alternative

Disturbed soils are present along State Route 341/342 which would be used to access the heap leach processing facility under the Non-Federal Alternative. According to the NRCS soils database, there are the following three soil associations within the proposed processing area for the Non-Federal Alternative: Reywat-Ister-Rock outcrop association (740); Devada-Rock

outcrop complex (241); Devada-Old Camp-Reywat association (7165); and Reno cobbly sandy loam, 4 to 15 percent slopes (572).

The Reywat-Ister-Rock outcrop association soils are generally well drained and consist of cobbly loam, very gravelly clay loam, very stony sandy loam, very stony sandy clay loam, and very stony clay loam before reaching bedrock. Water capacity ranges from very low to low (2.4 inches for Reywat and 4.3 inches for Ister) (USDA, 2013a).

The Devada-Rock outcrop complex soils are well drained, very cobbly loam grading to gravelly clay. Unweathered bedrock is present at 12 to 20 inches in depth. Water capacity is very low, about 1.7 inches (USDA, 2013b).

The Devada-Old Camp-Reywat association soils are well drained. Devada soils are very cobbly loam grading to gravelly clay, Old Camp soils are very stony sandy loam to extremely stony clay loam, and Reyvat soils are cobbly loam and very gravelly clay loam. Unweathered bedrock is present at 10 to 20 inches in depth. Water capacity is very low, about 1.7 inches for Devada, 1.4 inches for Old Camp, and 2.4 for Reywat (USDA, 2013b).

The Reno cobbly sandy loam, 4 to 15 percent slopes, soils are well drained. The soils in this association range from cobbly sandy loam, gravelly clay, cemented material, and extremely gravelly loamy sand. Water capacity is low, about 4.5 inches (USDA, 2013b).

3.13 VEGETATION

3.13.1 Proposed Action

A vegetative survey of the Project Area was conducted in May and June 2011, to determine the composition of native plant communities. Objectives of the field survey were to identify the plant communities' floristic composition and map the plant communities present in the Project Area. Areas within the Project Area include low sagebrush, mountain big sagebrush, and disturbed/sagebrush vegetation communities (ESA, 2013a). Those communities are discussed below.

Low Sagebrush

Low sagebrush (*Artemisia arbuscula*) provides dominant shrub cover on slopes and ridgetops, where soils are characterized by a shallow soil layer underlain by bedrock. It is also a component of the disturbed/sagebrush community mosaic. Sporadic tree cover is provided by singleleaf pinyon and Utah juniper, with occasional shrub associates downy rabbitbrush (*Chrysothamnus viscidiflorus* ssp. *puberulus*) and desert shrub species smooth horsebrush (*Tetradymia glabrata*), Nevada ephedra (*Ephedra nevadensis*), and spiny hopsage (*Grayia spinosa*) also present. Relatively heavy cover provided by cheatgrass dominates the grass layer,

along with perennial grasses Sandberg bluegrass (*Poa secunda* ssp. *secunda*) and bottlebrush squirreltail (*Elymus elymoides*). Annual herbs commonly present including Nuttall's fescue (*Vulpia microstachys*), filaree (*Erodium cicutarium*), wireweed (*Rigiopappus leptocladus*), moth combseed (*Pectocarya setosa*), and yellow navarettia (*Navarettia breweri*). Perennial, herbaceous associates include western hawksbeard (*Crepis occidentalis*), pale agoseris (*Agoseris glauca*), Holboel's rockcress (*Boechera holboelii*), Bruneau mariposa lily (*Calochortus bruneaunis*), milkvetches (*Astragalus* spp.), and wild buckwheats (*Eriogonum* spp.).

Mountain Big Sagebrush

This community type is found on slopes that exhibit deeper soils, and is the most common understory community within pinyon-juniper woodlands. On more mature sites, mountain big sagebrush (*A. tridentata* ssp. *vaseyana*) dominates the shrub layer with antelope bitterbrush (*Purshia tridentata*), Douglas' rabbitbrush (*Chrysothamnus viscidiflorus* ssp. *viscidiflorus*), and smooth horsebrush occasional associates. Singleleaf pinyon and/or juniper provide sporadic tree cover. The herbaceous layer is generally sparse with perennial bunchgrasses bottlebrush squirreltail, Sandberg bluegrass and Thurber's needlegrass (*Achnatherum thurberianum*) present. Common, perennial herbs include silver lupine (*Lupinus argenteus* var. *heteranthus*), balsamroot (*Balsamorhiza hookeri*), western and tapertip hawksbeard (*Crepis acuminata*), and longleaf phlox (*Phlox longifolia*). Annual herbs include several members of the borage family including two species of fiddleneck (*Amsinckia retrorsa* and *Amsinckia tessellata*), with miner's lettuce (*Claytonia perfoliata*), white tidytips (*Layia glandulosa*) and wireweed also present.

Disturbed/Sagebrush

Disturbed habitats include old and current road cuts and shoulders, railroad grade and ROW, historic mine works and tailings, and burns. These areas are generally characterized by a preponderance of annual, highly competitive species that are the first to colonize bare and disturbed soils. Commonly observed exotic annuals include filaree, tumble mustard (*Sisymbrium altissimum*), flixweed tansymustard (*Descurainia sophia*), prickly lettuce (*Lactuca serriola*), and cheatgrass. Native species that occupy this niche include wingnut cryptantha (*Cryptantha pterocarya*), bristly fiddleneck, spiny skeletonweed (*Stephanomeria spinosa*), slender tarweed (*Madia gracilis*), and whitestem stickleaf (*Mentzelia albicaulis*). Additional herbaceous colonizers include common horehound (*Marrubium vulgare*), with native shrubs including desert peach, antelope bitterbrush, rubber rabbitbrush, and mountain big sagebrush also observed colonizing these habitats.

3.13.2 No Action/Current Management Alternative

Vegetation within the existing ROW for the American Flat Road as well as along the non-exclusive use haul road is disturbed.

3.13.3 Non-Federal Alternative

A corridor of heavily disturbed vegetation is present along State Route 341/342 which would be used to access the heap leach processing facility under the Non-Federal Alternative. Vegetation in the proposed heap leach processing facility area is dominated by desert scrub, low sagebrush, rock outcrop, and areas that have been previously disturbed (ESA, 2013b).

Desert Scrub

This community type occurs commonly on south-facing slopes, on revegetating tailings piles and railroad grade, and is the most prevalent community type west of State Route 341 and adjacent to Negro Ravine. Occasional tree cover is provided by Utah juniper and singleleaf pinyon, with shrub cover consisting of smooth horsebrush, rubber rabbitbrush, Nevada ephedra, Mormon tea (*Ephedra viridis*), purple sage (*Salvia dorrii*), spiny hopsage, mountain big sagebrush and desert peach in varying proportions. The grass component is represented by cheatgrass, desert needlegrass (*Achnatherum speciosum*), Thurber's needlegrass, and bottlebrush squirreltail, while bristly fiddleneck, moth combseed, wingnut cryptantha and whitestem stickleaf are the common annual herbs present. Manyflower bedstraw (*Galium multiflorum*), Indian paintbrush (*Castilleja chromosa*), and shaggy milkvetch (*Astragalus malacus*) provide additional perennial cover.

Low Sagebrush

The low sagebrush vegetation community in the area analyzed for the Non-Federal Alternative is the same as the low sagebrush vegetation community described above for the Proposed Action.

Rock Outcrop

Rock outcrops are scattered throughout this survey area, with woody cover provided variously by singleleaf pinyon, Utah juniper, mountain big sagebrush, littleleaf brickellbush (*Brickellia microphylla*), and desert shrub species. Bottlebrush squirreltail and cheatgrass are the dominant grasses, with Thurber's needlegrass, Sandberg bluegrass, and desert needlegrass sometimes present. Additional sparse, perennial herbaceous cover is provided by manyflower bedstraw, silver rockcress (*Boechera puberula*), wallflower phoenicaulis (*Phoenicaulis cheiranthoides*), and tufted evening primrose (*Oenothera cespitosa*), with annual herbs sporadically present.

4.0 ENVIRONMENTAL CONSEQUENCES

This chapter describes and compares the environmental consequences predicted to result from implementing the Proposed Action or Alternatives described in Chapter 2.0. The purpose of this chapter is to present the impact analysis of the alternatives and to disclose the impacts of the actions on affected resources.

The potential consequences or impacts of each alternative are addressed in the same order of the resource topics discussed in Chapter 3.0. This parallel organization allows readers to compare existing resource conditions (Chapter 3.0) with potential impacts (Chapter 4.0).

This chapter describes the potential direct, indirect, and residual effects to resources that may result from the Proposed Action or Alternatives. In this NEPA document, the word "adverse" is used in characterizing minor (non-significant) detrimental effects to a resource, and "negligible" is used in characterizing minor (non-significant) detrimental effects to a resource that are generally undetectable. "Beneficial" effects would have a positive effect on the resource. In this document, the terms "effect" and "impact" are used synonymously.

In the impact analysis for cultural resources, "adverse" has a different meaning under the NHPA. "An adverse effect occurs when a project may directly or indirectly diminish the integrity of an historic property by altering any of the characteristics that qualify that property for National Register inclusion. Specifically, if the project diminishes the integrity of a property's location, design, setting, materials, workmanship, feeling, and association, then there is an adverse effect" (NEH, 2013).

In general, direct impacts result from activities authorized by the BLM and occur at the same time and place as the activity or action causing the impact. For example, for the action of building a road, a direct adverse impact is surface disturbance. Surface disturbance is the impact (the effect) of heavy equipment removing existing vegetation (the cause) as it grades the proposed road location. Indirect impacts occur at some distance or time from the action. In the example just given, an indirect impact could occur days after the surface is disturbed, as well as some distance from the disturbance. Heavy precipitation following the removal of vegetation and/or disturbance of the ground surface could erode soil and transport sediment into streams. The impact on stream water quality is considered an indirect adverse impact.

When applicable, the short-term or long-term aspects of impacts are described. Short-term impacts occur during Project construction. Long-term impacts would occur through Project operations. Project operation and maintenance activities were described in Section 2.1.5.

4.1 AIR QUALITY

4.1.1 Proposed Action

Project-related activities could disturb up to 49 acres of public and private lands from road construction and improvements. Construction and use of the roads in the Project Area would create fugitive dust and engine exhaust emissions causing negligible, short-term impacts to air quality.

Under the Proposed Action, the amount of haul traffic would decrease to up to 100 round trips per day. The distance traveled per round trip would be approximately 3.2 miles by up to 60-ton haul trucks. All haul traffic would be on maintained dirt roads. To limit long-term impacts to air quality, EPMs such as observing speed limits and the use of water trucks to control fugitive dust in accordance with the NDEP-BAPC Air Permit would be implemented. Impacts to air quality from haul truck traffic is expected to be adverse and be long-term. Table 4-1 shows the emissions calculations associated with the Proposed Action.

Table 4-1 Emissions Under the Proposed Action

Activity	Round Trips Per Day	Duration	PM	PM_{10}	$PM_{2.5}$	CO_2e***
60-ton Haul Trucks*	100	Long-term**	33.08	7.53	0.88	3,963.47
Road Construction Activities	N/A	Short-term (in tons)	21.98	10.99	1.65	670.00

Sources: Air Sciences, 2016; Stantec, 2016.
Unless noted, all calculations are in tons per year.
* Based on an operation 365 days per year, 24-hours per day.
** Based on a ROWA issued for 30-years.
*** CO_2e based on total CO_2 plus CH_4 and N_2O with associated global warming potential scaling factors applied.

4.1.2 No Action/Current Management Alternative

Under the No Action/Current Management Alternative, the amount of haul traffic would continue to be up to 118 round trips per day. The distance traveled per round trip is approximately 3.2 miles by 38-ton haul trucks. All haul traffic is on maintained dirt roads. EPMs would be implemented in accordance with the NDEP-BAPC Air Permit. Impacts to air quality caused by travel on the roads are adverse. Table 4-2 shows the emissions calculations associated with the No Action/Current Management Alternative.

Table 4-2 Emissions Under the No Action/Current Management Alternative

Activity	Round Trips Per Day	Duration	PM	PM_{10}	$PM_{2.5}$	CO_2e***
38-ton Haul Trucks*	118	Short-term**	36.63	7.43	0.89	4,486.55

Sources: Air Sciences, 2016; Stantec, 2016.
Unless noted, all calculations are in tons per year.
* Based on an operation 365 days per year, 24-hours per day.
** Based on an operation between August 2012 and December 2017 (five years, expiration of the ROW).

*** CO_2e based on total CO_2 plus CH_4 and N_2O with associated global warming potential scaling factors applied.

4.1.3 Non-Federal Alternative

Fugitive dust and emissions would be generated as result of the construction and operation of the heap leach processing facility in Lyon County causing short-term and long-term impacts to air quality. Emissions from the additional equipment required to construct and operate the heap leach processing facility would likely be greater than the emissions from equipment that would be utilized for road construction, improvement, maintenance, and use as described for the Proposed Action and No Action/Current Management Alternative. Impacts from construction activities are expected to be short-term and would occur in Lyon County. Long-term impacts to air quality from the operation and maintenance of the heap leach processing facility in Lyon County, as well as site access to the heap leach processing facility along State Route 341/342 in Storey and Lyon counties, would be expected to be similar to emissions from the existing heap leach processing facility and last through the decommissioning of the heap leach processing facility. Air quality impacts to Spring Valley are expected to be long-term and adverse.

Haul-truck and mine-related traffic would shift from the Lucerne Haul Road area to along the State Route 341/342 corridor to the new heap leach processing facility in Spring Valley. There would be increased vehicle emissions in Silver City under the Non-Federal Alternative. Under the Non-Federal Alternative, the amount of haul traffic could be up to 118 round trips per day by 16.5-ton haul trucks. The distance traveled per round trip would be approximately 5.1 miles. Although the distance of a round trip would increase from 3.2 miles under the Proposed Action to 5.1 miles under the Non-Federal Alternative, actual emissions of PM, $PM_{2.5}$, and PM_{10} would decrease because most of the travel (approximately four miles) would be on paved surfaces (State Route 342). Under the Non-Federal Alternative, the administrative traffic between the American Flat Road (site of Comstock Mining, LLC's administrative offices) and new processing facility in Spring Valley could be up to 75 round trips per day. The distance traveled per round trip would be approximately 6.0 miles. As most of the administrative traffic would be on paved surfaces (State Route 341/342), increases in PM, $PM_{2.5}$, and PM_{10} would be negligible. Table 4-3 shows the emissions calculations associated with the Non-Federal Alternative. Emissions associated with haul traffic is expected to be adverse and long-term.

Table 4-3 Emissions Under the Non-Federal Alternative

Activity*	Round Trips Per Day	Duration	PM	PM_{10}	$PM_{2.5}$	CO_2***
Mining and 16.5-ton Haul Trucks	118	Long-term**	37.39	15.60	4.15	11,973.00
Administrative Traffic	75	Long-term**	0.01	0.01	0.01	0.37
Construction of Heap-Leach Processing Facility	N/A	Short-term (in tons)	35.12	17.56	2.63	5,744.00
Operation of Heap leach Processing Facility	N/A	Long-term**	59.51	16.39	14.42	18.60

Source: Air Sciences, 2016.
Unless noted, all calculations are in tons per year.
* All activities are outside the BLM's decision-making.
** Based on an operation 365 days per year, 24-hours per day for 30-years.
*** CO_2e based on total CO_2 plus CH_4 and N_2O with associated global warming potential scaling factors applied.

4.2 CULTURAL RESOURCES

4.2.1 Proposed Action

4.2.1.1 Direct/Indirect Effects APE

Within the Direct/Indirect Effects APE for the Proposed Action, 12 sites have been determined eligible for the NRHP. Eight of the 12 historic properties are located within or adjacent to the proposed disturbance area and have the potential to be adversely affected. There are no historic properties within or adjacent to the wedge crossings depicted in Figure 3, and there are no historic properties within or adjacent to the proposed realigned section of the American Flat Road depicted in Figure 4.

Effects to site(s) may include physical damage or removal of artifacts or features as a result of road modification/widening activities. In areas adjacent to steep slopes, road modification could cause damaging erosion, undercutting sites or depositing sediments onto them. The BLM has determined that noise and dust from construction activities or haul traffic would not adversely affect historic properties.

In some areas, retaining walls or other physical barriers could be constructed to stabilize steep slopes and prevent erosion. Retaining walls or other barriers would conform to the guidelines of the CHDC, and would need to be designed in such a way as to avoid adversely affecting historic properties. The use of such stabilization measures has been defined in the MOA. Where physical avoidance of an historic property is not possible, mitigation could include scientific data recovery, public interpretation, or other measures that have been defined in the MOA.

4.2.1.2 Viewshed APE

The Virginia City National Historic District is a rural historic landscape comprising tangible features that are the result of historic use of the region, with the central unifying theme of mining (McClelland et al., 1999). The specific "Areas of Significance" identified in the NRHP listing

include Mining, Commerce, Industry, Engineering, Politics/Government, and Architecture. The period of significance for the district, as defined in the 1991 amendment, is 1859 to 1942 (James, 1991).

This section considers whether construction, maintenance, and use of the American Flat Road and Lucerne Haul Road would have adverse effects on the contributing historic buildings and structures within the Virginia City National Historic District. As described in Section 3.2.1.2, contributing historic buildings and structures are concentrated in five communities within the Virginia City National Historic District. Visual effects analysis for the Proposed Action focused on the 32 contributing buildings and structures within Gold Hill (James, 1991). Of these 32 contributing buildings and structures, the visual assessment indicated that 25 are within the line-of-sight of the Project Area.

Within the vicinity of the Project Area, there have been a number of modern and historic mining activities which have included access roads across the landscape. For example, during 1942, mining at the Lucerne Cut was being conducted by power shovel, with ore transported by truck to the Donovan Mill in Silver City (Stoddard and Carpenter, 1950). The Consolidated Chollar (Con Chollar), a 1940s operation, created some of the road network in the Project Area. The Con Chollar roads were constructed specifically to transport ore from the Overman Pit to the Con Chollar Mill. The open pit mining operations of the Con Chollar continued into 1944, producing 400 tons of ore a day. The ore was extracted by power shovel and transported to the Con Chollar Mill by 20-ton trucks. These historic operations were similar to modern surface mining in that they were highly mechanized, employing power shovels and haul trucks, and they extracted and processed very large volumes of ore.

The road through “Lot 51” (aka “Lucerne Haul Road”), in use today by Comstock Mining, LLC, was originally constructed in 2005 by The Plum Mining, Co. LLC. The configuration of the Lucerne Haul Road through “Lot 51” has existed in its current alignment since 2006. In August 2012, Comstock Mining, LLC commenced hauling of ore on the Lucerne Haul Road and American Flat Road between the Lucerne Pit and the heap leach processing facility at American Flat. Under the Proposed Action, Comstock Mining, LLC would be authorized to perform construction, maintenance, and use of the American Flat Road and Lucerne Haul Road to haul mined ore across public land segments.

The American Flat Road provides public access to American Flat. The re-configuration of the American Flat Road would allow for continued public access to the area on existing roads. The Lucerne Haul Road would be used to transport across public land segments ore mined from the Lucerne Pit to Comstock Mining, LLC’s heap leach processing facility in American Flat. The

Proposed Action would not cause visual, auditory, olfactory, and other indirect impacts to historic properties within the Virginia City Historic District.

The proposed function of the American Flat and Lucerne Haul roads (to access exploration and/or surface mining on private lands) has occurred during historic (1920s to 1940s) and modern day (1978 to present) periods in the Project Area. The American Flat Road has been used to access exploration or surface mining on private lands since at least 1978. The Lucerne Haul Road was constructed in 2005 by the Plum Mining Co. LLC for use in accessing exploration and/or mining on private lands. The Lucerne Haul Road has been used by Comstock Mining, LLC since August 2012 for their ongoing surface mining in the Billy the Kid and Lucerne pits. The BLM has determined that the Proposed Action would not adversely affect the feeling, setting, or association of the overall Virginia City National Historic Landmark and National Historic District or historic properties outside the Direct/Indirect Effects APE, but within the Viewshed APE (BLM, 2014).

4.2.2 No Action/Current Management Alternative

There would be no impacts to cultural resources determined as eligible for the NRHP along existing access on the American Flat Road (Spidell et al., 2014) because no new disturbance would be authorized.

4.2.3 Non-Federal Alternative

Five archaeological resources are located within the heap leach processing facility area analyzed for the Non-Federal Alternative. Of the five archaeological sites, three are historic, one is prehistoric, and one is a multi-component site with an historic and prehistoric component. Each site component within the Non-Federal Alternative was individually evaluated for the NRHP. Impacts to cultural resources as a result of this alternative are expected to be the same for the short and long-term.

Neither the prehistoric site nor the prehistoric part of the multi-component site located within the Non-Federal Alternative was determined eligible for the NRHP. Of the four historic sites, one has been determined eligible for the NRHP; this site would be impacted by the Non-Federal Alternative. Since the Non-Federal Alternative is not an undertaking under the NHPA, the approved MOA does not apply to the Non-Federal Alternative. Comstock Mining, LLC would be under no legal or regulatory requirement under the NHPA to follow a HPTP under this alternative. To date they have implemented HPTPs for cultural resources on private lands and have expressed that they would continue to implement HPTPs regardless of land status.

4.3 NOXIOUS, INVASIVE PLANT SPECIES

4.3.1 Proposed Action

Surface disturbance associated with the Proposed Action could impact up to 49 acres of public and private lands from road construction and improvements. Impacts from noxious, invasive plant species as a result of the Project are described below and are expected to be the same for the short and long-term. New surface disturbance would increase the potential for the establishment and spread of noxious, invasive plant species. Haul traffic has the potential for spreading noxious weeds. Scotch thistle and tall whitetop are known to occur in the Project Area.

Comstock Mining, LLC would control noxious weed populations in the Project Area consistent with their Integrated Weed Management Plan, which includes a detailed overview for weed management approaches, descriptions of and life histories for weed species in area surveyed, priorities for weed treatments, management actions, and includes a weed Management Maintenance Calendar. Comstock Mining, LLC would monitor and treat any noxious weed infestations that result from ground-disturbing activities within the Project Area. Treatments would be permitted, applied, and recorded per BLM policy. The BLM and Comstock Mining, LLC would cooperate to monitor the effectiveness of treatments of noxious weeds. Therefore, no adverse impacts from noxious weeds are expected from the Proposed Action.

4.3.2 No Action/Current Management Alternative

No noxious weeds are located in the area analyzed for the No Action/Current Management Alternative. Comstock Mining, LLC would continue to implement their IWMP under this alternative. Therefore, no adverse impacts from noxious weeds in the short or long-term are expected from the No Action/Current Management Alternative.

4.3.3 Non-Federal Alternative

Tall whitetop and tamarisk were located in the heap leach processing facility area analyzed for the Non-Federal Alternative. Disturbance created during construction of the heap leach processing facility could result in introduction and/or spread of noxious, invasive plant species. Regular access to the heap leach processing facility from the mine may also result in an introduction of noxious, invasive plant species.

Traffic from the administrative offices and Lucerne Pit to the proposed heap leach processing facility would pass through Silver City, and could result in the introduction of noxious weeds to this community. Comstock Mining, LLC would continue to implement their IWMP under this alternative which would include treatment of weed populations within the heap leach processing facility and Access Road, as well as preventative washing measures which would reduce the likelihood of introducing populations along State Route 341/342 and to Silver City from weed

seeds inadvertently flying from trucks. Therefore, long-term impacts to noxious weeds are expected to be minimal.

4.4 MIGRATORY BIRDS

4.4.1 Proposed Action

The Proposed Action could result in disturbance on up to 49 acres of public and private lands from road construction and improvements. Impacts to migratory birds from Project-related activities on the could include loss of habitat, nest destruction, disturbance of migratory bird species breeding behavior, or mortality associated with vehicular collisions.

In order to avoid short-term impacts to migratory birds, a pre-disturbance nest survey would be conducted by a qualified biologist prior to any surface disturbance associated with Project activities during the avian breeding season (March 1 through July 31 for raptors and May 15 through July 15 for other migratory birds) (Section 2.1.7.4). If nests are located prior to Project construction, or if other evidence of nesting (i.e., mated pairs, territorial defense, carrying nest material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species and the location of the nest) would be delineated after consultation with the BLM wildlife biologist and the buffer area avoided to prevent short-term destruction or disturbance to nests or birds until they are no longer actively breeding or rearing young, or until the young have fledged.

Long-term impacts to migratory birds would continue during Project operations with the maintenance and use of the roads in the Project Area and would continue for the duration of the Project. Habitat present in the Project Area is not considered quality nesting, roosting, or foraging habitat for migratory birds as a result of the proximity to existing, well-traveled roads and on-going disturbances. Alternative habitat is located adjacent to the Project Area and would continue to provide habitat for bird species. Therefore, long-term impacts are expected to be minimal.

4.4.2 No Action/Current Management Alternative

Under the No Action/Current Management Alternative, potential impacts to migratory birds could occur as a result of traffic on State Route 342, American Flat Road, or the non-exclusive use haul road. Adverse impacts to migratory birds on the roads in the area analyzed for the No Action/Current Management Alternative would be short-term and last until the ROW expires. No long-term impacts to migratory birds are expected from this alternative.

4.4.3 Non-Federal Alternative

Under the Non-Federal Alternative, potential short-term impacts to 41 acres associated with the construction of the heap leach processing facility on previously undeveloped private land could

result in impacts to migratory birds. Long-term impacts to migratory birds from the Non-Federal Alternative on the 41 acres could include loss of habitat, nest destruction, or disturbance of migratory bird species breeding behavior during construction, or mortality associated with vehicular collisions during heap leach processing facility operations. Impacts to migratory birds during processing operations of the heap leach processing facility could occur from an accidental release of cyanide solution from the heap leach pads or ponds which could occur any time through the decommissioning of the heap leach processing facility. Potential impacts to migratory birds from processing operations would be limited by the implementation of BMPs and safety features associated with required local and State permits.

Noise and haul truck traffic related-disturbances to migratory birds would shift from the Lucerne Haul Road area to along the State Route 341/342 corridor to the new heap leach processing facility in Spring Valley. Migratory bird mortality from collisions with administrative and haul traffic on State Route 341/342 may occur. Noise generated from traffic accessing the heap leach processing facility would further effect the low quality migratory bird habitat located along State Route 341/342. Lack of suitable nesting habitat along the road and observation of posted speed limits would minimize these impacts to migratory birds. Therefore, long-term impacts are expected to be minimal.

4.5 HAZARDOUS AND SOLID WASTES

4.5.1 Proposed Action

Solid wastes generated by the Project would include cleared vegetation lands that have not been previously disturbed. All solid waste generated during construction would be removed from the site, and if appropriate, hauled to a landfill for disposal. The Proposed Action would not generate, use, or dispose of any hazardous waste. Diesel fuel, oil, and lubricants would be used on vehicles traveling on roads in the Project Area; however, these hazardous wastes would not be stored in the Project Area. Therefore, neither short- or long-term impacts from solid or hazardous waste from the Project are expected.

Hazardous materials in the Project Area are being addressed by the NDEP-BCA due to the Project's proximity to the CRMS site. The Proposed Action is not anticipated to interfere with actions associated with the CRMS site.

4.5.2 No Action/Current Management Alternative

Under the No Action/Current Management Alternative, hazardous and solid wastes would be managed along the American Flat Road consistent with the existing ROW until it expires. Hazardous materials in the area analyzed for the No Action/Current Management Alternative are being addressed by the NDEP-BCA due to the Project's proximity to the CRMS site. Therefore,

no short- or long-term impacts to the environment from wastes associated with the No Action/Current Management Alternative are expected.

4.5.3 Non-Federal Alternative

Under the Non-Federal Alternative, short-term impacts could consist of solid wastes generated from the vegetation that is cleared on the previously undisturbed private land. Diesel fuel, oil, lubricants would be used on vehicles transporting material from the mine to the heap leach processing facility. These materials would be contained and stored onsite in the warehouse for the duration of operations. A heap leach pad would follow the same footprint as those currently in operation at the existing heap leach processing facility. Ponds associated with the heap leach would include barren, pregnant, and event ponds. A Merrill Crowe gold recovery plant would also be constructed under this alternative. Cyanide solution would be utilized on the heap leach pads, present in the ponds, and in the Merrill Crowe facility. Comstock Mining, LLC would permit this facility consistent with the existing heap leach processing facility. Hazardous materials in the area analyzed for the Non-Federal Alternative are being addressed by the NDEP-BCA due to the Project's proximity to the CRMS site. Long-term impacts to the environment from hazardous and solid wastes generated by the Non-Federal Alternative could be adverse, but are expected to be limited by the implementation of BMPs and safety features associated with required local and State permits. No impacts from this alternative to Silver City are expected from hazardous or solid wastes.

4.6 WATER QUALITY (SURFACE/GROUND)

4.6.1 Proposed Action

The Proposed Action would consist of the construction, improvement, and maintenance of roads in the Project Area. Potential short-term impacts to surface water quality from sedimentation during construction and improvement and long-term impacts from maintenance are not expected since the Project is unlikely to result in increased erosion and there are no perennial creeks adjacent to the Project Area. No hazardous wastes would be stored in the Project Area; therefore, no long-term impacts to surface water quality are expected from the Proposed Action. The Project is not expected to affect groundwater quality because road construction, use, and maintenance activities would occur on the surface and the depth to groundwater is 100 feet below ground surface.

4.6.2 No Action/Current Management Alternative

There are no short- or long-term impacts to water quality expected from the No Action/Current Management Alternative because there are no perennial sources of water adjacent to the area analyzed for this alternative.

4.6.3 Non-Federal Alternative

Under the Non-Federal Alternative, a heap leach pad would follow the same footprint as those currently in operation at the existing heap leach processing facility. Potential short-term impacts to water quality from construction could include increased sedimentation and erosion. Ponds associated with the heap leach would include barren, pregnant, and event ponds. A Merrill Crowe gold recovery plant would also be constructed under this alternative. Cyanide solution would be utilized on the heap leach pads, present in the ponds, and in the Merrill Crowe facility. Comstock Mining, LLC would permit this facility consistent with the existing heap leach processing facility. All hazardous materials would be in containment. Long-term impacts to surface water and groundwater quality from the Non-Federal Alternative could be adverse, but are expected to be limited by the implementation of BMPs and safety features associated with required local and State permits. Impacts to surface and groundwater quality from use of State Route 341/342 between the American Flat Road the heap leach processing facility in Spring Valley are not expected to occur.

4.7 SPECIAL STATUS SPECIES (ANIMALS)

4.7.1 Proposed Action

The Proposed Action could result in disturbance on up to 49 acres of public and private lands from road construction and improvements. Short-term impacts to BLM sensitive wildlife species from Project-related activities may occur during construction. Long-term impacts may include loss of habitat following construction or mortality associated with vehicular collisions during operation.

Habitat present in the 88-acre Project Area is not considered quality nesting, roosting, or foraging habitat for special status bird species as a result of the proximity to existing, well-traveled roads and on-going disturbances. Alternative habitat is located adjacent to the Project Area and would continue to provide habitat for bird species. Therefore, impacts are expected to be negligible, but long-term.

Potential impacts to golden eagle nests are not expected since they are not known to nest within the Project Area or immediate vicinity. Potential negligible, long-term impacts to golden eagle, Swainson's hawk, pinyon jay, loggerhead shrike, and sage thrasher may occur to foraging habitat as a result of vegetation removal. As discussed in Section 2.1.7.4, a pre-disturbance nest survey would be conducted on public lands during the nesting season to prevent short-term impacts to avian species.

Potential long-term impacts to BLM sensitive bat species foraging habitat may occur as a result of the Proposed Action. Additional foraging habitat is located adjacent to the Project Area and would continue to provide forage for those species.

4.7.2 No Action/Current Management Alternative

Short-term impacts to BLM sensitive species with potential habitat in the area analyzed for the No Action/Current Management Alternative could occur as a result of collisions with vehicles. These impacts from the No Action/Current Management Alternative to BLM sensitive wildlife species would be considered negligible and short-term (continuing until the current ROW expires).

4.7.3 Non-Federal Alternative

No impacts to special status wildlife species from the Non-Federal Alternative are expected along State Route 341/342 since there is no habitat for these species present. Short-term impacts to State protected wildlife species within the heap leach processing facility area under the Non-Federal Alternative could include degradation or loss of habitat or mortality associated with vehicular collisions during construction and during heap leach processing facility operations. The loss of habitat is considered a long-term impact since the heap leach processing facility would remain in operation until the mined material has been exhausted and then the heap leach processing facility would then be decommissioned. Impacts to State protected species would continue during operations of the heap leach processing facility since heap leach pads and associated ponds would be present and these impacts would be long-term. Cyanide solution would be used on the heap leach pads and would be present in the pregnant ponds. Comstock Mining, LLC would permit these features with appropriate State and local agencies and would employ BMPs and wildlife EPMs to minimize impacts to State protected wildlife species. These adverse impacts from the Non-Federal Alternative to State protected wildlife species would continue until the heap leach processing facility was decommissioned.

Noise and haul truck traffic related-disturbances would shift from the Lucerne Haul Road area to along the State Route 341/342 corridor to the new heap leach processing facility in Spring Valley. Mortality of special status wildlife from collisions with administrative and truck traffic on State Route 341/342 may occur. Lack of suitable habitat for these species along the road and observation of posted speed limits would minimize these impacts. Therefore, impacts are expected to be negligible, but long-term from this alternative.

4.8 GENERAL WILDLIFE

4.8.1 Proposed Action

The Proposed Action could result in disturbance on up to 49 acres of public and private lands from road construction and improvements. Short-term impacts to wildlife species from Project-related activities may occur during construction. Long-term impacts could include loss of habitat during construction or mortality associated with vehicular collisions. Impacts to wildlife would be expected to continue until road improvements and construction is complete. Long-term

impacts as a result of mortality associated with vehicular collisions would continue until the ROWA expires. These short-term and long-term impacts to wildlife from the Proposed Action would be considered negligible.

4.8.2 No Action/Current Management Alternative

Impacts to wildlife could occur as a result of collisions with vehicles under the No Action/Current Management Alternative. These negligible impacts would be short-term and last until the ROW expires.

4.8.3 Non-Federal Alternative

Under this alternative, short-term impacts to wildlife species from construction of the heap leach processing facility on the 41 acres and long-term impacts including loss of habitat or mortality associated with vehicular collisions. This loss of habitat is considered a permanent loss since the heap leach processing facility would remain in operation until the mined material has been exhausted and then the heap leach processing facility would then be decommissioned. Impacts during construction of this alternative would not occur under the Proposed Action or No Action/Current Management Alternative. Impacts to wildlife would continue during operations of the heap leach processing facility since heap leach pads and associated ponds would be present. Cyanide solution would be used on the heap leach pads and would be present in the pregnant ponds. Comstock Mining, LLC would permit these features with appropriate State and local agencies and would employ BMPs and wildlife EPMs to minimize impacts to wildlife.

Noise and haul truck traffic related-disturbances would shift from the Lucerne Haul Road area to along the State Route 341/342 corridor to the new heap leach processing facility in Spring Valley. Wildlife mortality from collisions with administrative and truck traffic on State Route 341/342 and impacts from noise may occur. Lack of suitable habitat along the road and observation of posted speed limits would minimize these impacts. Impacts to wildlife from the Non-Federal Alternative would be considered adverse and long-term.

4.9 LAND USE AUTHORIZATIONS

4.9.1 Proposed Action

Under the Proposed Action, Comstock Mining, LLC proposes to have exclusive use of the Lucerne Haul Road, which would prevent public access (including any potential recreational access) on the Lucerne Haul Road. The American Flat Road would be re-aligned, and would continue to be used for public access, as well as under the ROWA issued to Comstock Mining, LLC. The realignment of the American Flat Road would separate public traffic from exclusive use haul traffic on the Lucerne Haul Road. Impacts to land use access from the Proposed Action would be temporary, and the impacts would primarily result from public user delays that may occur during construction of improvements on the realigned American Flat Road. In addition,

the Proposed Action would reclaim road that runs south from the American Flat Road to the former American Flat Mill site.

Since the American Flat Road would be realigned to allow continued public access to land uses south and west of Comstock Mining, LLC's operations, and proper signage would be placed at the intersection of the realigned American Flat Road and the exclusive use Lucerne Haul Road to safely control the flow of traffic, short-term impacts from the Proposed Action on land use and access would be minor during the road realignment and construction of road improvements. After construction of the realigned American Flat Road is completed, long-term impacts to land use access from the Proposed Action would be negligible.

Various ROWs are located within the Project Area. The ROWs specified in Table 3-4 may be impacted by the Proposed Action. The primary ROWs within the Project Area are above ground power lines. The V&T Railroad Reconstruction ROW is primarily an access ROW for reconstructing and operating the V&T Railroad. Comstock Mining, LLC would coordinate with all ROW holders potentially impacted by the Proposed Action to make sure any conflicts with existing ROWs are resolved. Since Comstock Mining, LLC would coordinate with all ROW holders to prevent any conflicts with existing ROWs within the Project Area, long-term impacts to existing land use authorizations within the Project Area would be temporary and negligible.

The mining claims and lots within the Project Area are primarily held by Comstock Mining, LLC (Table 3-5). The lots and claims not shown as held by Comstock Mining, LLC in the Storey County Assessor database and the BLM's Land and Mineral Legacy Rehost 2000 System (LR2000) database are located at the northern portion of the proposed realigned American Flat Road. The impact to these claims and lots would primarily result from the improvements needed to widen the Cemetery Spur Road and the north section of the American Flat Road to improve site distances for safety. Comstock Mining, LLC would consult any property owners/claim holders impacted by these improvements prior to construction of the road improvements to reduce any potential land use or realty conflicts. Since impacts to land use within the Project Area would primarily result from initial construction activities to improve the realigned American Flat Road, and improvements would require permanent widening in some areas, impacts to existing land use authorizations would be long-term and negligible.

4.9.2 No Action/Current Management Alternative

Short- and long-term impacts from the No Action/Current Management Alternative would remain the same until the expiration of the existing ROW. Impacts result from traffic generation on the above mentioned routes from ore hauling and potential safety concerns resulting from mine traffic using the same routes as public traffic. This would result in short-term, minor impacts to land use authorizations.

4.9.3 Non-Federal Alternative

Since the heap leach processing facility for the Non-Federal Alternative would be constructed entirely on private land, land use authorization on the private land is limited to existing non-federal easements. Lyon County and other local jurisdictions are responsible for the management of zoning in Silver City and private land in the county. No public land use would be permitted on the private land without permission from the property owner, so there would be no short- or long-term impacts resulting from restricted land use access. There would be an increase in vehicle traffic on the portion of State Route 341/342 between the Lucerne Pit and the new heap leach processing facility in Lyon County, which would increase traffic passing through Silver City. Since the NDOT is responsible for the portion of State Route 341/342 affected by the Non-Federal Alternative, the NDOT would be responsible for setting the speed limit, installing safety controls, and other maintenance needs.

There are several above ground transmission lines that may be impacted by the Non-Federal Alternative. However, Comstock Mining, LLC would coordinate with all easement holders impacted by the Non-Federal Alternative in order to make sure any conflicts are resolved prior to constructing the new heap leach processing facility. Since Comstock Mining, LLC would coordinate with easement holders to prevent any conflicts, no short- or long-term impacts to existing agreements would result from the Non-Federal Alternative.

4.10 Recreation and Travel Management

4.10.1 Proposed Action

Recreation

Impacts to recreational use from the Proposed Action would be temporary, and the short-term impacts would primarily result from public user delays that may occur during construction of improvements on the American Flat Road. Short-term impacts from the Proposed Action on recreation would be minor during the road realignment and construction of road improvements. After construction of the realigned American Flat Road is completed, long-term impacts to recreation from the Proposed Action are not expected.

Under this alternative, Comstock Mining, LLC would coordinate with the Nevada All-State Trail Riders in order to avoid long-term impacts to the Virginia City 100 Endurance Ride, which crosses through the Project Area.

Travel Management

The Proposed Action addresses safety concerns regarding use of the American Flat Road by the public and mine-related traffic through modification of the road near the intersection with the

Gold Hill (Masonic) Cemetery where a blind curve exists. Currently all northbound traffic on the American Flat Road must stop before proceeding because of the blind curve.

Under the Proposed Action, Comstock Mining, LLC proposes to have exclusive use of the Lucerne Haul Road. Presently, public and haul truck traffic are intermixed between "Lot 51" and Comstock Mining, LLC's existing heap leach processing facility in American Flat. The American Flat Road would be realigned and separated from the proposed Lucerne Haul Road for public safety. The realigned American Flat Road would allow for continued public access to the V&T Railroad, the former American Flat Mill site, and to several private residents in American Flat. Short-term impacts from the Proposed Action on travel management would be minor during the road realignment and construction of road improvements. Separating public traffic from haul traffic on the American Flat Road would be a long-term, beneficial impact to travel management.

Under the Proposed Action, the amount of haul traffic would decrease to up to 100 round trips per day. The distance traveled per round trip would be approximately 3.2 miles by up to 60-ton haul trucks. Under the Proposed Action there would be no haul truck traffic on State Route 341/342, and no haul truck traffic between State Route 342 and "Lot 51" on the American Flat Road.

Under the Proposed Action, a road that runs south from the American Flat Road to the former American Flat Mill site would be reclaimed. This user-create road abuts the American Flat Road, and would also abut the proposed Lucerne Haul Road. Due to safety concerns (public traffic merging onto an exclusive use haul road near a curve), the road would be reclaimed and alternative access into American Flat would continue to be provided to the public. Short-term impacts from the Proposed Action on travel management would be minor during the road realignment and construction of road improvements. After construction of the realigned American Flat Road is completed, long-term impacts to travel from the Proposed Action are not expected.

4.10.2 No Action/Current Management Alternative

Recreation

Under this alternative, Comstock Mining, LLC would coordinate with the Nevada All-State Trail Riders in order to avoid long-term impacts to the Virginia City 100 Endurance Ride, which crosses through the area analyzed for the No Action/Current Management Alternative. Therefore, impacts to recreation would be considered negligible and short-term under the No Action/Current Management Alternative.

Travel Management

Under the No Action/Current Management Alternative, Comstock Mining, LLC would continue to haul mined ore from the Lucerne Pit to their heap leach processing facility on the Lucerne Haul Road (non-exclusively) and the American Flat Road. No modifications of the American Flat Road would be authorized to resolve safety issues with a blind curve near the Gold Hill (Masonic) Cemetery.

Under the No Action/Current Management Alternative Comstock Mining, LLC would not be authorized to realign and separate public traffic from haul traffic along the American Flat Road for public safety. Public and haul traffic would continue to be intermixed, which results in a potential for motor vehicle collisions along the American Flat Road, especially on a blind curve near the Gold Hill (Masonic) Cemetery. Impacts to travel management from the No Action/Current Management Alternative would occur until expiration of the existing ROW, and would be negligible.

Under the No Action/Current Management Alternative, the amount of haul traffic would continue to be up to 118 round trips per day. The distance traveled per round trip is approximately 3.2 miles by 38-ton haul trucks. Under the No Action/Current Management Alternative there would be no haul truck traffic on State Route 341/342, and no haul truck traffic between State Route 342 and "Lot 51."

Under the No Action/Current Management Alternative the road that leads south from the American Flat Road to the former American Flat Mill site would not be addressed. The BLM would have to seek alternative means of preventing use of the road by the public so that the BLM can reclaim the road.

4.10.3 Non-Federal Alternative

Recreation

The heap leach processing facility for the Non-Federal Alternative would be constructed entirely on private land, therefore, no recreational access would be permitted on the private land without permission from the property owner, so there would be no short- or long-term impacts to recreation.

Travel Management

The Non-Federal Alternative would result in the use of haul trucks on State Route 341/342 and through Silver City which would result in increased traffic and noise for the local residents in Silver City. Since the NDOT is responsible for the portion of State Route 341/342 affected by the Non-Federal Alternative, the NDOT would be responsible for setting the speed limit, installing safety controls, and other maintenance needs.

According to NDOT, the AADT along State Route 342 through Silver City is 1,900 vehicles per day (Pers. Comm. NDOT, 2015). Under the Non-Federal Alternative, the amount of haul traffic could be up to 118 round trips per day by 16.5-ton haul trucks. The distance traveled per round trip would be approximately 5.1 miles. The resulting increase in traffic on State Route 342 through Silver City would come from haul trucks which create more noise and cause more wear and tear on paved roadways than regular passenger vehicles. There would also be increased traffic on State Route 341/342 from mine employee and utility traffic traveling between Comstock Mining, LLC's administrative offices located on the American Flat Road and the new heap leach processing facility in Spring Valley. The increased traffic between the administrative offices and the heap leach processing facility would consist of approximately 75 round trips per day. The distance traveled per round trip would be approximately 6.0 miles. Traffic volume through Silver City would increase by approximately 10 percent. Increased traffic through Silver City and on State Route 341/342 would be long-term and an adverse effect.

4.11 SOCIOECONOMICS

4.11.1 Proposed Action

Under the Proposed Action there would be no change with regards to Comstock Mining, LLC's workforce associated with the operation of the heap leach processing facility and open pit mine operation. During construction activities associated with the Proposed Action, there would be an increase in a temporary workforce of eight employees or contractors, which is not expected to result in any new demands on public services that may be related to an increased number of workers. Impacts to socioeconomics from the Project would be short-term and beneficial.

4.11.2 No Action/Current Management Alternative

There would be no change in the workforce associated with the No Action/Current Management Alternative, unless the existing ROW were allowed to expire.

4.11.3 Non-Federal Alternative

A temporary workforce would be employed to construct the new heap leach processing facility, which would consist of approximately 115 employees or contractors. This increase in workforce would be considered a short-term impact to the local economy. It is likely that this workforce would commute from their homes in Storey, Lyon, or Carson City counties and utilize services in Virginia City.

A smaller workforce consisting of approximately 30 individuals would be retained to operate the heap leach processing facility following construction providing for continued employment. This is identical to workforce on the existing heap leach processing facility and would not result in a

change in short- or long-term impacts to the local economy of Lyon County including Virginia City and Silver City.

Under the Non-Federal Alternative, the existing ROW is set to expire on December 31, 2017. Implementation of the Non-Federal Alternative could also occur as a result of a BLM decision not to issue the ROWA for a 30-year term. In the short-term, there would be disruption of the current mining operation until a new heap leach processing facility is in operation. Layoff of mining employees would likely occur. Current taxable revenues paid to the State and/or Storey and Lyon counties would likely decrease or stop all together. Loss of mine-related employment would result in a corresponding reduction in local economic activity from a likely reduction in worker spending in the local economy. Comstock Mining, LLC would likely decrease its spending in the local economy on equipment, vehicle maintenance and repairs, and other ancillary services. A shut-down of mining activities, even in the short-term, would result in the loss of tax revenues for Storey and Lyon counties.

In the long-term under Non-Federal Alternative, with a new heap leach processing facility in operation, the tax revenue that had been paid to Storey County would be paid to Lyon County and then adjusted for the specific Lyon County tax rate. It is estimated that the tax revenue generated for Lyon County would increase from approximately $6,650 currently paid to approximately $299,000 annually under this alternative.

Compared to the Proposed Action and No Action/Current Management Alternative, the Non-Federal Alternative would adversely affect the quality of life for residents in the Silver City area. Haul traffic and noise would increase along State Route 341/342 and at the site of the proposed heap leach processing facility. There would also be increased traffic from administrative traffic. Total traffic volume through Silver City would increase by approximately 10 percent. The nearest residents are approximately 400 feet north of the proposed heap leach processing facility, although the majority of residents and the former commercial center in Silver City are approximately one mile to the north. The new heap leach processing facility would not be visible from the former commercial center in Silver City. Short and long-term effects to the quality of life in Silver City from increased noise and traffic would be adverse.

4.12 SOILS

4.12.1 Proposed Action

The Proposed Action could result in disturbance on up to 49 acres of public and private lands from road construction and improvements. Comstock Mining, LLC would employ dust control measures as outlined in the Dust Control Plan (Attachment A) and Section 2.1.7.1. Much of the Project Area has been previously disturbed; therefore, short-term impacts from dust generated during Project construction would be managed with these measure and long-term impacts to soils

from travel on unpaved roads would continue throughout the life of the Project and be considered negligible.

4.12.2 No Action/Current Management Alternative

There would be no additional short- or long-term impacts to soils under the No Action/Current Management Alternative because there would be no modifications to existing road alignments.

4.12.3 Non-Federal Alternative

Under this alternative, the construction of a new heap leach processing facility would result in impacts to 41 acres of previously undisturbed land. Short-term impacts to soils would occur during construction and could result in fugitive dust and increased erosion and sedimentation, which could in turn impact Amazon Gulch (a jurisdictional drainage that connects with Daney Canyon). Impacts during construction of this alternative would not occur under the Proposed Action or No Action/Current Management Alternative. Long-term impacts to soils would continue throughout operations from dust generated from traveling on unpaved roads. There would be no impacts to soils from the use of State Route 341/342 between the Lucerne Pit and new heap leach processing facility in Spring Valley, Comstock Mining, LLC would employ BMPs as well as follow the Dust Control Plan during construction to minimize short- and long-term impacts resulting in erosion and sedimentation. Impacts under the Non-Federal Alternative would be long-term and negligible.

4.13 VEGETATION

4.13.1 Proposed Action

The Proposed Action could result in disturbance on up to 49 acres of public and private lands from road construction and improvements. Vegetation that would be removed as a result of the Proposed Action includes low sagebrush and mountain sagebrush, as well as sporadic tree cover consisting of singleleaf pinyon and Utah juniper. Impacts to vegetation are considered negligible and long-term. Following reclamation of the Lucerne Haul Road at the end of the Project, Comstock Mining, LLC would reseed the area to encourage revegetation. On public lands Comstock Mining, LLC would use a BLM-approved seed mix.

4.13.2 No Action/Current Management Alternative

The No Action/Current Management Alternative would not result in impacts to vegetation because there would be no modifications to existing road alignments that could remove or alter vegetation.

4.13.3 Non-Federal Alternative

Impacts to vegetation as a result of the Non-Federal Alternative would occur in the 41-acre area of the heap leach processing facility, which would not occur under the Proposed Action or No

Action/Current Management Alternative. Vegetation communities in the area consist of desert scrub, low sagebrush, and rock outcrops with sporadic tree cover of singleleaf pinyon and Utah juniper. Impacts to vegetation within the area analyzed for the Non-Federal Alternative are considered adverse and long-term (lasting until the heap leach processing facility is decommissioned and the area is reclaimed and reseeded). No impacts to vegetation along the State Route 341/342 are expected from this alternative since the vegetation present in the corridor is already heavily disturbed.

4.14 COMPARISON OF ENVIRONMENTAL CONSEQUENCES BY ALTERNATIVE

Table 4-4 includes a comparison of impacts by alternative for those resources carried through the FEA for environmental impacts analysis in Section 4.0.

Table 4-4 Alternative Impact Comparison

Resource	Alternative		
	Proposed Action	**No Action/Current Management Alternative**	**Non-Federal Alternative**
Air Quality	Disturbance of approximately 49 acres during road construction and improvements; fugitive dust and engine exhaust emissions during construction and use; Up to 100 round trips per day by haul trucks.	No new surface disturbance; up to 118 round trips per day; fugitive dust and exhaust emissions during use only.	Disturbance of approximately 41 acres during construction; additional emissions associated with construction of the heap leach processing facility; fugitive dust and engine exhaust emissions during construction and use along State Route 341/342 of up to 118 round trips per day and 75 round trips per day by administrative traffic.
Cultural Resources	Eight of 12 historic properties located within or adjacent to the proposed disturbance area have the potential to be adversely impacted.	No adverse impacts to cultural resources.	One of the historic site located within or adjacent to the proposed disturbance area and has the potential to be adversely impacted.
Noxious, Invasive Plant Species	Surface disturbance associated with 49 acres could increase the potential for establishment and spread of noxious weeds.	No adverse impacts from noxious weeds expected.	Surface disturbance with 41 acres during heap leach processing facility construction and access could introduce and/or spread noxious weeds; possible to spread weeds along State Route 341/342.
Migratory Birds	Disturbance of 49 acres would result in indirect impacts to habitat and direct impacts to individuals.	Low potential for direct impacts as the road system has been used for more than three years for hauling of mined ore and administrative traffic.	Disturbance of 41 acres for heap leach processing facility and access road; indirect impacts to habitat and direct impacts to individuals from use of State Route 341/341; impacts from heap leach pad.
Solid and Hazardous Wastes	Solid waste from cleared vegetation; no hazardous waste.	No new impacts.	Solid waste from 41 acres cleared; processing materials would be used in the proposed heap leach processing facility during operations.
Water Quality (Surface/Ground)	No impacts expected.	No new impacts.	Potential impacts to water quality from construction including sedimentation and erosion; also processing materials would be used in the proposed heap leach processing facility during operations.

Resource	Alternative		
	Proposed Action	**No Action/Current Management Alternative**	**Non-Federal Alternative**
Special Status Species (Animals)	Indirect impacts from loss of habitat from new disturbance; direct impacts from use of the road.	Low potential for direct impacts as the road system has been used for more than three years for hauling of mined ore and administrative traffic.	Indirect impacts from loss of 41 acres; direct impacts from use of the access road and State Route 341/342; potential impacts from heap leach pad.
General Wildlife	Indirect impacts from loss of habitat from new disturbance; direct impacts from use of the road.	Low potential for direct impacts as the road system has been used for more than three years for hauling of mined ore and administrative traffic.	Indirect impacts from loss of 41 acres; direct impacts from use of the access road and State Route 341/342; impacts from heap leach pad.
Land Use Authorizations	User delays during construction, reclamation of road; no impacts to existing ROWs.	No changes to current land use authorizations.	Increase in vehicle traffic on State Route 341/342.
Recreation and Travel Management	Recreation. User delays during construction. Travel Management. Separation of public traffic and haul truck traffic improves safety. Up to 100 round trips per day by 60-ton haul trucks.	Recreation. No new impacts. Travel Management. Public safety issues continue with intermixing of public traffic and haul traffic. Up to 118 round trips per day by 38-ton haul traffic.	Recreation. No impacts to public recreation. Travel Management. Shift in haul traffic from the Lucerne Haul Road/American Flat Road onto State Route 341/341 to Spring Valley. Up to 118 round trips per day by 16.5-ton haul trucks and 75 trips per day by administrative traffic along State Route 341/342 through Silver City, a total increase in traffic volume of approximately 10 percent.
Socioeconomics	No change in workforce associated with ongoing heap leach processing and open pit mine operations. Temporary workforce of eight employees during construction.	No new impacts.	Disruption of workforce until new heap leach processing facility is in place, resulting in decreased tax revenues for Storey and Lyon counties, and decreased employment/wages and spendable income in local economies. Temporary workforce of 115 employees during construction; 30 employees during operations.
Soils	Disturbance of up to 49 acres during road construction and improvements resulting in fugitive dust.	No new surface disturbances.	Disturbance of approximately 41 acres during construction; fugitive dust and erosion/ sedimentation during construction and operations; possible impacts to Amazon Gulch.

Resource	Alternative		
	Proposed Action	**No Action/Current Management Alternative**	**Non-Federal Alternative**
Vegetation	Disturbance of up to 49 acres would result in loss of vegetation.	No new impacts.	Disturbance of 41 acres would result in loss of vegetation. No impacts along State Route 341/342.

5.0 CUMULATIVE EFFECTS

5.1 INTRODUCTION

A cumulative effect is defined under NEPA as 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 (RFFAs) 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).

This analysis examines potential cumulative impacts from past, present, and RFFAs combined with the Proposed Action or alternatives within the cumulative effects study area (CESA) specific to the resource for which cumulative impacts may be anticipated.

These cumulative impacts include both direct and indirect actions occurring as a result of the Proposed Action or alternatives and how they affect the resources of concern. These impacts are additive and do not always result in a one-to-one relationship but rather can compound the degree of effect. The significance of effects are determined based on context (i.e., the setting) and intensity (40 CFR 1508.27[b]). Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Intensity refers to the severity of effect. Factors that could be used to define the intensity of effects include the magnitude (relative size or amount of an effect), geographic extent, duration, and frequency of the effects.

The BLM has qualitatively and quantitatively disclosed non-federal *cumulative actions* within each CESA to the extent that information is publically available, or information can be obtained through Geospatial analysis. Although provided for disclosure purposes, when determining whether the Proposed Action or Alternatives has significant cumulative effects (40 CFR 1508.27), those effects from cumulative actions that cannot be prevented or modified by BLM decision-making are not additive in making a determination of significant *cumulative effects* (BLM 2008).

Table 5-1 includes the name and size of each CESA, the figure number on which the geographic extent of the CESA is shown, and a description of each CESA.

Table 5-1 Cumulative Effects Study Areas

CESA Name	Cumulative Effects Study Areas				
	Acres			Figure	Description
	Public	Private	Total		
Cultural Resources	14,656	19,052	33,708	Figure 15	The CESA for cultural resources is the Virginia City National Historic Landmark and Historic District.
Air Quality and Land Use Authorizations	1,415	1,746	3,161	Figure 16	The CESA for air quality and land use authorizations consists of the area immediate around the Project Area. It follows the V&T railroad to the west, the Cultural Resources Viewshed APE to the east, and an approximately 0.25-mile buffer around the Non-Federal Alternative to the south.
Recreation/Travel Management	4,337	2,615	6,952	Figure 17	The CESA for recreation includes the immediate recreation network around the Project Area, including off-road trails that lead from Jumbo Grade to the west, trails that lead south from American Flat to Industrial Parkway, as well as the Virginia City 100 horse endurance route, and Virginia City itself. The CESA for travel management includes State Route 341/342 between the American Flat Road and Spring Valley.
Biological Resources	8,206	5,665	13,871	Figure 17	This is the CESA for the following resources: noxious, invasive plant species; migratory birds; hazardous and solid wastes; vegetation; general wildlife; special status species (animal); water quality (surface/ground); and soils. The CESA follows the HUC-12 Gold Canyon-Carson River Watershed boundary to the north and in the south the CESA follows the topography located north of Highway 50.
Socioeconomics	4,524,161	1,229,647	5,753,808	Figure 18	The CESA for socioeconomics includes Washoe, Lyon, Storey, and Carson City counties.

5.2 PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS

Information utilized in the cumulative impacts assessment was gathered from the following sources: BLM (BLM, 2013a); the Nevada Atlas and Gazetteer; Lyon County data; Storey County data; and aerial photography. The BLM LR2000 database was queried for authorized multiple land use activities, pending ROW grants, mineral and non-mineral exploration, and mining projects, urban development, and other permitted facilities (BLM, 2013a). Table 5-2 outlines the quantifiable actions considered in the cumulative impacts analysis.

Table 5-2 Past, Present, and Reasonably Foreseeable Future Actions[11]

CESA	Types of Activity										Subtotal
	ROWs for Oil and Gas Pipelines and Facilities	Sand, Gravel, and Industrial Operations	Mineral Exploration and Mining Operations[12]	United Comstock Merger Mill at American Flat[13]	Utility Corridors	Urban Development	Public Purpose Sites	Road Corridors[14]	Railroads	Water Facilities and Pipelines	
Past and Present Actions – Surface Disturbance Acres											
Cultural Resources	130	224	292	32	373	880	54	298	91	98	**2,472**
Air Quality and Land Use Authorizations	NA	3	202	32	111	223	4	94	42	39	**750**
Recreation /Travel Management	NA	141	203	32	117	489	26	194	109	93	**1,404**
Biological Resources	130	324	231	32	1,836	694	14	254	103	98	**3,716**
Reasonably Foreseeable Future Actions – Surface Disturbance Acres											
Cultural Resources	NA	NA	35	NA	NA	934[15]	90	1	NA	13	**1,073**
Air Quality and Land Use Authorizations	NA	NA	35	NA	NA	NA	NA	1	NA	13	**49**

[11] The values in this table do not include the surface disturbance associated with the Proposed Action. Potential cumulative impacts from the Proposed Action are analyzed by resource in the sections that follow.
[12] This includes Storey County SUP No. 2000-222-A-4 for Comstock Mining, LLC which is located on private land. Approved disturbance under this SUP and permitted with the NDEP under Reclamation Permit #1096 (174.5 acres) is included in the past and present actions and the remaining acres under the SUP but not covered by Reclamation Permit #0196 (35 acres) are included under RFFAs.
[13] Source: United Comstock Merger Mill at American Flat EA (BLM, 2013c).
[14] To determine road acreages within each CESA, United States Highways were assumed to consist of a 100-foot wide ROW; State Routes were assumed to consist of a 50-foot ROW; and all other roads were assumed to consist of a 25-foot ROW.
[15] Lyon County Planning Commission Staff Report - August 10, 2010, for the Traditions Development Agreement.
NA: Not applicable

CESA	Types of Activity										Subtotal
	ROWs for Oil and Gas Pipelines and Facilities	**Sand, Gravel, and Industrial Operations**	**Mineral Exploration and Mining Operations[12]**	**United Comstock Merger Mill at American Flat[13]**	**Utility Corridors**	**Urban Development**	**Public Purpose Sites**	**Road Corridors[14]**	**Railroads**	**Water Facilities and Pipelines**	
Recreation /Travel Management	NA	NA	35	NA	NA	NA	NA	1	NA	13	**49**
Biological Resources	NA	NA	35	NA	NA	NA	25	71	NA	17	**148**

The time frame for past, present, and RFFAs begins with the earliest recorded data in LR2000 and extends into the future to correspond with the life of the proposed Project including reclamation.

5.2.1 Past and Present Actions

Past and present actions in the CESAs include the following: ROWs for oil and gas pipelines and facilities; sand, gravel, and industrial operations; mineral exploration and mining operations; United Comstock Merger Mill at American Flat; utility corridors; urban development; public purpose sites; road corridors; railroads; and water facilities and pipelines. Surface disturbance was not calculated for these activities within the Socioeconomics CESA. All the past and present actions listed above are known to occur within the Socioeconomics CESA, and these actions will be considered qualitatively in the cumulative impact analysis. Existing facilities present in the Project Area are included in Section 3.0.

Land Tenure Adjustments

Class 1 Color-of-Title Claim for "Lot 51"

The COT Act provides that any individual, group, or corporation who has evidence giving the appearance of having title to public lands, which are administered by the BLM, and legal title to the lands remains vested in the U.S., may file a Class 1 COT claim. An applicant will receive a patent conveying clear title to lands upon payment of the sale price of the lands if they meet the requirements for a claim. In other words, the COT Act provides a way citizens can gain clear title to land they believe belonged to them (BLM, 2013d). A Class 1 COT claim is non-discretionary.

Northern Comstock, LLC applied for a COT claim on June 8, 2012 for "Lot 51" (NVN 091521) (Figure 20). Approximately 860 feet of the American Flat Road and 1,485 feet of the Lucerne Haul Road are within "Lot 51." "Lot 51" is a Storey County designation, and the town lot was never tied to the Public Land Survey System (PLSS).

On February 13, 2013, the BLM Nevada State Office allowed the COT claim to move forward when it issued a "Determination to Allow the Claim" letter for Comstock Mining, LLC. Under the COT claim process, the BLM allowed for the use of the Lucerne Haul Road through "Lot 51" under the same conditions as ROW NVN 091237, which does not permit modifications to the existing road. The result of the COT claim determination allowed for the removal of haul trucks from State Route 342 and their use on the Lucerne Haul Road (non-exclusively) through "Lot 51." On February 21, 2013, the BLM issued a press release providing notification to the public that the COT claim was being processed. An article on the COT claim appeared in the *Reno-Gazette Journal* and *Nevada Appeal* on February 22, 2013. The news release was also published in the *Elko Daily Press* on February 23, 2013. In May 2016, the BLM completed the Cadastral

Survey of "Lot 51." After receiving the fair market value less equity, in July 2016 the BLM issued a patent for the 23.76-acre parcel to Northern Comstock, LLC.

Gold Hill Town Lots

In 2013, the BLM Nevada State Cadastral confirmed the Block 8, Range D, Lot 33 town lots were patented in December 1872 and February 1873, respectively (Figure 20). Approximately 297 feet of the American Flat Road cross through the town lots. During a case file review, the BLM was unable to locate these patents in the PLSS. According to the BLM Nevada State Cadastral, the townsite that encompasses the patents is not tied to the PLSS. In 2014, Comstock Mining, LLC renovated the Con Chollar and Overman mine buildings for administrative purposes. The official land tenure status of the Block 8, Range D, Lot 33 town lots would be resolved (depicted as private property on BLM land status maps) as a part of the "Restoring Storey County" (see below).

Restoring Storey County

On December 19, 2014, the National Defense Authorization Act for Fiscal Year 2015 was signed into law (Public Law 113-291). Included in the National Defense Authorization Act for Fiscal Year 2015 is Section 3009 (d), a provision affecting public lands managed by the BLM. Under Section 3009 (d) (3) the BLM shall convey to Storey County through a quitclaim deed all surface rights of the U.S. in and to the federal land within the conveyance boundary. The boundary of this conveyance area includes approximately 1,745 acres of public lands in Gold Hill and Virginia City (Figure 20). The conveyance of lands by quitclaim deed would be subject to valid existing rights. The southern portion of this conveyance area includes the northern portion (approximately 2,435 feet) of the American Flat Road, between "Lot 51" and State Route 342 (approximately 12 acres) (Figure 20). The timeframe for this conveyance is unknown, although Congress expressed a sense that the conveyance should be completed in 18 months (by June 19, 2016).

Mineral Exploration and Mining Operations

Surface disturbances associated with mineral exploration and mining were calculated within the Cultural Resources, Air Quality and Land Use Authorizations, Recreation, and Biological Resources CESAs from LR2000 data as well as from aerial imagery. The past and present disturbances within each CESA associated with these activities are presented in Table 5-2. Disturbance associated with Comstock Mining, LLC's mining activities on private land are also included in Table 5-2.

Public Purpose Sites

Public purpose sites in the CESAs include cemeteries, sewage treatment facilities, schools, parks, etc. located on public lands. Disturbances associated with public purpose sites within the

Cultural Resources and Recreation CESAs were calculated using aerial imagery and data from LR2000. Within the Air Quality and Land Use CESA and the Biological Resources CESA, disturbances associated with public purpose sites were calculated using aerial imagery. The past and present disturbances for public purpose sites calculated for each CESA are included in Table 5-2.

Railroads

Surface disturbances associated with railroads were calculated based on the width of the ROWs identified by LR2000 and actual lengths of the railroad were measured using aerial imagery. The values of past and present disturbance for railroads in each CESA are presented in Table 5-2.

The V&T Railroad Company was formed in 1868. Construction began on the standard gauge rail line in February 1869. The original track was 21 miles long from Carson City to Virginia City, requiring six tunnels and multiple twists and turns, rising over 2,400 feet in elevation. Two months after the V&T rolled into Gold Hill it was finally connected to Virginia City. It took another two years to connect with the transcontinental rail line in Reno. To serve the large mines, short spurs of the railroad were built in Virginia City and Gold Hill. After the railroad was built, about 100 employees ran the day-to-day operations. At its peak, the V&T operated as many as 45 trains daily between 1873 and 1881. By 1880, the Comstock boom was coming to a close. The V&T railroad spur that led to Silver City was torn up and the materials were re-used for the narrow-gauge Carson and Colorado rail line. In 1900, the cash-strapped V&T sold the Carson and Colorado to the Southern Pacific Railroad, which built a more direct route, that left the V&T off the line. In 1906, the railroad connected to the newly created town of Minden to the south. In 1938 the company filed for bankruptcy. The line between Carson City and Virginia City ended that year and the track between Carson City and Virginia City was removed in 1941. The interest of rail fans and the sale of rolling stock to Hollywood kept the railroad barely alive (Spidell et al., 2014). The last run on the V&T was held in 1950 when the train ran from Minden through Carson City to Reno.

Reconstruction of the line began in 1974 in Virginia City, with the line extended to Gold Hill in 1980. In 1993 the Tri-County Railroad Commission (later renamed the Nevada Commission for Reconstruction of the V&T Railway) was formed to raise funds, acquire ROWs and administer the reconstruction of the line from Gold Hill to Carson City. Reconstruction of the 16.7 miles of track occurred between 2005 and August 2009, and is today used on weekends for scenic sightseeing rides (seasonally) between Carson City and Virginia City, passing through American Flat as a fuel re-supply stop (V&T Railroad, 2014).

Road Corridors

Aerial imagery was reviewed to determine the approximate amount of disturbance associated with roads with the Cultural Resources, Air Quality and Land Use Authorizations, Biological Resources, and the Recreation CESAs. The values of past and present disturbance for roads in each CESA are presented in Table 5-2.

ROWs for Oil and Gas Pipelines and Facilities

According to LR2000, there are approximately 130 acres of surface disturbance within the Cultural Resources and Biological Resources CESAs associated with two oil and gas pipelines and one oil and gas facility on public lands.

Sand, Gravel, and Industrial Operations

Surface disturbances associated with sand, gravel, and industrial operations were calculated for the Cultural Resources, Air Quality and Land Use Authorizations, Recreation, and Biological Resources CESAs from LR2000 data as well as from aerial imagery. The past and present disturbances associated with these operations within each CESA are presented in Table 5-2.

Urban Development

Aerial imagery was reviewed to determine the approximate amount of disturbance associated with urban development with the Cultural Resources, Air Quality and Land Use Authorizations, Biological Resources, and the Recreation CESAs. The values for past and present disturbance in each CESA are presented in Table 5-2. Urban development with the Socioeconomics CESA is relatively extensive and located primarily within Washoe, Carson City, Storey, and Lyon counties associated with residences and commercial operations on public and private land.

Utility Corridors

Surface disturbances associated with utility corridors were calculated from LR2000 data for the Cultural Resources, Air Quality and Land Use Authorizations, Recreation, and Biological Resources CESAs and are presented in Table 5-2.

Water Facilities and Pipelines

Past and present surface disturbances associated with water facilities and pipelines were calculated from LR2000 data for the Cultural Resources, Air Quality and Land Use Authorizations, Recreation, and Biological Resources CESAs and are presented in Table 5-2.

Details of Mining-Related Past and Present Actions

Carson River Mercury Superfund Site

The Project Area is located within the Dayton Valley Hydrographic Area of the CRMS. Existing mercury contamination is tied to historic mining operations. The general milling operations

before 1900 involved pulverizing ore with stamp mills, creating a slurry, and adding mercury to the mixture. The mercury formed an amalgam with the precious metals, which was then separated from the solution and retorted (EPA, 1995). Under the NDEP-BCA, Comstock Mining, LLC has on file with the NDEP a plan for sampling, analysis, and clean-up activities, when necessary.

United Comstock Merger Mill at American Flat

Following the success of early cyanide mills in the region, the United Comstock Mines Company (UCMC) constructed a large cyanide plant, capable of processing 2,500 tons per day of ore. The UCMC was organized in 1920, and through a series of acquisitions, controlled many of the south end mines on the Comstock. By 1922, UCMC owned the mineral rights to more than 10,000 feet of the Comstock Load and constructed the American Flat Mill. Ore from the Overman and the Imperial mines was transported to American Flat by a 9,250-foot-long tunnel. Problems with the ore, both in extracting and mining, as well as a drop in the price of silver, caused the closure of the operation after only two years of production. Recorded production from the mill was $3.4 million from about a million tons of ore.

Comstock Merger Mines, a large-scale operation that had been working the middle mines in the divide and Gold Hill area, bought out UCMC in 1924. Comstock Merger Mines operated the mill, supplying the mill with low-grade ores from an open pit near the Imperial Mine. This operation continued for three years from 1924 to 1926, and produced around one million tons. In December 1926, Comstock Merger Mines ceased operations as operating costs exceeded returns (Spidell et al., 2014).

At the time of abandonment of the site in 1926, all equipment, metal, and wood materials were scrapped and salvaged. Concrete structural components were cut and broken as required to facilitate the removal process, resulting in a great deal of damage. Large holes and voids were left in the concrete, reinforcing steel was cut, and concrete structural members were broken. The existing structures at the site consist of badly decaying concrete, exposed reinforcing steel, broken structural members, and large holes in the concrete floors; only the deteriorated concrete skeletons of the structures remained. In April 2013, the BLM authorized the demolition of all structures at this site to eliminate physical safety hazards (BLM, 2013c) and during the winter of 2014/2015 the BLM completed the demolition of the site. Reclamation and rehabilitation of the site is anticipated to be completed by the end of 2016.

Houston Oil and Minerals Milling Activities

In 1977, the HOM acquired the New York Mine. In 1978 work occurred to reopen access to the underground workings. HOM acquired the leases on all of the Gold Hill properties held by the Union Pacific Railroad and later by Minerals Engineering Co. In July 1978, HOM announced

that operations at the Imperial Mine in Gold Hill would begin. Ore would be processed at a newly constructed 1,000-ton processing facility (known as the "Comstock Mill") in American Flat. The mill site (approximately five acres) consisted of a secondary crusher, agitator pond and eight other buildings. HOM constructed the American Flat Road between State Route 342 and their site (just east of Comstock Mining, LLC's existing heap leach processing facility), including the ancillary road to the south of the existing road, in 1978 as a part of their operations.

In February 1980, massive rock slides occurred in the high wall of the open pit, causing excavation to be suspended. To continue to operate, the pit would have to be expanded east and State Route 342 would have to be relocated. Although these activities were approved by the Storey County Planning Commission, in February 1981 the plans were abandoned.

United Mining Corp.

In early 1983, United Mining Corp. obtained the HOM holdings (the Comstock Mill and mining claims NMC 189979, NCM 10291, NCM 15110-15115) and restarted mining operations at the New Savage Mine. In April 1985, stating that the mill was operating at a loss because of the drop in gold and silver prices, United Mining Corps closed its operations (Smith, 1998). Between August and October 2006, the abandoned HOM structures were removed from public lands and the former tailings impoundment was reclaimed by El Paso Corp. Concrete, scrap metal, glass, plastic, etc. were buried on site.

Oliver Hills Mining Company

On July 8, 1991, the BLM approved an EA for a Plan of Operations for Oliver Hills Mining Company (NVN 069300, N37-89-008P). The Plan was for the Billie the Kid and Lucerne Cut Project. The project included the removal of mined material from the Billie the Kid Pit, with waste rock placed into the Lucerne Cut Pit, and ore would be processed at the Haywood Process Facility in Moundhouse, Nevada. The project also included the construction and widening of an existing haul road (the existing haul road that is in use by Comstock Mining, LLC) (BLM, 1991).

Right-of-Way for Old HOM Office

On July 30, 1992, the BLM received an application by Shaddock for a ROW on an existing road in American Flat to access a residence. The residence was in the old HOM office building. On December 22, 1992, the BLM issued a categorical exclusion for the ROW (N 56178), and on January 25, 1993, a 30-year ROW with standard stipulations was issued. The ROW was 5,980 feet in length.

On February 4, 1997, the BLM received a request by the ROW holder (Shaddock) to relinquish interest in the ROW (N 56178). On February 14, 1997, the BLM received an application to

reassign the ROW to Brockbank (President of The Plum Mining Co., LLC). That same day, the BLM issued a new assignment on the ROW.

On October 7, 1999, the BLM received an application to amend the ROW (NVN 056178) from Brockbank, to include the grading and graveling of another existing road. In early 2000, the BLM determined that this should be a mining action to be permitted under a Notice or Plan of Operations. The ROW was not amended. Public records show that Brockbank was deceased on August 25, 2003. The BLM is currently in the process of terminating of ROW NVN 056178.

The Plum Mining Co., LLC Right-of-Way and Mining Activities

In 1998 under Notice (N30-98-020N, reassigned as N 70048 in 2002) The Plum Mining Co., LLC began to conduct exploration activities (18 drill holes) on public lands proximal to the unpatented mining claims in the Billie the Kid pit (NMC 108773) and Hartford-Lucerne Fractions (NMC 41460 and NMC 416042)[16]. The Notice N 70048 was amended in January and September 1999 for the development of a small open pit mine on the Billie the Kid mining claim[17]. The amendments included the construction of haul road segments, one that would cross through "Lot 51" (now called the "bypass road," different than the haul road currently used by Comstock Mining, LLC) and tie into the HOM road and American Flat Road under ROW N 56178. The haul road through "Lot 51" was constructed by The Plum Mining Co., LLC in 1999 under Notice N30-98-020N.

In January 2001, The Plum Mining Co., LLC notified the BLM of its intent to conduct exploration activities on public lands under Notice (N 74191) in T16N R21E, Section 5.

On August 17, 2001, the Billie the Kid unpatented mining claim (NMC 108773) went to patent and is currently listed under the name of Oberster. On January 21, 2003, Notice N 70048 as amended held by The Plum Mining Co., LLC expired.

In November 2003, GoldSpring Inc. acquired The Plum Mining Co., LLC and the "Billie the Kid Project," which included the Billie the Kid, Lucerne and Hartford Pits, as well as a 40-acre private land parcel in American Flat. In November 2003, The Plum Mining Co., LLC began construction of the heap leach processing facility in American Flat and improved the existing haul road through "Lot 51" leading to the Lucerne and Hartford Pits.

On February 23, 2004, The Plum Mining Co., LLC filed an application to install an above ground temporary, four-inch water pipeline from an existing well (on public land), to The Plum Mining Co., LLC's new heap leach processing facility being constructed on nearby on private

[16] Unpatented mining claims NMC 41460 and NMC 416042 are currently held by Comstock Mining, LLC.

lands (located in T16N R21E, Section 6, the site of Comstock Mining, LLC's existing heap leach processing facility). On March 23, 2004, the BLM issued a categorical exclusion for the ROW, and on April 15, 2004, the amended ROW grant (N 78108) was issued for the water pipeline and well. The grant for the water pipeline was for six months and the well for 30 years. The ROW for the water pipeline expired on October 15, 2004. The heap leach processing facility was constructed during the summer of 2004. At the same time, The Plum Mining Co., LLC requested a modification to their existing Storey County Special Use Permit (SUP) to include year round processing in American Flat, and year-round mining in the Lucerne pit, in addition to their on-going mining in the Billie the Kid Pit.

In July of 2008, the NDEP modified Reclamation Permit (#0196) to The Plum Mining Co., LLC which was originally issued in September of 2000. The BLM's case file for The Plum Mining Co., LLC was closed in June 2009.

GoldSpring Inc. Exploration Activities

On November 20, 2008, and amended on December 11, 2008, GoldSpring Inc. filed an exploration Notice (NVN 086559), after-the-fact, with the BLM for 29 drill holes and 21 drill pads in T16N R21E, Sections 5 and 8. These areas are on public land adjacent to, and east of State Route 342. The Notice would cover exploration between April 2008 and November 2010. Late in 2008, the BLM determined that the Notice was incomplete. During a compliance inspection in September 2010, the BLM determined that exploration was no longer occurring, however all surface reclamation activities had not been completed. A total of 2.57 acres of surface disturbance occurred on public land. In 2010 GoldSpring Inc. changed its name through a merger acquisition of Comstock Mining Inc., a wholly owned subsidiary.

Comstock Mining, LLC Right-of-Way

In 2005, GoldSpring Inc. constructed a bypass road for the existing The Plum Mining Co., LLC haul road that runs through "Lot 51" between the American Flat Road and the Lucerne pit. This activity was conducted without authorization from the BLM. Other improvements to the American Flat Road occurred between 2003 and 2007.

Comstock Mining, LLC Exploration Activities

The most recent exploration activities by Comstock Mining, LLC were under a Notice, as amended (NVN 086559) (originally submitted by GoldSpring Inc. in 2008). Under the Notice, submitted on April 12, 2011, Comstock Mining, LLC proposed 45 drill holes and 23 drill pads in T16N R21E, Sections 5 and 6, for a surface disturbance of 2.18 acres. Exploration activities were on public lands east of State Route 342 and in the Lucerne Pit. A condition of the amended Notice was that Comstock Mining, LLC would complete a Class III cultural resources inventory of areas previously explored by GoldSpring Inc., and those proposed to be explored under the

amended notice. Bonding was also required under the amended Notice. On December 23, 2013, Notice NVN 086559 expired.

Comstock Mining, LLC's submitted a new exploration Notice (NVN 093083) to the BLM on June 4, 2014, for high wall stabilization for a total disturbance of 0.09 acre. On September 16, 2014, Notice (NVN 093083) was amended for exploration activities on the unpatented Echo St. Louis and Comstock St. Louis Mining Claim Fractions. The Notice (NVN 093083) was also amended to include the reclamation obligations by Comstock Mining, LLC under Notice (NVN 086559). Reclamation activities under NVN 086559 include the public land wedges depicted in Figure 3.

Comstock Mining, LLC Mining-Related Activities

Below is a summary of the major permits authorizing operations for Comstock Mining, LLC's activities at the existing heap leach processing facility located on private land. Additional permits for the project are listed in Table 1-2.

Heap Leach Processing Facility in American Flat

Between 2003 and 2004, The Plum Mining, Co. LLC constructed the heap leach processing facility on private lands in American Flat. The Plum Mining, CO. LLC operated the heap leach processing facility between 2004 and 2007. In the fall of 2012, operation of the heap leach processing facility commenced when Comstock Mining, LLC starting open pit mining in the "starter pit" immediately adjacent to State Route 342. The heap leach processing facility occupies approximately 80 acres of private lands in American Flat. Comstock Mining, LLC has another approximately 400 acres of land holdings in American Flat.

The heap leach processing facility uses conventional cyanide heap leaching technology with precious metal recovery via the Merrill-Crowe process. The precipitate is dried, mixed with fluxing agents, and melted in a gas or electric furnace to produce gold doré. Up to 4.0 million tons of ore are permitted to be processed per year, including 144,000 tons in the high-grade ore mill process. The heap leach processing facility is required to be designed, constructed, operated and closed without any discharge or release in excess of water quality standards established in regulation except for meteorological events which exceed the design storm event (NDEP, 2011).

The heap leach processing facility includes a crushing plant, a heap leach pad (eight cells), process ponds and overflow ponds, cyanide tank, and Merrill-Crowe plant as well as support facilities such as lab trailers, office, storage, and shop (NDEP, 2011).

Open Pit and Underground Mining

Open pit mining by Comstock Mining, LLC commenced on August 2, 2012 in the "starter pit," immediately adjacent to State Route 342. Since then Comstock Mining, LLC has also conducted surface mining in the Billie the Kid and Lucerne pits. The footprint of these mining activities since 2012 is approximately 75 acres of private lands.

Permit Details for the Heap leach Processing Facility, Open Pit, and Underground Mining Activities

Water Pollution Control Permit NEV2000109

Water Pollution Control Permit (WPCP) NEV2000109 for The Plum Mining Co., LLC's Billie the Kid project was originally submitted in January 2000 and approved in August 2000. Subsequent modifications occurred in 2004, 2006, 2009, 2011, 2013, and 2014, and are described below.

Closure measures were subsequently modified based on an increase in the mining and processing throughput rate, the incorporation of Cells 3 through 5 of the heap leach pad, and permit the conversion of the freshwater holding pond into an overflow pond for emergency management of stormwater. These changes were described in the December 2004 Minor Modification (Comstock Mining, LLC, 2014). In March 2006, the NDEP-BMRR renewed WPCP NEV2000109 which authorized the construction, operation, and closure of approved facilities (NDEP, 2011).

As part of the Major Modification to WPCP NEV2000109 submitted in March 2009, and approved by the NDEP in October 2009, mining was expanded to both the east and west sides of State Route 342 in the Lucerne/Billie the Kid mining zones (NDEP, 2014a). The permit approved the construction, operation, and closure of a new crushing and agglomeration plant and expansion of the heap leach pad (NDEP, 2011). This Major Modification included as an attachment a Permanent Closure Plan which described the closure of the heap leach pad and process facilities.

The milling/leaching plant is designed to process 144,000 tons per year. The leach pad would ultimately encompass approximately 677,000 square feet consisting of five cells, which were constructed in five phases. Cells one through five accommodate 2.4 million tons of ore (105 feet high). As part of the 2009 Major Modification, the solution application system was redesigned to operate with two circuits: barren solution at a rate of 660 gallons per minute (gpm), and intermediate solution at a rate of 660 gpm (1,320 gpm total). A new pregnant pond was included as part of the 2009 Major Modification (NDEP, 2011).

A Minor Modification to WPCP NEV2000109 was submitted in June 2011 which proposed further expansion of the Merrill-Crowe building and changing the geometry of the new pregnant pond, as well as a phased approach to the construction of the Major Modification components whereby the mill facility would be constructed in stages rather than all at once. The Minor Modification increased the total annual production rate to 1.0 million tons of ore per year (NDEP, 2011). The Minor Modification was approved by NDEP in August 2011 (NDEP, 2011).

A Major Modification to WPCP NEV2000109 was submitted in March 2013 and subsequently approved in 2013 to increase the total annual production rate to 4.0 million tons of ore per year, expand the heap leach pad capacity to include cells six through eight, reconstruct an event pond to increase its storage capacity and provide double-lined containment, construct a second double-lined event pond, and construct a stormwater diversion channel upslope from the proposed heap leach pad expansion area. The Major Modification was approved by the NDEP and the permit became effective November 12, 2013. On March 14, 2014, Comstock Mining, LLC submitted an Application for Renewal of WPCP NEV2000109. In the March 2014 Renewal, an expansion to the leach pad for cell nine and associated realignment of the stormwater division channel as well as several changes to monitoring locations were approved by the NDEP in October 2014.

Underground Mining

On September 2, 2014, the Board of Storey County Commissioners approved with conditions SUP No. 2000-222-A-4, which was a major modification of SUP No. 2000-222-A-3 and SUP No. 2011-016. The SUP authorizes surface and underground mining; processing, milling, and beneficiation; mine definition; exploration; and uses which are ancillary to those uses. On January 5, 2016, the Board of Storey County Commissioners approved SUP No. 2000-222-A-5, which was a major modification to SUP No. 2000-222-A-4 for previously authorized uses.

On February 16, 2016, NDEP-BMRR approved a Major Modification to NEV2000109. The authorized uses include open pit and underground mining with ore processing using conventional cyanide heap leaching technology with precious metal recovery via the Merrill-Crowe process. Up to 4,000,000 tons of ore are permitted to be processed per year. On August 20, 2015, NDEP-BMRR approved a Major Modification to Reclamation Permit 0196 for underground development and obligated a total surety amount of $7,096,459.00 for reclamation liabilities.

Comstock Mining, LLC initiated construction of an underground portal and drift for exploration in August 2015.

Reclamation Permit #0196

In September 2000, the NDEP-BMRR issued a final Reclamation Permit (#0196) to The Plum Mining Co., LLC which allowed for surface disturbances of 41.24 acres related to the Billie the

Kid project in Storey County. Surface disturbances authorized under this permit included the Billie the Kid (Lucerne) open pit, a heap leach processing facility with process ponds, waste rock storage areas, a crusher area, ore stockpiles, and metal refining process facility (NDEP, 2014b).

The permit was amended in June 2002, September 2004, November 2004, February 2008, April 2008, August 2008, and April 2011. The recent amendments are described below.

In 2008, an application for a modification to the permit was submitted to expand the project area boundary and increase the total surface disturbance to 121.84 acres. This modification included additional disturbances associated with three pre-existing pit areas and a waste rock facility. The NDEP-BMRR issued revised permit #0196 in July 2008 and included additional surety bonding for the reclamation responsibilities associated with the acreage increase. In August 2008, an additional minor modification was approved to add 10.66 acres of surface disturbance for mineral exploration activities on private land within the Billie the Kid project boundary (NDEP, 2014b).

Comstock Mining, LLC submitted the report Reclamation Plan Update, Lucerne Project, Reclamation Permit #0196 to the NDEP-BMRR in June 2012, with subsequent revisions in July and October 2012. The NDEP-BMRR issued the permit in July 2012 (Comstock Mining, LLC, 2014). The NDEP-BMRR issued a Surety Determination and Revised Reclamation Permit #0196 for Comstock Mining, LLC's Lucerne Mine Project, effective March 11, 2014.

Comstock Mining, LLC submitted the report Reclamation Plan Modification, Lucerne Project, Reclamation Permit #0196 to NDEP-BMRR in August 2013, with a revision dated February 4, 2014, in response to NDEP-BMRR review comments (Comstock Mining, LLC, 2014).

Air Quality Operating Permit to Construct

On November 6, 2014, the NDEP-BAPC issued to Comstock Mining, LLC the revised Class I Air Quality Operating Permit to Construct (OPTC) AP1041-2761. The revision included the following: 1) reconfiguring the permit to reflect as built facility conditions, renumbering systems, and emission units; 2) addition of a flux mixer, 1.5 MW Diesel Emergency Generator, and Insignificant Activities; and 3) increase of operating hours from 12 hours per day and 4,380 hours per year to 20 hours per day and 7,300 hours per year on the crushing, screening, and conveying systems. In order to obtain an air quality permit (allowing for surface mining), Comstock Mining, LLC was not required to provide to NDEP calculations for particulates and emissions from motor vehicles and heavy equipment.

Storey County Special Use Permits

Comstock Mining, LLC operated under SUP No. 2000-222 which was issued by Storey County in 2000 to conduct mineral exploration, mining, and processing in Gold Hill and American Flat. The SUP was amended in 2004 to allow expanded exploration, mining, and processing. In July 2013, Storey County approved an amendment to the SUP which expanded land area and modified uses allowed at the existing heap leach processing facility (Storey County Planning Commission, 2013).

In October 2011, Storey County approved SUP No. 2011-016 for Comstock Mining, LLC to further develop its exploration drilling in the southern portion of the county (Comstock Mining, LLC, 2014b). Comstock Mining, LLC provides annual compliance and status review to the Storey County Planning Commission in accordance with one of the conditions of that permit (Storey County Planning Commission, 2013).

In October 2014, Storey County approved SUP No. 2000-222-A-4 which was a major modification of former SUP No. 2000-222-A-3 and SUP No. 2011-016. The approved SUP No. 2000-222-A-4 applies to mining, mine definition and exploration, processing, and ancillary uses. SUP No. 2000-222-A-4 amends and replaces SUP No. 2000-222-A-3. It also replaces SUP No. 2011-016 (for exploration) which was deemed closed by the Storey County Planning Commission (Storey County Planning Commission, 2014). The current SUP is effective for a period of ten years and authorizes up to 120 acres of disturbance for active mining (including surface and underground mining) at any given time. The SUP also authorizes up to 20 acres for mine definition (drilling and other activities for the purposes of determining subsequent phasing of the active mine within 300 feet of the active surface mine), 20 acres for exploration (drilling and associated activities for the purposes of broad-based assessment and may occur throughout the entire subject property), and 50 acres for active reclamation at any given time. This amendment increases the disturbance approximately 45 acres from the previous amendment. This disturbance would occur on approximately 602.6 acres of private land over the life of the SUP.

5.2.2 Reasonably Foreseeable Future Actions

RFFAs in the CESAs include the following: urban development; public purpose sites; road ROWs; and water facilities and pipelines.

Public Purpose Sites

Disturbances associated with public purpose sites within the Cultural Resources and Biological Resources CESAs were calculated using data from LR2000. The disturbances for reasonably foreseeable public purpose sites are included in Table 5-2.

Road ROWs

Disturbances associated with road ROWs within the Cultural Resources, Air Quality and Land Use Authorizations, Recreation, and Biological Resources CESAs were calculated using data from LR2000. The disturbances for reasonably foreseeable roads are included in Table 5-2.

Urban Development

The Lyon County Planning Commission Staff Report identifies 934 acres of reasonably foreseeable surface disturbance within the Cultural Resources CESA for the Traditions Development Agreement.

Water Facilities and Pipelines

Disturbances associated with water facilities and pipelines within the Cultural Resources, Air Quality and Land Use Authorizations, Recreation, and Biological Resources CESAs were calculated using data from LR2000. The disturbances for reasonably foreseeable water facilities and pipelines are included in Table 5-2.

5.3 AIR QUALITY

The CESA for air quality is the Air Quality and Land Use Authorizations CESA and includes the area immediately around the Project Area (Figure 16). The CESA follows the V&T railroad to the west, the Cultural Resources Viewshed APE to the east, and an approximately 0.25-mile buffer around the Non-Federal Alternative to the south.

Past and present actions that could impact air quality include the following: sand, gravel, and industrial operations (3 acres); mineral exploration and mining operations (202 acres, including 174.5 acres from Comstock Mining, LLC); former United Comstock Merger mill site at American Flat (32 acres); utility corridors (111 acres); urban development (223 acres); public purpose sites (4 acres); roads (94 acres); railroads (42 acres); and water facilities and pipelines (39 acres). RFFAs that could impact air quality include the following: mineral exploration and mining operations (35 acres from Comstock Mining, LLC); roads (1 acre); and water facilities and pipelines (13 acres). Approximately 799 acres of disturbance are associated with these actions, with 750 acres from past and present actions and 49 acres associated with RFFAs, accounting for approximately 25 percent of the CESA.

Under all alternatives, Comstock Mining, LLC would continue to operate a surface and/or underground mine in the Billie the Kid and Lucerne pit areas and continue to operate a heap leach processing facility. Although under the Non-Federal Alternative the location of heap leach processing facility would change (from American Flat to Spring Valley), the emissions associated with its operations would not be expected to change.

The NDEP estimated that Nevada's statewide greenhouse gas emissions in 2010 (the most recent year for which State data has been tabulated) totaled approximately 45 million metric tons (49 million tons) of carbon dioxide equivalents. This was 0.7 percent of 2010 U.S. greenhouse gas emissions (NDEP 2012).

5.3.1 Proposed Action

The Proposed Action would increase the surface disturbance within the CESA by approximately 49 acres for a total of 848 acres of surface disturbance. The Proposed Action would account for an additional 5.7 percent increase of surface disturbance within the CESA.

Impacts to air quality from past, present, and RFFAs include the generation of fugitive dust from blasting, drilling, haul truck operations, and mining activities. Other air emissions would be generated from processing facilities, burning of fossil fuels by heavy equipment including the V&T Railroad, other vehicles, and travel on dirt roads. Implementation of the proposed EPMs and BMPs, as well as the Dust Control Plan, is expected to minimize potential impacts to air quality that would result from implementation of the Proposed Action. Cumulative impacts to air quality from the Proposed Action are considered to be adverse. Table 5-3 shows the cumulative emissions associated with the Proposed Action.

Table 5-3 Cumulative Emissions Under the Proposed Action

Non-Federal Cumulative Actions+	PM	PM_{10}	$PM_{2.5}$	CO_2e**
Mining*	761.10	364.50	86.10	150,765.90
Operation of Heap leach Processing Facility*	1,785.30	491.70	432.60	558.00
Federal Cumulative Actions				
60-ton Haul Trucks*	992.40	225.90	26.40	118,904.10
Road Construction Activities	21.98	10.99	1.65	670.00
Totals	3,560.70	1,093.09	546.75	270,898.00***

Source: Modified from Air Sciences 2016.
+ Outside the BLM's decision-making.
* Based on an operation 365 days per year, 24 hours per day for 30 years.
** CO_2e based on total CO_2 plus CH_4 and N_2O with associated global warming potential scaling factors applied.
*** CO_2e represents 0.005% of the total emissions for the State of Nevada based on 49 million tons per year.

5.3.2 No Action/Current Management

Under the No Action/Current Management Alternative, impacts to air quality would continue from current authorizations in the Project Area until the ROW expires and other activities within the CESA. The cumulative impacts to air quality from the No Action/Current Management Alternative are negligible when added to past, present, and RFFAs.

Table 5-4 shows the cumulative emissions calculations associated with the No Action/Current Management Alternative.

Table 5-4 Cumulative Emissions Under the No Action/Current Management Alternative

Non-Federal Cumulative Actions+*	PM	PM_{10}	$PM_{2.5}$	CO_2e***
Mining**	304.75	152.00	22.25	35,702.25
Operation of Heap leach Processing Facility**	297.55	81.95	72.10	93.00
Federal Cumulative Action*				
38-ton Haul Trucks**	183.15	37.15	4.45	22,432.75
Totals	785.45	271.10	98.80	58,228.00****

Source: Modified from Air Sciences, 2016.
+ Outside the BLM's decision-making.
* Based on an operation between August 2012 and December 2017 (five years, expiration of the ROW).
** Based on an operation 365 days per year, 24 hours per day.
*** CO_2e based on total CO_2 plus CH_4 and N_2O with associated global warming potential scaling factors applied.
**** CO_2e represents 0.001% of the total emissions for the State of Nevada based on 49 million tons per year.

5.3.3 Non-Federal Alternative

The Non-Federal Alternative would increase the surface disturbance within the CESA by approximately 41 acres for a total of 840 acres of surface disturbance. The Non-Federal Alternative would account for an additional 4.8 percent increase of surface disturbance within the CESA.

Impacts to air quality from past, present, and RFFAs include the generation of fugitive dust from blasting, drilling, haul truck operations, and mining activities. Other air emissions would be generated from processing facilities, burning of fossil fuels by heavy equipment and other vehicles, travel on State Route 341/342, and travel on dirt roads. Emissions from haul truck traffic would be shifted from the Lucerne Haul Road area to along the State Route 341/342 corridor to the new heap leach processing facility in Spring Valley, resulting in an increase in vehicle emissions in the Silver City area. Implementation of the proposed EPMs and BMPs, as well as the Dust Control Plan, is expected to minimize potential impacts to air quality that would result from implementation of the Non-Federal Alternative. The major source of pollutants within the CESA would operate under permit conditions established by the NDEP-BAPC and, and would be adverse.

Under the Non-Federal Alternative, the existing ROW (NVN 091237) would be allowed to expire, or the BLM could decide not to issue a ROWA for a 30-year term. In either case, Comstock Mining, LLC could implement the Non-Federal Alternative. Under this alternative, all emissions would be outside the BLM's jurisdiction. Table 5-5 shows the cumulative emissions calculations associated with the Non-Federal Alternative.

Table 5-5 Cumulative Emissions Under the Non-Federal Alternative

Non-Federal Cumulative Actions+	PM	PM_{10}	$PM_{2.5}$	CO_2**
Mining and 16.5-ton Haul Trucks*	1,121.70	468.00	124.50	359,190.00
Administrative Traffic*	0.30	0.30	0.30	11.10
Construction of Heap leach Processing Facility	35.12	17.56	2.63	5,744.00
Operation of Heap leach Processing Facility*	1,785.30	491.70	432.60	558.00
Totals	2,942.42	977.56	560.03	365,503.10***

Source: Modified from Air Sciences, 2016.
+ All activities outside BLM's decision-making.
* Based on an operation 365 days per year, 24-hours per day for 30-years.
** CO_2e based on total CO_2 plus CH_4 and N_2O with associated global warming potential scaling factors applied.
*** CO_2e represents 0.007% of the total emissions for the State of Nevada based on 49 million tons per year.

5.4 CULTURAL RESOURCES

The Cultural Resources CESA includes the Virginia City National Historic Landmark and National Historic District (approximately 33,708 acres) (Figure 15). The Virginia City National Historic District consists of approximately 14,656 acres of public and 19,052 acres of private lands. The smaller Virginia City National Historic Landmark is located entirely within the Virginia City National Historic District and it consists of approximately 10,389 acres of public and 5,917 acres of private lands. National Landmark status carries with it a higher-level of recognition than does the National Register (aka "National Historic District"). Properties designated as National Historic Landmarks are of national significance and exceptional importance to America's history. The National Register also recognizes nationally significant properties, but it also includes properties deemed significant at the State and local levels (Spidell et al., 2014).

The Virginia City National Historic Landmark was officially designated by the Secretary of the Interior on July 4, 1961 and it includes Virginia City, "The Divide," Gold Hill, Silver City, and Dayton. When the NRHP was established with the passage of the NHPA in 1966, the Virginia City Historic District was automatically included by virtue of its landmark status. In 1991 the National Register period of significance was extended until 1942, however the NPS did not amend/expand the Virginia City National Historic Landmark boundary. As a result, the Virginia City National Historic District and National Historic Landmark boundaries and periods of significance differ (Spidell et al., 2014).

The current mining operations of Comstock Mining, LLC are being conducted in what is presently referred to as the Lucerne Pit, historically referred to as both the Lucerne Cut and the Hartford Pit. The Lucerne Cut and the Hartford Pit were historically mined within the period of significance of the Virginia City National Historic District, by power shovel, with ore being transported by truck to cyanide processing facilities on Hartford Hill and in Silver City. The Hartford Pit was mined by power shovel beginning in 1935, with an estimated 72,000 tons of ore

extracted from the Hartford Pit, and processed at the Hartford Mill (Gardner and Carpenter, 1935; Ansari, 1989). The Lucerne Cut was mined on a small scale from 1899 to 1906 and produced 60,000 tons of ore. However, by 1942, mining at the Lucerne Cut was being conducted by power shovel, with ore transported by truck to the Donovan Mill in Silver City (Stoddard and Carpenter, 1950).

These open pit operations are two examples of the nine open pit mining operations that worked the Comstock Lode during the post-boom renewal of mining in the 1930s and 1940s. Other historic operations of note include the Consolidated Chollar (Con Chollar), a 1940s operation that created some of the road network within the Project Area. The Con Chollar roads were constructed specifically to transport ore from the Overman Pit to the Con Chollar Mill. The Con Chollar cyanide mill is one of the 25 contributing properties to the Virginia City National Historic District that is within the Viewshed APE for the Proposed Action.

The open pit mining operations of the Con Chollar continued into 1944, producing 400 tons of ore a day. The ore was extracted by power shovel and transported to the Con Chollar Mill by 20-ton trucks. Operations at the Con Chollar mine ceased in 1944 due to a scarcity of labor and materials. In 1946, the mine restarted operations with production of 300 tons per day, and by 1948, had restored operations to 400 tons per day. From 1940 to 1948, the open pit operation produced two-thirds of a million tons of ore and over two million tons of waste rock (Stoddard and Carpenter, 1950).

In the Gold Hill and American Flat region of the Comstock, the landscape is largely defined by 20th century activities. Across the landscape are open pits, cuts, waste rock dumps, haul roads, and mills associated with the revitalization of mining that occurred during the 1930s. Development associated with the large-scale operations of the 1930s substantially altered the landscape and constructed resources of the preceding era because the equipment, structures, and buildings dating to the Comstock Bonanza were scavenged, scrapped, or replaced. Furthermore, the reprocessing of old pan-amalgamation tailings essentially removed many of the landscape features of those earlier operations. From 1933 to 1940, the Con Chollar alone re-processed 400,000 tons of Bonanza-era tailings. This amounts to nearly one-tenth of the total tonnage produced from 1870 to 1881, the peak years of production during the Comstock Bonanza (Couch and Carpenter, 1943; Stoddard and Carpenter, 1950).

Open pit mining occurred during the historic period of the Virginia City National Historic District during the Post Boom Renewal and L208 period of mining on the Comstock Lode (1900-1942) (Spidell et al., 2014). These historic operations were similar to modern surface mining in that they were highly mechanized, employing power shovels and haul trucks, and they extracted and processed very large volumes of ore.

The American Flat Road historically provided public access to American Flat. The re-configuration of the American Flat Road would allow for continued public access to the region on existing roads. The Lucerne Haul Road would be used to transport ore mined from the Lucerne Pit to Comstock Mining, LLC's heap leach processing facility in American Flat.

Past and present actions that could impact cultural resources include the following: ROWs for oil and gas pipelines and facilities (130 acres); sand, gravel, and industrial operations (224 acres); mineral exploration and mining operations (292 acres, including 174.5 acres from Comstock Mining, LLC); former United Comstock Merger mill site at American Flat (32 acres); utility corridors (373 acres); urban development (880 acres); public purpose sites (54 acres); roads (298 acres); railroads (91 acres); and water facilities and pipelines (98 acres). RFFAs that could impact cultural resources include the following: mineral exploration and mining operations (35 acres from Comstock Mining, LLC); urban development (934 acres); public purpose sites (90 acres); roads (1 acre); and water facilities and pipelines (13 acres). Approximately 3,545 acres of disturbance are associated with these actions, with 2,472 acres from past and present actions and 1,073 acres associated with RFFAs, accounting for approximately 10 percent of the CESA.

5.4.1 Proposed Action

The Proposed Action could increase the surface disturbance within the CESA by approximately 49 acres for a total of 3,594 acres of surface disturbance. The Proposed Action would account for an additional 1.3 percent increase of surface disturbance within the CESA.

Past, present, and RFFAs could have direct physical impacts to cultural resources and indirect impacts (such as visual, auditory, olfactory, etc.) on the setting for specific cultural resources. Actions that occurred prior to 1966 (i.e., the NHPA) or those actions without a federal or State nexus generally did not identify or quantify cultural resource sites or impacts to them. These past actions, such as power lines, roads, urban development, railroads, may have had direct physical effects on sites. Present actions and RFFAs would be subject to the NHPA and direct impacts to cultural resources are unlikely on public lands. Impacts to eligible cultural sites within the Project Area have been resolved through an executed MOA and HPTP; therefore, incremental increase in cumulative effects to cultural resources from the Project would be minimal.

5.4.2 No Action/Current Management Alternative

No impacts to cultural resources are anticipated under the No Action/Current Management Alternative; therefore, there are no cumulative impacts to cultural resources from the No Action/Current Management Alternative when added to past, present, and RFFAs.

5.4.3 Non-Federal Alternative

The Non-Federal Alternative would increase the surface disturbance within the CESA by approximately 41 acres for a total of 3,586 acres of surface disturbance. The Non-Federal Alternative would account for an additional 1.2 percent increase of surface disturbance within the CESA.

Past, present, and RFFAs could have direct physical impacts to cultural resources and indirect impacts (such as visual, auditory, olfactory, etc.) on the setting for specific cultural resources. Actions that occurred prior to 1966 (i.e., the NHPA) or those actions without a federal or State nexus generally did not identify or quantify cultural resource sites or impacts to them. Present actions and RFFAs would be subject to the NHPA and direct impacts to cultural resources are unlikely on public lands. The Non-Federal Alternative would result in direct impacts to one eligible cultural site. These impacts could be mitigated through the preparation and implementation of a HPTP, as has been done for other Comstock Mining, LLC private lands; therefore, incremental increase in cumulative effects to cultural resources from this alternative would be minimal.

5.5 Noxious, Invasive Plant Species

The CESA for noxious, invasive plant species is the Biological Resources CESA and follows the HUC-12 Gold Canyon-Carson River Watershed boundary to the north and in the south the CESA follows the topography located north of Highway 50 (Figure 17).

Past and present actions that could impact noxious, invasive plant species include the following: ROWs for oil and gas pipelines and facilities (130 acres); sand, gravel, and industrial operations (324 acres); mineral exploration and mining operations (231 acres, including 174.5 acres from Comstock Mining, LLC); former United Comstock Merger mill site at American Flat (32 acres); utility corridors (1,836 acres); urban development (694 acres); public purpose sites (14 acres); roads (254 acres); railroads (103 acres); and water facilities and pipelines (98 acres). RFFAs that could impact noxious, invasive plant species include the following: mineral exploration and mining operations (35 acres from Comstock Mining, LLC); public purpose sites (25 acres); roads (71 acres); and water facilities and pipelines (17 acres). Approximately 3,864 acres of disturbance are associated with these actions, with 3,716 acres from past and present actions and 148 acres associated with RFFAs, accounting for approximately 28 percent of the CESA.

5.5.1 Proposed Action

The Proposed Action would increase the surface disturbance within the CESA by approximately 49 acres for a total of 3,913 acres of surface disturbance. The Proposed Action would account for an additional 1.2 percent increase of surface disturbance within the CESA.

Direct impacts from surface disturbance associated with all past, present, and RFFAs would have included the removal of vegetation. Removal of native vegetation would have increased the potential for invasion by noxious and non-native plant species. Historic past actions are generally not subject to any reclamation activities. However, some present actions and RFFAs including those associated with mineral exploration and mining operations on public land are subject to reclamation requirements, which would help reestablish vegetation and prevent impacts from noxious, invasive plant species. Comstock Mining, LLC would control noxious weed populations in the Project Area consistent with their Integrated Weed Management Plan. Following reclamation, Comstock Mining, LLC would reseed the area to encourage revegetation and minimize potential impacts from the Proposed Action. The Project would result in few additional impacts from noxious, invasive plant species; therefore, there would be little or no incremental increase in cumulative effects from noxious, invasive plant species from the Project.

5.5.2 No Action/Current Management Alternative

Under the No Action/Current Management Alternative, impacts from noxious, invasive plant species would continue from current authorizations in the Project Area and other activities within the CESA. Comstock Mining, LLC would continue to implement their IWMP under this alternative. Therefore, cumulative impacts from noxious, invasive plant species from the No Action/Current Management Alternative are negligible when added to past, present, and RFFAs.

5.5.3 Non-Federal Alternative

The Non-Federal Alternative would increase the surface disturbance within the CESA by approximately 41 acres for a total of 3,905 acres of surface disturbance. The Non-Federal Alternative would account for an additional 1.1 percent increase of surface disturbance within the CESA.

Historic past actions are generally not subject to any reclamation activities. However, some present actions and RFFAs including those associated with mineral exploration and mining operations on public land are subject to reclamation requirements, which would help reestablish vegetation and prevent impacts from noxious, invasive plant species. Comstock Mining, LLC would control noxious weed populations consistent with their IWMP in the heap leach processing facility area and along State Route 341/342. Following reclamation, Comstock Mining, LLC would reseed the area to encourage revegetation and minimize potential impacts from the Non-Federal Alternative. Although impacts to vegetation from this alternative are long-lasting, they are relatively small within the CESA and considered to be negligible.

5.6 MIGRATORY BIRDS

The CESA for migratory birds is the Biological Resources CESA and follows the HUC-12 Gold Canyon-Carson River Watershed boundary to the north and in the south the CESA follows the topography located north of Highway 50 (Figure 17).

Past and present actions that could impact migratory birds include the following: ROWs for oil and gas pipelines and facilities (130 acres); sand, gravel, and industrial operations (324 acres); mineral exploration and mining operations (231 acres, including 174.5 acres from Comstock Mining, LLC); former United Comstock Merger mill site at American Flat (32 acres); utility corridors (1,836 acres); urban development (694 acres); public purpose sites (14 acres); roads (254 acres); railroads (103 acres); and water facilities and pipelines (98 acres). RFFAs that could impact migratory birds include the following: mineral exploration and mining operations (35 acres from Comstock Mining, LLC); public purpose sites (25 acres); roads (71 acres); and water facilities and pipelines (17 acres). Approximately 3,864 acres of disturbance are associated with these actions, with 3,716 acres from past and present actions and 148 acres associated with RFFAs, accounting for approximately 28 percent of the CESA.

5.6.1 Proposed Action

The Proposed Action would increase the surface disturbance within the CESA by approximately 49 acres for a total of 3,913 acres of surface disturbance. The Proposed Action would account for an additional 1.2 percent increase of surface disturbance within the CESA.

Surface disturbance associated with all past, present, and RFFAs would have removed vegetation resulting in loss of migratory bird nesting or foraging habitat. Surface disturbance may have also resulted in direct impacts to individual or nesting migratory birds. Historic past actions are generally not subject to any reclamation activities. However, some present actions and RFFAs including those associated with mineral exploration and mining operations on public land are subject to reclamation requirements, which would help reestablish migratory bird foraging and nesting habitat. Following reclamation, Comstock Mining, LLC would reseed the area to encourage revegetation and minimize potential impacts from the Proposed Action. During operation, Comstock Mining, LLC would employ the EPMs outlined in Chapter 2 to minimize impacts to migratory birds. Therefore, the Project would result in few additional impacts to migratory birds; therefore, there would be little or no incremental increase in cumulative effects to migratory birds or habitat from the Project.

5.6.2 No Action/Current Management Alternative

Under the No Action/Current Management Alternative, impacts to migratory birds would continue from current authorizations in the Project Area and other activities within the CESA.

The cumulative impacts to migratory birds from the No Action/Current Management Alternative are negligible when added to past, present, and RFFAs.

5.6.3 Non-Federal Alternative

The Non-Federal Alternative would increase the surface disturbance within the CESA by approximately 41 acres for a total of 3,905 acres of surface disturbance. The Non-Federal Alternative would account for an additional 1.1 percent increase of surface disturbance within the CESA.

Historic past actions are generally not subject to any reclamation activities. However, some present actions and RFFAs including those associated with mineral exploration and mining operations on public land are subject to reclamation requirements, which would help reestablish wildlife foraging and nesting habitat. Noise and haul truck traffic related-disturbances to wildlife would shift from the Lucerne Haul Road area to along the State Route 341/342 corridor to the new heap leach processing facility in Spring Valley, resulting in increased impacts to wildlife. Impacts to migratory birds from this alternative are considered long-term and would last until haul traffic along State Route 341/342 ends and the heap leach processing facility is decommissioned and reclaimed. Following reclamation, Comstock Mining, LLC would reseed the area to encourage revegetation and minimize potential impacts from the Non-Federal Alternative to migratory bird foraging and nesting habitat. Although impacts to migratory birds from this alternative are long-lasting, they are relatively small within the CESA and considered to be negligible.

5.7 HAZARDOUS AND SOLID WASTES

The CESA for hazardous and solid wastes is the Biological Resources CESA and follows the HUC-12 Gold Canyon-Carson River Watershed boundary to the north and in the south the CESA follows the topography located north of Highway 50 (Figure 17).

Past and present actions that could have impacts from hazardous and solid wastes include the following: ROWs for oil and gas pipelines and facilities (130 acres); sand, gravel, and industrial operations (324 acres); mineral exploration and mining operations (231 acres, including 174.5 acres from Comstock Mining, LLC); former United Comstock Merger mill site at American Flat (32 acres); utility corridors (1,836 acres); urban development (694 acres); public purpose sites (14 acres); roads (254 acres); railroads (103 acres); and water facilities and pipelines (98 acres). Historic accumulation of hazardous materials include mercury, arsenic, and lead resulted in the designation of the CRMS. RFFAs that could have impacts from hazardous and solid wastes include the following: mineral exploration and mining operations (35 acres from Comstock Mining, LLC); public purpose sites (25 acres); roads (71 acres); and water facilities and pipelines (17 acres). Approximately 3,864 acres of disturbance are associated with these actions, with

3,716 acres from past and present actions and 148 acres associated with RFFAs, accounting for approximately 28 percent of the CESA.

5.7.1 Proposed Action

The Proposed Action would increase the surface disturbance within the CESA by approximately 49 acres for a total of 3,913 acres of surface disturbance. The Proposed Action would account for an additional 1.2 percent increase of surface disturbance within the CESA.

Hazardous materials are currently stored and utilized for use in the gold recovery and processing at the existing heap leach processing facility in the CESA. Other past uses of hazardous materials include fuels and other petroleum products associated with the mining and exploration activities, which were used to maintain and operate the mining and exploration equipment and vehicles. Vehicles using State Route 342 contain petroleum products and it is likely that some petroleum products have been spilled as the result of vehicle accidents on State Route 342. Impacts from use of petroleum products during mineral exploration, mining, and travel on State Route 342 may have resulted in soil contamination and impacts to water quality. The Proposed Action would not generate, use, or dispose of hazardous wastes. Petroleum products would be used by vehicles traveling in the Project Area; however, these would not be stored in the Project Area. Hazardous materials existing in the Project Area and vicinity which are located within the CRMS site are being addressed through the NDEP–BCA SAP including sampling, analysis, and clean-up activities, where necessary. The Project is not expected to have impacts from solid or hazardous wastes; therefore, there would be no incremental increase in cumulative effects from solid or hazardous wastes.

5.7.2 No Action/Current Management Alternative

Although the past uses of hazardous materials include chemicals used at the historical mines in the CESA which has resulted in impacts to hazardous and solid wastes and the CRMS site, no impacts from solid or hazardous wastes anticipated under the No Action/Current Management Alternative. Therefore, there are no cumulative impacts to solid or hazardous wastes from the No Action/Current Management Alternative when added to past, present, and RFFAs.

5.7.3 Non-Federal Alternative

The Non-Federal Alternative would increase the surface disturbance within the CESA by approximately 41 acres for a total of 3,905 acres of surface disturbance. The Non-Federal Alternative would account for an additional 1.1 percent increase of surface disturbance within the CESA.

Past uses of hazardous materials include fuels and other petroleum products associated with the mining and exploration activities, which were used to maintain and operate the mining and

exploration equipment and vehicles. Vehicles using State Route 341/342 contain petroleum products and it is likely that some petroleum products have been spilled as the result of vehicle accidents on State Route 341/342. Solid wastes would be generated from vegetation removal prior to construction of the Non-Federal Alternative. Additional petroleum products would be utilized and stored in the area analyzed for the Non-Federal Alternative. Hazardous materials would be stored and utilized on-site for use in the gold recovery and processing associated with heap leach processing facility. Comstock Mining, LLC would permit this heap leach processing facility consistent with the existing heap leach processing facility located on private land, and impacts to hazardous and solid wastes from this alternative would be limited by the implementation of BMPs and safety features associated required local and State permits. Impacts from solid or hazardous wastes from this alternative are unlikely to occur and disturbance associated with the Non-Federal Alternative is relatively small within the CESA; therefore, cumulative impacts to solid or hazardous wastes are considered unlikely to occur.

5.8 WATER QUALITY (SURFACE/GROUND)

The CESA for water quality is the Biological Resources CESA and follows the HUC-12 Gold Canyon-Carson River Watershed boundary to the north and in the south the CESA follows the topography located north of Highway 50 (Figure 17).

Past and present actions that could impact water quality include the following: ROWs for oil and gas pipelines and facilities (130 acres); sand, gravel, and industrial operations (324 acres); mineral exploration and mining operations (231 acres, including 174.5 acres from Comstock Mining, LLC); former United Comstock Merger mill site at American Flat (32 acres); utility corridors (1,836 acres); urban development (694 acres); public purpose sites (14 acres); roads (254 acres); railroads (103 acres); and water facilities and pipelines (98 acres). RFFAs that could impact water quality include the following: mineral exploration and mining operations (35 acres from Comstock Mining, LLC); public purpose sites (25 acres); roads (71 acres); and water facilities and pipelines (17 acres). Approximately 3,864 acres of disturbance are associated with these actions, with 3,716 acres from past and present actions and 148 acres associated with RFFAs, accounting for approximately 28 percent of the CESA.

5.8.1 Proposed Action

The Proposed Action would increase the surface disturbance within the CESA by approximately 49 acres for a total of 3,913 acres of surface disturbance. The Proposed Action would account for an additional 1.2 percent increase of surface disturbance within the CESA.

Past, present, and RFFAs could have impacts to water quality by introducing sediment to ephemeral streams or springs, or by introducing contaminants into the surface. With the depth of groundwater at approximately 100 feet below the surface, no impacts to groundwater are

expected from the Project. Past, present, and RFFAs particularly from mining could have impacts to groundwater quality if water were encountered; however, the Lucerne and Billie the Kid pits have not encountered groundwater and are not expected to (BLM, 1991). Within the CRMS site, past uses of hazardous materials include chemicals used at the historical mines in the CESA which has resulted in impacts to soils and potentially surface water quality. The Proposed Action is not expected to increase erosion, there are no perennial creeks within or adjacent to the Project Area; and no hazardous wastes would be stored in the Project Area; therefore, no impacts to surface or groundwater quality are expected from the Proposed Action. No incremental increase in cumulative effects to water quality is expected from the Project.

5.8.2 No Action/Current Management Alternative

No impacts to water quality anticipated under the No Action/Current Management Alternative; therefore, there are no cumulative impacts to solid or hazardous wastes from the No Action/Current Management Alternative when added to past, present, and RFFAs.

5.8.3 Non-Federal Alternative

The Non-Federal Alternative would increase the surface disturbance within the CESA by approximately 41 acres for a total of 3,905 acres of surface disturbance. The Non-Federal Alternative would account for an additional 1.1 percent increase of surface disturbance within the CESA.

Past, present, and RFFAs could have impacts to water quality by introducing sediment to ephemeral streams or springs, or by introducing contaminants into the surface or groundwater supply. The Non-Federal Alternative could have impacts to surface and groundwater quality; however, these impacts are expected to limited by the implementation of BMPs and safety features associated with required local and State permits. Impacts to water quality from this alternative are unlikely to occur and disturbance associated with the Non-Federal Alternative is relatively small within the CESA; therefore, cumulative impacts to water quality are considered unlikely to occur.

5.9 Special Status Species (Animals)

The CESA for special status animal species is the Biological Resources CESA and follows the HUC-12 Gold Canyon-Carson River Watershed boundary to the north and in the south the CESA follows the topography located north of Highway 50 (Figure 17).

Past and present actions that could impact special status species include the following: ROWs for oil and gas pipelines and facilities (130 acres); sand, gravel, and industrial operations (324 acres); mineral exploration and mining operations (231 acres, including 174.5 acres from Comstock Mining, LLC); former United Comstock Merger mill site at American Flat (32 acres);

utility corridors (1,836 acres); urban development (694 acres); public purpose sites (14 acres); roads (254 acres); railroads (103 acres); and water facilities and pipelines (98 acres). RFFAs that could impact special status species include the following: mineral exploration and mining operations (35 acres from Comstock Mining, LLC); public purpose sites (25 acres); roads (71 acres); and water facilities and pipelines (17 acres). Approximately 3,864 acres of disturbance are associated with these actions, with 3,716 acres from past and present actions and 148 acres associated with RFFAs, accounting for approximately 28 percent of the CESA.

5.9.1 Proposed Action

The Proposed Action would increase the surface disturbance within the CESA by approximately 49 acres for a total of 3,913 acres of surface disturbance. The Proposed Action would account for an additional 1.2 percent increase of surface disturbance within the CESA.

Surface disturbance associated with all past, present, and RFFAs would have removed vegetation resulting in loss of special status species habitat. Surface disturbance may have also resulted in direct impacts to individual special status species. Historic past actions are generally not subject to any reclamation activities. However, some present actions and RFFAs including those associated with mineral exploration and mining operations on public land are subject to reclamation requirements, which would help reestablish special status species foraging and nesting habitat. Following reclamation, Comstock Mining, LLC would reseed the area to encourage revegetation and minimize potential impacts from the Proposed Action. Therefore, the Project would result in few additional impacts to special status species habitat; therefore, there would be little or no incremental increase in cumulative effects to special status species or their habitat from the Project.

5.9.2 No Action/Current Management

Under the No Action/Current Management Alternative, impacts to special status species would continue from current authorizations in the Project Area and other activities within the CESA. The cumulative impacts to special status species from the No Action/Current Management Alternative are negligible when added to past, present, and RFFAs.

5.9.3 Non-Federal Alternative

The Non-Federal Alternative would increase the surface disturbance within the CESA by approximately 41 acres for a total of 3,905 acres of surface disturbance. The Non-Federal Alternative would account for an additional 1.1 percent increase of surface disturbance within the CESA.

Historic past actions are generally not subject to any reclamation activities. However, some present actions and RFFAs including those associated with mineral exploration and mining

operations on public land are subject to reclamation requirements, which would help reestablish foraging and nesting habitat. Impacts to State protected wildlife species from this alternative at the heap leach processing facility are considered long-term and would last until the heap leach processing facility is decommissioned and reclaimed.

Noise and haul truck traffic related-disturbances to wildlife would shift from the Lucerne Haul Road area to along the State Route 341/342 corridor to the new heap leach processing facility in Spring Valley, resulting in increased impacts to special status species. During operation, Comstock Mining, LLC would employ BMPs and EPMs to minimize impacts to these species. Following reclamation, Comstock Mining, LLC would reseed the area to encourage revegetation and minimize potential impacts from the Non-Federal Alternative to habitat. Although impacts to State-protected wildlife habitat from this alternative are long-lasting, they are relatively small within the CESA and considered to be negligible.

5.10 General Wildlife

The CESA for general wildlife is the Biological Resources CESA and follows the HUC-12 Gold Canyon-Carson River Watershed boundary to the north and in the south the CESA follows the topography located north of Highway 50 (Figure 17).

Past and present actions that could impact wildlife include the following: ROWs for oil and gas pipelines and facilities (130 acres); sand, gravel, and industrial operations (324 acres); mineral exploration and mining operations (231 acres, including 174.5 acres from Comstock Mining, LLC); former United Comstock Merger mill site at American Flat (32 acres); utility corridors (1,836 acres); urban development (694 acres); public purpose sites (14 acres); roads (254 acres); railroads (103 acres); and water facilities and pipelines (98 acres). RFFAs that could impact wildlife include the following: mineral exploration and mining operations (35 acres from Comstock Mining, LLC); public purpose sites (25 acres); roads (71 acres); and water facilities and pipelines (17 acres). Approximately 3,864 acres of disturbance are associated with these actions, with 3,716 acres from past and present actions and 148 acres associated with RFFAs, accounting for approximately 28 percent of the CESA.

5.10.1 Proposed Action

The Proposed Action would increase the surface disturbance within the CESA by approximately 49 acres for a total of 3,913 acres of surface disturbance. The Proposed Action would account for an additional 1.2 percent increase of surface disturbance within the CESA.

Surface disturbance associated with all past, present, and RFFAs would have removed vegetation resulting in loss of wildlife habitat. Surface disturbance may have also resulted in direct impacts to individual wildlife. Historic past actions are generally not subject to any reclamation

activities. However, some present actions and RFFAs including those associated with mineral exploration and mining operations on public land are subject to reclamation requirements, which would help reestablish wildlife foraging and nesting habitat. Following reclamation, Comstock Mining, LLC would reseed the area to encourage revegetation and minimize potential impacts from the Proposed Action. Therefore, the Project would result in few additional impacts to wildlife; therefore, there would be little or no incremental increase in cumulative effects to wildlife or wildlife habitat from the Project.

5.10.2 No Action/Current Management Alternative

Under the No Action/Current Management Alternative, impacts to wildlife would continue from current authorizations in the Project Area and other activities within the CESA. The cumulative impacts to wildlife from the No Action/Current Management Alternative are negligible when added to past, present, and RFFAs.

5.10.3 Non-Federal Alternative

The Non-Federal Alternative would increase the surface disturbance within the CESA by approximately 41 acres for a total of 3,905 acres of surface disturbance. The Non-Federal Alternative would account for an additional 1.1 percent increase of surface disturbance within the CESA.

Historic past actions are generally not subject to any reclamation activities. However, some present actions and RFFAs including those associated with mineral exploration and mining operations on public land are subject to reclamation requirements, which would help reestablish wildlife foraging and nesting habitat. Noise and haul truck traffic related-disturbances to wildlife would shift from the Lucerne Haul Road area to along the State Route 341/342 corridor to the new heap leach processing facility in Spring Valley, resulting in increased impacts to wildlife. Impacts to wildlife from this alternative are considered long-term and would last until haul traffic along State Route 341/342 ends and the heap leach processing facility is decommissioned and reclaimed. During operation, Comstock Mining, LLC would employ BMPs and EPMs to minimize impacts to wildlife. Following reclamation, Comstock Mining, LLC would reseed the area to encourage revegetation and minimize potential impacts from the Non-Federal Alternative to wildlife habitat. Although impacts to wildlife from this alternative are long-lasting, they are relatively small within the CESA and considered to be negligible.

5.11 LAND USE AUTHORIZATIONS

The CESA for land use authorizations is the Air Quality and Land Use Authorizations CESA and includes the area immediately around the Project Area (Figure 16). The CESA follows the V&T railroad to the west, the Cultural Resources Viewshed APE to the east, and an approximately 0.25-mile buffer around the Non-Federal Alternative to the south.

Past and present actions that could impact land use authorizations include the following: sand, gravel, and industrial operations (3 acres); mineral exploration and mining operations (202 acres, including 174.5 acres from Comstock Mining, LLC); former United Comstock Merger mill site at American Flat (32 acres); utility corridors (111 acres); urban development (223 acres); public purpose sites (4 acres); roads (94 acres); railroads (42 acres); and water facilities and pipelines (39 acres). RFFAs that could impact land use authorizations include the following: mineral exploration and mining operations (35 acres from Comstock Mining, LLC); roads (1 acre); and water facilities and pipelines (13 acres). Approximately 799 acres of disturbance are associated with these actions, with 750 acres from past and present actions and 49 acres associated with RFFAs, accounting for approximately 25 percent of the CESA.

5.11.1 Proposed Action

The Proposed Action would increase the surface disturbance within the CESA by approximately 49 acres for a total of 848 acres of surface disturbance. The Proposed Action would account for an additional 5.7 percent increase of surface disturbance within the CESA.

Impacts to land use authorizations have occurred from past and present actions and may have included substantial changes in land use as well as the division of the physical arrangement of an established community. These impacts have been localized, affecting just those areas where the specific projects occurred. Land use authorization impacts from RFFAs could include limited or restricted access through specific areas from development, public purpose sites, road construction, or water facilities and pipelines. The current uses of public lands within the Project Area are similar to those with the CESA and common to the region. Impacts to land use authorizations from the Proposed Action are expected be negligible and long-term; therefore, cumulative impacts to land use authorizations from the Project are considered to be negligible.

5.11.2 No Action/Current Management Alternative

Under the No Action/Current Management Alternative, impacts to land use authorizations would continue from current authorizations in the Project Area and other activities within the CESA. The cumulative impacts to land use authorizations from the No Action/Current Management Alternative are negligible when added to past, present, and RFFAs.

5.11.3 Non-Federal Alternative

The Non-Federal Alternative would increase the surface disturbance within the CESA by approximately 41 acres for a total of 840 acres of surface disturbance. The Non-Federal Alternative would account for an additional 5.1 percent increase of surface disturbance within the CESA.

Impacts to land use authorizations have occurred from past and present actions in the CESA. These impacts have been localized, affecting just those areas where the specific projects occurred. Land use authorization impacts from RFFAs could include limited or restricted access through specific areas from urban development, public purpose sites, road construction, or water facilities and pipelines in the CESA. The Non-Federal Alternative would be constructed entirely on private land and current land use is limited to easements. Impacts to land use authorizations from the Non-Federal Alternative are expected be long-term and may preclude development of other utilities on the site. As a result of the relatively small size of the disturbance associated with this alternative, cumulative impacts to land use authorizations from this alternative are considered to be negligible.

5.12 Recreation and Travel Management

The CESA for recreation and travel management is the Recreation CESA and includes the immediate recreation network around the Project Area, including off-road trails that lead from Jumbo Grade to the west, trails that lead south from the former American Flat Mill site to Industrial Parkway, as well as the Virginia City 100 horse endurance route, and Virginia City itself (Figure 17).

Virginia City National Historic Landmark attracts an estimated 600,000 tourist visitors each year (BLM, 2013b). In-town attractions include saloons, bed and breakfasts, mine tours, museums, the V&T Railroad, Piper's Opera House, Fourth Ward School, and St. Mary's Church. Miner's Park is located in Virginia City at the corner of Carson and F streets. This park includes a pool, baseball field, gazebo, BBQ area, skate park, and playground equipment. The Virginia City High School campus, located on R Street, includes an artificial turf athletic field that provides regulation football and softball facilities that are utilized by the high school athletic teams, as well as the town's residents.

Past and present actions that could impact recreation and travel management include the following: sand, gravel, and industrial operations (141 acres); mineral exploration and mining operations (203 acres, including 174.5 acres from Comstock Mining, LLC); former United Comstock Merger mill site at American Flat (32 acres); utility corridors (117 acres); urban development (489 acres); public purpose sites (26 acres); roads (194 acres); railroads (109 acres); and water facilities and pipelines (93 acres). RFFAs that could impact recreation and travel management include the following: mineral exploration and mining operations (35 acres from Comstock Mining, LLC); roads (1 acre); and water facilities and pipelines (13 acres). Approximately 1,453 acres of disturbance are associated with these actions, with 1,404 acres from past and present actions and 49 acres associated with RFFAs, accounting for approximately percent of the CESA.

5.12.1 Proposed Action

The Proposed Action would increase the surface disturbance within the CESA by approximately 49 acres for a total of 1,502 acres of surface disturbance. The Proposed Action would account for an additional 3.2 percent increase of surface disturbance within the CESA.

Impacts to recreation and travel management from past, present, and RFFAs include limited or restricted access through specific areas from sand and gravel operations, mineral activities, ROWs and roads, urban development, public purpose sites, or water facilities and pipelines. Impacts to recreation from past, present, and RFFAs likely include reduction in the quality and area available for recreational activities.

Recreation

Impacts to recreation would occur during Project construction, and are considered short-term and negligible; therefore, cumulative impacts to recreation from the Project are considered to be negligible.

Travel Management

Impacts to travel management during Project construction are considered short-term and negligible. Impacts to travel management through the separation of public traffic from haul traffic are considered long-term and beneficial. Overall cumulative impacts to travel management are beneficial under the Proposed Action.

5.12.2 No Action/Current Management Alternative

Under the No Action/Current Management Alternative, impacts to recreation and travel management would continue from current authorizations in the Project Area and other activities within the CESA.

Recreation

The cumulative impacts to recreation from the No Action/Current Management Alternative are negligible when added to past, present, and RFFAs.

Travel Management

There would be no short-term impacts to travel management from construction activities under the No Action/Current Management Alternative. In the long-term, there would be adverse impacts to travel management because safety concerns regarding the intermixing of public traffic and haul traffic would not be addressed. In the long-term, the road that leads south from the American Flat Road to the former American Flat Mill site would have to be addressed by the BLM through other means. Overall cumulative effects from the No Action/Current Management Alternative would be negligible.

5.12.3 Non-Federal Alternative

The Non-Federal Alternative would increase the surface disturbance within the CESA by approximately 41 acres for a total of 1,494 acres of surface disturbance. The Non-Federal Alternative would account for an additional 2.8 percent increase of surface disturbance within the CESA.

Impacts to recreation and travel management from past, present, and RFFAs include limited or restricted access through specific areas from sand and gravel operations, mineral activities, ROWs and roads, urban development, public purpose sites, or water facilities and pipelines.

Recreation

Impacts to recreation are not expected from the Non-Federal Alternative; therefore, no cumulative impacts to recreation from the Non-Federal Alternative are expected.

Travel Management

Implementation of the Non-Federal Alternative would result in a shift of haul truck traffic from the Lucerne Haul Road area to the State Route 341/342 corridor from the Lucerne Pit to the new heap leach processing facility in Spring Valley. Up to 118 round trips per day would be made by 16.5-ton haul trucks between the Lucerne Pit and Spring Valley, through Silver City. In addition, Comstock Mining, LLC would maintain their existing administrative offices on the American Flat Road. As a result there would be mine employee and utility traffic on State Route 341/342 between the American Flat Road and new heap leach processing facility in Spring Valley. The increased traffic between the administrative offices and the heap leach processing facility would consist of approximately 75 round trips per day. The result would be long-term and cumulative effects to travel management along the State Route 341/342 corridor, including through Silver City would be adverse.

5.13 SOCIOECONOMICS

The CESA for socioeconomics is the Socioeconomics CESA and includes Washoe, Lyon, Storey, and Carson City counties. Washoe County measures approximately 6,302 square miles with a 2012 population estimate of 429,908 (Figure 18). Carson City County measures approximately 145 square miles with a 2012 population estimate of 54,838. Lyon County measures approximately 262 square miles with a 2012 population estimate of 51,327. Storey County measures approximately 2,000 square miles with a 2012 population estimate of 3,935 (U.S. Census Bureau, 2014). Annual 2013 unemployment rates for these counties are as follows: Lyon County was 13.0; Carson City County was 9.9; Washoe County was 9.3; and Storey County was 9.8 (Nevada Workforce Informer, 2014).

5.13.1 Proposed Action

Past, present, and RFFAs the CESA are diverse and include all the actions listed in Table 5-1. Impacts from the Proposed Action on socioeconomics are considered to be temporary and beneficial, consisting of eight employees or contractors during Project construction. Therefore, cumulative impacts to socioeconomics from the Project are considered to be negligible.

5.13.2 No Action/Current Management Alternative

No impacts to socioeconomics are anticipated under the No Action/Current Management Alternative; therefore, there are no cumulative impacts to socioeconomics from the No Action/Current Management Alternative when added to past, present, and RFFAs.

5.13.3 Non-Federal Alternative

Past, present, and RFFAs the CESA are diverse and include all the actions listed in Table 5-1. Impacts from the Non-Federal Alternative on socioeconomics from the construction of the new heap leach processing facility are considered to be temporary and beneficial, consisting of approximately 115 employees or contractors during construction. Following construction, a smaller workforce of approximately 30 individuals would remain to operate the heap leach processing facility. This is identical to the current workforce at the existing heap leach processing facility. Tax revenues that had previously gone to Storey County would be located in Lyon County under this alternative. Employment gains would be short-term and negligible. New haul traffic through Silver City on State Route 341/342 to Spring Valley would result in up to 118 round trips per day by 16.5-ton haul trucks. The cumulative effects to the quality of life for residents of Silver City would be adverse and long-term.

5.14 SOILS

The CESA for soils is the Biological Resources CESA which covers 13,871 acres and covers the area that follows the HUC-12 Gold Canyon-Carson River Watershed boundary to the north and in the south the CESA follows the topography located north of Highway 50 (Figure 17).

Past and present actions that could impact soils include the following: ROWs for oil and gas pipelines and facilities (130 acres); sand, gravel, and industrial operations (324 acres); mineral exploration and mining operations (231 acres, including 174.5 acres from Comstock Mining, LLC); former United Comstock Merger mill site at American Flat (32 acres); utility corridors (1,836 acres); urban development (694 acres); public purpose sites (14 acres); roads (254 acres); railroads (103 acres); and water facilities and pipelines (98 acres). RFFAs that could impact soils include the following: mineral exploration and mining operations (35 acres from Comstock Mining, LLC); public purpose sites (25 acres); roads (71 acres); and water facilities and pipelines (17 acres). Approximately 3,864 acres of disturbance are associated with these actions, with

3,716 acres from past and present actions and 148 acres associated with RFFAs, accounting for approximately 28 percent of the CESA.

5.14.1 Proposed Action

The Proposed Action would increase the surface disturbance within the CESA by approximately 49 acres for a total of 3,913 acres of surface disturbance. The Proposed Action would account for an additional 1.2 percent increase of surface disturbance within the CESA.

Impacts to soils from past, present, and RFFAs have resulted in increased erosion. Within the CRMS site, past uses of hazardous materials include chemicals used at the historical mines in the CESA which has resulted in impacts to soils. Historic past actions are generally not subject to any reclamation activities. However, some present actions and RFFAs including those associated with mineral exploration and mining operations on public land are subject to reclamation requirements, which would minimize impacts to soils. Implementation of the proposed EPMs and BMPs, as well as the Dust Control Plan, is expected to minimize potential impacts to soils that would result from implementation of the Proposed Action. Therefore, the Project would result in few additional impacts to soils; therefore, there would be little or no incremental increase in cumulative effects to soils from the Project.

5.14.2 No Action/Current Management Alternative

No impacts to soils are anticipated under the No Action/Current Management Alternative; therefore, there are no cumulative impacts to soils from the No Action/Current Management Alternative when added to past, present, and RFFAs.

5.14.3 Non-Federal Alternative

The Non-Federal Alternative would increase the surface disturbance within the CESA by approximately 41 acres for a total of 3,905 acres of surface disturbance. The Non-Federal Alternative would account for an additional 1.1 percent increase of surface disturbance within the CESA.

Historic past actions are generally not subject to any reclamation activities. However, some present actions and RFFAs including those associated with mineral exploration and mining operations on public land are subject to reclamation requirements, which would minimize impacts to soils. Implementation of the BMPs and the Dust Control Plan would be expected to minimize potential impacts to soils that would result from construction and implementation of the Non-Federal Alternative. Therefore, this alternative would result in few additional impacts to soils; therefore, there would be little or no incremental increase in cumulative effects to soils from the Non-Federal Alternative.

5.15 VEGETATION

The CESA for vegetation is the Biological Resources CESA and follows the HUC-12 Gold Canyon-Carson River Watershed boundary to the north and in the south the CESA follows the topography located north of Highway 50 (Figure 17).

Past and present actions that could impact vegetation include the following: ROWs for oil and gas pipelines and facilities (130 acres); sand, gravel, and industrial operations (324 acres); mineral exploration and mining operations (231 acres, including 174.5 acres from Comstock Mining, LLC); former United Comstock Merger mill site at American Flat (32 acres); utility corridors (1,836 acres); urban development (694 acres); public purpose sites (14 acres); roads (254 acres); railroads (103 acres); and water facilities and pipelines (98 acres). RFFAs that could impact vegetation include the following: mineral exploration and mining operations (35 acres from Comstock Mining, LLC); public purpose sites (25 acres); roads (71 acres); and water facilities and pipelines (17 acres). Approximately 3,864 acres of disturbance are associated with these actions, with 3,716 acres from past and present actions and 148 acres associated with RFFAs, accounting for approximately 28 percent of the CESA.

5.15.1 Proposed Action

The Proposed Action would increase the surface disturbance within the CESA by approximately 49 acres for a total of 3,913 acres of surface disturbance. The Proposed Action would account for an additional 1.2 percent increase of surface disturbance within the CESA.

Surface disturbance associated with all past, present, and RFFAs would have resulted in impacts including removal of native vegetation. Historic past actions are generally not subject to any reclamation activities. However, some present actions and RFFAs including those associated with mineral exploration and mining operations on public land are subject to reclamation requirements, which would help reestablish vegetation. Following reclamation, Comstock Mining, LLC would reseed the area to encourage revegetation and minimize potential impacts from the Proposed Action. Therefore, the Project would result in few additional impacts to vegetation; therefore, there would be little or no incremental increase in cumulative effects to vegetation from the Project.

5.15.2 No Action/Current Management Alternative

No impacts to vegetation are anticipated under the No Action/Current Management Alternative; therefore, there are no cumulative impacts to vegetation from the No Action/Current Management Alternative when added to past, present, and RFFAs.

5.15.3 Non-Federal Alternative

The Non-Federal Alternative would increase the surface disturbance within the CESA by approximately 41 acres for a total of 3,905 acres of surface disturbance. The Non-Federal Alternative would account for an additional 1.1 percent increase of surface disturbance within the CESA.

Historic past actions are generally not subject to any reclamation activities. However, some present actions and RFFAs including those associated with mineral exploration and mining operations on public land are subject to reclamation requirements, which would help reestablish vegetation. Impacts to vegetation from this alternative are considered long-term and would last until the heap leach processing facility is decommissioned and reclaimed. No impacts to vegetation are expected along State Route 341/342 from this alternative. Following reclamation, Comstock Mining, LLC would reseed the area to encourage revegetation and minimize potential impacts from the Non-Federal Alternative. Although impacts to vegetation from this alternative are long-lasting, they are relatively small within the CESA and considered to be negligible.

6.0 CONSULTATION AND COORDINATION

6.1 PUBLIC REVIEW AND COMMENT

6.1.1 Public Review – Draft Environmental Assessment (DEA)

On November 7, 2014, the BLM announced the schedule for the public review of the DEA and public workshop. An article appeared in the *Nevada Appeal* on November 8, 2014.

On November 10, 2014, the BLM made a DEA available to the public for review and comment for 30 days. To notify the public, a letter was sent to 76 individuals on the Project mailing list. The BLM also conducted a workshop on November 13, 2014, at the Piper's Opera House in Virginia City. Twenty-nine people attended the workshop. The BLM received 13 emails or letters during the comment period, which ended on December 9, 2014. The BLM identified 61 unique comments on the DEA.

6.1.2 Public Review – Revised Draft Environmental Assessment (RDEA)

On September 21, 2015, the BLM published a RDEA for a 30-day public review and comment period on the BLM's national ePlanning "NEPA Register." Articles were published on *High Beam* (internet) on September 21, 2015, the *Northern Nevada Business on the Hour* (internet) on October 2, 2015, the *Nevada Appeal* (newspaper) on October 6, 2015, and in the *Virginia City News* (newspaper) on October 8, 2015. In addition the news release, the BLM sent notification to the 10 consulting parties, and 34 Nevada State agencies through the Clearinghouse. The BLM received four comment letters or emails during the review period, which ended on October 20, 2015.

Along with the RDEA, the BLM also made available Attachment D (draft MOA) and Attachment E (Comments and Responses to Public Comments Table). Attachment E included the BLM's response to the 61 unique comments received on the DEA. The BLM identified 31 unique comments on the RDEA and provided responses to those comments in Attachment E of the FEA.

6.2 INDIVIDUALS, TRIBES, ORGANIZATIONS, AND AGENCIES CONTACTED

The following individuals, tribes, organizations and agencies provided comments during public scoping, review of the DEA or RDEA, or were on the mailing list for the above public notification and involvement opportunities.

6.2.1 Individuals

Pam Abercrombie
James Allander
Elaine Barkdull-Spencer
Bob and Nadine Hastings
Lillian Henry
John Herrington

Ron and Sue Bell
Kay Bennett
Ron Bliss
Daniel Bowers
Jean Brighton
Jim Brady
Russell & Pamela Brandon
Clint Capurro
Andy Chesnut
James Clark
Robin Cobbey
Travis Covey
GiGi Cox
Ron Cox
Chuck Davies
Aglace Del Carlo
Ken DeHart
Helen Diessner
Ken Dorr
Denny Dotson
Julie Draksler
Marie DuFrone
Jim Dunlap
Jeanne Dupre
Robert Elstone
Sherry and Sammy Flynn
Craig Givant
Kim Golding
Charles Harrall
Russell and Camille Harig
Jim Hindle
Linda Hoyen
Karen James
Bo Johansson
Scott Jolcover
Scott Keller
Vida Keller
Cynthia Kennedy
Chris Kiechler
Penny Kiechler
Paul Liebendorfer
Rob McFadden
Rob & Darcy McMillin
Larry McPherson
Terry McTimmonds
Angela Mann
Bill Mitchell
Chuck Newness
Alicia Norris
Erich Obermayr
Mark Joseph Phillips
James Gill & Linda Piper
Dixie Randall
Nathan Earl Robison
Jeni Temen
David Toll
Mark Turner
Julie Workman
Stephanie Wozniak

6.2.2 Consulting Parties under Section 106 NHPA

Larry Wahrenbrock
Advisory Council on Historic Preservation
Comstock Cemeteries Foundation
Comstock Historic District Commission
Comstock Mining, LLC
Nevada State Historic Preservation Officer
Storey County

6.2.3 Tribes

Yerington Paiute Tribe
Washoe Tribe of Nevada and California

6.2.4 Organizations

Comstock Historic District Commission
Gold Hill Historical Society
Great Basin Resource Watch
Nevada All-State Trail Riders, Inc.
Nevada Commission for the Reconstruction of the V&T Railway
Nevada Johns
Silver Oak Development
Silver Springs Hospital District
Virginia City News

6.2.5 Agencies

Advisory Council on Historic Preservation
National Park Service (Western Regional Office)
Nevada Division of Environmental Protection
Nevada Department of Transportation
Nevada Department of Wildlife
State Historic Preservation Office

7.0 LIST OF PREPARERS

BLM staff members who contributed to this document are listed in the table below.

Name	Responsibility
Brian Buttazoni	Project Manager, NEPA Compliance
Shaina Shippen	Lands and Realty
Rachel Crews	Cultural and Historic Resources
Dan Erbes	Hazardous Wastes
Dean Tonenna	Vegetation, Weeds
Arthur Callan	Recreation
Pilar Ziegler	Wildlife
Niki Cutler	Water Quality, Soils

Stantec staff members who contributed to this document are listed in the table below.

Name	Resource
Kristi Schaff	Project Manager
Michele Lefebvre	Assistant Project Manager
Chris Johnson	GIS Specialist
Steve Morton	Resource Specialist
Ben Veach	Nevada Division Manager
Kim Carter	Formatting and Administrative Record

Jason Spidell from Kautz Environmental Consultants, Inc. contributed to the cultural resource sections of this document.

Rachel Yelderman, Larry Gorell, and Scott Jolcover from Comstock Mining, LLC also contributed to this document.

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