U.S. Department of the Interior
Bureau of Land Management

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Eldorado Valley
Transmission and Utility Corridor
Programmatic Environmental Assessment

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BLM

NATIONAL SYSTEM OF PUBLIC LANDS

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List of Acronyms

°C	degrees Celsius
°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
ACEC	area of critical environmental concern
APE	area of potential effects
ARPA	Archaeological Resources Protection Act of 1979
AST	aboveground storage tank
BCA	Bureau of Corrective Actions (NDEP)
BCCE	Boulder City Conservation Easement
BCFD	Boulder City Fire Department
BLM	Bureau of Land Management
BMP	best management practice
CAA	Clean Air Act
cal BP	calibrated years before the present
CCFD	Clark County Fire Department
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	cumulative effects study area
CFR	Code of Federal Regulations
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CRC	Colorado River Commission
CSP	concentrating solar power
CWA	Clean Water Act
DAQEM	Department of Air Quality and Environmental Management
dB	decibels
DBA	A-weighted decibels
DCP	Desert Conservation Program
DWMA	Desert Wildlife Management Area
EA	Environmental Assessment
EIS	Environmental Impact Statement
Eldorado Valley Corridor EA	Eldorado Valley Transportation and Public Utility Corridor Programmatic Environmental Assessment / DOI-BLM-NV-S010-2012-0024-EA
Eldorado Valley Patent Area	Approximately 107,412 acres conveyed by the BLM, to the Colorado River Commission, per U.S. Patent No. 27-95-0022
ESA	Endangered Species Act of 1973
EVTA	Eldorado Valley Transfer Act

FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Resource Commission
FLPMA	Federal Land Policy and Management Act
GHG	greenhouse gas
GIS	geographic information system
GPS	global positioning system
GSU	generator step-up
GWP	global warming potential
IBC	International Building Code
KOP	key observation point
Las Vegas RMP	1998 Las Vegas Resource Management Plan and Final Environmental Impact Statement
L_{dn}	daytime-nighttime average sound level
L_{eq}	equivalent sound pressure level
LVICC	Los Vegas Interagency Communications Center
MBTA	Migratory Bird Treaty Act of 1978
MP	milepost
MSHCP	Clark County Multiple Species Habitat Conservation Plan
MW	megawatts
NAAQS	National Ambient Air Quality Standards
NAC	Nevada Administrative Code
NCP	National Contingency Plan
NDEP	Nevada Department of Environmental Protection
NDOA	Nevada Department of Agriculture
NDOW	Nevada Department of Wildlife
NDWR	Nevada Division of Water Resources
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NNHP	Nevada Natural Heritage Program
NNPS	Nevada Native Plant Society
NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places
NRS	Nevada Revised Statute
NVCRIS	Nevada Cultural Resource Information System
OHV	off-highway vehicle
OSHA	Occupational Safety and Health Administration

P.L.	Public Law
PLO	Public Land Order
PM_{10}	particulate matter less than or equal to 10 micrometers in diameter
$PM_{2\,5}$	particulate matter less than or equal to 2.5 micrometers in diameter
ppm	parts per million
PRMMP	Paleontological Resource Management and Monitoring Plan
PV	photovoltaic
R	Range
RCRA	Resource Conservation and Recovery Act
RMP	Resource Management Plan
ROW	right-of-way
RRRP	Reclamation, Restoration, and Revegetation Plan
SARA	Superfund Amendments and Reauthorization Act
SCORP	Nevada Statewide Comprehensive Outdoor Recreation Plan
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SO_2	sulfur dioxide
SPCC (Plan)	Spill Prevention, Control, and Countermeasure (Plan)
Stat.	Statute
study area	corridors within the Eldorado Valley Patent Area
SWPPP	Stormwater Pollution Prevention Plan
T	Township
TSD	treatment, storage, and disposal
U.S. EPA	United States Environmental Protection Agency
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
VOC	volatile organic compound
VRM	visual resource management
WAPA	Western Area Power Administration
WEAP	Worker Environmental Awareness Program
WHBA	Wild Free-Roaming Horses and Burros Act
WQMP	Water Quality Management Plan

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Chapter 1. Purpose and Need

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1.1 Identifying Information

1.1.1 Title, EA Number, and Type of Project

Eldorado Valley Transportation and Public Utility Corridor Programmatic Environmental Assessment / DOI-BLM-NV-S010-2012-0024-EA, hereinafter referred to as the Eldorado Valley Corridor Programmatic EA.

1.1.2 Location of Proposed Action

The proposed action under review occurs within the Eldorado Valley in Southern Nevada. More specifically, the Eldorado Valley is located southeast of Las Vegas, south of the Cities of Henderson and Boulder City, and east of the McCullough Mountains, in Clark County, Nevada. Below is a general legal description of the location of the Bureau of Land Management (BLM) utility corridors. For a legal description of the greater Eldorado Valley Patent Area, see Appendix A.

Mount Diablo Meridian, Clark County, Nevada

T. 23 S., R. 62 E.,
sec. 24, 25, 36.

T. 23 S., R. 63 E.,
sec. 19, 26, 27, 30, 31, 33 – 36.

T. 23 S., R. 63½ E.,
sec. 25 and 36.

T. 23 S., R. 64 E.,
sec. 31, 33, 34.

T. 23½ S., R. 64 E.,
sec. 31– 34.

T. 24 S., R. 62 E.,
sec. 24 - 26, 34 - 36.

T. 24 S., R. 63 E.,
sec. 1 – 5, 7 – 12, 14 – 19, 21, 22, 28 – 32.

T. 24 S., R. 64 E.,
sec. 3, 4, 6, 8, 9, 16, 17, 19, 20, 29, 30 – 32.

T. 25 S., R. 62 E.,
sec. 1 – 4, 7 – 20, 22, 23, 26, 27, 33, 34.

T 25 S., R. 63 E.,
sec. 6, 27, 34.

T. 25 S., R. 64 E.,

sec. 6.

T. 26 S., R. 62 E.,
sec. 14.

T. 26 S., R. 63 E.,
sec. 4, 9, 16.

1.1.3 Name of Location of Preparing Office

Las Vegas Field Office, 4701 N. Torrey Pines Drive Las Vegas, NV 89130

1.1.4 Case File Number

BLM Case File No. Nev-48100

1.2 Background

In 1995, pursuant to the Eldorado Valley Transfer Act (EVTA) Public Law (P.L.) 85-339, 72 Statute (Stat.) 31-33 (as amended in 1962 by P.L. 87-784, 76 Stat. 804), the BLM conveyed approximately 107,412 acres (the Eldorado Valley Patent Area) by U.S. Patent No. 27-95-0022 to the Colorado River Commission (CRC), which acts as the state agency recipient of water and hydropower resources for the State of Nevada. The 1995 patent excepted and reserved to the United States transportation and public utility corridors that were identified in Exhibit A to that patent, as shown on Figure 1-1. The excepted and reserved corridors reflect those previously identified and analyzed in the BLM's Supplement to the Stateline Resource Management Plan (RMP) and Environmental Impact Statement (EIS) published in May 1994. Corridors within the Eldorado Valley were designated as 1,000-, 2,000-, and 3,000-foot widths.

Subsequently, the CRC initiated a process to transfer the subject patented lands to the City of Boulder City, which involved a Contract for Sale with the City. This Contract of Sale recognized the exceptions and reservations to the United States that were described in the original patent, including "[c]ertain right-of-way corridors for transportation and public utilities as designated in Exhibit A [of that patent]." A Deed of Sale for transfer of the land to the City followed the contract and was executed on July 9, 1995, and included the exception and reservation of transportation and public utilities corridors in favor of the United Sates. After receiving title to the land, the City of Boulder City entered into an "Interlocal Agreement for Sale and Grant of a Conservation Easement" with Clark County for an approximately 86,000-acre easement interest in a portion of the Eldorado Valley Patent Area. The Conservation Easement Grant was issued to Clark County on July 18, 1995, and became known as the Boulder City Conservation Easement (BCCE). The BCCE serves as mitigation for Clark County's Section 10 permit from the U.S. Fish and Wildlife Service (USFWS).

On August 24, 2010, the City of Boulder City adopted the Supplemental Interlocal Agreement No. 10-330 ("Amendment to the Conservation Easement Grant [Agreement No. 94-A313A]") between the City of Boulder City and Clark County, which amended some of the language in the earlier agreement; outlined best management practices (BMPs) for construction, maintenance, and operation of infrastructure to pass through the easement; and established an "Energy Zone."

As shown on Figure 1-1, the BLM utility corridors traverse the Eldorado Valley Patent Area and part of the BCCE. The BCCE is preserved and protected for the desert tortoise and other species, as described in the BCCE Conservation Easement Grant and outlined in the Clark County Multiple Species Habitat Conservation Plan (MSHCP). Only passive uses (i.e., hiking, driving slowly on designated routes, and sightseeing) are allowed in the BCCE, with the exception of approved activities in designated corridors. The Desert Conservation Program (DCP), a Clark County agency, manages the BCCE through policies outlined in the Interlocal Agreement (as amended), and the City of Boulder City maintains the right to approve land uses within the greater Eldorado Valley Patent Area. The Eldorado Valley Patent Area also includes the Eldorado Dry Lake Area, which is used for off-highway vehicle (OHV) recreational purposes.

The BLM northerly corridors (the three most easterly corridors) end at the northerly boundary of the patented lands. The lands north of the patented area are withdrawn lands to the Department of Energy, Western Area Power Administration (WAPA) per Public Land Order (PLO) 4250 pursuant to the Act of June 17, 1902 (32 Stat. 338; 43 United States Code [U.S.C.] 416), as amended. These lands were withdrawn for the Pacific Northwest Pacific Southwest Intertie (Reclamation) Project. BLM serialized this withdrawal under Nev-67001.

Within the WAPA withdrawn lands is a sliver of land that was not withdrawn under PLO 4250. This sliver is patented land that includes the BLM's excepted and reserved utility corridor. This utility corridor is identified by N-02795 and runs east/west within sec. 25, T.23S., R.63½E.

1.3 Purpose and Need for BLM Action

Any proposed project/facilities that cross within, over, or under the BLM-administered corridors are subject to National Environmental Policy Act (NEPA) review. Because a number of renewable energy projects are being proposed that would require the construction of new facilities or interconnections to infrastructure within the BLM transportation and utility corridors within and near the Eldorado Valley Patent Area, it is increasing likely that multiple project-specific NEPA environmental reviews will be required to analyze the potential impacts of proposed rights-of-ways (ROWs).

The BLM is responding to this current and foreseeable future demand of multiple ROW applications by the preparation of this Eldorado Valley Corridor Programmatic EA. This EA provides an overview of the environmental impacts associated with permitting ROWs within the corridors of the Eldorado Valley Patent Area ("study area"); outlines the processes by which future facilities will be constructed, operated, and terminated in a safe and environmentally sound manner that legally complies with NEPA; and covers basic policy issues and BMPs so that future project-specific NEPA reviews can be performed in a more efficient and standardized manner. This EA also promotes the consideration of the cumulative environmental impacts of multiple projects occurring within the study area.

1.4 Scope of the Analysis

As discussed above, a number of projects are proposed in proximity to BLM transmission and utility corridors within the Eldorado Valley that will require connection to transmission lines within, or passage through, these corridors, via individual ROW applications. Non-federal actions and their associated BLM ROW applications could be approved or denied regardless of whether or not the Proposed Action discussed in this EA is adopted; therefore, within the context of this EA, non-federal actions, associated transmission upgrades, and other federal actions for which ROW applications have been submitted are considered Cumulative Actions and are discussed in Chapter 5. In contrast, within the context of individual ROW applications, energy projects such as solar and wind projects requiring connection to BLM transmission and utility corridors are considered Connected Actions under NEPA. According to 40 Code of Federal Regulations (CFR) 1508.25 (a)(1), Connected Actions are actions that are "closely related [to the Proposed Action] and therefore should be discussed in the same impact statement." Therefore, the BLM will consider energy projects associated with BLM ROW applications as Connected Actions during the individual NEPA review processes for those ROW applications and not within the context of this EA.

1.5 Relationship to Laws, Regulations, Policies, and Other Plans

This EA has been prepared in accordance with the following statutes and implementing regulations, policies, and procedures:

- NEPA of 1969, as amended (Public Law 91-190, 42 U.S.C. 4321 et seq.);
- 40 CFR 1500 et seq.: Regulations for Implementing the Procedural Provisions of NEPA;
- 43 CFR Part 46: Department of the Interior's (DOI's) Regulations for Implementation of NEPA and CEQ Regulations;
- BLM NEPA Handbook (H-1790-1) (BLM 2008);
- The Federal Land Policy and Management Act of 1976 (FLPMA), as amended, Sections 103(c), 501(a)(4), and 503; and
- BLM Las Vegas Resource Management Plan and Final Environmental Impact Statement (1998).

The BLM land uses in southern Nevada are managed under the 1998 Las Vegas Resource Management Plan and Final Environmental Impact Statement (hereinafter referred to as "the Las Vegas RMP"). The Las Vegas RMP provides management objectives and directions for lands within the Las Vegas District of the BLM. The BLM manages approximately 2.5 million acres of public land in Clark County, Nevada. The Eldorado Valley Corridor Programmatic EA is in conformance with the Las Vegas RMP, objective RW-1, ("Meet public demand and reduce impacts to sensitive resources by providing an orderly system of development for transportation, including legal access to private inholdings, communications, flood control, major utility transmission lines, and related facilities") and RW-1-h (public land is available for ROW at agency discretion under the FLPMA).

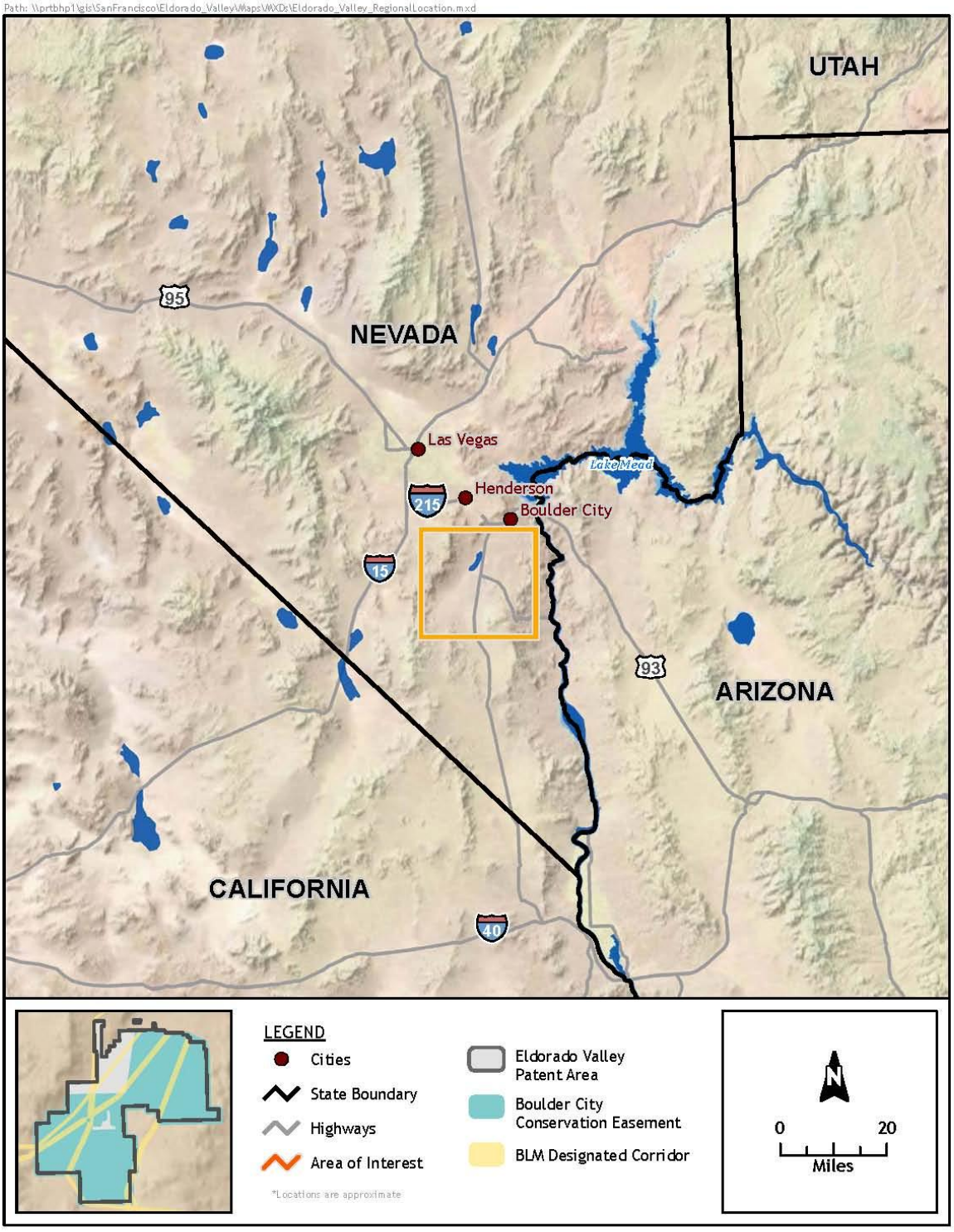

Figure 1-1: Regional Location
Clark County, Nevada

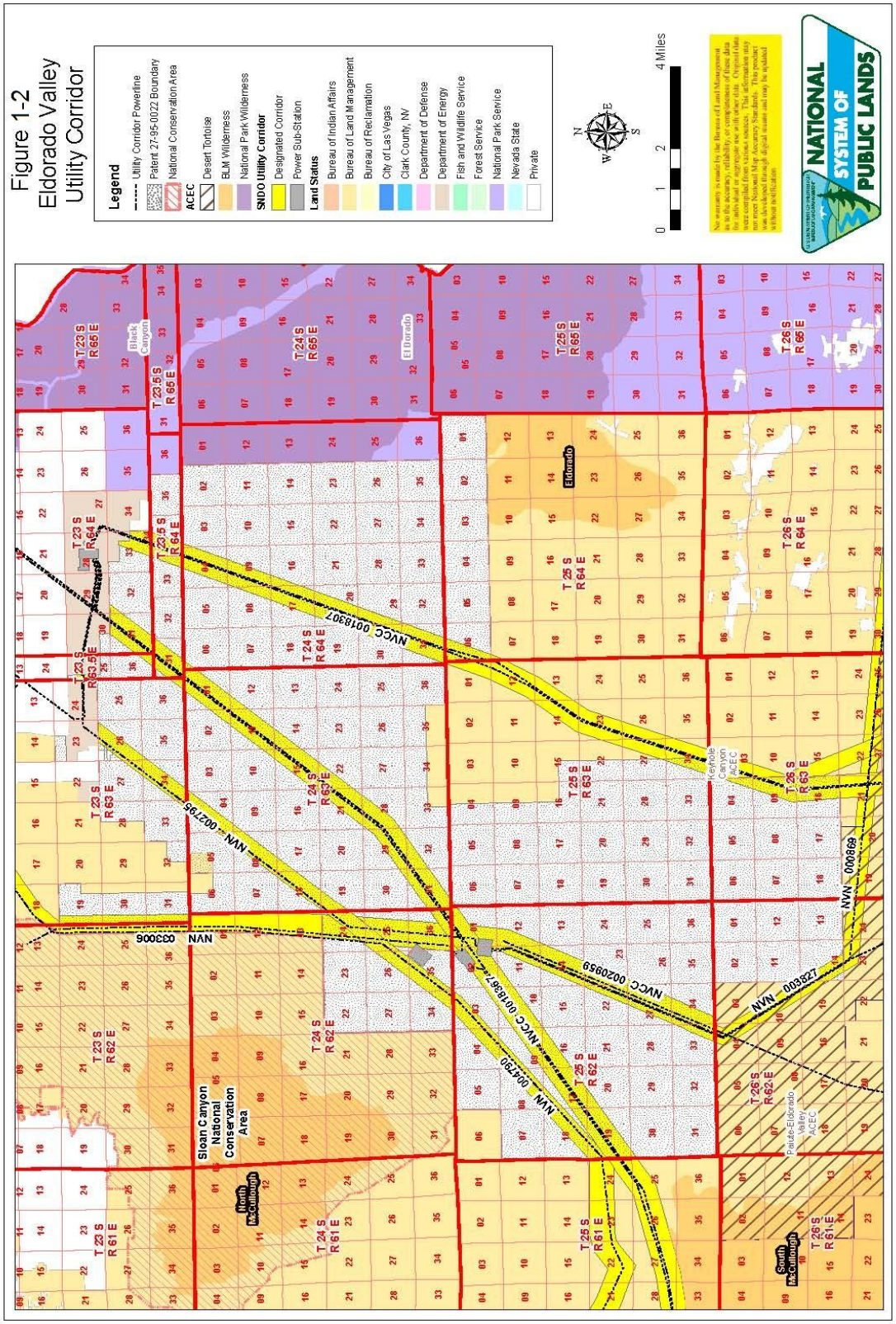
Figure 1-2
Eldorado Valley
Utility Corridor
Legend
Utility Corridor Powerline
Patent 27-95-0022 Boundary
National Conservation Area
ACEC
Desert Tortoise
BLM Wilderness
National Park Wilderness
SNDO Utility Corridor
Designated Corridor
Power Sub-Station
Land Status
Bureau of Indian Affairs
Bureau of Land Management
Bureau of Reclamation
City of Las Vegas
Clark County, NV
Department of Defense
Department of Energy
Fish and Wildlife Service
Forest Service
National Park Service
Nevada State
Private
N
W
E
S
0
1
2
4 Miles
NATIONAL SYSTEM OF PUBLIC LANDS
Sloan Canyon National Conservation Area
North McCullough
South McCullough
Eldorado
Keyhole Canyon ACEC
Black Canyon
Paiute-Eldorado Valley ACEC
NVCC 001307
NVCC 002795
NVCC 002959
NVCC 001838
NVCC 002790
NAN 033006
NAN 003527
NAN 69000

Chapter 2. Proposed Action and Alternatives

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2.1 Proposed Action

The BLM proposes to issue ROWs for facilities that cross within, over, or under federally administered transmission and utility corridors that traverse the study area in the Eldorado Valley. A BLM ROW grants only those rights which it expressly contains for a specific use on public lands subject to the valid existing rights of others including the United States. Consistent with federal regulations, a ROW may be granted in perpetuity or for a term appropriate for the life of the project. Typical ROW uses include roads; oil, gas, and water pipelines; transmission lines; communication sites; and substations. Valid existing rights within the Eldorado Valley are shown in Appendix E of this EA.

The BLM manages the corridors for a variety of infrastructure uses consistent with Rights-of-Way Objectives RW-1 and RW-2 in the 1998 Las Vegas RMP. Objective RW-1 directs the BLM to "[m]eet public demand and reduce impacts to sensitive resources by providing an orderly system of development for transportation, including legal access to private inholdings, communications, flood control developments, major utility transmission lines, and related facilities." Objective RW-2 directs the BLM to "[m]aximize the use of existing communication sites and to prevent the proliferation of scattered single users." Within the Las Vegas planning area, current ROW uses include transmission lines, pipelines, and other infrastructure, including electrical substations. As shown on Figure 2-1, six (6) corridors traverse portions of the Eldorado Valley Patent Area; these corridors range in width from 1,000 to 3,000 feet.

The Eldorado Valley Corridor Programmatic EA is intended to help expedite the environmental review of proposed actions within, over, under, or crossing the BLM transmission and utility corridors that traverse the Eldorado Valley. Under the Proposed Action, ROW applications for upgrades to existing infrastructure or applications for new construction within, over, under, or crossing the BLM corridors would adhere to the BMPs outlined in this EA. However, this EA neither approves nor denies any specific applications for ROW grants within the area. With adoption of the Proposed Action Alternative, all applications for ROW grants within, over, under, or crossing the BLM corridors would continue to be subject to individual review under NEPA.

2.2 No Action Alternative

This alternative represents a continuation of the current management, and thus serves as a baseline. Under the No Action Alternative, the process for authorizing ROW grants in federally designated BLM transmission and utility corridors within the study area would remain unchanged. The BLM would continue to review and issue ROWs on a case-by-case basis without a programmatic EA of the potential impacts of permitting ROWs within, over, under, or crossing BLM's corridors within the study area.

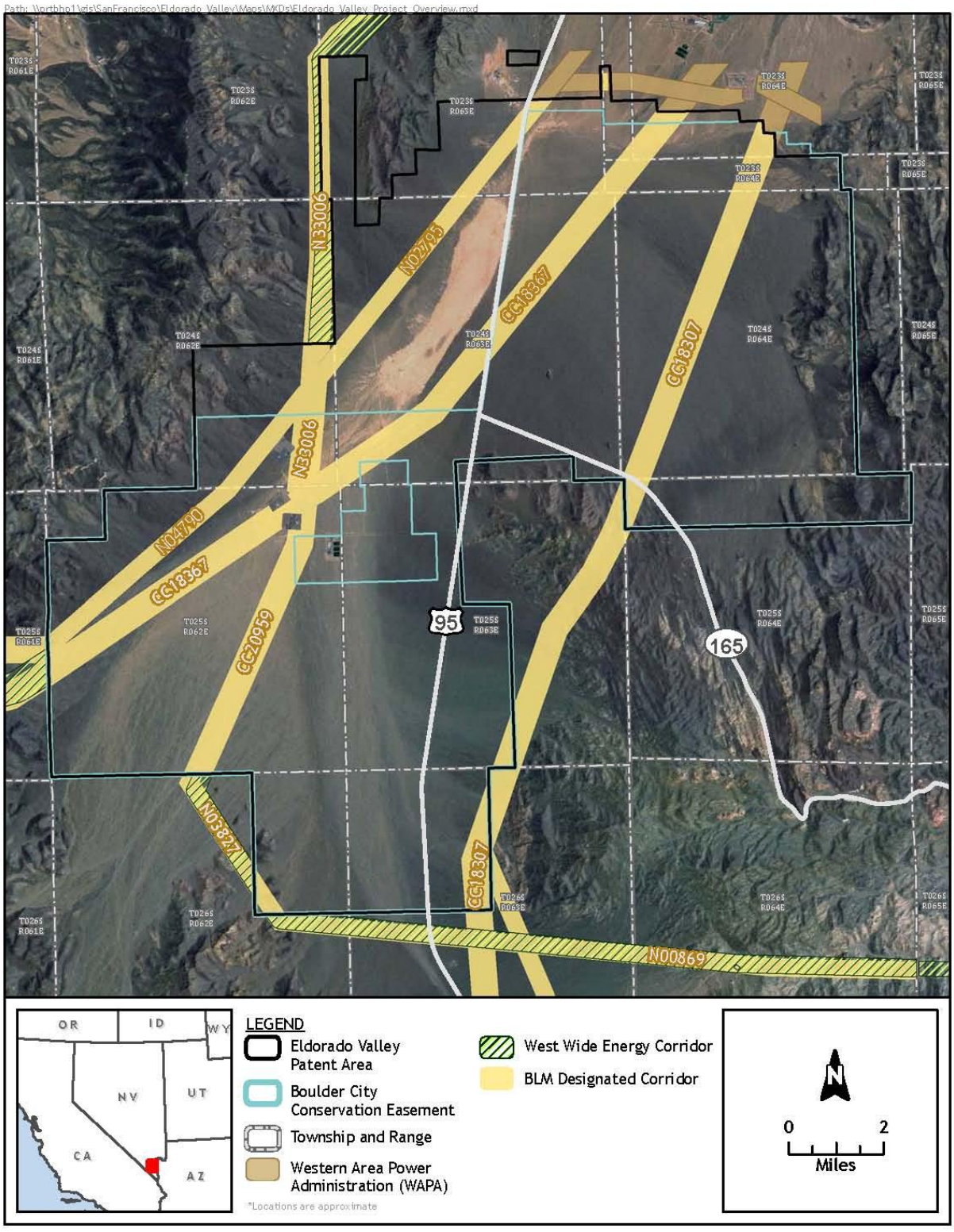

Figure 2-1: Eldorado Valley Utility Corridor Overview
Clark County, Nevada

Chapter 3. Affected Environment

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3.1 Proposed Project General Setting

The BLM transmission and utility corridors discussed in this EA traverse the study area in the Eldorado Valley, Clark County, Nevada. The study area is located directly south of Boulder City, Nevada. The BLM transmission and utility corridors, which run through the study area, are excepted and reserved by the United States of America and managed by the BLM.

The Eldorado Valley is an internally drained basin bordered by the McCullough Range to the west, the River Mountains to the north, and the Eldorado Mountains and Opal Mountains to the east. The Eldorado Valley is located in an alluvial fan in an area dominated by creosote bush and burro bush vegetation. The project area contains several unnamed desert washes flowing from west to southeast in the vicinity of the study area. These washes flow only during heavy precipitation events. Surrounding land is characterized primarily by power generation facilities, energy transmission infrastructure, transportation infrastructure, and open space.

3.1.1 Resources Considered

Appendix 1 of the BLM's NEPA Handbook, H-1790-1 (BLM 2008) identifies Supplemental Authorities (i.e., resources) that are subject to requirements specified by statute or executive order and must be considered in all BLM environmental documents. For the purposes of this programmatic EA, resources that were determined to be present in the study area were carried forward for analysis as described in Table 3-1.

Table 3-1 Resources Considered

Resource	NP	NI	PI	Rationale
Air Quality			X	Carried forward in Section 3.10.
Cultural Resources			X	Carried forward in Section 3.7.
Environmental Justice	X			No minority or low income communities are present in the study area.
Farmlands (prime or unique)	X			There are no prime or unique farmland designations in the District.
Fish Habitat	X			There are no water bodies in the study area; therefore, there is no fish habitat.
Forests and Rangeland	X			There are no forests or rangeland in the study area.
Floodplains			X	Carried forward in Section 3.12.
Invasive, Nonnative, and Noxious Species			X	Carried forward in Section 3.6.
Livestock Grazing	X			There are no grazing allotments in the study area.
Migratory Birds			X	Carried forward in Section 3.4.
Native American Religious Concerns			X	Carried forward in Section 3.7.
Special-status Species			X	Carried forward in Section 3.3.
Wastes, Hazardous or Solid				Carried forward in Section 3.16
Water Resources (Surface/Ground)			X	Carried forward in Section 3.12.
Wetlands/Riparian Zones	X			There are no wetlands in the study area.
Wild and Scenic Rivers	X			There are no rivers in the study area.
Wilderness	X			There are no wilderness areas in the study area.
Visual Resources			X	Carried forward in Section 3.8.
Recreation			X	Carried forward in Section 3.9.
Land Use			X	Carried forward in Section 3.2.
Fuels/Fire Management			X	Carried forward in Section 3.14.

Table 3-1 Resources Considered

Resource	NP	NI	PI	Rationale
Geology and Minerals	X			The mineral estate (surface or subsurface) was not reserved in the patent; therefore, there are no mineral issues.
Noise			X	Carried forward in Section 3.13.
Socioeconomic Resources			X	Carried forward in Section 3.15
Soils			X	Carried forward in Section 3.11.
Vegetation			X	Carried forward in Section 3.6.
Wildlife			X	Carried forward in Section 3.5.
Wild Horses and Burros	X			The Eldorado Valley does not include an active herd management area. There will be no impacts to wild horses or burros.
Special-status Species—BLM Sensitive Species			X	Carried forward in Section 3.3.
Paleontological Resources			X	Carried forward in Section 3.7.
Areas of Critical Environmental Concern	X			The study area is not within an ACEC, although the study area is adjacent to the Piute-Eldorado critical desert tortoise habitat.
Greenhouse Gases			X	Carried forward in Section 3.10.
Hydrologic Conditions			X	Carried forward in Section 3.12.

Notes:
NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected to a degree that detailed analysis is required
PI = present with potential for relevant impact that need to be analyzed in detail in the EA

3.1.2 Resources or Uses Present and Brought Forward for Analysis

For the purposes of this programmatic EA, resources that were determined to be present in the study area were carried forward for analysis. These resources are as follows:

- Land Use
- Special-status Species
- Migratory Birds
- Wildlife
- Vegetation and Invasive Species/Noxious Weeds
- Cultural Resources
- Visual Resources
- Recreation
- Air Quality
- Geology and Soils
- Hydrology and Water Resources
- Noise
- Fuels/Fire Management
- Socioeconomic Resources

3.2 Land Use

3.2.1 Affected Environment

The BLM transmission and utility corridors traverse the study area in southwestern Nevada just south of Boulder City, Clark County, Nevada. Although the BLM does not manage the surrounding land uses outside of the corridors within the study area, land uses in the area range from open space and conservation/preserve areas to commercial, public, private, and recreation; utility/energy uses; industrial and mining uses; and transportation.

Transportation Corridors

Highway 95 runs through the middle of the study area and bisects several BLM transmission and utility corridors. BLM transmission and utility corridors in the area contain a number of existing ROWs for transmission lines and other linear infrastructure, as shown on Figure 1-1. Valid existing rights within the study area are included in Appendix E.

Recreational Uses

There are a number of recreational uses within and near the study area. Lands used for recreation within the study area include the Eldorado Valley Dry Lake, located in the northwest, adjacent to Highway 95 between two BLM transmission and utility corridors (CC-18367 and N-04790), as depicted on Figure 3-1. The Eldorado Valley Dry Lake is managed by Boulder City for recreational uses, including off-road vehicle use, ultra-light aircraft operation, hiking, and biking (Boulder City 2003).

Additional recreational uses within the northwest portion of the study area until recently included motocross events at the Boulder City MX Racetrack; however, the facility is closed indefinitely as of January 1, 2012, and is currently up for sale. Prior to its closure, the facility hosted a variety of annual racing events (Boulder City MX 2011). Additional information on recreational uses is provided in Section 3.9, Recreation.

Open Space and Conservation

The BCCE is located immediately south of the City of Boulder City within the study area. The land is preserved and protected for the desert tortoise and other species, as described in the BCCE Grant and outlined in the Clark County MSHCP. Only passive use (hiking, driving slowly on designated routes, and sightseeing) is allowed in the BCCE (Clark County 2000) with the exception of approved activities in designated corridors. The Desert Conservation Program, a Clark County agency, manages the BCCE through policies outlined in the Interlocal Agreement (as amended), and the City of Boulder City maintains the right to approve land uses within the area.

Energy Generation

The Nevada Solar One power plant is a concentrated solar power facility, approximately 13 miles southwest of Boulder City. The facility sits on 400 acres of land, surrounded by the BCCE, and generates 64 megawatts (MW) of power using parabolic concentrators (Acciona 2009). The Eldorado Combined Cycle Power Plant, operated by Sempra Energy, is a 480-MW natural gas fired power plant located on 138-acres of land, 17 miles southwest of downtown Boulder City and 40 miles southeast of Las Vegas. Eldorado Combined Cycle Power Plant has been operational since May 2000 (Sempra Generation n.d.).

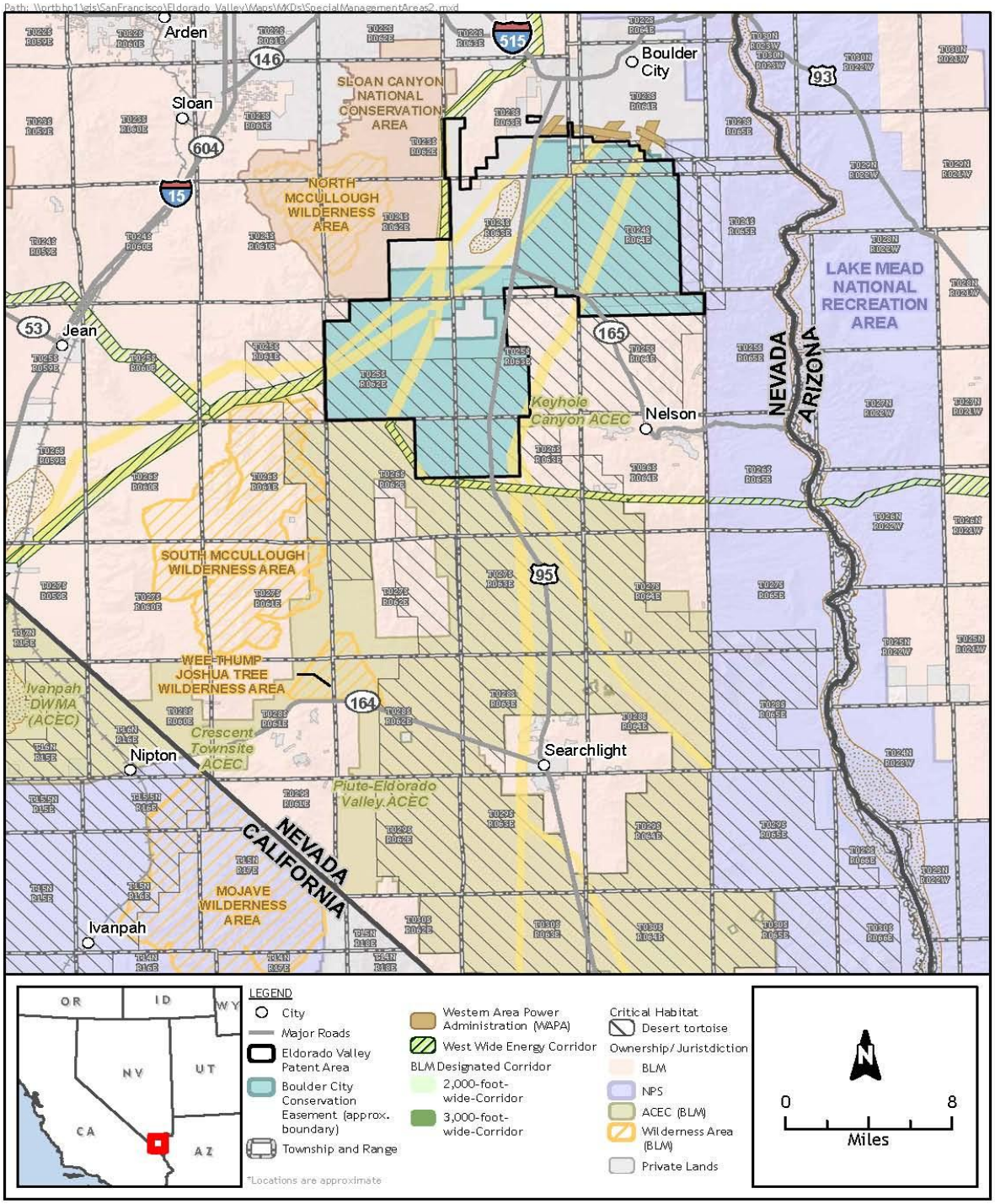

Figure 3-1: Eldorado Valley Special Management Areas
Clark County, Nevada

Adjacent Land Uses

In addition to land uses within the study area, several adjacent areas are managed by the BLM, WAPA, and the National Park Service.

Piute-Eldorado Valley Area of Critical Environmental Concern

The Piute-Eldorado Valley Area of Critical Environmental Concern (ACEC) abuts the study area's southern boundary. The Piute-Eldorado Valley ACEC is managed by the BLM to protect desert tortoise and related tortoise habitat as part of the Desert Tortoise Recovery Plan. BLM transmission and utility corridors N-33006 and N-18307 cross into the ACEC when they exit the BCCE to the south (Figure 3-1).

South McCullough Wilderness Area

The South McCullough Wilderness Area is located within 1 mile of the study area in the south, as depicted on Figure 3-1. According to the BLM's South McCullough Wilderness and Wee Thump Joshua Tree Wilderness, Final Wilderness Management Plan and Environmental Assessment, the area is intended to:

> "…provide for the long-term protection and preservation of [the area's] wilderness character under a principle of nondegradation. The area's natural condition, opportunities for solitude, opportunities for primitive and unconfined types of recreation, and any ecological, geological, or other features of scientific, educational, scenic, or historical value present will be managed so that they will remain unimpaired." (BLM 2005a)

Sloan Canyon National Conservation Area

The Sloan Canyon National Conservation Area (Figure 3-1) is adjacent to the western boundary of the study area and is managed by the BLM. The area provides opportunities for outdoor recreation and experiences and is managed so that recreation-related disturbances are minimized. The area is an exclusion area for all ROW types (BLM 2006) and includes the North McCullough Wilderness Area.

North McCullough Wilderness Area

The North McCullough Wilderness Area, located within the Sloan Canyon National Conservation Area (Figure 3-1) is managed by the BLM to provide opportunities for solitude and recreational activities such as hiking, horseback riding, hunting, exploration, and camping (BLM 2005b).

Western Area Power Administration Withdrawn Land

As discussed in Chapter 1, adjacent to the northern boundary of the study area are WAPA withdraw lands. The BLM northerlytransmission and utility corridors (the three most easterly corridors) end at the northerly boundary of the study area. The lands north of the study area are withdrawn lands to WAPA per PLO 4250 pursuant to the act of June 17, 1902 (32 Stat. 338; 43 U.S.C. 416), as amended. These lands were withdrawn for the Pacific Northwest Pacific Southwest Intertie (Reclamation) Project. The BLM serialized this PLO under Nev-67001.

Within the WAPA withdrawn lands is a sliver of land that was not withdrawn under PLO 4250. This sliver is patented land that includes the BLM's excepted and reserved utility corridor. This utility corridor is identified by N-02795 transmission line (1,000 feet wide on each side) that runs east/west within sec. 25, T.23S., R.63.5E.

West Wide Energy Corridors

Several West Wide Energy Corridors are adjacent to the study area. West Wide Energy Corridors are designated pursuant to Section 368 of the Energy Policy Act of 2005 (P.L. 109-58). Such

designation was completed in accordance with NEPA under a Programmatic EIS prepared by the departments of Agriculture, Commerce, Defense, Energy, and the Interior, under their respective authorities, for oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities on federal land in the 11 contiguous Western States (BLM 2009).

Lake Mead National Recreation Area

The Lake Mead National Recreation Area, managed by the National Park Service, is adjacent to the northeastern border of the study area. Individuals may use this area for hiking or exploration; however, the majority of park facilities are located near Lake Mead over 5 miles away from the study area. The Lake Mead Visitors Center is located in Boulder City (NPS n.d.)

3.2.2 Applicable Laws, Regulations, and Standards

Federal Land Policy and Management Act of 1976, as amended

The FLPMA provides the BLM with an overarching mandate to manage the public lands and resources under its stewardship under the principles of multiple use and sustained yield. "Multiple use" is a concept that directs management of public lands and their resource values in a way that best meets the present and future needs of Americans and is defined as: a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources (FLPMA §103(c)).

BLM Las Vegas Resource Management Plan

The Las Vegas RMP identifies future management in the form of objectives and management directions for 3.3 million acres of public land in Clark and southern Nye Counties, located in southern Nevada (BLM 1998). One guideline stated in the Las Vegas RMP is that "minimizing the proliferation of randomly placed, single-use utility lines would better protect the scenic values and integrity of the surrounding areas." Although utility ROWs are not limited to designated corridors, all efforts are focused on transmission nd utility corridors whenever possible and to their maximum capacity (BLM 1998).

The Las Vegas RMP is currently under revision. The purpose of the revision is to focus on resource issues that need clarification or adjustment, and emerging issues not addressed in the current plan that need new decisions and management guidance.

Public Utilities Commission of Nevada

The construction of a utility facility, defined as a transmission line that is 200 kilovolts or more, requires a permit by the Public Utilities Commission of Nevada under the Utility Environmental Permit Act according to the Nevada Revised Statutes (NRS) 704.820 through 704.900. However, the replacement of an existing facility with a like facility, as determined by the Commission, does not constitute construction of a utility facility (NRS 704.865).

Clark County Comprehensive Plan

Although the BLM transmission and utility corridors are not managed by Clark County, the Clark County Comprehensive Plan requires that utility providers locate transmission and pipeline facilities in existing Clark County corridors whenever possible (Clark County 2010).

Title 30 Clark County Unified Development Code: Uses 30.44

The Clark County Unified Development Code contains restrictions related to the construction of public utilities, including transmission towers, which may be relevant to projects proposed within the study area.

Clark County Multiple Species Habitat Conservation Plan

The Clark County MSHCP has several recommendations concerning utility construction that would be applicable to construction within the study area. For example, the MSHCP recommends siting new power lines in consolidated utility corridors and minimizing new road construction associated with new utility facilities. In addition, the MSHCP requires that design features be incorporated to inhibit raptors or ravens from perching and nesting.

3.3 Special-status Species

3.3.1 Affected Environment

Some species of plants and animals are accorded special status by state and federal agencies largely because they are either scarce on a regional level, facing clearly defined threats, or in a position within the regional landscape to potentially become scarce. Special-status species at the federal level include those listed by the USFWS as threatened, endangered, or those that are candidates for listing under the federal Endangered Species Act (ESA) 1973[as amended]. Additionally, BLM sensitive species are designated by the BLM State Director's Office (Manual 6840.06 C). Still other species are tracked at the state level by state programs and assigned different levels of concern based on rarity and perceived level of threat, such as the Nevada Natural Heritage Program (NNHP) that systematically collects information on Nevada's at risk, rare, endangered, and threatened species. For the purpose of this document, special-status species include those species listed under the federal ESA, designated sensitive by the BLM, protected by the State of Nevada under Nevada Revised Statutes and Nevada Administrative Code (NAC) Sections 501 and 503, designated At-Risk by the NNHP, or covered by Clark County's MSHCP.

The Clark County MSHCP is designed to allow the incidental take of species covered by the ESA under USFWS Section 10(a) on non-federal lands (Clark County 2000). The MSHCP provides for the long-term conservation and recovery of native species of wildlife and plants and their habitats, while allowing for regulated development of lands within Clark County. The plan is designed to comply with statutory and regulatory requirements of the ESA and NEPA. The plan represents a county-wide conservation strategy that emphasizes ecosystem-level management of natural resources. Currently, there are 79 species covered under the plan. In general, potential projects proposed within BLM transmission and utility corridors within the study area would not seek take authorization through the Clark County Section 10 MSHCP; however, the underlying tenants of the MSHCP should be followed by all potential projects during implementation.

The potential for special-status species to occur within the study area was determined by reviewing a number of sources, including current regional literature, biological databases, and listing resources such as the NNHP database, Nevada Department of Wildlife (NDOW), Nevada Native Plant Society (NNPS), National Park Service (NPS), USFWS, BLM, and Clark County MSHCP internet resources. Special-status plant and animal species with the greatest likelihood of occurrence within the Eldorado Valley (i.e., "High," "Medium," and, "Low") are identified in Table 3-2.

The following special-status wildlife and plant species were identified on USFWS, NNHP, BLM, and Clark County MSHCP lists as potentially occurring within Clark County, Nevada, but are very unlikely to occur within Eldorado Valley due to a lack of suitable habitat, appropriate soils, and/or suitable elevation and thus are excluded from discussion (NNHP 2004a; NNHP 2010a,b; Clark County 2000; Ironwood Consulting 2011). The wildlife species excluded are:

- Swainson's hawk (*Buteo swainsoni*)
- ferruginous hawk (*Buteo regalis*)
- Western snowy plover (*Charadrius alexandrinus nivosus*)
- bald eagle (*Haliaeetus leucocephalus*)
- Western yellow-billed cuckoo (*Coccyzus americanus*)
- Southwest willow flycatcher (*Empidonax trailii extimus*)
- Lewis' woodpecker (*Melanerpes lewis)*
- Yuma clapper rail (*Rallus longirostris yumanensis*)
- long-eared myotis (*Myotis evotis*)
- little brown bat (*Myotis lucifugus*)
- fringed myotis (*Myotis thysanodes*)
- cave myotis (*Myotis velifer*)
- long-legged myotis (*Myotis volans*)
- spotted bat (*Euderma maculatum*)
- pallid bat (*Antrozous pallidus)*
- Mexican long-tongued bat (*Choeronycteris mexicana*)
- big brown bat (*Eptesicus fuscus*)
- silver-haired bat (*Lasionycteris noctivagans*)
- western red bat (*Lasiurus blossevillii*)
- hoary bat (*Lasiurus cinereus*)
- western yellow bat (*Lasiurus xanthinus*)
- Yuma myotis (*Myotis yumanensis*)
- Allen's big-eared bat (*Idionycteris phyllotis*)
- western pipistrelle (*Pipistrellus hesperus*)
- pale kangaroo mouse (*Microdipodops macrotis*)
- Nevada admiral (*Limenitis weidemeyerii nevadae*)
- Carole's silver-spot butterfly (*Speyeria zerene carolae*)
- Spring Mountains comma skipper (*Hesperia colorado mojavensis*)
- Amargosa toad (*Bufo nelsoni*)

Table 3-2 presents sensitive species with potential to occur in the project area. Additional sensitive species with potential to occur are listed in Appendix B. Future surveys and analyses are required to determine the probability of these additional species to occur in the project area.

Table 3-2 Special-status Species of Wildlife and Plants With Potential to Occur in the Eldorado Valley

Common Name	Scientific Name	Habitat	Status	Potential
Plants				
Catclaw acacia	*Acacia greggii*	Well-drained, sandy or rocky soils. Chaparral & brush country. Washes; stream banks; brushlands.	MSHCP	H
White bearpoppy	*Arctomecon merriamii*	Creosote bush scrub, limestone outcrops and dry lake beds at elevations between 2,000 and 6,280 feet.	BLM, W, MSHCP	M
Las Vegas bearpoppy	*Arctomecon californica*	Occurs in Mojave Desert and salt desert scrubs in gypsum soils in areas of low relief associated with other gypsum tolerant species at elevation 1,300feet to 2,700 feet.	W, MSHCP	M
Littlefield milkvetch	*Astragalus preussii*	Species likely dependent on sand transport system from dry lake beds towards lower slopes.	W, MSHCP	M
Scrub lotus	*Lotus argyraeus var. multicaulis*	Pinyon-Juniper Woodlands. Habitat sandy washes, ledges or clay slopes in canyons.	MSHCP	M
White-margined beardtongue	*Penstemon albomarginatus*	Sand dunes and/or deep, sandy soils at elevations ranging from 2,560 to 5,890 feet.	BLM, ART, MSHCP	H
Yellow two-tone beard tongue	*Penstemon bicolor ssp. bicolor*	Endemic to southern Nevada and know to occur in lower elevations.	BLM, W, MSHCP	M
Rosy two-tone beardtongue	*Penstemon bicolor* ssp. *roseus*	Rocky, calcareous soils and scree in creosote bush or black bush desert scrub at elevations of from 1,800 to 4,840 feet.	BLM, ART	H
Honey mesquite	*Prosopis glandulosa*	Found in desert drainage ways. Well-drained sandy soils.	MSHCP	M
Mammals				
Desert pocket mouse	*Chaetodipus penicillatus*	Inhabit the sandy, open desert with sparse vegetation of grasses, mesquites, creosote bushes, and a few cacti.	MSHCP	M
Townsend's big-eared bat	*Corynorhinus townsendii*	Roosts in mines, caves, and buildings in Mojave Desert scrub.	BLM, ART	M
Desert kangaroo rat	*Dipodomys deserti*	Found in a variety of desert scrub habitats, the common factor being a substrate of wind-drifted sand, probably not less than 20 inches deep. Preferred canopy is sparse to moderate creosote bush or shadescale scrub; less common in denser stands.	MSHCP	M
Wild burro	*Equus asinus*	Mostly low desert environments in scrublands and woodlands.	WHBA	M
Townsend's big-eared bat	*Corynorhinus townsendii*	Roosts in mines, caves, and buildings in Mojave Desert scrub.	Townsend's big-eared bat	*Corynorhinus townsendii*
California leaf-nosed bat	*Macrotus californicus*	Caves and mines in desert scrub habitat, generally below 3,280 feet in elevation. Requires warm roost sites in winter.	BLM, ART	M
California myotis	*Myotis californicus*	Dry, brushy habitats; roosts in cracks and crevices.	BLM, ART	M
Western small-footed myotis	*Myotis ciliolabrum,*	Roosts in mines, caves, and buildings in Mojave Desert scrub.	BLM, 501	M

Table 3-2 Special-status Species of Wildlife and Plants With Potential to Occur in the Eldorado Valley

Common Name	Scientific Name	Habitat	Status	Potential
Big free-tailed bat	*Nyctinomops macrotis*	Roosts in rugged, rocky areas in desert scrub.	BLM, ART	M
Desert bighorn sheep	*Ovis canadensis nelsoni*	Large, relatively contiguous areas of steep, sparsely vegetated mountainous terrain. Frequently observed in the McCullough Range.	BLM	H
Brazilian free-tailed bat	*Tadarida brasillensis*	Roosts in mines, caves, and buildings in Mojave Desert scrub.	BLM, 501	M
American badger	*Taxidea taxus*	Mojave Desert scrublands on flats and alluvial fans with friable soils where rodents are present.	BLM, ART	H
Kit Fox	*Vulpes macrotis*	Inhabit arid and semi-arid regions encompassing desert scrub, chaparral, halophytic, and grassland communities. Prefer loose textured soils and generally avoid rugged terrain.	MSHCP	M
Birds				
Golden eagle	*Aquila chrysaetos*	Open country in woodland or mountains, nests on cliff ledges or very large trees.	BLM	H
Western burrowing owl	*Athene cunicularia hypugaea*	Open, sparsely vegetated land with available animal burrows.	BLM, 501	M
Cactus Wren	*Campylorhynchus Brunneicapillus*	Primarily inhabit areas that are desert or semi-desert; live along arid hillsides and locales that provide them with vegetation such as spiny cacti and cholla, which is used for nesting.	MSHCP	M
Prairie falcon	*Falco mexicanus*	Nests on cliffs and in deep canyons in a variety of arid and desert habitats. Known to occur in the McCullough Range.	BLM	H
Peregrine falcon	*Falco peregrinus*	Nests on cliffs surrounded by large expanses of open space in a variety of habitats. Known to breed in the McCullough Range.	BLM, 501, MSHCP	H
Scott's Oriole	*Icterus parisorum*	Found in desert grassland prairies and mountain canyons, particularly if yucca or palms are present; nests in pinyon-juniper woodlands, sycamores, and cottonwoods.	MSHCP	M
Loggerhead shrike	*Lanius ludovicianus*	Occurs in desert scrub, denser vegetation along washes, and woodlands.	BLM	H
Pinyon jay	*Gymnorhinus cyanocephalus*	Occurs in coniferous scrubland in foothills and lower mountain slopes.	BLM	M
Phainopepla	*Phainopepla nitens*	Mostly mesquite thickets along washes, but also desert scrub and woodland habitats.	BLM, 501, MSHCP	H
Brewer's sparrow	*Spizella breweri*	This species typically breeds in shrub habitat and is somewhat common in open desert habitats during winter.	501	M
Bendire's thrasher	*Toxostoma bendirei*	Found in brushy desert habitat, where open ground meets tall bushes and cholla cactus. May inhabit elevations up to 6,500 feet. Nests generally built high above ground in cacti, desert thorn, mesquite, and catclaw.	ART, 501	M
Crissal thrasher	*Toxostoma crissale*	Primarily inhabits dense desert scrub and arroyo riparian vegetation. It also occurs in foothill scrub and pinyon-juniper woodland with a shrubby understory.	MSHCP	M
Le Conte's thrasher	*Toxostoma lecontei*	Saltbush/shadescale vegetation or cholla cacti in sandy substrate. It needs vegetative litter for cover and for obtaining prey. Recently observed west of McCullough Range.	FT, MSHCP	H

Table 3-2 Special-status Species of Wildlife and Plants With Potential to Occur in the Eldorado Valley

Common Name	Scientific Name	Habitat	Status	Potential
Gray vireo	*Vireo vicinior*	Dry thorn scrub, chaparral, and pinyon-juniper and oak-juniper scrub, in arid mountains and high plains scrubland.	MSHCP	M
Reptiles				
Glossy snake	*Arizona elegans*	Variety of habitats from sparse desert scrub to chaparral, as well as grasslands, mostly at low elevations.	MSHCP	M
Western banded gecko	*Coleonyx variegatus*	Creosote bush scrub, associated with rocks, or sometimes barren dunes. Largely nocturnal.	MSHCP	M
Mojave Desert sidewinder	*Crotalus cerastes*	Fine wind-blown sand areas in hummocks; also on flats and rocky hillsides. Associated with creosote bush and desert scrublands.	MSHCP	M
Speckled rattlesnake	*Crotalus mitchellii*	Generally in rocky areas, usually associated with creosote bush. Range includes sagebrush, succulent desert, and pinyon-juniper.	MSHCP	M
Mojave rattlesnake	*Crotalus scutulatus*	Most common in upland desert scrublands in creosote bush habitat and also in mesquite thickets and barren desert.	MSHCP	M
Black collared lizard	*Crotaphytus insularis*	Frequents rocky areas in arroyos and on slopes of hills in creosote bush, saltbush, and Basin sagebrush deserts.	MSHCP	M
Desert iguana	*Dipsosaurus dorsalis*	Creosote bush scrub with loose sand or hardpan areas with rocks.	MSHCP	M
Long-nosed leopard lizard	*Gambelia wislizenii*	Open scrublands such as creosote bush, alkali bush, or sagebrush on various substrates.	MSHCP	M
Desert tortoise	*Gopherus agassizii*	Occurs in Mojave Desert scrub and Joshua tree woodlands in valleys, on bajadas, and in low hills at elevations up to 4,900 feet.	FT, 501, MSHCP	H
Gila monster	*Heloderma suspectum*	Prefers rocky outcrops, canyons, foothills, bajadas, and edges of washes with dense vegetation rather than open scrublands. A Sonoran desert species, peripheral in the Mojave desert.	BLM, 501	M
Common kingsnake	*Lampropeltis getula*	Found in a wide variety of habitats, including deserts with rock shelters or animal burrow refuges.	MSHCP	M
Western leaf-nosed snake	*Phyllorhynchus decurtatus*	Sandy or gravelly substrates associated with creosote bush scrub.	MSHCP	M
Desert horned lizard	*Phyrynosoma platyrhinos*	Arid regions with loose sandy soils for burrowing, and limited vegetation such as sagebrush or shadescale. They can also be found in areas with hardpan and gravelly soils as well.	MSHCP	M
Long-nosed snake	*Rhinocheilus lecontei*	Occurs in desert or shrubby habitats mostly in valleys and hills.	MSHCP	M

Table 3-2 Special-status Species of Wildlife and Plants With Potential to Occur in the Eldorado Valley

Common Name	Scientific Name	Habitat	Status	Potential
Chuckwalla	*Sauromalus ater*	Rocky outcrops with crevices for hiding in Mojave Desert scrub. Recently observed near the McCullough Pass.	BLM	H
Lyre snake	*Trimorphodon biscutatus*	Most often found in areas of massive rock outcrops in creosote bush, desert scrub, or desert grasslands.	MSHCP	M
Nevada shovel-nosed snake	*Chionactis occipitalis talpina*	Inhabits dry desert habitats with loose sand and often with little vegetation such as washes, dunes, sandy flats, and rocky hillsides.		
Mojave shovel-nosed snake	*Chionactis occipitalis occipitalis*	Inhabits dry desert habitats with loose sand and often with little vegetation such as washes, dunes, sandy flats, and rocky hillsides.		

Sources: NNHP 2004; NNHP 2010a,b; Clark County 2000; Ironwood Consulting 2011; EPG 2009; L. Bice, personal communication, 2012.

Status Codes
FT = Federally listed as threatened
BLM = BLM sensitive species
ST = Listed by the State of Nevada as threatened
501 = Protected under NRS 501 and 503
ART = Nevada Natural Heritage Program At Risk Taxa
MSHCP = Clark County Multiple Species Habitat Conservation Plan covered species
W = Nevada Native Plant Society Watch List species; potentially vulnerable to becoming threatened or endangered
WHBA= Wild Free-Roaming Horses and Burros Act

Potential of Occurrence:
H = High Potential
M = Moderate Potential

The plant species excluded are:

- Clokey milkvetch (*Astragalus aequalis*)
- blue diamond cholla (*Opuntia whipplei var. multigeniculata*)
- Jaeger beardtongue (*Penstemon thompsoniae var. jaegeri*)
- Parish's phacelia (*Phacelia parishii*)

Rosy and Yellow Two-toned Beardtongue

The rosy two-toned beardtongue (*Penstemon bicolor* ssp. *roseus*) and the yellow two-toned beardtongue (*Penstemon bicolor* ssp. *bicolor*) are perennial herbs less than 60 inches in height with thick, ovate leaves 1.5 to 4.5 inches in length. The basal leaves are fused around the stem. The flowers, which appear from mid-March to mid-May, vary from cream to magenta, and the corolla is from 0.7 to 1.1 inches in length. The plants are found in rocky soils of calcareous, granitic, or igneous origin, in drainages, along roads, on scree at the bases of rock outcrops, and in other places receiving enhanced runoff. The plants are found in creosote bush-bursage, black bush, and mixed shrub associations (Jepson 2008; NNHP 2004b). The plant is present in Clark and Nye counties, Nevada; Mohave County, Arizona; and California (Kearney and Peebles 1960; NNHP 2001a). At least 70 sites for the species are known in Nevada, most of which are the rose-flowered phase (Smith 2005). The two subspecies of the two-toned beardtongue (*P. b. bicolor* and *P. b. roseus*) are not considered valid taxa by Smith (2005), who includes them in *P. bicolor*.

Agassizi's Desert Tortoise

Agassizi's desert tortoise is currently listed as threatened by the USFWS under the ESA (Federal Register 1990). The Revised Recovery Plan for the Mojave Population of the Desert Tortoise (USFWS 2011) defines recovery units, critical habitat, and management strategies for all desert tortoise populations in Nevada, among other states. The BLM transmission and utility corridors in this area lie within the Northeast Mojave Recovery Unit.

Desert tortoises occupy a variety of habitats, from flats and lower slopes dominated by creosote bush scrub at lower elevations to rocky slopes dominated by blackbrush and juniper woodland ecotones at higher elevations (USFWS 2011). Desert tortoises generally occur at elevations from sea level to 5,000 feet; however, presence at elevations up to 7,300 feet has been reported (USFWS 2011).

In the Mojave Desert, tortoises occur most commonly on gently sloping terrain with sandy gravel soils and where there is sparse cover of low-growing shrubs, which allows establishment of herbaceous plants. Soils must be friable enough for digging burrows but firm enough so that burrows do not collapse. Typical habitat for the desert tortoise in the Mojave Desert has been characterized as creosote scrub, often mixed with cacti, yucca, and other drought-resistant shrubs, such as white bursage and saltbush. These habitats tend to have a relatively high diversity of perennial plants and average annual precipitation ranges from 2 to 6 inches (USFWS 2011). The diet of the desert tortoise will vary depending on the seasonal availability of food. Tortoises prefer flowers of annual plants and grasses, but will also consume cacti and the vegetation of woody plants. Desert tortoises reach reproductive maturity at 18 to 20 years of age. Tortoises typically lay eggs in late spring/early summer, and the eggs hatch 90 to 120 days later in late summer/early fall. Eggs are laid under several inches of sand near the mouth of the burrow opening.

The Eldorado Valley provides suitable habitat for tortoises. Historical survey data indicates that the area surrounding Eldorado Valley is very high to very low density tortoise habitat (BLM 2012a). The Piute-Eldorado Area of Critical Habitat Concern is within Eldorado Valley, and the BLM-administered transmission and utility corridors cross this critical habitat south of the study area (Figure 3-1).

Burrowing Owl

Burrowing owls use a variety of habitat types, including shortgrass prairie, open scrublands of mesquite, creosote bush, or rabbit-brush, as well as agricultural fields, airports, and golf courses (Terres 1980; Ehrlich et al. 1988; Dechant et al. 1999). In desert areas, habitat is typically treeless, open, and relatively level. The burrowing owl nests in burrows in the ground, is semi-colonial, and usually occupies burrows excavated by small mammals such as ground squirrels. In areas that lack colonial burrowing mammals, burrowing owls will use excavations made by other animals such as badgers, skunks, foxes, coyotes, and tortoises. It may also use natural cavities in rocks and openings in human-made structures. Burrowing owls often select burrows where surrounding vegetation is kept short by grazing, dry conditions, or burning (Hjertaas et al. 1995; Dechant et al. 1999). Burrowing owls feed on a variety of arthropods and small vertebrates (Dechant et al. 1999; Hjertaas et al. 1995). They may forage during the day or night, but tend to forage closer to the nest during the day.

The study area is within the greater limits of the known range of the burrowing owl and is within the historic and current breeding ranges of the species (Shufford and Gardali 2008). A review of current information shows almost no recent breeding records in the part of the eastern Mojave Desert that includes the study area (Bates 2006; Institute for Bird Populations 2008). Suitable habitat for burrowing owls is present in the study area, particularly where animal burrows, especially those of desert tortoise, are common.

LeConte's Thrasher

LeConte's thrasher is very sparsely distributed in southern California, western Arizona, southern Nevada, and extreme southwestern Utah (Schram 1998). It is generally restricted to the lowest, hottest, and most barren desert plains, particularly in saltbush and creosote bush habitats (Terres 1980). LeConte's thrashers feed primarily on large insects and other terrestrial invertebrates, and they occasionally eat lizards, other vertebrates, seeds, or fruit (Dobkin and Granholm 2005; Ehrlich et al. 1988). This species is very secretive and sensitive to human disturbance, particularly off-road vehicle activity and clearing of shrubs. LeConte's thrashers may occur in areas throughout the Proposed Action, mostly on the lower bajadas, where vegetation is sparse and where chollas provide suitable nesting sites.

Gila Monster

In Nevada, the Gila monster occurs in Clark, Lincoln, and Nye counties (NNHP 2004). The species prefer undulating rocky foothills, bajadas (shallow slopes under rocky hills), and canyons, and tend to avoid open sandy plains (Beck 2005). Rough, rocky terrain is an important component of Gila monster habitat as this provides many crevices that can be used for winter hibernacula and/or summer dens (Brown and Carmony 1991). Trees and shrubbery are also important for providing shade and cover and for supporting larger populations of prey species. Gila monsters use dry washes, as well as mesquite thickets, for foraging. They have a varied diet that includes newborn rodents and rabbits, lizards, ground-nesting birds, carrion, and eggs from birds and reptiles (Beck 2005; Ivanyi et al. 2000; Lowe et al. 1986). The daily timing of Gila monster activities varies according to season and locality. The amount of surface activity is

estimated to be low; in some locations Gila monsters may spend up to 98 percent of their time in burrows (Brown and Carmony 1991; Ivanyi et al. 2000). However, recent telemetry studies indicate that Gila monsters move much more than expected when they are active (Beck 2005). Home range estimates vary from an average of 86 acres in Utah to 159 acres in Nevada (Beck 2005).

Potentially suitable Gila monster habitat occurs in the study area in the rougher terrains on mountain slopes and in rocky canyons and ravines associated with the mountain ranges.

Chuckwalla

The chuckwalla is restricted to rocky areas in desert flats, hillsides, and mountains, where crevices are available for shelter (Brennan and Holycross 2006). Creosote bush is common throughout its range (Stebbins 2003). Chuckwallas are primarily herbivorous, eating a variety of desert annuals and perennials, but they occasionally eat insects (Brennan and Holycross 2006; Sherburn 1972; Stebbins 2003). The common chuckwalla is widely distributed across western Arizona, southern Nevada, southeastern California, Baja California, and northwestern Sonora. The chuckwalla is likely to occur anywhere in the study area where suitable rocky habitat is present.

Desert Bighorn Sheep

Desert bighorn sheep occur in the Southwest desert regions of the United States and are creatures of rugged, open, mountainous terrain where adequate forage, water, and escape terrain are available. They are typically found in small bands in areas with little or no permanent water, although they do require access to surface water (Wehausen 2006). Their diet consists of grasses, forbs, and sedges. Mating may take place at any time in the desert if climatic conditions are suitable. Decline of the species can be attributed to degradation of habitat due to development, road-building, water-management practices, and recreational activities. Desert bighorn sheep are also highly susceptible to various diseases, e.g., bacterial pneumonia (Pasteurellosis), sometimes passed on to them by domestic sheep, and they are often preyed upon by mountain lions, coyotes, and likely by domestic dogs. Drought-induced mortality can also occur if edible food sources decline or if there is competition for surface water with humans and other large mammals (i.e., cattle or burros).

Desert bighorn sheep are classified by NDOW as a big game mammal, and annual hunting seasons allow for a very limited take. Adjacent to the study area, desert bighorn sheep are present in the McCullough Range, where there are bighorn special use areas (lambing areas and summer grounds) that are of concern to wildlife and land managers. Lambing grounds are generally at higher elevation in mountain ranges where ewes go in the winter or spring to drop their lambs away from certain predators, such as coyotes. Summer grounds include areas with adequate forage in the mountain range that are close enough to water that sheep occupy during the hot summer months. The only water development in the McCullough Range available to bighorn sheep in the summer is the “Linda” guzzler (a manufactured water storage device), approximately 1.3 miles north of the McCullough Pass.

Areas of Special Management Consideration

Boulder City Conservation Easement

The Clark County DCP purchased the BCCE from Boulder City in 1995 to exact protections and provide conservations for the desert tortoise and other species, and their habitats (Clark County 2009). The BCCE is a high-priority conservation area in which development activity is severely limited with only passive use allowed (hiking, driving slowly on designated routes, and

sightseeing), with the exception of approved activities in designated utility corridors. Only existing uses of historical easements are permitted, and expansion or significant modification to these uses is not allowed (Clark County 2009). The DCP manages the BCCE through policies outlined in an Interlocal Agreement (as amended), and the City of Boulder City maintains the right to approve land uses within the area.

BLM Areas of Critical Environmental Concern, Desert Wildlife Management Areas, and Wilderness Areas

Critical areas have been established at various times by the BLM for the conservation and recovery of certain species (e.g., desert tortoise), unique biological habitats, and non-biological resources such as cultural resources. These include Desert Wildlife Management Areas (DWMAs), ACECs, and Wilderness Areas. These areas are designated as they have significant endemic plant species, plant communities, diverse wildlife elements, and cultural resources values. The USFWS (2011) maps critical habitat for the desert tortoise in all of the ACECs. The BLM-administered utility corridors under review for this analysis do not cross any DWMAs or ACECs within the borders of the study area (Figure 3-1). However, the study area is in proximity to the Piute-Eldorado Valley ACEC (designated for desert tortoise conservation), Keystone Canyon ACEC (designated for cultural resource conservation), and the North and South McCullough wilderness areas (Figure 3-1).

Lake Mead National Recreation Area

The NPS's Lake Mead National Recreation Area is an inland water recreation area with 1.5 million acres of land. The Lake Mead National Recreation Area includes conservation lands surrounding Lakes Mead and Mohave that provide protection of representative plants, animals and physical geography of the Mojave Desert and Basin and Range geologic province. The park includes many regionally and nationally significant biological resources, including populations of federally listed threatened and endangered species of animals, birds, fish and plants (NPS 2000). The study area is in proximity to, but does not cross, the Lake Mead National Recreation Area (Figure 3-1).

3.3.2 Applicable Laws, Regulations, and Standards

Endangered Species Act, Section 7

The ESA and 50 CFR 17.1 et seq. designate and provide for protection of threatened and endangered plants and animals and their critical habitat. Projects with a federal nexus—i.e., any project proposing to construct within BLM transmission and utility corridors in the study area—must go through the ESA Section 7 consultation process. The federal lead agency (the BLM) initiates and coordinates the steps below for Section 7:

- Informal consultation with USFWS to establish a list of target species
- Preparation of biological assessment assessing potential for the project to adversely affect listed species
- Coordination between state and federal biological resource agencies to assess impacts and proposed mitigation
- Development of appropriate mitigation for all significant impacts on federally listed species

The USFWS ultimately issues a final Biological Opinion on whether the project would affect federally listed species. The Biological Opinion includes an Incidental Take statement of

anticipated incidental take accompanied by the appropriate and reasonable mitigation measures to minimize such take.

Desert Tortoise Recovery Plan and Critical Habitat Designation of 1994

The Desert Tortoise Recovery Plan established a strategy for the recovery and eventual de-listing of the Mojave population of desert tortoise. Six recovery units with 14 DWMAs were originally proposed in Arizona, California, Nevada, and Utah. Based on information in the Recovery Plan, 12 Critical Habitat Units were established for the Mojave population of desert tortoise by the USFWS on February 8, 1994 (59 Federal Register 5820, USFWS 1994).

A revised recovery plan was prepared in 2011; this revised strategy builds upon the foundation laid by the 1994 Recovery Plan by emphasizing partnerships to direct and maintain focus on implementing recovery actions and a system to track implementation and effectiveness of recovery actions. The revised recovery plan combines the originally designated Eastern Colorado and Northern Colorado recovery units into the Colorado Desert Recovery Unit, which also now encompasses part of the Eastern Mojave Recovery Unit in Piute and Fenner Valleys. The recovery units cover the entire range of the Mojave population of desert tortoise (USFWS 2011).

Nevada Revised Statute 501

NRS 501, supplemented by the NAC, is the Nevada state law that covers administration and enforcement of wildlife resources within the state. The administering agency is the NDOW. Any authorizations for impacts to protected species would be processed through the NDOW.

3.4 Migratory Birds

3.4.1 Affected Environment

The Eldorado Valley provides foraging and nesting habitat for bird species, including raptors. Bird nesting could occur within vegetation (particularly shrubby plants and cacti species), in ground burrows, in cliffs and crevices associated with surrounding mountain ranges, and potentially on facilities within the study area such as existing electrical transmission poles and towers. The vegetation communities found within the BLM-administered transmission and utility corridors likely support a variety of migratory birds. These vegetation communities are described under Section 3.6. In Eldorado Valley, the nesting season for most bird species is from between March 15 and July 30 (BLM 2012).

BLM management for migratory bird species on BLM-administered land is based on Instruction Memorandum No. 2008-050 (BLM 2007a). This Memorandum establishes management methods to address species identified and listed as "Species of Conservation Concern" and "Game Birds below Desired Conditions." The species in these lists are from the USFWS Migratory Bird Program Strategic Plan 2004-2014, which was updated in 2008 (USFWS 2008). Several migratory bird "Species of Conservation Concern" and "Game Birds below Desired Conditions" have the potential to occur in Eldorado Valley (Ironwood Consulting 2011), including the burrowing owl, Le Conte's thrasher, prairie falcon, mourning dove, Bendire's thrasher, golden eagle, gray vireo, Brewer's sparrow, and peregrine falcon. Many of these species are also special-status species, and thus have been described in Section 3.3.

Golden Eagle

The golden eagle is relatively common in the western United States and can be found in a variety of habitats, but prefers open ground or low hills where visibility is good for hunting (Ehrlich et al.

1988; Glinski 1998). It nests on cliffs, large or small trees, and sometimes telephone poles (Glinski 1998). The golden eagle feeds primarily on mammals, preferring rabbits and ground squirrels, but also will feed on snakes, birds, and large insects when mammals are unavailable (Ehrlich et al. 1988; Glinski 1998; Terres 1980). Preferred nesting habitat for the golden eagle is rugged mountains and canyons with little human disturbance. They use cliff faces and ledges for perching and nest cover. This habitat is fairly limited in extent within the study area.

Suitable nesting habitat for the golden eagle is present in the McCullough Range and Highland Range, primarily in rockier areas at higher elevations. A review of golden eagle historic and current occurrences compiled by NDOW identifies sightings of golden eagle nests in Nevada within proximity to the study area. There is a nesting record for the Highland Range, and one currently active golden eagle breeding territory located in the McCullough Range (NDOW 2010). Golden eagle territories are quite large, and eagles are thought to forage up to 10 miles from the nest within breeding territories in arid environments (USFWS 2010).

3.4.2 Applicable Laws, Regulations, and Standards

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-712) provides protection for a majority of bird species occurring in the U.S. The MBTA makes it unlawful to pursue, hunt, take, capture, kill, or sell birds listed under the MBTA. There have been several amendments to the original law (including the Migratory Bird Treaty Reform Act of 1998). Currently, penalties include a fine of not more than $15,000 or imprisonment of not more than two years for misdemeanor violations of the act. The statute does not discriminate between live or dead birds and grants full protection to any bird parts, including feathers, eggs, and nests. Currently, 836 bird species are protected by the MBTA. The USFWS Migratory Birds and Habitat Program primarily operates under the auspices of the MBTA (USFWS 2010).

Bald and Golden Eagle Act of 1940

The Bald and Golden Eagle Act of 1940, as amended in 1959, 1962, 1972, and 1978, prohibits the take or possession of bald and golden with limited exceptions. Take, as defined in the Eagle Act, includes "to pursue, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." Disturb means "to agitate or bother a bald or golden eagle to a degree that causes or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity by substantially interfering with normal breeding, feeding or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

3.5 Wildlife

3.5.1 Affected Environment

Mammalian fauna with potential to occur within the study area is dominated by small, mostly nocturnal species of rodents and bats. These species are probably the most important mammals in terms of distribution and relative abundance. The study area is also likely to support black-tailed hares (*Lepus californicus*), desert cottontails (*Sylvilagus audubonii*), coyote (*Canis latrans*), kit fox (*Vulpes macrotis*), badger (*Taxidea taxus*), and bobcat (*Lynx rufus*) (Clark County 2009). Several mines located in the southeast portion of the Eldorado Valley would provide suitable habitat for several bat species. Mule deer (*Odocoileus hemionus*), desert bighorn sheep, and wild burros are found in suitable habitats surrounding the Eldorado Valley and they may occasionally

transit the BLM transmission and utility corridors. However, the Eldorado Valley does not include an active herd management area for wild horses or burros (BLM 2012a), and there is no recent evidence that wild horses or domestic livestock occur in the Eldorado Valley (Clark County 2009).

The study area may provide forage, cover, roosting, and nesting habit for a variety of bird species. Most of the birds on the Eldorado Valley are either transients that migrate through the area during spring and autumn, or are seasonal residents. The most common residents include black-throated sparrow (*Amphispiza bilineata*), house finch (*Carpodactus mexicanus*), common raven (*Corvus corax*), loggerhead shrike (*Lanius ludovicianus*), northern mockingbird (*Mimus polyglottos*), greater roadrunner (*Geococcyx californicus*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), Gambel's quail (*Callipepla gambelii*), chukar (*Alectoris chukar*), and mourning dove (*Zenaida macroura*). In winter, the Eldorado Valley likely provides feeding grounds for flocks of small passerine birds that may remain as winter residents (Clark County 2009).

Reptiles are common in the study area. In addition to the desert tortoise, the reptilian fauna of the Eldorado Valley would likely include the side-blotched lizard (*Uta stansburiana*), western whiptail (*Cnemidophorus tigris*), zebra-tailed lizard (*Callisaurus draconoides*), desert iguana (*Dipsosaurus dorsalis*), desert horned lizard (*Phrynosoma platyrhinos*), long-nosed leopard lizard (*Gambelia wislizennii*), glossy snake (*Arizona elegans*), and western shovel-nosed snake (*Chionactis occipitalis*). Five species of venomous snakes may occur on the site, including the sidewinder (*Crotalus cerastes*), speckled rattlesnake (*C. mitchelli*), Mojave rattlesnake (*C. scutulatus*), night snake (*Hypsiglena torquata*), and Sonora lyre snake (*Trimorphodon lambda*) (Clark County 2009).

Fish and amphibian species are unlikely to occur in the Eldorado Valley because suitable aquatic habitat is not present.

Wildlife Corridors/Linkages

A wildlife corridor is defined as a linear landscape feature that allows animal movement between two patches of habitat or between habitat and geographically discrete resources such as water. Connections between extensive areas of open space are integral to maintaining regional biological diversity and population viability. Areas that serve as wildlife movement corridors are considered biologically sensitive because they facilitate the persistence of special-status species. In the absence of corridors, habitats become fragmented, isolated islands surrounded by development. Fragmented habitats support much lower numbers of species and increase the likelihood of extinction for select species.

The Eldorado Valley and the surrounding mountain ranges provide discrete corridors for wildlife movement. The surrounding mountain ranges, while providing corridors, may also present barriers. Animals that may use corridors are large mammals, reptiles, and bird species. As discussed in Section 3.3, desert bighorn sheep occur within the mountain ranges around the study area, and may use the Eldorado Valley to migrate between the mountains on a regional level, and use local corridors as access to guzzlers and lambing areas. Suitable and critical habitat for the desert tortoise occurs throughout Eldorado Valley, and the study area likely functions as an important regional linkage among individual populations (Figure 3-1). While the exact migratory patterns of Gila monster and chuckwalla are not known, these reptiles likely have seasonal movement patterns (Nowak 2005) and may use local corridors within the study area.

3.6 Vegetation and Non-Native Plant Species

3.6.1 Affected Environment

Plant Communities

Habitat types within the Eldorado Valley are typical of the Mojave Desert at elevations below 4,000 feet. Vegetation at lower elevations (i.e., generally found between 2,000 to 3,500 feet) over most of the study area is characteristic of the creosote bush-white bursage (*Larrea tridentata-Ambrosia dumosa*) community (Clark County 2009). This vegetation association occurs in areas of deep, loose sandy soils that lack a surface pavement. Dominant and associated shrubs within this association include:

- creosote bush (*Larrea tridentate*)
- bursage (*Ambrosia dumosa*)
- indigo bush (*Psorothamnus fremontii*)
- little-leaved ratany (*Krameria parvifolia*)
- Nevada ephedra (*Ephedra nevadensis*)
- winterfat (*Krascheninnikovia lanata*)

Other specific vegetation types that may occur in varying density include saltbush (*Atriplex* spp.) scrub, Mojave yucca (*Yucca schidigera*) desert scrub, Joshua tree (*Yucca brevifolia*) woodland, and vegetated desert dry wash. Above 3,500 feet in elevation, the sandy loam soils include a matrix of scattered, rock fragments, but that lack a near surface hardpan. These soils are dominated by a Larrea-Lycium-Grayia association where desert thorn (*Lycium andersonii*) and spiney hop-sage (*Grayia spinosa*), replace bursage as dominants. The associated species are similar to those in the Larrea-Ambrosia association. This association has also been called the Mojave Mixed Scrub Community (Clark County 2009).

In addition, areas relatively devoid of native vegetation include the Eldorado Valley Dry Lake bed, developed areas, paved roads, highways, and access roads and other disturbed areas associated with construction and ongoing utility use.

Cactus and Yucca

Cactus and yucca are considered a commodity and government property. As such, they are regulated under the BLM forestry program and NRS 527.060.120, NAC Chapter 527.060–120 and Chapter 527. There are 16 species of cacti and yucca with potential to occur in the BLM transmission and utility corridors (EPG 2009; Ironwood Consulting 2011), including:

- Foxtail cactus (*Escobaria cf. vivipara var. Deserti)*
- Buckhorn cholla (*Cylindropuntia acanthocarpa var. coloradensis*)
- Wiggins' cholla (*Cylindropuntia echinocarpa*)
- Pencil cholla (*Cylindropuntia ramosissima*)
- Engelmann's hedgehog cactus (*Echinocereus engelmannii*)
- Johnson's fishhook cactus (*Echinomastus* [*syn. Sclerocactus*] *johnsonii*)
- Cottontop cactus (*Echinocereus polycephalus*)

- California barrel cactus (*Ferocactus cylindraceus*)
- Matted cholla (a.k.a Parish club cholla) (*Grusonia parishii*)
- Teddybear cholla (*Cylindropuntia bigloveii*)
- Fishhook cactus (*Mammillaria tetrancistra*)
- Beavertail cactus (*Opuntia basilaris*)
- Pancake prickley-pear (*Opuntia chlorotica*)
- Banana yucca (*Yucca baccata*)
- Joshua tree (*Yucca brevifolia*)
- Mojave yucca (*Yucca schidigera*)

Noxious Weeds and Non-Native Plant Species

"Noxious" is a legal/regulated category of plant species. Soil disturbances and loss of native plants increase the risk of noxious and invasive species. Noxious weeds and invasive species are spread through a multitude of vectors, including vehicles and equipment. New invasive and noxious species are discovered regularly in this region. Invasive and noxious species can disrupt ecological function by altering habitat that is critical to sensitive or threatened and endangered species. The spread of red brome (*Bromus rubens*) has altered the fire regime resulting in destructive landscape fires.

The introduction of non-native plants species was an unintended consequence of the settling of the West by Europeans. Non-native plants, often referred to as noxious or invasive weeds, are a concern due to their potential to cause permanent damage to natural plant communities directly via competition or indirectly through alteration of the natural fire regime. The U.S. Department of Agriculture (USDA) (USDA 2012), Nevada Department of Agriculture (NDOA) (NDOA 2012), and BLM maintain lists of non-native plants of special concern. Although the species composition and distribution of the flora of the Eldorado Valley has not been thoroughly surveyed, it likely contains several of the weedy species listed in Table 3-3.

3.6.2 Applicable Laws, Regulations, and Standards

BLM Las Vegas Resource Management Plan

The Las Vegas RMP (1998), currently under revision, contains two Vegetation Management Objectives, including maintaining or improving the condition of vegetation on public lands and restoring plant productivity on disturbed areas of public lands. Vegetation management directions include:

VG1: Manage to achieve a Desired Plant Community or a Potential Natural Community.

VG2: Rehabilitate, reclaim, or re-vegetate areas subjected to surface-disturbing activities, where feasible. When rehabilitating disturbed areas, manage for optimum species diversity by seeding native species, except where non-native species are appropriate.

Table 3-3 Non-Native Plant species Likely to Occur in Eldorado Valley

Common Name	Scientific Name	Noxious Weed List Category[1]
Cheatgrass	*Bromus tectorum*	Not Rated
Canada Thistle	*Cirsium arvense*	C
Hoary cress	*Cardaria draba*	C
Johnson grass	*Sorghum halepense*	C
Perennial pepperweed	*Lepidium latifolium*	C
Poison Hemlock	*Conium maculatum*	C
Puncture vine	*Tribulus terrestris*	C
Salt cedar (tamarisk)	*Tamarix spp*	C
Water Hemlock	*Cicuta maculata*	C
Russian Knapweed	*Acroptilon repens*	B
Sahara Mustard	*Brassica tournefortii*	B
Saltlover	*Halogeton glomeratus*	Not Rated
Seaside barley	*Hordeum marinum*	Not Rated
Palo Verde	*Parkinsonia aculeate*	Not Rated
African Rue	*Peganum harmala*	A
Russian thistle	*Salsola tragus*	Not Rated
London rocket	*Sisymbrium irio*	Not Rated
Eastern rocket	*Sisymbrium orientale*	Not Rated

Source: NDOA 2012, Craig 2012

[1] Nevada State Department of Agriculture noxious classification includes:

1. Category "A": Weeds not found or limited in distribution throughout the state; actively excluded from the state and actively eradicated wherever found; actively eradicated from nursery stock dealer premises; control required by the state in all infestations.
2. Category "B": Weeds established in scattered populations in some counties of the state; actively excluded where possible, actively eradicated from nursery stock dealer premises; control required by the state in areas where populations are not well established or previously unknown to occur.
3. Category "C": Weeds currently established and generally widespread in many counties of the state; actively eradicated from nursery stock dealer premises; abatement at the discretion of the state quarantine officer

BLM Vegetation Treatments on BLM Lands

The BLM's Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States, Programmatic EIS (BLM 2007b) published guidance on the use of various methods to manage vegetation on BLM-administered lands. This guidance assesses the BLM's use of herbicides and describes the environmental effects of using non-herbicide treatment methods, including fire and mechanical, manual, and biological controls. Mitigation measures are included in the documents and would reduce adverse impacts from the implantation of herbicide and non-herbicide vegetation management methods.

BLM Cactus and Yucca Salvage Guidelines

The BLM normally requires transplanting or salvage of certain native plant species that would be lost to development on lands under their jurisdiction. Species that typically require salvage regardless of their height in this region include yuccas (*Yucca* spp.), ocotillo (*Fouquieria splendens*), and cacti. For chollas, the plant must be less than 3 feet in height to require salvaging; all plants greater than 3 feet in height must be left on site to be destroyed by clearing activities and used for vertical mulch on the site (BLM 2001). The larger chollas thus become part of a natural desert mulch, which provides a seed bank for regeneration of these species.

Nevada Revised Statute 527.060–527.120

NRS 527, supplemented by the NAC, protects and regulates the removal of Christmas trees, yuccas, and cacti for commercial purposes. Such removal or possession requires a permit and tags from the Nevada Spur Forester Fire Warden, Nevada Division of Forestry.

3.7 Cultural Resources

3.7.1 Affected Environment

Prehistoric

The Prehistoric period encompasses the time of the first peopling of the Americas until the arrival of the first Europeans who began keeping written records of the area. The Prehistoric period is subdivided into the Paleo-Indian, Archaic, and Late Prehistoric eras. The Paleo-Indian occupation (15,000 to 10,000 calibrated years before the present [cal BP]) is thought to have occurred throughout North America and represents the first influx of people into the New World during the end of the last ice age. The makers of fluted points, specifically Clovis people, used to be considered the earliest occupants of North America, but recent finds have demonstrated earlier occupations. Evidenced to the west and north of the Mojave Desert on California's Channel Islands and at Paisley Cave in Oregon, this occupation is associated with stemmed projectile points and crescentics (Erlandson et al. 2011).

The Paleo-Indian occupation in the Mojave Desert is poorly represented by artifacts, or at least has been poorly documented to date (Sutton 1996). The Mojave Desert has had its share of purported early sites, but none has withstood scrutiny. Fluted points, diagnostic of the later Clovis people, have been found, but primarily as surface artifacts (Sutton et al. 2007). The dearth of Paleo-Indian sites and diagnostics may be more a function of sample bias than of actual absence. To date, the archaeological community has not searched beneath the surface of desert pavement surfaces for older occupations. Research into the age of desert pavements and the potential for subsurface cultural resources may lead to significant discoveries about the Paleo-Indian presence in the Mojave Desert.

The Archaic period coincides with the early and middle Holocene epoch, a time when the climate was cooler and moister than currently. The Lake Mojave, Pinto, Deadman Lake, and Gypsum groups of artifacts (complexes) represent different shifts in technology and subsistence methods throughout the Archaic period. The Lake Mojave complex (10,000 to 8,000 cal BP), characterized by Great Basin stemmed series projectile points such as Lake Mojave and Silver Lake points, is the earliest complex represented during the Holocene, although these sites are generally poorly dated. Many of the sites have been surface finds. Given the similarities of the stemmed points found with the Lake Mojave and the materials reported from the pre-Clovis Channel Island sites and Paisley Cave, there is a need to reevaluate the age of this material and its broader connections. Lake Mojave is well represented at Fort Irwin, China Lake, and Twentynine Palms. Lake Mojave complex sites offer evidence of long-distance trade networks to the coast and a wide foraging base for lithic raw materials (Sutton et al. 2007).

The Pinto complex (8,000 to 5,000 cal BP) is thought to have begun in the early Holocene, overlapping with the end of the Lake Mojave complex. Sites with artifacts diagnostic to the Pinto complex are widespread and well represented in the Mojave Desert. Diagnostic artifacts from this complex include Pinto series projectile points and a marked increase in the use of groundstone implements, indicating a substantial shift to a greater emphasis on plant resources. Trade with

coastal communities continued during this time, as evidenced by the presence of olivella shell beads (Sutton et al. 2007).

The Gypsum complex (4,000 to 1,800 cal BP) is defined by the presence of Elko, Humboldt, and Gypsum series projectile points. The material culture from Gypsum complex assemblages implies increased trade activities and an increase in social complexity. Quartz crystals, paint, and rock art panels are commonly attributed to Gypsum components (Sutton et al. 2007).

The onset of the Late Prehistoric is demarcated from the Archaic by the introduction of the bow and arrow and the phasing out of atlatl (spear thrower) technology. The Rose Spring complex (1,800 to 900 cal BP) coincides with a time of increased rainfall in at least some parts of the Mojave Desert. An increase in population, the presence of Eastgate and Rose Spring series projectile points, well developed midden remains, and a marked shift in material culture are all hallmarks of the Rose Spring complex. Sites attributed to this complex are commonly found near springs and along washes and lakeshores (Sutton et al. 2007). The Rose Spring complex is sometimes discussed along with the above-described Archaic complexes; however, the use of bow and arrow technology during the time tools in this complex were used makes it more suitable to be discussed in the Late Prehistoric period.

In the post-Rose Spring complex time, there appears to have been a decrease in population and the onset of a dryer, warmer climate. The habitation pattern from this era includes habitation sites with associated cemeteries surrounded by special-purpose and seasonal sites. Desert series projectile points, such as Cottonwood and Desert side-notched, and the introduction of ceramics, steatite beads, and slate pendants are hallmarks of this era. The Late Prehistoric era is not well understood in the Eastern Mojave due to a lack of both fieldwork and research (Sutton et al. 2007).

Protohistoric and Ethnographic

The Southern Paiute have been the recorded occupiers of the project area since the Protohistoric period. They are defined as a hunter-gatherer foraging culture and are particularly known for their skilled manufacture of baskets, brownware pottery, and sketched and engraved petroglyphs in the southern Great Basin. The Southern Paiute are subdivided into the Chemehuevi, Las Vegas, Moapa, Pahranagat, Gunlock, Saint George, Shivwits, Uinkaret, Cedar, Beaver, Panguitch, Kaibab, Kaiparowits, Antarianunts, and San Juan.

The habitation pattern of the Southern Paiute was largely based on the seasons, to take advantage of seasonal food resources. Winters were generally spent at higher elevations, and summers were spent in the lowland areas. The Chemehuevi lived in earth-covered dwellings and relied heavily on agave, pine nuts, other seeds, and small and large game for subsistence (Sander et al. 2009).

Historic

Francisco Garces, Francisco Atanasio Dominguez, and Silvestre Velez de Escalante were the first documented Europeans to come into contact with the Paiute, in 1776. Colonization of the Paiutes did not commence until 1810, when Spanish settlers along the upper Rio Grande began baptizing the natives. By the 1830s, the Paiute were being traded as slaves along the Old Spanish Trail. The Paiute slave trade came to an end in the 1850s due in large part to the influence of Mormon expansion into Nevada and Utah. In the 1860s the American government began resettling the Southern Paiutes onto reservations (Sander et al. 2009).

The Old Spanish Trail was established as an overland supply route from New Mexico to California. The trail passes through the southern tip of Nevada. Other than the trail, the Spanish

did not have an economic interest in southern Nevada. The Goodsprings (Yellow Pine, Petosi) mining district in the Spring Mountains north of Clark Mountain was consistent from 1893 to 1905 when completion of the San Pedro, Los Angeles, and Salt Lake Railroad stimulated increased mining development and the district became a principal source of zinc with peak production during World War 1 (Longwell et al. 1965). Mining drew many into the southern portion of the state long before the Hoover Dam was proposed. In addition to mining, the completion of the San Pedro, Los Angeles, and Salt Lake Railroad in 1905 created a land boom in Las Vegas (Longwell et al. 1965). The construction of the Hoover Dam began in 1931 and was completed in 1936. The Boulder (Hoover) Dam transmission line was constructed from 1930 to 1931 over eight months. The dam required electricity, which came from 226 miles away in San Bernardino, California, through the first transmission lines in the area. Once the dam was constructed, the flow of electricity was reversed to provide hydroelectric power to the Los Angeles area. The line is still in use and is currently owned by Southern California Edison (Sander et al. 2009).

The mountains surrounding the project area offered mineral resources that were desirable for early miners. Gold, copper, silver, and lead were available in the region. Mines are recorded around the project area in the mountains. It is likely that associated cultural resources such as trails, campsites, and other features associated with mining were in the general project area outside the current Area of Potential Effects (APE) and may prove to be National Register of Historic Places (NRHP)-eligible resources.

A search of the Nevada Cultural Resource Information System (NVCRIS) (the State Historic Preservation Office's online site files), was performed for this project. An area ½ mile on either side of the each corridor was examined. Table 3-4 summarizes the results of this search.

Table 3-4 NVCRIS APE Record Search Results

Corridor	Sites recorded	Unique sites	Number of inventories
CC20959/N33006	15	13	28
N04790/N02795	20	0	72
CC18367	51	29	51
CC18307	17	17	36
N03827	1	1	4

The searches yielded a total of 60 archaeological and historical resources. These ranged from isolated artifacts to large sites with multiple loci. Linear historic features, including a road and historic electric transmission lines, and historic artifacts were also recorded. Looking at the number of sites found versus the number of surveys, it is clear that the more survey done the higher the number of sites. Prehistoric sites include isolated flakes and flake scatters, but isolated milling stones and large sites with multiple milling stones indicate more than just a casual occupation of the area.

Eldorado Valley Dry Lake is a prominent feature of the area, and such lakes would have held water, a critical resource in the Mojave Desert, during moist periods in the past. A NVCRIS search for ½ mile around the lake was conducted, yielding records for 32 sites. There have been 20 inventories conducted in this search area. Lakeside sites range from isolated artifacts to large sites with more than one locus. Some of these sites are associated with dunes. Dunes, particularly stabilized dunes, have a potential for burying and preserving both archaeological surfaces and paleoenvironmental information.

Survey within the project area is spotty. All of the corridors have at least one, and sometimes several, long, linear surveys within them, but the coverage is far from full. Rectangular and irregularly shaped areas have been surveyed, as well.

Paleontology

Most of the land crossed by the corridors is Quaternary Alluvium. Indeed, about 40 percent of Clark County is covered by such deposits. Only a small portion near the center of Corridor CC18307 is a different formation, Tertiary Volcanics (Longwell, Pamleyan, and Boyer 1964).

Quaternary Alluvium is composed of sedimentary deposits of sands, silts, and clays, as well as coarse, gravelly deposits (Longwell et al. 1965) and may have a high potential for fossils. The Tertiary Volcanics in the Eldorado Mountains are made up of basalts, rhyolites, and andesites (Longwell et al. 1965) and would be expected to have a low potential for containing fossils.

Tribal Governments

Appendix C includes copies of the letters mailed to Tribal Governments on May 29, 2012.

3.7.2 Applicable Laws, Regulations, and Standards

Federal Antiquities Act of 1906

The Antiquities Act was the first law enacted to specifically establish that archaeological sites on public lands are important public resources, and it obligated federal agencies that manage public lands to preserve the scientific, commemorative, and cultural values of such sites (NPS 2007). This act does not refer to paleontological resources specifically; however, the act does provide for protection of objects of antiquity (understood to include paleontological resources) by various federal agencies, including the BLM and the NPS.

Code of Federal Regulations, Title 36 Section 800

This statute protects historic properties and pertains to implementation of the regulations of Section 106 of the National Historic Preservation Act (NHPA). Section 106 requires federal agencies to take into account the effects of a proposed action on historic properties.

Federal Land Policy and Management Act: 43 U.S.C. Sections 1701 et seq.

This statute requires the Secretary of the Interior to retain and maintain public lands in a manner that will protect the quality of scientific, scenic, historic, ecological, environmental, and air and atmospheric water resources, as well as archaeological values.

Secretary of the Interior Standards and Guidelines for Archeology and Historic Preservation (FR V.48 N. 190 Part IV p. 44738-44739)

This statute is a set of standards and guidelines for archaeology and historic preservation. They are considered the appropriate professional methods and techniques for the preservation of archaeological and historic properties and are used by all federal agencies. The Nevada State Historic Preservation Office refers to these standards in their requirements for selection of qualified personnel and in the mitigation of potential impacts on cultural resources.

Native American Graves Protection and Repatriation Act (1990): 25 U.S.C. Sections 3001 et seq.

This statute requires all federal agencies and museums receiving federal funds to inventory their collections, notify appropriate parties of sensitive collections, acknowledge requests from native groups for repatriation, review the collections and the requests, and, if appropriate, repatriate human remains, grave associations, sacred objects, and items of cultural patrimony to affiliated

tribes or individuals. It establishes that Native American human remains legally belong to the nearest affiliated Indian tribe or family of known individuals, rather than with the owner of the land on which they were found. This statute also requires that archaeologists consult with land management officials prior to conducting field work on federal land or in a federal undertaking.

Executive Order 11593, May 13, 1971 (36 CFR 8921)

This order mandates the protection and enhancement of the cultural environment through providing leadership, establishing state offices of historic preservation, and developing criteria for assessing resource values.

American Indian Religious Freedom Act: Title 42, U.S.C. Section 1996

This statute protects Native American religious practices, ethnic heritage sites, and land uses.

Archaeological Resources Protection Act of 1979, Public Law 96-95; 16 U.S.C. 470aa-mm

The Archaeological Resources Protection Act (ARPA) prohibits the excavation or removal of an archaeological resource from federal or traditional Native American lands without a permit from the appropriate land management agency. Under ARPA, the sale, purchase, exchange, transport, or possession of archaeological resources removed without permission of the management agency is forbidden. Violators convicted of ARPA violations are subject to fine and imprisonment.

Paleontological Resources Preservation Act of 2009

The Paleontological Resources Preservation Act calls on the Secretary of the Interior to protect vertebrate paleontological resources on federal lands by allowing only permitted and qualified researchers to collect vertebrate fossils and scientifically important fossils.

Nevada Revised Statutes

The Nevada Revised Statutes are the state laws that apply to a project's impacts on cultural resources. NRS Sections 381.195" 381.227 and 383.400"383.440 apply the term prehistoric site to paleontological sites (including fossilized footprints and other impressions) as well as archaeological sites, ruins, deposits, petroglyphs, pictographs, habitation caves, rock shelters, natural caves, burial grounds, and sites of religious or cultural importance to a tribe.

3.8 Visual Resources

3.8.1 Affected Environment

The existing environmental setting for visual resources is described in terms of the existing landscape and potential viewers. The existing environmental setting is described broadly to provide an overall context for the area in which the proposed action would be located. Representative views of the existing BLM transmission and utility corridors that traverse the study area are included to support the textual description of the existing landscape setting. These include both key observation points (KOPs), described below, and landscape character photographs. The locations and directions of these views are indicated in Figure 3-2.

Potential viewers are described in terms of the number of viewers, duration of views, distance between the viewer and the activities proposed within the BLM transmission and utility corridors, and viewer expectations. Viewer groups include motorists along Highway 95 travelling for work or pleasure; recreational users in the area, including OHV enthusiasts, go-cart racers, and golfers; residents of the community of Boulder City, Nevada; visitors to the Veteran's Memorial

Cemetery; and dispersed recreationists in the area. Viewer expectation considers viewer activity; adjacent land uses; special management areas in the vicinity; and any federal, state, or local regulations that protect visual resources in the area (BLM Manual H-8410-1). Public concerns expressed about visual impacts of the activities proposed within the BLM transmission and utility corridors are also taken into account to describe the sensitivity of viewers.

Distance zones used to discuss views are consistent with BLM standard definitions. These are foreground-middleground (between 0 and 3 to 5 miles), background (between 3 to 5 and 15 miles), and seldom-seen views (greater than 15 miles or hidden from view) (BLM Manual H-8410-1). Generally, increased visual contrast within foreground-middleground distance zones would be more noticeable to viewers than increased visual contrast within background distance zones.

KOPs represent both sensitive and typical views in the study area and form the bases of the visual analysis. KOPs were identified in consultation with the BLM based on distance zones, landscape features, and the potential viewer groups and their sensitivity to visual resources. The locations of the KOPs are shown on Figure 3-2. Contrast rating forms were completed for each of the KOPs during and following site visits in January 2012; the contrast rating forms are included in Appendix D. The following KOPs are used for this analysis:

- KOP 1 – South from Southern Nevada Veterans Memorial Cemetery, Boulder City, Nevada.
- KOP 2 – South from Veterans Memorial Drive across golf practice area, Boulder Creek Golf Club, Boulder City, Nevada.
- KOP 3 – East from dry lake bed across Highway 95 Clark County, Nevada.
- KOP 4 – West from Highway 95 toward Nevada Solar One, Eldorado Energy Combined Cycle Power Plant, and Eldorado Substation, Clark County, Nevada.

As discussed in further detail in Section 3.11, Geology and Soils, the Eldorado Valley is located within the Basin and Range province, which includes the southwestern United States and northwestern Mexico. This province is characterized by generally north-south trending mountain ranges with intervening dry, alluvium-filled, flat-floored valleys, or playas. Steep to gently-sloping alluvial fans emerging from steep canyons often converge to form outwash plains, or bajadas, along the bases of the mountain ranges and form the transitional zones between mountains and valleys. Vegetation consists largely of low-growing, sparse, and regularly-spaced shrubs interspersed with smaller shrubs and bunchgrasses. Trees are generally rare in the valleys and on bajadas at lower elevations. Open water bodies and streams are very scarce within the province.

The Eldorado Valley is surrounded by the McCullough Range to the west, the Eldorado Mountains to the east, and the Highland Range to the south. Broad bajadas slope gently from the bases of the steep mountains toward the interior of the valley and a flat, usually dry lake bed where a shallow lake forms briefly during and following occasional rain events. Vegetation within the study area consists mostly of low-growing, sparse, and regularly-spaced shrubs, primarily creosote bush, interspersed with smaller shrubs and bunchgrasses. Trees are not apparent within the study area, but do occur in developed areas nearby to the north. Landscape Character Photograph 1 (Figure 3-3) shows the view due west from Highway 95 of the southern part of the Eldorado Valley. The broad, gently-sloping alluvial plain of the valley bottom extends from the foreground-middleground to the back ground. The McCullough Range is dominant in the background. Transmission lines are visible approximately 4 miles away.

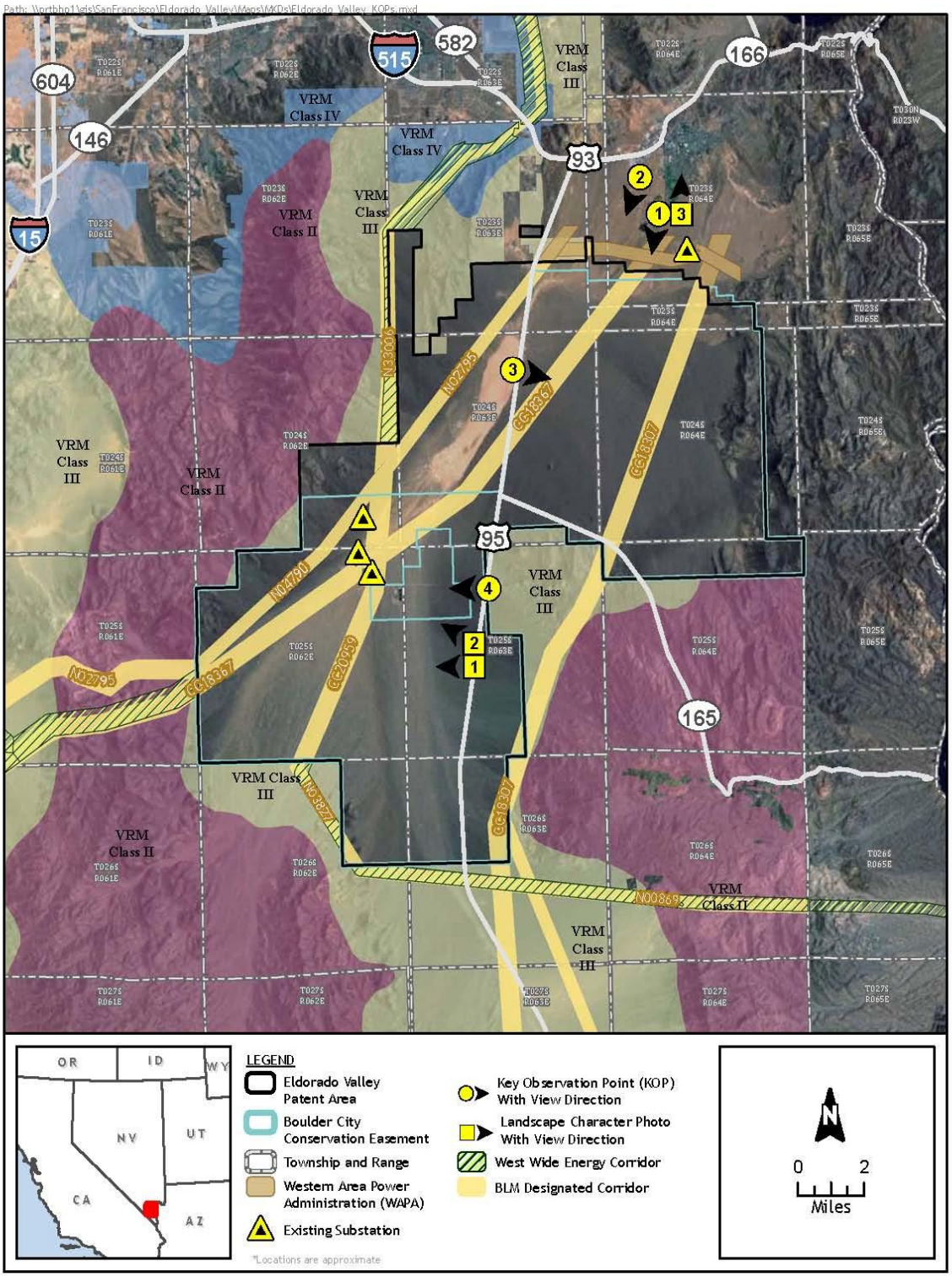

Figure 3-2: Eldorado Valley Key Observation Points
Clark County, Nevada

Figure 3-3: Landscape Character Photograph 1 – View due west from Highway 95 of the southern part of the Eldorado Valley

The physical setting of the proposed action and viewer groups would vary for each ROW application, as described below.

Electric Substations

There are three existing substations within the study area (Figure 3-2). The substations are several miles due west of Highway 95 and approximately 10 miles southwest of Boulder City, Nevada. Landscape Character Photograph 2 (Figure 3-4) shows the view northwest from Highway 95 with the substations in the background approximately 4 miles away and behind Nevada Solar One and the Eldorado Energy Combined Cycle Power Plant. The view shows the existing energy facilities, transmission lines, and substations positioned on the broad alluvial plain in the Eldorado Valley, sloping very gently north toward the dry lake bed. The McCullough Range and bajadas are dominant in the background approximately 6 to 10 miles away. Vegetation is generally low-growing and sparse, forming some irregular patterns on the bajadas.

BLM Visual Resource Management

Activities proposed within BLM transmission and utility corridors that traverse the study area would be located on lands managed by the BLM; therefore, the methodology used to determine impacts on visual resources is consistent with the BLM's guidelines for selecting KOPs, describing the views from these locations, determining the degree to which views would be impacted, and assessing the compliance of activities proposed within BLM transmission and utility corridors that traverse the study area with applicable Visual Resource Management (VRM) objectives. The assessment of the visual impacts is based on an evaluation of the changes to the existing visual environment that would result from construction, operation, and maintenance of activities proposed within BLM transmission and utility corridors that traverse the study area.

Figure 3-4: Landscape Character Photograph 2 – View northwest from Highway 95 toward Nevada Solar One and the Eldorado Energy Combined Cycle Power Plant

KOPs were selected in accordance with BLM VRM Manual 8431 and include critical viewpoints such as those from residential communities or road crossings, representative views of typical landscapes in the study area, and any special project or landscape feature, such as a dry lake bed. The KOP selection process considered the number of viewers, the duration of the view, and viewer expectation.

Viewer expectation and the sensitivity of viewpoints were also considered in selecting the KOPs as outlined in the BLM Visual Resources Inventory Manual 8410-1. Factors considered in determining the sensitivity of a viewpoint and viewer expectation include the types of users in the area, the amount of use for each location, any public interest, adjacent land uses, and areas with special designations such as Wilderness Areas or Recreation Areas.

KOPs were agreed upon by the applicant's consultants and BLM staff from the Las Vegas field office (Seitz 2012). The consulting team met with BLM staff from the field office to conduct field work and identify KOPs. Coordination with agency staff continued after completion of the visual field work.

Field surveys in the Eldorado Valley area of Clark County, Nevada, were conducted on January 31, 2012 to finalize selection of KOPs in consultation with the BLM. During the field visit, BLM staff indicated that for the purposes of this analysis, BLM utility corridors that traverse the study area should be considered VRM Class III.

KOP photos were taken with a digital camera and zoom lens set at 50 millimeters, with a resulting horizontal field of view of approximately 40 degrees. A single-frame image was used

for each KOP. If viewed as a 10-inch-wide image at a distance of about 1 foot, this field of view approximates the actual field of view experienced.

The impact analysis assessed the contrast between the existing conditions and conditions that would exist after construction of activities proposed within BLM utility corridors that traverse the study area for basic visual features (landforms, water bodies, vegetation, and structures) using four basic design elements (form, line, color, and texture). Views and features of the study area are described in terms of distance zones. These are foreground-middleground (from 0 to 1 to 3 miles), background (from 3 to 5 to 15 miles), and seldom-seen views (greater than 15 miles or hidden from view).

The degree of contrast that would be introduced by activities proposed within the study area at each KOP is then assigned a BLM rating that reflects the degree of contrast of visual changes against the objectives of the applicable VRM class for the KOP. These ratings are as follows:

- Strong: the element contrast demands attention, will not be overlooked, and is dominant in the landscape
- Moderate: The element contrast begins to attract attention and begins to dominate the characteristic landscape.
- Weak: the element contrast can be seen but does not attract attention.
- None: the element contrast is not visible or perceived.

The BLM classifies the visual resources of an area by assigning them to one of four inventory classes using a standard visual resource inventory process. Each of the four classifications corresponds to management goals as follows:

- Objective Class I: The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
- Objective Class II: The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
- Objective Class III: The objective of this class is to partially retain the existing character of the landscape. The level of change to characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
- Objective Class IV: The objective of this class is to provide for management activities that allow major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.

As directed in the BLM Visual Contrast Rating Manual 8431, a number of variables are considered in determining the significance of a potential impact to aesthetics and visual resources for each KOP. A weak visual change can constitute a major visual impact if the change is

perceptible in foreground views to a highly sensitive viewer group such as recreational viewers in a VRM Class I area. The factors considered in determining the extent and implications of the visual changes are as follows:

- The specific changes in the affected environment's composition and character and any outstanding valued qualities,
- The context of the affected visual environment,
- The extent to which the affected environment contains places or features that have been designated in plans and policies for protection or special consideration, and
- The numbers of viewers, their activities, and the extent to which the activities are related to the visual qualities affected by proposed changes.

Key Observation Points

Select KOPs represent typical views of BLM utility corridors in the study area and views from sensitive locations. Sensitive locations include areas with protected visual resources or scenic vistas or areas with a high degree of visual sensitivity such as residences or recreational areas. The sensitivity of a location takes into account the type of users, the number of users or frequency of use, public concern for maintaining visual resources, any scenic designations or management plans designed to protect visual resources, and adjacent land uses (BLM Manual H-8410-1). The process for selecting these KOPs is described in more detail below. These KOPs are used to help establish the baseline for existing visual resources and assess potential changes to the visible landscape from activities proposed within the BLM utility corridors. KOPs are characterized by describing the form, line, color, and texture of landforms, waterbodies, vegetation, and structures visible in the view. The location and direction of the view for each KOP is shown in Figure 3-2.

KOP 1: View south from Southern Nevada Veterans Memorial Cemetery

KOP 1 (Figure 3-5) shows a typical view south from the southern edge of the Southern Nevada Veterans Memorial Cemetery located in Boulder City, Nevada, near its southern boundary. The cemetery is just east of the Boulder City Airport and south of the Boulder Creek Golf Club. Landscape Character Photograph 3 (Figure 3-6) shows a view of the cemetery looking north from the same location as KOP 1.

Viewer groups with views from KOP 1 of the study area and the BLM utility corridors traversing it are generally highly sensitive. Typically, viewers visit the cemetery to honor, pay respect to, or participate in services for deceased friends or family members who served in the military. These are generally solemn occasions and may involve large or small groups of people or individuals with moderate- to long-duration views. For these reasons, viewers at the cemetery would have a high concern for views of the distant mountains and valley, including the study area and the BLM utility corridors traversing it.

In the view from KOP 1, the topography in the foreground-middleground distance zone consists of a broad and mildly undulating alluvial plain that slopes gently from east to west toward the dry lake bed just out of view to the right. This sloping alluvial plain extends well into the background distance zone where it intersects the rugged and varied peaks and ridges of the Eldorado Mountains and distant Highland Range to the south. The horizontal intersection between the rugged mountains and open plain, or valley bottom, creates a dramatic contrast of form, line, color, and texture.

Figure 3-5: KOP 1 – View south from Southern Nevada Memorial Cemetery, Boulder City, NV

Figure 3-6: Landscape Character Photograph 3 – View of the Cemetery Looking North from the Same Location as KOP 1

The nearer mountains tend to be dark gray with some browns, tans, and light orange hues intermixed. More distant mountains appear to be softer grays and have a hazy, bluish tint. The valley plain tends to be lighter browns, tans, and yellowish tans that blend together more evenly and have a more fine-textured and homogeneous appearance. The more vertical forms, coarse textures, and varied colors of the rugged mountain ranges contrast strongly with the more horizontal form, fine texture, and blended colors of the valley plain. Also, the irregular, angular lines of the mountain ridgelines contrast strongly with the more horizontal line of their interface with the valley plain. No water is visible in this view.

Vegetation form, texture, and color is generally very consistent over much of the valley plain, consisting almost exclusively of evenly-spaced, low creosote bush shrubs interspersed with lower-growing shrubs and bunchgrasses. The creosote bush shrubs are generally dark to bright green with orange-red tints on upper leaves and the other low-growing shrubs and grasses tend to be much lighter yellows, tans, and soft grays through much of the year. The contrast of the vegetation color and texture very close to the observer (i.e., within several hundred feet) tends to be moderately strong; however, the overall effect throughout most of the view is very homogeneous in color and fine in texture.

KOP 1 is located about 2 miles north of the northern boundary of the study area. Transmission structures and lines visible in the near foreground-middleground of the view are not within the study area but are typical of existing high-voltage transmission structures and lines within the BLM transmission and utility corridors in the study area. Structures associated with a small, oval, go-cart race track are visible on the left side of the photo. Wooden-pole distribution structures are also visible in the near foreground. The strong angular and rigid forms and vertical lines of these structures in the near foreground contrast strongly with the softer forms and more horizontal lines of the valley plain, especially where they intersect the strong linear demarcation between the mountains and valley plain. The more distant dull-gray lattice structures in the view tend to blend more with the colors and textures of the valley plain.

KOP 2 – View south from Veterans Memorial Drive across golf practice area, Boulder Creek Golf Club

KOP 2 (Figure 3-7) shows a typical view south-southwest from the pedestrian walkway along the southwest side of Veterans Memorial Drive just south of the clubhouse for the Boulder Creek Golf Club. This view looks across the practice area (i.e., chipping, putting, and driving facilities) for the golf course and out over the Eldorado Valley.

Viewer groups with views from KOP 2 of the study area and the BLM transmission and utility corridors are generally recreationists and local area residents with high awareness of and sensitivity for views. Viewers at this location consist of golfers, walkers, joggers, bicyclists, and people driving for work, pleasure, and other purposes. Because the pedestrian walkway is near residences, it is likely that many of the users are local area residents with high concern for views. The golf practice area tends to receive a moderate to high level of use by golfers. Because the driving range faces south toward the study area, golfers using this area tend to have long-duration views. Views of the BCCE, valley, and mountains from this KOP are elevated, providing a somewhat superior viewing position with broad vistas of the landscape. Locations with superior viewing positions tend to serve as overlooks that attract greater attention from viewers and thus heighten viewer awareness and sensitivity. For these reasons, viewers from this area would generally have a high concern for views of the distant mountains and valley, including the study area and the BLM transmission and utility corridors.

In the view from KOP 2, the topography in the immediate foreground-middleground distance zone is flat and elevated on a low bluff above the valley. The topography slopes away from the edge of the bluff and the land surface is generally not visible from this viewpoint for several miles to about the northern boundary of the study area. However, viewers using the practice area and golf course are likely to have views of the gentle slope between the golf course and the boundary. In the view from KOP 2, the topography in the visible portion of the foreground-middleground distance zone consists of a broad and mildly undulating alluvial plain that slopes gently from east to west toward the dry lake bed, a portion of which is visible at the extreme right side of the photograph. This sloping alluvial plain extends well into the background distance zone where it intersects the rugged and varied peaks and ridges of the Eldorado Mountains and distant Highland Range to the south and McCullough Range to the southwest.

Figure 3-7: KOP 2 – View south from Veterans Memorial Drive across golf practice area, Boulder Creek Golf Club, Boulder City, Nevada

The horizontal intersection between the rugged mountains and open plain, or valley bottom, creates a dramatic contrast of form, line, color, and texture. The mountains tend to be medium to light gray with some brown and, tan hues intermixed. More distant mountains appear to be softer grays and have a hazy, bluish-gray tint. The valley plain tends to be a similar medium gray that transition to some lighter tan and yellowish-tan areas and form horizontal patterns across the valley plain. The valley plain tends to be fine-textured and homogeneous. The dry lake bed, visible on the right side of the photograph, is light tan in color and fine-textured. The more vertical forms, coarser textures, and somewhat more varied colors of the rugged mountain ranges contrast moderately with the more horizontal form, fine texture, and blended colors of the valley plain. Also, the irregular, angular lines of the mountain ridgelines contrast strongly with the horizontal forms and lines of the valley plain. No water is visible in this view.

Vegetation in the immediate foreground consists of bright green turf and landscape shrubs and small trees planted as part of the golf course development. These vegetation elements contrast strongly in form, line, color, and texture with that of the vegetation in the distant valley. Vegetation form, texture, and color are generally very consistent over much of the valley plain, giving the valley a dull, greenish-gray appearance. Because of their low height, even spacing, and distance away, individual plants in the valley are not distinguishable from this KOP. The overall appearance of the vegetation for most of the view beyond the immediate foreground is very homogeneous in color and fine in texture.

KOP 2 is located about 3 miles north of the northern boundary of the study area. Transmission lattice structures and lines visible in the foreground-middleground of the view just beyond the edge of the bluff and practice area are not within the study area but are typical of existing high-voltage transmission structures and lines within the BLM transmission and utility corridors. Because of their dull gray colors and fine textures, they tend to have low contrast with their surroundings in this view. The very light-colored horizontal area visible in the background just beyond the dry lake bed to the right side of the view is one of the rectilinear photovoltaic arrays for Nevada Solar One. Although the angular form of this element contrasts strongly with the more horizontal elements of the valley plain surrounding it, its form appears linear from this location and elevation. However, its bright color contrasts strongly with the colors of the surrounding landscape and draws viewer attention to it. This array is located outside of the study area.

KOP 3 – View east from the dry lake bed across Highway 95

KOP 3 (Figure 3-8) shows a typical view east toward Highway 95 and the Eldorado Mountains from the northern portion of the dry lake bed in the northwest of the study area. This KOP is located just west of the highway and shows the view east across part of the lake bed and highway.

Viewer groups with views from KOP 3 of the BLM transmission and utility corridors are generally recreationists who use the lake bed for OHV activities, flying model airplanes, and other dispersed recreation activities. Other viewers from the vicinity of KOP 3 would include people driving on Highway 95 for work, pleasure, and other purposes. Recreationists tend to have a high awareness of and sensitivity for views. Recreationists using the dry lake bed tend to have long-duration views. Recreation activities in the area appear to be dispersed and use appears to be low to moderate. For these reasons, viewers at KOP 3 would have a moderate to moderately high concern for views of the BLM transmission and utility corridors.

In the view from KOP 3, the topography in the foreground-middleground distance zone is generally very flat, consisting mostly of the dry lake bed surface. The topography of the broad valley plain beyond the edge of the lake bed and highway running horizontally across the view slopes toward the viewer from the east. Minor undulations occur in the landscape of the valley that are not apparent in the photograph. Also, the highway is slightly elevated on a low berm that borders the dry lake edge in this location. The Eldorado Mountains in the background dominate the view.

The horizontal intersection between the rugged mountains and open, nearly flat valley plain creates a dramatic contrast of form, line, color, and texture. The mountains tend to be dark gray with some brown and tan hues intermixed. The valley plain tends to be medium brown with orange or ochre undertones. The dry lake bed surface is a lighter brown to dark tan. The rugged and angular mountains are moderately coarse in texture. The valley plain is fine-textured and homogeneous, as is the dry lake bed in the immediate foreground. The more vertical, irregular, and angular forms, coarser texture, and darker colors of the rugged mountains and ridgeline

contrast strongly with the horizontal form and line, fine texture, and lighter colors of the valley plain and dry lake bed. No water is visible in this view.

Vegetation is not discernible in this view. However, the broad valley plain, extending from the foreground-middleground beyond the horizontal line of the highway to the base of the mountains in the background, is covered with low shrubs and grasses similar to those visible in Figures 3-4 and 3-5. Because of their low height, even spacing, and distance away, individual plants in the valley are not distinguishable for this KOP. Vegetation form, texture, and color are generally very consistent over much of the valley plain, giving the valley a dull, medium brown to orange-brown appearance. The overall appearance of the vegetation for most of the view beyond the immediate foreground is very homogeneous in color and fine in texture. Vegetation is not visible on the surface of the dry lake bed in this view; however, some small shrubs and grasses are present near the base of the highway berm.

Figure 3-8: KOP 3 – View east from the dry lake bed across Highway 95, Clark County, Nevada

KOP 3 is located about 800 feet west of Highway 95 within the study area. Transmission structures and lines visible in the foreground-middleground of the view are located within the BLM utility corridor (NVN 0018367) approximately 1 to 1½ miles away. These structures are typical of existing high-voltage transmission structures and lines within the BLM transmission and utility corridors. Several wooden-pole distribution structures that are within the BLM corridor are also visible. The strong angular and rigid forms and vertical lines of these structures in the foreground-middleground contrast strongly with the more horizontal lines of the valley plain, especially where they intersect the strong linear demarcation between the mountains and valley plain. However, their fine texture and dull gray color in combination with the fact that they are not silhouetted against the sky above the ridgeline results in their having a moderate contrast with their surroundings.

KOP 4 – View west from Highway 95 toward Nevada Solar One, Eldorado Energy Combined Cycle Power Plant, and Electric Substations

KOP 4 (Figure 3-9) shows a typical view west from the intersection of Highway 95 and the east-west access road to the Nevada Solar One and Eldorado Energy Combined Cycle Power Plant energy generation facilities and several electric substations. The Eldorado Energy Combined Cycle Power Plant is the complex of taller structures just south of the access road. The rectilinear arrays of photovoltaic panels that constitute Nevada Solar One are located both north and south of the access road in the view. The Eldorado Substation is visible in the far right side of the view approximately 3.5 miles away in the middleground to near background.

Figure 3-9: KOP 4 – View west from Highway 95 toward Nevada Solar One, Eldorado Energy Combined Cycle Power Plant, and Eldorado Substation, Clark County, Nevada.

Viewer groups with views from KOP 4 of the study area and BLM transmission and utility corridors traversing it are generally people driving on Highway 95 for work, pleasure, and other purposes. Viewers driving west on the access road are generally people driving for work. Generally, viewers driving for work are considered to have low concern for visual resources. Some viewers driving north or south on Highway 95 are driving to or from recreation activities; however, because they would be traveling at fairly high speeds, the duration of views would be fairly short. For these reasons, the majority of viewers for KOP 4 would have low to moderately low concern for views of the study area and BLM transmission and utility corridors.

In the view from KOP 4, the topography in the foreground-middleground distance zone consists of a broad and mildly undulating alluvial plain that slopes in both directions gently toward the center of the valley where the structures are located in this view. This sloping alluvial plain

extends to the edge of the bajada at the base of the McCullough Range in the background distance zone. The horizontal intersection between the rugged mountains and open plain, or valley bottom, generally creates a strong contrast of form, line, and texture. In some areas this contrast is softened by the gently sloping bajada intersecting the horizontal plain at a low angle. The mountains tend to be dappled dark grays, medium and light browns, yellow-browns, and tans intermixed. The valley plain tends to be a mix of dull greens, light browns, and orange browns that blend together more evenly and have a more fine-textured and homogeneous appearance than the mountains and bajada. The more vertical forms, coarse textures, and varied colors of the rugged mountain ranges contrast strongly with the more horizontal form, fine texture, and homogeneous colors of the valley plain. No water is visible in this view.

Vegetation form, texture, and color is generally very consistent over much of the valley plain, consisting almost exclusively of evenly-spaced, low creosote bush shrubs interspersed with lower-growing shrubs and bunchgrasses. The creosote bush shrubs are generally dark to bright green with orange-red tints on upper leaves and the other low-growing shrubs and grasses tend to be much lighter yellows, tans, and soft grays through much of the year. The contrast of the vegetation color and texture very close to the observer (i.e., within several hundred feet) tends to be moderately strong; however, the overall effect throughout most of the view is very homogeneous in color and fine in texture.

KOP 4 is located at the boundary of the study area. About a half mile to the east is an enclave of land which contains the Nevada Solar One and Eldorado Energy Combined Cycle Power Plant energy generation facilities. Structures associated with these facilities contrast strongly in form, line, color, and texture with the surrounding landscape. The strong linear form and line of the road and its light color also contrasts strongly with its surroundings.

3.8.2 Applicable Laws, Regulations, and Standards

Federal Land Policy and Management Act

The FLPMA of 1976 (90 Stat. 2743; 43 U.S.C. 1601, et seq.) established the BLM as the jurisdictional agency for expanses of land in the western U.S. to be managed as multiuse lands. The following sections of the FLPMA relate to the management of aesthetic and visual resources on federal lands:

> § 102(a): "The public lands [shall] be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values."
>
> § 201(a): "The Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values (including…scenic values)."
>
> § 505(a): "Each right-of-way shall contain terms and conditions which will…(ii) minimize damage to the scenic and esthetic values."

Federal regulations regarding aesthetics and visual resources are enacted through the application of the VRM system outlined in the BLM 8400 VRM Manual. The VRM system involves inventorying scenic values and establishing management classes and objectives for those values, and then evaluating proposed activities to determine whether they conform to the management objectives. VRM classes may be established in RMPs. In the absence of VRM classes in an adopted RMP, BLM resource specialists may complete a Visual Resource Inventory for the affected area. The Las Vegas RMP has established VRM classes for the Eldorado Valley area that would include activities proposed within the BLM transmission and utility corridors. The VRM

classes for lands managed by the BLM in and around the Eldorado Valley are Class II and Class III. VRM Class II is assigned primarily to mountainous areas surrounding the valley and VRM Class III is assigned primarily to the broad alluvial plain of the valley floor. However, lands within the study area, including the BLM transmission and utility corridors, and some adjacent lands in the valley not managed by the BLM, are not assigned a VRM class. Therefore, the BLM assigns VRM Class III to the corridors in the area to be consistent with adjacent VRM classes on BLM land.

Las Vegas Resource Management Plan

Activities proposed within BLM transmission and utility corridors in the study area would be managed according to the Las Vegas RMP (BLM 1998). The BLM Southern Nevada District Office manages land under its jurisdiction according to the goals and policies outlined in the Las Vegas RMP, which contains the following objective regarding the management of visual resources:

- **VS-1.** Limit future impacts on the visual and aesthetic character of the public lands.

The management objectives associated with VRM classes are discussed below.

Clark County Comprehensive Plan

The Clark County Comprehensive Plan includes the following policies related to the siting and design of public utilities to minimize impacts to aesthetic and visual resources (Clark County 2006):

- **UT 1-4.** Support increasing capacity of existing utility corridors over establishing new ones.
- **UT 1-8.** Support the reduction of visual impacts by newly constructed utility poles, towers, substations, and equipment buildings. Use methods for reducing the effect through actions such as:
  - Disguising and co-locating antennas for cell towers
  - Hiding equipment buildings with screening and solid fencing
  - Using architecture design on major utility poles to complement the character of a community
  - Placing high capacity electrical transmission lines underground to lessen visual impacts in large multi-use projects

Boulder City Master Plan

The Boulder City Master Plan includes the following policy related to visual impacts within the Eldorado Valley region (Boulder City 2003):

> **EV 3: Views.** The visual impacts of future development in the Eldorado Valley should be a strong consideration when reviewing future proposals for energy production facilities or other uses. Future development should be designed so as to minimize negative impacts to views of the Eldorado Valley from the urbanized areas of the city.

3.9 Recreation

Recreational opportunities can be defined as "favorable circumstances enabling visitors' engagement in a leisure activity to realize immediate psychological experiences and attain more lasting, value-added beneficial outcomes" (BLM 2005a). Recreational experiences can be defined as "psychological outcomes realized either by recreation-tourism participants as a direct result of their on-site leisure engagements and recreation-tourism activity participation or by non-participating community residents as a result of their interaction with visitors and guests within their community and/or interaction with public and private recreation-tourism providers and their actions" (BLM 2005c). Visual resources are frequently a key element of recreational experiences. The existing visual setting and potential impacts on visual resources on recreational opportunities in the study area are discussed in Section 3.8, "Visual Resources."

The Eldorado Valley contains a number of resources conducive to recreational opportunities or experiences. Land uses within and surrounding the study area range from open space and conservation/preserve areas to commercial, public, and private recreation; utility/energy uses; industrial and mining uses; and transportation. Although lands in the study area are managed by Clark County, the BLM manages the corridors traversing the area to be compatible with Clark County's allowable uses.

3.9.1 Affected Environment

Wilderness and National Recreation Areas

Although there are no designated Wilderness or National Recreation Areas within the study area, there are several designated areas within proximity. For example, as shown on Figure 3-1, both the South McCullough Wilderness Area and North McCullough Wilderness Area are located within several miles of the study area to the west. Both of these areas provide opportunities for solitude and provide recreational activities such as hiking, horseback riding, hunting, exploration, and camping (BLM 2005a, 2005b). In addition, the Lake Mead National Recreation Area is adjacent to the northeastern border of the study area. Individuals may use this area for hiking or exploration, however, the majority of park facilities are located near Lake Mead over 5 miles away. The Lake Mead Visitors Center is located in Boulder City (NPS n.d.)

Eldorado Valley Dry Lake

The Eldorado Valley Dry Lake is located in the northwest portion of the study area, as depicted on Figure 3-1. The lake bed is managed by Clark County for recreational uses, including off-road vehicle use, ultralight aircraft operation, hiking, biking, and other uses (Boulder City 2003).

Boulder City Conservation Easement

The BLM transmission and utility corridors in the Eldorado Valley traverse the BCCE, a high-priority conservation area in which development is severely limited. Established by the City of Boulder City (City of Boulder City 1994), the BCCE allows for passive use of land, including hiking and sightseeing. Regulations of the BCCE are enforceable under Boulder City Ordinance #972, Title 7, Chapter 5 (7.5-8), which lists prohibited activities, including traveling on a closed road and camping, within the easement. Vehicular travel is limited to designated open roads or private utility roads, and all open and closed roads are clearly marked. The Boulder City Master Plan designates the BCCE as Energy, Utility, and Preserve, which allows recreation on designated recreation trails.

Golf Courses

The Boulder Creek Golf Club and Boulder City Golf Course are adjacent golf courses located on the southern edge of Boulder City, north of the Boulder City Municipal Airport. The Boulder City

Municipal Airport is located between the study area and the golf courses. Views from the golf courses are discussed in Section 3.8 under KOP 2.

Shooting Ranges

The Boulder Rifle and Shooting Club, founded in 1932, is located east of Boulder City, north of the study area. The club is a non-profit, volunteer-run shooting range that was originally built by the United States Army Corps of Engineers (USACE) during the construction of the Hoover Dam. The club features an open pistol area, shooting bays, shotgun shooting stations, training bays, and a silhouette range (Boulder Rifle and Pistol Club n.d.). Because of the topography and location of the club outside of the study area, it is unlikely that construction within BLM transmission and utility corridors would be viewable from the shooting range.

The Desert Hills Shooting Club is a 160-acre club in the foothills of the McCullough Mountains, north of the study area. The club includes shotgun and machine gun rentals, a variety of shooting ranges, an archery field, a clubhouse that hosts corporate and private events, and other amenities (Desert Hills Shooting Club 2010).

Race Tracks

The Boulder City MX Racetrack is a 55-acre park located within the study area, north of the Eldorado Valley Dry Lake. As of January 1, 2012, the facility is closed indefinitely and is up for sale. Prior to its closure, the facility hosted a variety of annual racing events (Boulder City MX 2011).

The Boulder City R/C Speedway is located on Quail Drive, south of the Southern Nevada Veterans Memorial Cemetery, north of the study area. Activities at this location include mainly R/C racing (Boulder City R/C Speedway n.d.).

3.9.2 Applicable Laws, Regulations, and Standards

Las Vegas Resource Management Plan

The Las Vegas RMP (BLM 1998) provides a comprehensive framework for managing resources within the planning area managed by the BLM Las Vegas Field Office, including maintaining opportunities for recreation as well as managing open spaces, trails, and parks and maintaining areas for OHV events on BLM lands. Provisions of the Las Vegas RMP are administered and enforceable by the BLM. The Las Vegas RMP is currently under revision.

The 2003 Nevada Statewide Comprehensive Outdoor Recreation Plan

The Nevada Statewide Comprehensive Outdoor Recreation Plan (SCORP) was developed by the Nevada Division of State Parks to increase and improve the quality of outdoor recreation opportunities in Nevada. Although the SCORP does not issue requirements for compliance with its management goals, it describes recreational needs and issues for the state and provides strategies for improving the quality of recreational outlets based on the needs of the population (Nevada Division of State Parks 2003).

Nevada Revised Statutes

NRS 501, supplemented by the NAC, covers administration and enforcement of wildlife resources within the state. NRS 501 states that "the preservation, protection, management and restoration of wildlife within the State contribute immeasurably to the aesthetic, recreational and economic aspects of these natural resources." NRS 455B.490 addresses the effect of provisions governing recreational areas on local ordinances and laws and regulations of the State of Nevada and does not prohibit "a county, city or unincorporated town from adopting ordinances that

regulate a recreation area which are consistent with the provisions of NRS 455B.400 to 455B.490, inclusive." Provisions of the NRS are administered and enforceable by the State of Nevada.

Clark County

The BLM transmission and utility corridors in the study area cross near lands managed by the Clark County Comprehensive Plan. The Plan's Recreation Element outlines standards and policies for county-managed parks, trails, and open spaces. Recreational areas and facilities designated under these plans are managed by the Clark County Parks and Community Services Department.

Boulder City

Policy EV 2 in the Boulder City Master Plan relates to recreational uses on the Eldorado Dry Lake. According to this policy, "The Dry Lake Bed Public Recreation Land shall continue to be used for public recreational purposes, including but not limited to off-road vehicle use, ultra-light aircraft operation, hiking, and biking. Public recreational uses should be monitored to minimize conflicts between uses and to protect the environmental integrity of the Valley" (Boulder City 2003).

3.10 Air Quality and Climate

3.10.1 Affected Environment

This section identifies existing air quality and climatic conditions within and adjacent to the BLM transmission and utility corridors discussed in this EA. The BLM transmission and utility corridors are located in the Eldorado Valley, within an unincorporated planning area administered by Clark County, Nevada. This area is designated as Hydrographic Area 167 under the federal Clean Air Act (CAA) (Clark County 2011).

The BLM transmission and utility corridors traversing the Eldorado Valley are located in a semiarid region, with a climate characterized by warm, dry summers and cool winters. Air masses moving across southern Nevada are usually low in moisture. This arid condition is characterized by low precipitation, low humidity, and cloudless skies. Summer climate is marked by hot days and mild nights, with an average daily temperature of nearly 90 degrees Fahrenheit (°F). Winter temperatures drop below freezing about 12 days per year, with average daily temperatures of 46°F during the coldest period. Spring and autumn are generally moderate, with average daily temperatures of about 80°F (Clark County 2000). The annual precipitation is approximately 10 centimeters (4 inches) per year (Nevada DOT 2005).

In addition, deserts or drylands have a potential for carbon storage in soils rather than in their vegetation. The carbon storage potential for drylands ranges from greater than 400 to less than 100 metric tons per hectare, although the majority of desert soils can store less than 225 metric tons per hectare (World Resources Institute 2003). While deserts generally store less carbon than forests on a carbon/unit area basis, the total amount of carbon that desert soils can store is potentially significant due to the extensive areas of these ecosystems.

Air quality at a given location is a function of several factors, including the amounts and types of pollutants being emitted, both locally and regionally, and the dispersion rates of pollutants within the region. Major factors affecting pollutant dispersion are wind speed and direction, atmospheric stability, temperature, the presence or absence of inversions, and the topographic and geographic

features of the region. Existing sources of air pollutants in Eldorado Valley include commercial and industrial area sources, non-road mobile sources (e.g., off-highway equipment), on-road mobile sources, and aircraft emissions.

Air quality is regulated by federal, state, and local agencies. The CAA requires the United States Environmental Protection Agency (U.S. EPA) to set National Ambient Air Quality Standards (NAAQS) for criteria pollutants that are emitted from numerous and diverse sources. These pollutants are considered harmful to public health and the environment. U.S. EPA has set NAAQS for seven criteria pollutants: carbon monoxide (CO), lead, nitrogen dioxide (NO_2), ozone, particulate matter less than or equal to 10 micrometers in diameter (PM_{10}), particulate matter less than or equal to 2.5 micrometers in diameter ($PM_{2.5}$), and sulfur dioxide (SO_2). Ozone is not emitted directly from emission sources but is created in the atmosphere via a chemical reaction between oxides of nitrogen (NO_X) and volatile organic compounds (VOCs) in the presence of sunlight. As a result, NO_X and VOCs are often referred to as ozone precursors and are regulated as a means to prevent ground-level ozone formation.

The Department of Air Quality and Environmental Management (DAQEM) is the air pollution control agency for all of Clark County, Nevada. The DAQEM is also responsible for issuing stationary source air permits, developing emissions inventories and local air quality plans, and maintaining air quality monitoring stations. The NAAQS, applicable under the Clark County DAQEM jurisdiction, are summarized in Table 3-5.

The U.S. EPA compares ambient air criteria pollutant measurements with NAAQS to assess air quality in regions within the United States. Based on these comparisons, regions are placed in one of the following categories:

- Attainment – A region is "in attainment" if monitoring shows ambient concentrations of a specific pollutant are less than or equal to NAAQS. In addition, an area that has been re-designated from nonattainment to attainment is classified as a "maintenance area" for 10 years to ensure that the air quality improvements are sustained.
- Nonattainment – If the NAAQS are exceeded for a pollutant, the region is designated as nonattainment for that pollutant.
- Unclassifiable – An area is unclassifiable if the ambient air monitoring data are incomplete and do not support a designation of attainment or nonattainment.

The U.S. EPA has designated parts of Clark County as Nonattainment for PM_{10} and ozone (U.S. EPA 2011b, 2011c). The Eldorado Valley (Hydrographic Area 167) is currently designated nonattainment for the 8-hour ozone NAAQS (DAQEM 2011). This portion of the county is designated as attainment and/or unclassifiable for all other pollutant NAAQS. The air quality designations of areas of project activity are summarized in Table 3-6. The General Conformity Rule is designed to ensure that federal agencies ensure that Proposed Projects would conform to the applicable state implementation plan. Modeled as a "worst-case" scenario, projects that would be proposed within the BLM transmission and utility corridors in the study area could potentially trigger the requirement for a federal conformity analysis.

Table 3-5 Summary of National and Clark County Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS	
		Primary	Secondary
CO	8-hour	9 ppm[a]	—
	1-hour	35 ppm[a]	—
Lead	3-month (rolling average)	0.15 µg/m^3	0.15 µg/m^3
NO_2	Annual	0.053 ppm	0.053 ppm
	1-hour	0.100 ppm[e]	—
Ozone	8-hour	0.075 ppm[b,c]	0.075 ppm[b,c]
PM_{10}	24-hour	150 µg/m^3 [d]	150 µg/m^3 [d]
$PM_{2.5}$	Annual	15 µg/m^3 [e]	15 µg/m^3 [e]
	24-hour	35 µg/m^3 [f]	35 µg/m^3 [f]
SO_2	3-hour	—	0.5 ppm
	1-hour	0.075 ppm [g]	—

Source: U.S. EPA 2011a.

Key:
ppm = parts per million
µg/m^3 = micrograms per cubic meter

Notes:
[a] Standard not to be exceeded more than once per year.
[b] To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations over each year must not exceed 0.075 ppm.
[c] Final rule signed March 12, 2008. The 1997 ozone standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place.
[d] Not to be exceeded more than once per year on average over 3 years.
[e] To attain this standard, the 3-year average of the 98th percentile must not exceed the standard.
[f] The 3-year average of the 98th percentile of 24-hour concentrations within an area must not exceed 35 µg/m^3.
[g] Final rule signed June 2010. To attain standard, the 3-year average of the 99-percentile of the daily maximum 1-hour average must not exceed 75 parts per billion, or 0,075 ppm. The 1971 annual and 24-hour standards were revoked in that same rulemaking.

The closest DAQEM air quality monitoring station operating in the proposed project study area is the Boulder City monitoring station. The station is located at the intersection of U.S. 93 and Industrial Road. The Boulder City station monitors ozone and PM_{10}. Average concentration levels for these criteria pollutants in 2011 were reported as 0.042 parts per million (ppm) for ozone and 14 µg/m^3 for PM_{10} (DAQEM 2012a).

Table 3-6 Attainment Status within the Study Area

Pollutant	Clark County, Nevada NAAQS
CO	A
Lead	A/U
NO_2	A/U
Ozone	NA
PM_{10}	NA (*)
$PM_{2.5}$	A/U
SO_2	A/U

Sources: DAQEM 2011, U.S. EPA 2011b, c

Notes: (*) Reported by U.S. EPA as Serious Non-attainment for Clark County, Nevada.

Key:
A = attainment
A/U = attainment/unclassifiable
CO = carbon monoxide
NA = nonattainment
NO_2 = nitrogen dioxide
$PM_{2.5}$ = particulate matter with a diameter of 2.5 micrometers or less
PM_{10} = particulate matter with a diameter of 10 micrometers or less
SO_2 = sulfur dioxide
U = unclassifiable
$\mu g/m^3$ = micrograms per cubic meter

Greenhouse Gases and Climate Change

The U.S. EPA defines climate change as any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period of time (U.S. EPA 2011d). Climate change may result from: natural factors (e.g., changes in the sun's intensity or slow changes in the Earth's orbit around the sun); natural processes within the climate system (e.g., changes in ocean circulation); and human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, desertification, etc.)

Greenhouse gasses (GHGs) refer to gases that trap heat in the atmosphere, causing a greenhouse effect. According to the Intergovernmental Panel on Climate Change, increased atmospheric levels of carbon dioxide CO_2 are correlated with rising temperatures; concentrations of CO_2 have increased by 31 percent above pre-industrial levels since 1750 (Figure 3-10). Climate models show that temperatures will probably increase by 1.4 degrees Celsius (°C) to 5.8°C by 2100 (IPCC 2007).

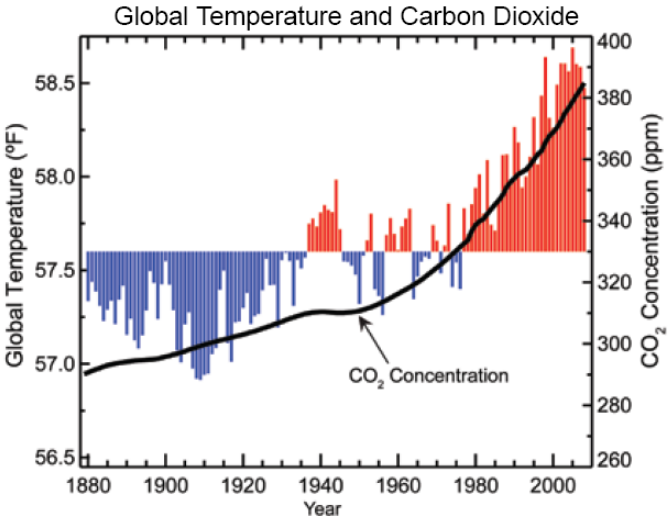

Figure 3-10 Relationship between Global Temperature and Carbon Dioxide
Source: IPCC 2001

Global warming potential (GWP) estimates how much a given mass of a GHG contributes to climate change. The term enables comparison of the warming effects of different gases. GWP uses a

relative scale that compares the warming effect of the gas in question with that of the same mass of CO_2. The carbon dioxide equivalent (CO_2e) is a measure used to compare the effect of emissions of various GHGs based on their GWP, when projected over a specified time period (generally 100 years). CO_2e is commonly expressed as million metric tons of CO_2 equivalents. The CO_2e for a gas is obtained by multiplying the mass of the gas (in tons) by its GWP.

Activities in Nevada accounted for approximately 49.5 million metric tons of gross CO2e emissions in 2005, an amount equal to 0.7 percent of total U.S. gross GHG emissions (NCCAC 2008). Nevada's gross GHG emissions increased 62 percent from 1990 to 2004, while national emissions rose by only 16 percent during this period. Rapid population growth has been the most important driver in emissions growth in Nevada. Annual population growth from 1990 to 2005 was 4.9 percent. The principal sources of Nevada's GHG emissions are electricity use (which exclude electricity exports to other states) and transportation, accounting for 42 percent and 32 percent of Nevada's gross GHG emissions, respectively. The next largest contributor to emissions is the residential, commercial, and industrial fuel use sector, accounting for 13 percent of the total State emissions.

The Nevada Department of Environmental Protection (NDEP) is the primary administrator of air quality rules and regulations at the state level. The NDEP and the U.S. EPA each currently require submission of GHG emissions inventories for stationary facilities exceeding applicable threshold emission levels. The EPA has also published a proposed rule that may also require certain industrial facilities to acquire federal permits (DAQEM 2012b).

3.10.2 Applicable Laws, Regulations, and Standards

Clean Air Act

The CAA establishes the U.S. EPA's responsibilities to protect and improve the nation's air quality. The U.S. EPA oversees the implementation of federal programs for permitting new and modified stationary sources, controlling toxic air contaminants, and reducing emissions from motor vehicles and other mobile sources. The U.S. EPA also requires that each state prepare and submit a State Implementation Plan (SIP) for review. The SIP consists of background information, rules, technical documentation, and agreements that an individual state will use to clean up polluted areas. The plans and rules associated with them are enforced by the state and local agencies, but are also federally enforceable. At this time, there are no finalized federal laws, regulations, or standards governing GHG emissions at the federal level in the U.S.

General Conformity

The General Conformity Rule has been promulgated by the U.S. EPA to ensure that the actions of federal departments or agencies conform to the applicable SIP. The General Conformity Rule covers direct and indirect emissions of criteria pollutants or their precursors that are caused by a federal action, are reasonably foreseeable, and can practically be controlled by the federal agency through its continuing program responsibility. A federal action is exempt from the General Conformity Rule requirements if the action's total net emissions are below the de minimis levels specified in the rule and are not regionally significant. An analysis of the project indicates that net direct and indirect emissions associated with project construction and operation would be less than the thresholds that would trigger the need for a General Conformity Determination under this rule.

State of Nevada

The NDEP is the primary administrator of air quality rules and regulations at the state level. Thus, the NDEP is responsible for preparing and submitting the SIP to the U.S. EPA. However, air quality administration in Clark and Washoe counties has been delegated to the local county government and air districts. NDEP uses air quality management plans prepared by these county air quality districts during SIP development.

Clark County, Nevada

The Clark County DAQEM is the administrator of air pollution rules and regulations within Clark County, Nevada. The DAQEM is also responsible for issuing stationary source air permits, developing emissions inventories and local air quality plans, and maintaining air quality monitoring stations.

3.11 Geology and Soils

3.11.1 Affected Environment

Topography

The Eldorado Valley is within the Basin and Range physiographic province (USGS 2004), which consists of north-south trending linear mountain ranges, which are 28 to 50 miles long, separated by flat valleys (basins) ranging in width from 12 to 31 miles. The mountain ranges are often asymmetrical in cross section with a steep slope on one face and a gentle slope on the other face. There are a few ranges that are bounded on both sides by faults, thus reasonably symmetrical. This distinct topography of alternating linear mountains and valleys was created through tectonic extension and normal faulting. Over the Basin and Range's geologic history, the basins have filled with sedimentary deposits derived from erosion of the nearby mountain ranges.

Geologic Setting

The Eldorado Valley is an internally drained basin bordered by the McCullough Range to the west, the Highland Range to the south, the Eldorado Mountains to the east, and the River Mountains to the north. The Eldorado Valley is mainly underlain by Quaternary alluvium-undifferentiated alluvium and playa/floodplain deposits (Eldorado Valley Dry Lake) (Nevada Bureau of Mines and Geology 1978a, 1978b). The term "Quaternary" indicates that these sediments were deposited in the recent past, specifically within the past 2.6 million years. "Alluvium" and "alluvial" refer to unconsolidated gravels and sand fragments derived from erosion of the surrounding hills. Table 3-7 and Figure 3-11 present geologic rock formations in the Eldorado Valley.

Sediments in the Eldorado Valley are derived from deposition of material from erosion of neighboring mountain ranges, including the McCullough Range and Eldorado Mountains. These deposits form alluvial fans at their base. Alluvial fans are fan-shaped slopes at the base of mountain ranges created through depositions of thousand to millions of years of eroded material (USGS 2001). Most of these are deposits of loose sediments that have not been cemented into rock. Some ancient alluvial fans have been cemented into sedimentary rock.

Due to the loose nature of alluvial fans, they are subject to constant hydrologic reworking. Stream channels migrate over time and continually change the landscape. During heavy precipitation events, alluvial fan deposits can be subject to rapid flow changes, resulting in debris flows, landslides, and flash floods. Extreme rain events can suspend sand, gravel, or even boulders, and transport them downstream, resulting in damage to structures impacted by flood waters (USGS 2001).

Table 3-7 Summary of Surficial and Bedrock Geologic Units

Map Label	Age	Rock Type
Qa	Quaternary	Mixture of alluvial and broken rock deposits
Qp	Quaternary	Playa, lake bed, and flood plain deposits, alluvium
QToa	Miocene to Quaternary	Old alluvial fan deposits
Ta3	Late Miocene to Middle Miocene	Andesite and intermediate composition rocks
Tba	Early Miocene to Early Pliocene	Andesite and Basalt Flows, volcanic rocks
Ti	Early Miocene to Middle Miocene	Alkali-granite (alaskite)
Ts3	Late Eocene to Late Miocene	Tuffaceous sedimentary rocks; sandstone and limestone
Tt3	Middle Miocene to Late Miocene	Rhyolitic flows and shallow intrusive rocks
Xm	Early Proterozoic	Metamorphic rocks; gneiss and schist
Tbr	Middle Eocene to Early Pliocene	volcanic breccia (agglomerate); tectonite

Source: USGS

Seismicity

The Eldorado Valley is located in Seismic Zone 2B. According to the Uniform Building Code, Seismic Zone 2B has moderate potential for damage by seismic hazards associated with known faults (UBC 1997). The only known fault near the study area is the Black Hills Fault, located east of Boulder City in the McCullough Range. The Black Hills Fault is a complex, northeast-trending, east-dipping (eastward sloping fault beneath the earth's surface) normal fault zone that forms the northwestern structural boundary of the Eldorado Basin. The Black Hills Fault may be capable of producing a magnitude 6.4 to 6.8 earthquake.

There are few earthquakes (USGS 2008b) greater than magnitude 3.0 reported within the study area. At least seven magnitude 3.0 to 3.9 events occurred on a northeast to southwest trend from Boulder City to the north end of Eldorado Dry Lake, likely associated with the active Black Hills Fault.

Soils

A summary of the significant characteristics of the major soil associations is presented in Table 3-8 and shown on Figure 3-12. Included in the table are the Natural Resources Conservation Service Soil Survey Geographic identification number, soil association, description, shrink swell potential, k-factor (i.e., soil erodibility factor), and corrosivity. The information presented is generalized data and should be considered for planning purposes, rather than for site-specific engineering.

The Eldorado Valley contains cryptobiotic soil crusts. Cryptobiotic crusts (biological soil crusts) are thin layers of microbial-rich plant material that live on the surface of many soils types in desert areas. Other names for cryptobiotic crusts include cryptobiotic, cryptogamic, and microbiotic soil crusts. These biological communities serve a number of functions in stabilizing the soil and creating an environment for plant species to inhabit harsh environments. The thin crusts on the soil help control erosion and retain water. If the layer of microbes is altered, it can take from 5 to 250 years to regenerate, depending on rainfall levels (USGS 2002).

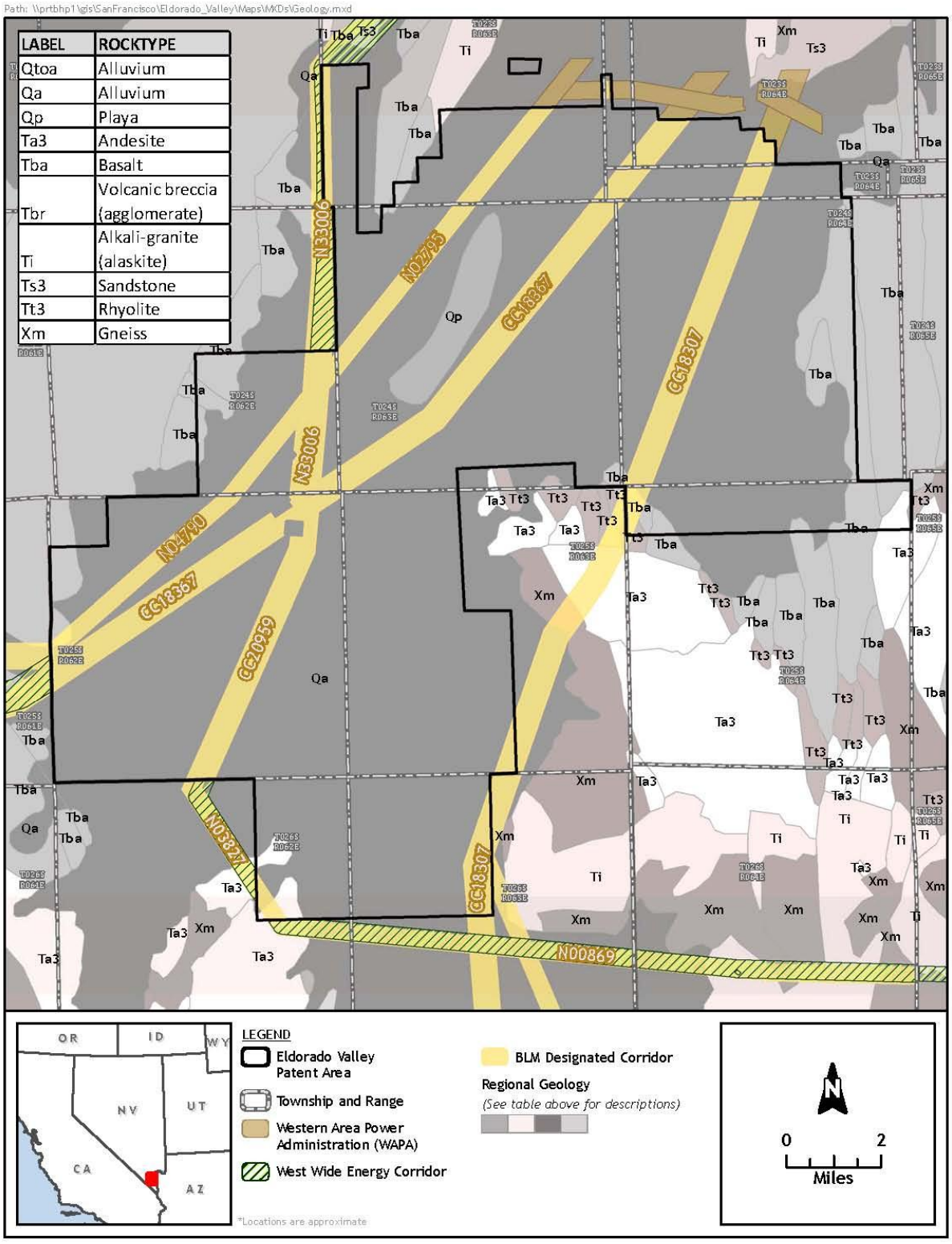

Figure 3-11: Surficial Geology in the Eldorado Valley
Clark County, Nevada

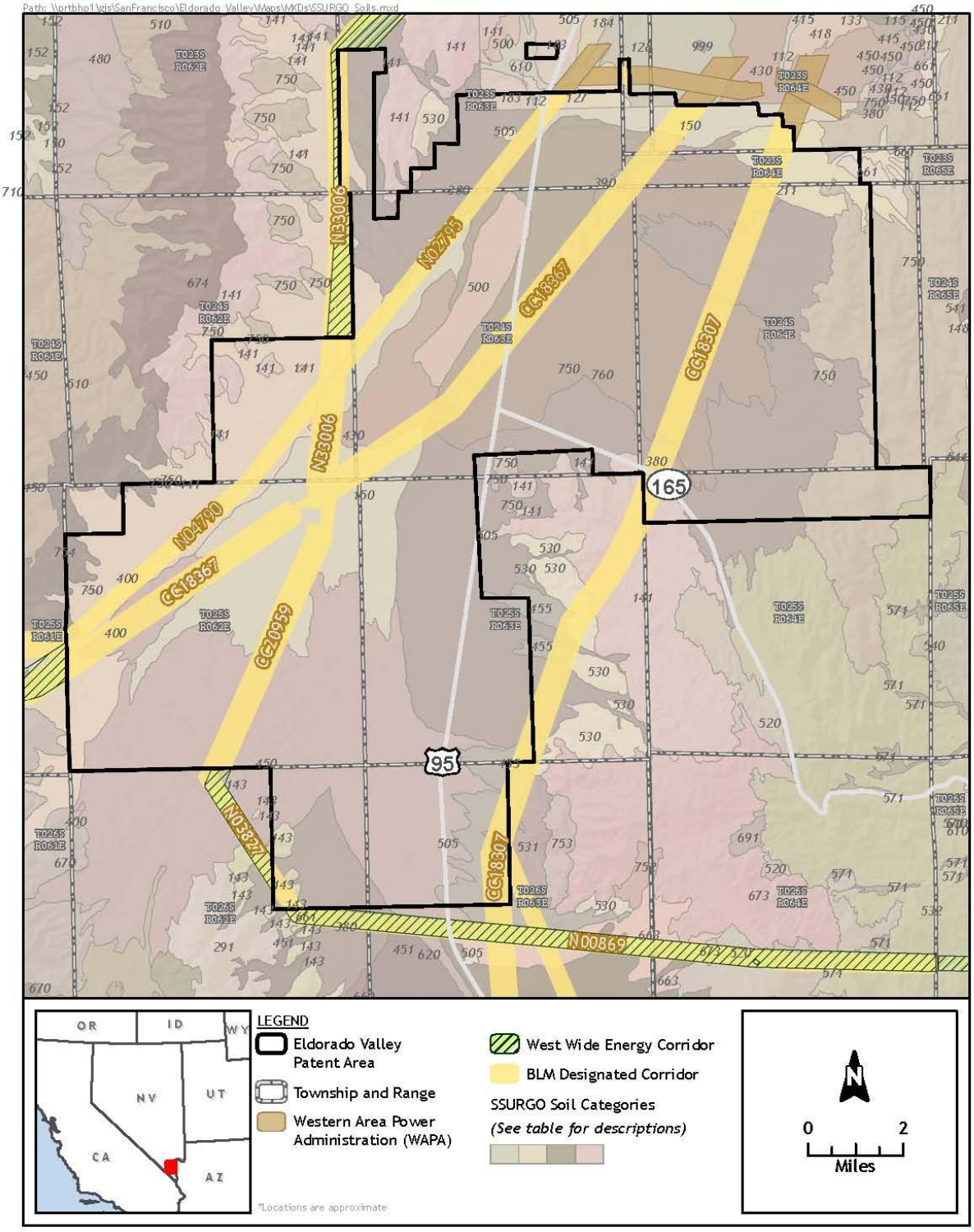

Figure 3-12: Soil Associations in the Eldorado Valley
Clark County, Nevada

Table 3-8 Soils Within the Proposed Action Area

NRCS SSURGO ID	Soil Association	Description	Shrink/Swell Potential / K-Factor	Corrosion	
				Concrete	Steel
135	Nippeno-Mountmcull-Newera association	well drained sandy loam with 19% slope	1.5/0.02	Low	High
141	Nipton-Haleburu-Rock outcrop association	somewhat excessively drained with 0% slope	--	--	--
143	Haleburu association	well drained fine sandy loam with 23% slope	1.5/0.05	Low	High
148	Haleburu-Seanna association	well drained sandy loam with 33% slope	1.5/0.02	Low	High
150	Hypoint gravelly sandy loam, 0 to 4 percent slopes	somewhat excessively drained sandy loam with 2% slope	1.5/0.2	Low	High
211	Nickel-Crosgrain association	well drained fine sandy loam with 3% slope	1.5/0.05	Low	High
291	Rock outcrop-Highland association	0% slope	--	--	--
380	Tonopah-Arizo association	excessively drained sandy loam with 5% slope	1.5/0.05	Low	High
390	Tipnat-Hypoint-Grapevine association	well drained loamy sand with 1% slope	1.5/0.15	High	High
400	Arizo-Cafetal association	excessively drained sandy loam with 5% slope	1.5/0.1	Low	High
430	Bluepoint-Tipnat-Grapevine association	well drained loamy fine sand with 1% slope	1/0.05	Low	High
450	Arizo association	excessively drained loam with 2% slope	1.5/0.15	Low	High
451	Arizo-Peskah-Crosgrain association	well drained sandy loam with 3% slope	1.5/0.05	Low	High
455	Arizo-Tenwell association	excessively drained loam with 5% slope	1.5/0.05	Low	High
480	Vace-Arizo association	well drained fine sandy loam with 10% slope	1.5/0.05	Low	High
500	Playas	very poorly drained silty clay loam with 0.5% slope	7.5/0.37	High	High
505	Pits, gravel	sand with 1% slope	1.5/0.02		
510	Railroad association	well drained sandy loam with 33% slope	1.5/0.05	Low	High
520	Nolena-Rock outcrop association	well drained sandy loam with 53% slope	1.5/0.02	Low	High
530	Seanna-Botleg association	well drained sandy loam with 33% slope	1.5/0.02	Low	High
531	Seanna-Rock outcrop association	well drained with 0% slope	--	--	--
532	Seanna-Goldroad-Rock outcrop association	well drained with 50% slope	--	--	--
540	Sunrock-Rock outcrop association	well drained with 50% slope	--	--	--
541	Sunrock-Haleburu-Rock outcrop association	well drained with 50% slope	--	--	--
571	Carrizo-Carrizo-Riverbend association	excessively drained sandy loam with 11% slope	1.5/0.05	Low	High

Table 3-8 Soils Within the Proposed Action Area

NRCS SSURGO ID	Soil Association	Description	Shrink/Swell Potential / K-Factor	Corrosion	
				Concrete	Steel
610	Goldroad-Rock outcrop association	well drained with 50% slope	--	--	--
620	Arizo-Lanip association	excessively drained sandy loam with 5% slope	1.5/0.05	Low	High
660	Crosgrain extremely gravelly loam, 4 to 15 percent slopes	well drained loam with 10% slope	1.5/0.05	Low	High
661	Crosgrain very stony loam, 8 to 30 percent slopes	well drained loam with 5% slope	1.5/0.24	High	High
663	Crosgrain-Kidwell-Arizo association	well drained fine sandy loam with 9% slope	1.5/0.02	Low	High
670	Nipton-Highland-Rock outcrop association	well drained with 0% slope	--	--	--
673	Nolena-Newera association	well drained with 0% slope	--	--	--
674	Nipton-Rubble land-Railroad association	well drained with 53% slope	--	--	--
690	Hoppswell-Ustidur association	well drained sandy loam with 6% slope	1.5/0.05	Low	High
691	Hoppswell-Jetmine association	well drained sandy loam with 4% slope	1.5/0.24	Low	High
700	Mountmcull-Nippeno association	well drained sandy loam with 53% slope	1.5/0.05	Low	Moderate
710	Arizo-Lanfair-Riverwash association	excessively drained sandy loam with 5% slope	1.5/0.05	Low	High
750	Haleburu-Crosgrain-Rock outcrop association	well drained with 50% slope	--	--	--
751	Nipton-Nolena association	well drained sandy loam with 32% slope	1.5/0.02	Low	High
752	Nipton-Newera association	somewhat excessively drained sandy loam with 32% slope	1.5/0.02	Low	High
753	Nipton-Hiddensun-Haleburu association	well drained fine sandy loam with 19% slope	1.5/0.1	Low	High
754	Haleburu-Hiddensun association	well drained sandy loam with 19% slope	1.5/0.02	Low	High
760	Searchlight extremely gravelly sandy loam, 2 to 4 percent slopes	well drained sandy loam with 3% slope	1/0.05	Low	High
115	Whitebasin-Upperline-Hardbasin association	well drained loam with 10% slope	1/0.05	Low	High
112	Arizo very gravelly loamy sand, flooded, 0 to 4 percent slopes	excessively drained loamy sand with 2% slope	1/0.05	Low	High
127	Bluepoint loamy fine sand, 0 to 2 percent slopes	somewhat excessively drained loamy fine sand with 1% slope	1.5/0.17	High	High
128	Bluepoint gravelly loamy fine sand, 2 to 4 percent slopes	somewhat excessively drained loamy fine sand with 3% slope	1.5/0.1	High	High
133	Bracken-Rock outcrop complex, 8 to 30 percent slopes	somewhat excessively drained sandy loam with 19% slope	1.5/0.1	High	High

Table 3-8 Soils Within the Proposed Action Area

NRCS SSURGO ID	Soil Association	Description	Shrink/Swell Potential / K-Factor	Corrosion	
				Concrete	Steel
150	Cave very stony sandy loam, 0 to 4 percent slopes	well drained sandy loam with 2% slope	1.5/0.1	Low	High
152	Cave gravelly fine sandy loam, 0 to 4 percent slopes	well drained fine sandy loam with 2% slope	1.5/0.2	Low	High
183	Caliza very cobbly loamy sand, 4 to 8 percent slopes	well drained loamy sand with 6% slope	1.5/0.05	Low	High
184	Caliza very gravelly sandy loam, 2 to 8 percent slopes	well drained sandy loam with 5% slope	1.5/0.1	Low	High
415	Aztec very gravelly sandy loam, 2 to 8 percent slopes	well drained sandy loam with 5% slope	1.5/0.1	High	High
418	Aztec-Nickel-Knob Hill complex, 2 to 15 percent slopes	well drained fine sandy loam with 9% slope	1.5/0.17	High	High
430	Knob Hill loamy sand, 0 to 4 percent slopes	somewhat excessively drained loamy sand with 2% slope	1.5/0.17	Low	High
450	Haleburu-Crosgrain-Rock outcrop association	well drained with 50% slope	--	--	--
481	Hobog loamy fine sand, 15 to 50 percent slopes	well drained loamy fine sand with 33% slope	1.5/0.17	Low	High
484	Hobog very cobbly fine sandy loam, 15 to 50 percent slopes	well drained fine sandy loam with 33% slope	1.5/0.1	Low	High
500	Canutio-Akela complex, 2 to 15 percent slopes	well drained sandy loam with 12% slope	1.5/0.1	Low	High
505	Canutio-Akela complex, 15 to 50 percent slopes	well drained sandy loam with 23% slope	1.5/0.1	Low	High
610	Pits, gravel	with 0% slope	--	--	--
999	Water	with 0% slope	--	--	--
112	Arizo very gravelly loamy sand, flooded, 0 to 4 percent slopes	excessively drained loamy sand with 2% slope	1/0.05	Low	High
115	Whitebasin-Upperline-Hardbasin association	well drained loam with 10% slope	1/0.05	Low	High
141	Nipton-Haleburu-Rock outcrop association	somewhat excessively drained with 0% slope	--	--	--
211	Nickel-Crosgrain association	well drained fine sandy loam with 3% slope	1.5/0.05	Low	High
661	Crosgrain very stony loam, 8 to 30 percent slopes	well drained loam with 5% slope	1.5/0.24	High	High
710	Railroad association	well drained sandy loam with 33% slope	1.5/0.05	Low	High

Source: NRCS 2012

3.11.2 Applicable Laws, Regulations, and Standards

International Building Code

The 2006 International Building Code (IBC) is a model building code developed by the International Code Council. The IBC sets rules specifying the minimum acceptable level of safety for constructed objects such as buildings. It has been adopted throughout most of the U.S. The IBC has no legal status until it is adopted or adapted by government regulation, which it has been by both California and Nevada. The IBC was developed to consolidate existing building codes into one uniform code that provides minimum standards to ensure the public safety, health, and welfare insofar as they are affected by building construction and to secure safety to life and property from all hazards incident to the occupancy of buildings, structures, or premises. The IBC replaced the Uniform Building Code in 2000.

3.12 Hydrology and Water Resources

3.12.1 Affected Environment

The Eldorado Valley is located in the Basin and Range Physiographic Province in southern Nevada. The Eldorado Valley has an arid climate with precipitation provided by thunderstorms in the summer. Average annual precipitation ranges from 3 to over 20 inches (Rush and Huxel 1966).

Flooding

The Eldorado Valley Dry Lake, located in the northwestern portion of the study area, is within a Federal Emergency Management Authority (FEMA) Zone A 100-year Flood Zone. Additionally, the BLM transmission and utility corridors cross several other FEMA mapped Zone A 100-Year Flood Zones in both the northern and southern portions of the study area, as depicted in Figure 3-13.

The BLM transmission and utility corridors cross a number of mapped and likely many more unmapped dry washes. Desert washes are typical in the Mojave Desert region and flow only intermittently during seasonal precipitation events. They are unstable, and can migrate laterally during significant runoff. Water in the study area commonly flows into the Eldorado Valley Dry Lake (i.e., a dry lake, which receives surface water from desert washes in an internal drainage setting that evaporates back into the atmosphere and/or contributes to groundwater). Drainage in the study area is internal (i.e., dry washes transport water to the Eldorado Valley Dry Lake where the water either evaporates or contributes to groundwater) (Clark County 2009). Dry washes can also carry destructive bedloads (boulders and gravels) during rain events.

Geologically, the Eldorado Valley is located on a series of alluvial fan lobes that form large, cone-shaped, sedimentary deposits. The hydrologic processes that occur on alluvial fans can be random and difficult to model. Sediments, which can range from clay to large boulders, are transported across alluvial fans by water in desert washes, debris flows, and sheet floods. Flood events on alluvial fans in arid climates are triggered by significant storms. Specific to the Mojave Desert region, these would include the random summer cloud bursts that occur infrequently but can supply a large amount of water to a localized area, or a larger storm such as a tropical storm that occurs on a 100-year time scale. Any of these storms could result in flooding hazards in the area and could potentially cause localized destruction.

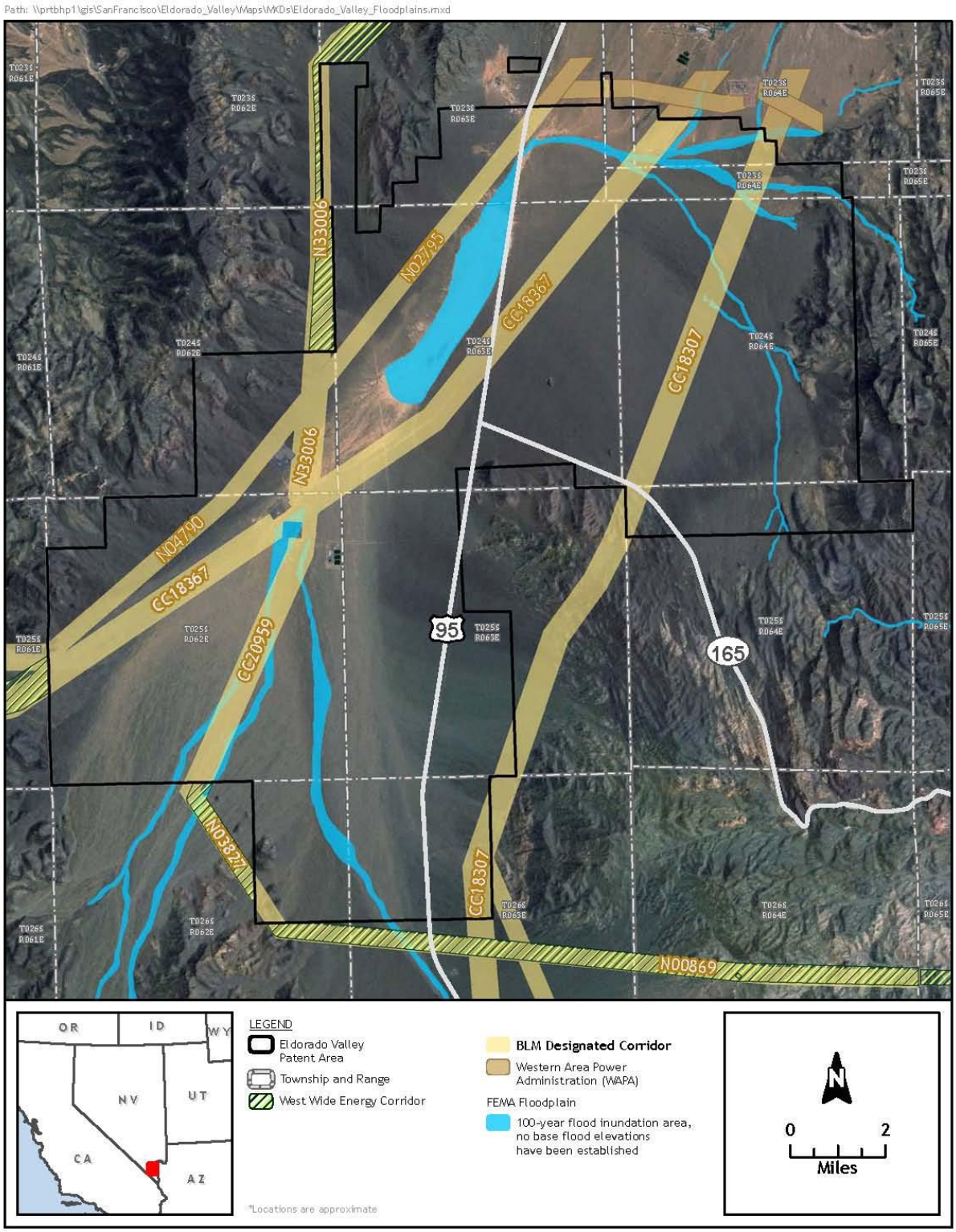

Figure 3-13: 100-Year Floodplains in the Eldorado Valley
Clark County, Nevada

A specific approach to understanding and assessing flood hazards on alluvial fans has been developed for arid alluvial fans near Laughlin, Nevada. This approach uses geologic mapping to determine active and inactive portions of alluvial fans. Physical features such as stratigraphic relationships, topography, drainage patterns, soil development, and surface morphology are used to determine active and inactive portions of fans (House 2005). Certain portions of alluvial fans can become inactive and may remain inactive for thousands of years. Those areas would be relatively safe to build projects. Conversely, very active portions of alluvial fans may need additional hydrological surveys and appropriate engineering controls to assure acceptable impacts to the public and the environment. This approach may improve the accuracy of surface water modeling on alluvial fans and reduce the associated flood hazards.

Surface Water

Ephemeral streams provide natural distribution of water and sediments on floodplains, recharge for groundwater in the region, and a sporadic but local water supply for wildlife. Surface water in the Eldorado Valley is limited (Clark County 2009), and no information is available on the surface water quality in the region during rain events. However, the nature of the flooding that occurs there would tend to result in flood waters of high turbidity. Highly turbid waters would be more able to contain any contaminants that had been present on the soil surface. As this is a rural, undeveloped area, anthropogenic contaminants on the surface are expected to be low to non-existent.

Groundwater

The Eldorado Valley Groundwater Basin (basin 167) covers 530 square miles in the Central Hydrographic Region (Clark County 2009). In the Eldorado Valley, annual groundwater recharge is 1,100 acre-feet (Rush and Huxel 1966). Water is withdrawn primarily for mining and milling processes. Smaller amounts are withdrawn for municipal use, stockwater, and industrial use (NDCNR n.d.). Recharge is primarily via percolation through alluvial deposits at ephemeral washes and the bases of neighboring mountain ranges. The coarse-grained alluvial deposits allow for infiltration of water during precipitation events.

Groundwater quality in the Basin and Range aquifers varies by basin. Generally, groundwater quality is high near the alluvial fan deposits at the base of mountain ranges. Groundwater quality decreases where increased discharge or excessive evaporation in confined basins resulted in salination of groundwater (Planert and Williams 1995).

3.12.2 Applicable Laws, Regulations, and Standards

Clean Water Act

In 1972, Congress passed the Federal Water Pollution Control Act, which was reauthorized in 1977, 1981, 1987, and 2000 as the Clean Water Act (CWA). The goal of the law is to eliminate pollution in the nation's waters by imposing uniform standards on all municipal and industrial wastewater sources based on the best available technology. Sections 301 and 402 of the CWA prohibit the discharge of pollutants from point sources to "Waters of the U.S.," unless authorized under a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits can be issued by the U.S. EPA or by agencies in delegated states. The NPDES permit program has been delegated in California to the State Water Resources Control Board and in Nevada to the Bureau of Water Quality Planning.

Nevada Division of Water Resources

Natural resources in the State of Nevada are managed by the Department of Conservation and Natural Resources. Water resources are regulated by Nevada Division of Water Resources

(NDWR), which is part of the Department of Conservation and Natural Resources. NDWR has defined a number of goals and objectives to conserve and manage Nevada's water resources for the citizens of Nevada. The Water Rights Section maintains a detailed Water Rights database and quantifies existing water rights, determines whether adequate water is available for new developments, manages surface and flood control, and manages and issues permits for the use of all water rights within the state. NDWR manages both surface and subsurface water rights. Water pollution and permitting are managed by the NDEP.

Nevada Revised Statute 444A.420 and Nevada Administrative Code 445A.118-225

The Nevada Revised Statute and Administrative Code laws regulate surface water within the state and assign responsibility for implementing CWA §401 through 402 and 303(d) in Nevada. The Nevada Bureau of Water Pollution Control is the state entity in charge of governing the water statutes. Nevada establishes both numeric and narrative water quality standards for surface waters. None of the drainage features in the Eldorado Valley in Nevada have established numeric water quality standards.

Construction General Stormwater Permit

The NDEP has been delegated the authority by the U.S. EPA to administer the NPDES program in Nevada, through the Bureau of Water Pollution Control, which manages construction stormwater permits. The construction stormwater permit is required for all sites larger than 1 acre. A waiver is possible if the site is less than 5 acres and meets certain stipulations. The permit requires applicants to prepare and enforce a stormwater pollution prevention plan (SWPPP) during construction. Industrial stormwater permits and septic system permits are also managed under NDEP. No specific Nevada regulations exist pertaining to the treatment of fuel spills during construction, although petroleum-contaminated materials must be disposed of in accordance with applicable state and local regulations.

Clark County

The Clark County Regional Flood Control District has a comprehensive floodplain management plan in place that includes a regulatory program that establishes standards and requirements for flood hazard management. The county has adopted revised regulations, the Uniform Regulations for the Control of Drainage, that comply with national FEMA standards and provide regulatory control over land development in floodplain areas. These regulations outline when and where a Floodplain Use Permit is required, as well as the process for review of local development permit applications in compliance with these regulations (Clark County Regional Flood Control District 2007).

A Stormwater Quality Management Committee has been formed as a partnership entity among the cities of Las Vegas, North Las Vegas, and Henderson; Clark County; and the Clark County Regional Flood Control District. The committee manages stormwater program development and compliance efforts in accordance with the State of Nevada's NPDES program. For inclusion of a project under the state's General Stormwater Permit, project proponents must submit a notice of intent and a SWPPP for all soil-disturbing activities. The criteria for soil-disturbing activities includes those where 1 or more acres will be disturbed, stormwater (free flow or via storm drains) will be discharged to a natural receiving water, and/or detention basins will need to be constructed for onsite stormwater treatment (Clark County Stormwater Quality Management Committee 2009).

The Clark County DAQEM oversees environmental issues in the county. The Water Quality Planning Team, which is part of this group, is responsible for ensuring compliance by area permittees for projects that could have an impact on county surface water and groundwater. The

group's primary responsibility is to develop and ensure compliance with area-wide water quality management plans. The group deals with issues such as municipal wastewater treatment, stormwater pollution prevention, groundwater management, and wellhead protection. The county also has a federal lands program to coordinate with the six federal agencies and monitor national NEPA planning.

To accomplish the goals noted above, the Clark County Area Wide Water Quality Management Plan (WQMP) was established in 1975. This bill enabled certain counties (including Clark County) to complete their own WQMP. The plan was established in 1978 and approved by the U.S. EPA in 1979, and has been revised and amended, most recently in 2009. The WQMP establishes eight planning areas. The site is contained in Planning Area 6: Ivanpah-Pahrump Valleys. Planning Area 6 covers approximately 1,690 square miles. The major watershed in the area is the Ivanpah-Pahrump Watershed (DAQEM 2009).

3.13 Noise

3.13.1 Affected Environment

To describe environmental noise at the regional and local levels, and to assess impacts on areas sensitive to community noise, an understanding of noise fundamentals is necessary. Noise is defined as unwanted sound. Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. There are several ways to measure noise, depending on the source, the receiver, and the reason for the noise measurement. The most common metric is the overall A-weighted sound level measurement that has been adopted by regulatory bodies worldwide. The A-weighted network measures sound similarly to how a person perceives sound, thus achieving good correlation with acceptable and unacceptable sound levels. A-weighted sound levels are reported in units of A-weighted decibels (dBA).

A-weighted sound levels are typically measured or presented as the equivalent sound pressure level (L_{eq}), which is the logarithmic average noise energy level due to all sources (for example, the ambient noise level in addition to construction and traffic noise) in a given area for a defined period of time (for example, 1 hour or 24 hours). The L_{eq} is commonly used to measure steady-state sound or noise that is usually dominant. Statistical methods are used to capture the dynamics of a changing acoustical environment. Statistical measurements are typically denoted by L_{xx}, where $_{xx}$ represents the percentage of time the sound level is exceeded. For example, L_{90} represents the noise level exceeded during 90 percent of the measurement period. Similarly, L_{10} represents the noise level exceeded for 10 percent of the measurement period. The relative A-weighted noise levels of common sounds measured in the environment and industry for various qualitative sound levels are provided in Table 3-9.

Another metric used to determine the impact of environmental noise considers the differences in human responses to daytime and nighttime noise levels. During the evening and at night, exterior background noises are generally lower than during the day. However, most household noise also decreases at night and exterior noise becomes more noticeable. Furthermore, most people sleep at night and are therefore more sensitive to intrusive noises. To account for human sensitivity to evening and nighttime noise levels, the Daytime-Nighttime Noise Level (DNL, also abbreviated as L_{dn}) and Community Noise Equivalent Level (CNEL) metrics were developed. The DNL accounts for the greater annoyance of noise during the night (10:00 p.m. to 7:00 a.m.). The CNEL accounts for the greater annoyance of noise during the evening (7:00 p.m. to 10:00 p.m.) and nighttime hours.

Table 3-9 Typical Sound Levels Measured in the Environment and Industry

Noise Source at a Given Distance (feet)	A-Weighted Sound Level in Decibels (dBA)	Qualitative Description
Carrier deck jet3 operation Jet takeoff (200 feet)	140 130 120	Pain threshold
Auto horn (3 feet) Jet takeoff (1,000 feet) Shout (0.5 feet)	110 100	Maximum vocal effort
N.Y. subway station (50 feet) Heavy truck (50 feet)	90	Very annoying; hearing damage (8-hr, continuous exposure)
Pneumatic drill (50 feet) Freight train (50 feet) Freeway traffic (50 feet)	80 70 to 80 70	Annoying Intrusive (telephone use difficult)
Air conditioning unit (20 feet) Light auto traffic (50 feet) Living room/Bedroom	60 50 40	Quiet
Library/Soft whisper (5 feet) Broadcasting/Recording studio	30 20 10	Very quiet Just audible

Source: NYSDEC 2003 (Adapted from Table E.)

The effects of noise on people can be listed in three general categories:

- Subjective effects of annoyance, nuisance, dissatisfaction
- Interference with activities such as speech, sleep, learning
- Physiological effects such as startling and hearing loss

In most cases, environmental noise may produce effects in the first two categories only. No completely satisfactory way exists to measure the subjective effects of noise or to measure the corresponding reactions of annoyance and dissatisfaction. This lack of a common standard is primarily due to the wide variation in individual thresholds of annoyance and habituation to noise. Thus, an important way of determining a person's subjective reaction to a new noise is to compare it to the existing or "ambient" environment to which that person has adapted. In general, the more the level or the tonal (frequency) variations of a noise exceed the previously existing ambient noise level or tonal quality, the less acceptable the new noise will be, as judged by the exposed individual.

The general human response to changes in noise levels that are similar in frequency content (for example, comparing increases in continuous [L_{eq}] traffic noise levels) is summarized as follows:

- A 3-dBA change in sound level is a barely noticeable difference.
- A 5-dBA change in sound level is typically noticeable.
- A 10-dBA change is perceived by the listener as a doubling in loudness.

Existing Noise Sources

The primary existing environmental noise source contributing to the ambient noise levels within the study area is vehicular traffic on U.S. 95 and other local roadways, occasional distant aircraft over flights over Eldorado Valley[1,2] associated with the Boulder City Municipal Airport, other local airports and heliports, and recreational uses within or adjacent to the study area, such as outdoor shooting (e.g., Desert Lake Shooting Club and Boulder Rifle and Pistol Club),[3] motocross tracks (e.g., Boulder City MX and Boulder Hills), and motorcycle and OHV/all-terrain vehicle recreational areas in the Eldorado Valley Dry Lake Bed and Nelson Hills areas.

Existing Noise Levels

Ambient noise levels in the study area and vicinity generally are assumed to be low and typical of remote desert areas (i.e., 35 to 50 dBA). Noise measurements conducted at the Eldorado Substation site in 2008 reported a minimum hourly L_{eq} and L_{90} noise levels as 47 dBA and 46 dBA, respectively (SCE 2009). Ambient noise levels may be modified by noise-generating activities in the vicinity, including:

- Noise associated with occasional recreational and support activities, especially OHV. A motorcycle ranges from 40 to 100 dBA. Within 300 feet, the peak noise levels created by a motorcycle exceed those of naturally occurring sounds (BLM 2003);
- Ambient vehicular traffic noise on U.S. 95 and transportation routes within and surrounding the BCCE;
- Occasional aircraft over flights associated with flight corridors from local airports (Boulder City Municipal Airport, Jean Airport, McCarran Airport);
- Outdoor shooting from private clubs located adjacent the BCCE; and
- Natural sources such as wind, rain, thunder, and wildlife.

Sensitive Receptors

Noise sensitive receptors, in general, are those areas of human habitation or substantial use where the intrusion of noise has the potential to adversely impact the occupancy, use, or enjoyment of the environment. These can include residences, schools, hospitals, parks, and places of business requiring low levels of noise.

The setting for the BLM transmission and utility corridors within the study area is rural and undeveloped. No residences are located within 1 mile of the Eldorado Dry Lake Bed. The nearest receptors would be located 0.85 mile from the southern end of the Boulder City residential area to the northern tip of corridor CC18367. Additional potential receptors would recreational users on the Eldorado Valley Dry Lake and the Nelson Hills/Eldorado Valley recreational areas. There are no hospitals, libraries, schools, places of worship, or other facilities within the study area.

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[1] Although the Eldorado Valley/Boulder City area has previously been identified as suitable for heliport use (CCDOA 2003), the only existing facility within the proposed project area is the Eldorado Substation Heliport, which is a private facility operated by Southern California Edison located on 801 El Dorado Valley Dr., Boulder City, Nevada.

[2] BLM regulates helicopter landing restrictions within the Eldorado Valley area, but has no jurisdiction on aircraft over flight paths.

[3] Outdoor shooting outside permitted facilities is regulated by state and federal law. Although the BLM Las Vegas RMP does not prohibit outdoor shooting as recreational activity, the 43 CFR and Nevada statutes prohibit shooting across roads and at facilities. Additionally, U.S.C. Title 18 Part I Chapter 65 § 1361 prohibits shooting at government facilities, or facilities located on public land.

Species in the area could also be susceptible to noise, especially during significant life stages (NPS 2009)

3.13.2 Applicable Laws, Regulations, and Standards

Federal, state, and local bodies of government establish regulations and guidance to control excessive noise and reduce disturbance due to noise to a level that is acceptable within their jurisdiction. While federal and state laws regulate transportation noise, establish "normally" and "conditionally" acceptable exterior noise limits based on land-use type, and establish maximum acceptable interior noise limits for residences, no federal or state provisions regulate noise levels due to temporary construction activity. This type of noise is generally regulated at the local or county-wide level.

Federal Regulations

Noise and land use guidelines have been produced by a number of federal agencies, including the Federal Highway Administration, the U.S. EPA, the Department of Housing and Urban Development, and the American National Standards Institute. These guidelines are all based upon statistical noise criteria such as L_{eq}, L_{dn} or CNEL. The U.S. EPA identified outdoor and indoor noise levels to protect public health and assets. An $L_{eq\ (24)}$ of 70 decibels (dB) was identified as the level of environmental noise that would prevent any measurable hearing loss over a lifetime. An L_{dn} of 55 dBA outdoors and 45 dBA indoors were identified as noise thresholds that would prevent activity interference or annoyance (EPA 1974).

The only energy-facility-specific requirements are those of the Federal Energy Regulatory Commission (FERC) for interstate electrical transmission lines, natural gas pipelines, and petroleum pipelines. The FERC limits specifically address compressor facilities associated with pipelines under FERC jurisdiction. Under these regulations, the noise attributable to any new natural gas compressor station; added compression to an existing station; or any modification, upgrade, or update of an existing station must not exceed an L_{dn} of 55 dBA at any pre-existing noise sensitive area (FERC 2002). Federal guidelines and regulations are summarized in Table 3-10.

Table 3-10 Federal Guidelines and Regulations for Exterior Noise (dBA)

Agency	$L_{eq\ (1)}$	L_{dn}
Federal Energy Regulatory Commission	[49]	55
Federal Highway Administration	67	[67]
Federal Aviation Administration	[59]	65
U.S. Department of Transportation – Federal Rail and Transit Authorities[a,b]	Sliding scale; refer to Figure 3.13-2	Sliding scale; refer to Figure 3.13-2
U.S. Environmental Protection Agency[c]	[49]	55
U.S. Department of Housing and Urban Development[d]	[59]	65

Sources:

[a] FRA 2005 [Updated to latest revision 2005]

[b] FTA 2006

[c] U.S. EPA 1974

[d] CFR Title 24 Part 51B (U.S. Department of Housing and Urban Development 1991)

Note: Brackets around numbers (e.g., [59]) indicate calculated equivalent standard. Because FHWA regulates peak noise level, the DNL is assumed equivalent to the peak noise hour.

The noise impact criteria in Figure 3-14 are based on comparison of the existing outdoor noise levels and the future outdoor noise levels from the proposed project. The Y axis is the increase in noise level in Cumulative dBA over the existing noise level on the X axis. Category 1 land uses include tracts of land where quiet is an essential element in their intended purpose. This category includes lands set aside for serenity and quiet, and such land uses as outdoor amphitheaters and concert pavilions, as well as National Historic Landmarks with significant outdoor use. Category 2 land uses include residences and buildings where people normally sleep. This category includes homes, hospitals and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance (FTA 2006).

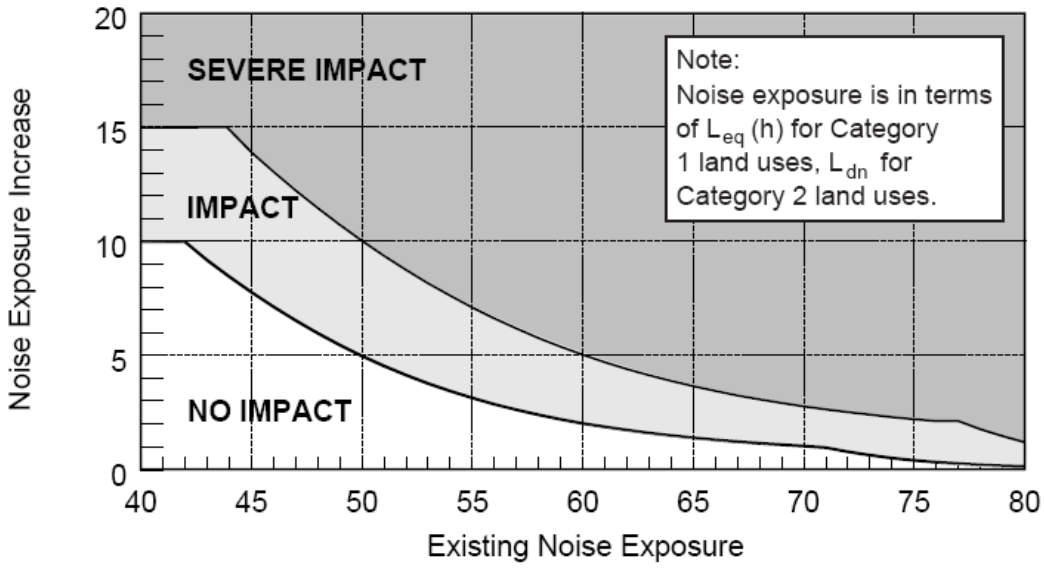

Figure 3-14 FRA and FTA Allowable Increase in Cumulative Noise Level
(Note: Residential uses are included in Category 2)

State and Local Regulations

Projects to be developed within the study area must be compatible with local plans and zoning to the extent practicable. Therefore, local plans, laws, ordinances, regulations, and standards related to noise adopted by each of the jurisdictions through which the BLM transmission and utility corridors would pass were reviewed. Results of the review are presented in Tables 3-11 and 3-12. Currently, Boulder City does not have a development ordinance or a noise compatible development land use plan that requires construction of noise barriers for new developments. The only noise standard the city follows is no construction before 7:00 a.m. or after 7:00 p.m. While there is no restricted airspace, over flights of Boulder City are discouraged.

Table 3-11 Local Plans, Laws, Ordinances, Regulations, and Standards During Construction by Jurisdiction

Jurisdiction	Source	Standard Construction Hours	Permissible Noise Levels		
			Land Use	Hours	Exterior Noise Level Limits (dBA)
Clark County	Sec 30.68.020 (h): Requirements of this section do not apply to construction and/or demolition activities when conducted during daytime hours.	Daytime	Any	Daytime	Do not apply
Boulder City	No construction noise guidelines specified.	NS	NS	NS	NS

Key:
NS = Not specified

Table 3-12 Local Plans, Laws, Ordinances, Regulations, and Standards During Operation by Jurisdiction

Jurisdiction	Source	Permissible Noise Levels		
		Land Use	Hours	Exterior Noise Level Limits (dBA)
Clark County	Sec 30.68.020 (b): The maximum permissible sound pressure level of any continuous, regular, or frequency source of sound produced by any activity shall be established by time period and type of zoning district per Table 30.68-1 [in the Clark County regulations].	Residential, Business and Industrial	Depends on octave band frequency.	Depends on octave band frequency.
	Sec 30.68.020 (e): Impulsive type noises shall be subject to the maximum permitted sound level standards described in Table 30.68-2, provided they are capable of being accurately measured with the equipment described above.	Residential Business and Industrial	Daytime Nighttime Daytime Nighttime	56 46 65 61
Boulder City	No operation noise guidelines specified.	NS	NS	NS

Key:
NS – Not Specified
Octave Band - A segment of the frequency spectrum separated by an octave.

3.14 Fuels and Fire Management

3.14.1 Affected Environment

Wildfires consist of uncontrolled fire spreading through vegetative fuels and they increase safety risks for people and structures. Wildfires are caused by arson, campfires, the improper burning of debris, accidental ignition caused by the use of gas powered vehicles or tools or other anthropogenic activities, and lightning. Wildfire behavior may vary due to individual fire characteristics, topography, fuels (type and quantity of available flammable material, referred to as the fuel load) and weather conditions (temperature, humidity, wind, and lightning).

The BLM transmission and utility corridors within the Eldorado Valley are situated primarily in open desert characterized by minimal vegetation and vacant land with sparse development areas in Clark County, Nevada. According to the Nevada Community Wildfire Risk/Hazard Assessment Project (RCI 2005), Boulder City is classified as a low hazard community with respect to fire. The vegetative fuel density in the Boulder City area is Mojave Desert scrub, generally light, dominated by widely spaced creosote bush, cholla cactus, and Mojave prickly pear cactus.

The BLM Las Vegas RMP classifies the study area as Zone 2B, which is generally dry and contains critical desert tortoise habitat and bighorn sheep populations. Due to its threatened and endangered species habitat value, the BLM transmission and utility corridors areas are a high suppression priority for the BLM Las Vegas Field Office (BLM 1998).

Boulder City and its surrounding areas have a low wildfire ignition risk potential, with no significant wildfire history reported and very few incidents of ignition history (RCI 2005). Generally, in their undisturbed condition, the existing desert shrub communities did not historically support spreading or intense wildfire activity. However, wildfires in these desert plant communities occur with greater frequency, size, and intensity than in the past. This shift is primarily due to the spread of invasive annual grass such as cheat grass (*Bromus tectorum*) and red brome (*Bromus rubens*). The annual grass promotes frequent large fires, which further alter natural vegetation, establishing a high fire frequency annual grass fire cycle (Brooks et. al. 2002). Natural Mojave vegetation is generally not fire adapted and some plant species never recover in a post fire environment. The amount and continuity of annual grass present on the landscape for any given season is dependent on climate and precipitation. Climatic conditions in which fire can spread are generally present year round. Lightning is common during the monsoon season and human cause ignitions occur year round. When large, extensive, continuous crops of annual grass are present on the landscape fire risk goes up substantially.

Invasive species and noxious weeds, such as cheat grass, red brome, and tamarisk (salt cedar) have moved into areas in Southern Nevada and are more susceptible to fire than native species causing larger and more destructive fire events. Due to the presence of this invasive species, historic fire regimes are changing, increasing the risk of losing key ecosystem components. The BLM has undergone a program to remove invasive species, such as the tamarisk, in areas and replace it with native vegetation more beneficial to wildlife and less prone to wildfire (BLM 2011c)

Lightning is common throughout the region surrounding the study area. Fires typically remain small when starts occur under these common conditions. Dry lightning is also possible in the region, but less common. Larger fires can result from the associated dry and windy conditions.

Human-caused ignitions during warm summer temperatures and lower fuel moisture content can result in large fires. Extreme fire behavior is a potential when fire reaches riparian areas heavily infested with tamarisk (BLM 2011c).

Interagency Fire Management

Wildland fire protection on BLM public lands is provided by the BLM Southern Nevada District Office. A strong Fire Prevention Program is a vital part of the district office's mission to manage wildland fires (BLM 2011c). Additionally, interagency mutual aid and assistance for fire management in the BLM transmission and utility corridors within the Zone 2B is directed in the Las Vegas RMP.

Structural fire protection on private lands within the study area is provided by the Boulder City Fire Department and Clark County Fire Department. The Boulder City Fire Department can request mutual aid from the Las Vegas Interagency Communications Center, which is the wildland dispatch center for the BLM, Bureau of Reclamation, NPS, USFWS, and U.S. Forest Service. The Las Vegas Interagency Communications Center (LVICC) is responsible for dispatching initial attack on wildland fires on more than six million acres of federally managed land and supports fire suppression resources for local agencies when requested (BLM 2012b).

Nevada Division of Emergency Management, Nevada Department of Public Safety

The Nevada Division of Emergency Management operates under the authority of NRS 414. The Nevada Division of Emergency Management is responsible for staffing the State Emergency Operations Center when a disaster or emergency threatens, as well as prior to and during large-scale events. The Clark County, Boulder City, Henderson, and Las Vegas Fire Departments provide emergency response.

Clark County Fire Department

The Clark County Fire Department maintains first responder responsibility for incidents within unincorporated areas of Clark County. Specific responsibilities include Urban Fire Services; Rural Fire Services; Aircraft Rescue Fire Fighting; Emergency Medical Services, including Basic, Intermediate and Advanced Life Support (Paramedic Program); Hazardous Materials Response Team; Fire Prevention; Fire Investigation; Disaster and Emergency Preparedness; Public Education; and Technical Rescue, including:

- Urban Search and Rescue Team (FEMA National Response Team)
- Confined Space Rescue
- Heavy Rescue
- Swift Water Rescue

Fuels Treatment

Managing problematic fire prone species is likely to result in less fire problems over time. Natural Mojave without the presence of annual grass is less likely to burn and not likely to burn at the landscape level. Fuels treatment for projects proposed within the BLM transmission and utility corridors would be addressed on a case-by-case basis, based on the contents of a case-specific Weed Management Plan. Should fuels treatments be organized, creating fuel breaks by applying herbicide to non-native annual grasses is a possibility. Because wildfire incidence is so low in the BLM transmission and utility corridors area, fuel breaks during weed abatement are unlikely. However, maintaining planned fuel breaks may require treatment with herbicide or mechanical means as addressed under the Weed Management Plan.

3.14.2 Applicable Laws, Regulations, and Standards

Interagency Fire

Wildland fire protection on BLM public lands is provided by the BLM Southern Nevada District Office (SNDO). A strong Fire Prevention Program is a vital part in the SNDO mission to manage wildland fires (BLM 2011c). Additionally, interagency mutual aid and assistance for fire management in the BLM transmission and utilities corridors within the Zone 2B is directed in the Las Vegas RMP.

Structural fire protection on private lands within the study area is provided by the Boulder City Fire Department (BCFD) and Clark County Fire Department (CCFD). The BCDF can request mutual aid from the LVICC, which is the wildland dispatch center for the BLM, Bureau of Reclamation, NPS, USFWS, and U.S. Forest Service. LVICC is responsible for dispatching initial attack on wildland fires on more than six million acres of federally managed land and supports fire suppression resources for local agencies when requested (BLM 2012b).

Nevada Division of Emergency Management, Nevada Department of Public Safety
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Fuels Treatment

Fuels treatment for projects proposed within the BLM transmission and utility corridors would be addressed on a case-by-case basis, based on the contents of a case-specific Weed Management Plan. Should fuels treatments be organized, creating fuel breaks by applying herbicide to non-native annual grasses is a possibility. Because wildfire incidence is so low in the BLM transmission and utility corridors area, fuel breaks during weed abatement are unlikely. However, maintaining planned fuel breaks may require treatment with herbicide or mechanical means as addressed under the Weed Management Plan.

3.15 Socioeconomics

3.15.1 Affected Environment

The region of influence for the proposed action is Clark County, Nevada. Below are selected population, housing, and economic characteristics for Clark County, the State of Nevada, and Boulder City, which is located immediately north of the study area (Tables 3-13, 3-14, and 3-15). In addition, demographic estimates related to race and ethnicity are included in Table 3-16. As the data demonstrate, Boulder City has lower percentages of minorities and low income residents than the overall populations of Clark County and Nevada.

Table 3-13 Population and Population Growth in the Region of Influence

Geographic Area	Population 2010	Population 2000	Percent Change
Clark County	1,951,269	1,375,765	29.4%
Nevada	2,700,551	1,998,257	26.0%
Boulder City	15,023	14,966	0.37%

Source: US Census 2010a and US Census 2000

Table 3-14 Selected Housing Characteristics in the Region of Influence

Geographic Area	Housing Units	Owner Occupied Units (Percent)	Vacant Units (Percent)	Median Home Value
Clark County	812,840	58.2%	14.4%	$257,300
Nevada	1,140,555	60.1%	14.1%	$254,200
Boulder City	7,178	73.8%	13.3%	$314,000

Source: US Census 2010c

Table 3-15 Selected Economic Characteristics in the Region of Influence

Geographic Area	Labor Force	Median Income	Below Poverty Level
Clark County	1,005,374	$56,258	11.7%
Nevada	1,387,343	$55,726	11.9%
Boulder City	7,011	$62,171	8.2%

Source: US Census 2010c

Table 3-16 Race and Ethnicity in the Region of Influence

Geographic Area	White	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian or Other Pacific Islander	Hispanic or Latino (of any race)
Clark County	69.8%	10.2%	0.6%	8.3%	0.7%	28.2%
Nevada	73.6%	7.9%	1.1%	7.0%	0.6%	25.6%
Boulder City	93.6%	0.5%	1.0%	1.5%	0.4%	6.5%

Source: US Census 2010c

3.15.2 Applicable Laws, Regulations, and Standards

Executive Order 12898, Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations

On February 11, 1994, President Clinton signed Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, which requires each federal agency to "make achieving environmental justice part of its mission by identifying and

addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

Executive Order 12898 created an Interagency Working Group on Environmental Justice comprised of the heads of federal departments for the purpose of providing guidance to federal agencies on the criteria for identifying disproportionately high and adverse human health or environmental effects on minority and low-income populations. Under Executive Order 12898, each federal agency was also charged with developing an agency-wide environmental justice strategy to: (1) promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations; (2) ensure greater public participation; (3) improve research and data collection relating to the health and environment of minority populations and low-income populations; and (4) identify differential patterns of consumption of natural resources among minority populations and low-income populations.

As the entity tasked with oversight of the Federal Government's compliance with Executive Order 12898, the Council on Environmental Quality (CEQ) developed guidance to help federal agencies comply with NEPA procedures to ensure that environmental justice concerns are effectively identified and addressed (CEQ 1997).

The terms minority, minority population, and low-income population are defined by CEQ in Environmental Justice, Guidance Under the National Environmental Policy Act (CEQ 1997) as follows:

- Minority: Individual(s) who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic.
- Minority Population: Minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent; or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. A minority population also exists if there is more than one minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the above-stated thresholds.
- Low-Income Population: Low-income populations in an affected area should be identified with the annual statistical poverty thresholds from the Bureau of the Census Current Population Reports on Income and Poverty.

BLM H-16010-1 Land Use Planning Handbook – Appendix D, Section IV Environmental Justice Requirements

This document provides guidance for assessing potential impacts on population, housing, and employment as they relate to environmental justice. It also describes variables such as lifestyles, beliefs and attitudes, and social organizations with respect to environmental justice. These variables were not evaluated in this analysis, as they are cannot be readily quantified for the purposes of impact assessment and do not provide any additional analytical value in terms of evaluating potential environmental justice impacts.

3.16 Human Health and Safety/Hazardous Materials

This section defines existing conditions relative to human health and safety/hazardous materials to establish a baseline against which potential impacts may be measured. The study area would be potentially affected by existing hazards in the study area, including fire, earthquakes, flooding, and existing soil or groundwater contamination. Hazards associated with seismic conditions are addressed in Section 3.11, Geology and Soils. Flood-related hazards are addressed in Section 3.12, Hydrology and Water Resources. Fire hazards are further discussed in Section 3.14, Fuels and Fire Management. Other potential natural hazards, hazards related to existing infrastructure, and hazards associated with uses of the site and its vicinity are considered herein.

3.16.1 Affected Environment

Potential Hazardous Wastes/Contaminated Soil and Groundwater

Existing and past land use activities are potential indicators of hazardous material storage and use. Past and current land uses that could have resulted in unknown contamination include (1) rural residences and farms that could have old or inactive underground fuel tanks (USTs), (2) agricultural properties that could have pesticide-polluted runoff from farming operations, and (3) commercial and industrial sites (historical and current) that could have soil or groundwater contamination from unreported hazardous substance spills. The primary reason to define potentially hazardous sites is to protect the health and safety of construction and operations personnel and to minimize public exposure to hazardous materials during construction and waste handling. If encountered, contaminated soil may qualify as hazardous waste, thus requiring handling and disposal according to local, state, and federal regulations.
The following are summary definitions of hazardous materials and hazardous waste:

- **Hazard:** Any naturally occurring or human-made physical condition in the surrounding environment that would pose a public safety risk.
- **Hazardous Material:** Hazardous materials can be in the form of explosives, flammable and combustible substances, poisons, radioactive materials, pesticides, and petroleum products. These substances are most often released as a result of motor vehicle or equipment accidents or because of chemical accidents during industrial use. These substances have the potential to leach into soils, surface water, and groundwater due to spills if not properly contained (FEMA n.d.).
- **Hazardous Waste:** A waste may be considered hazardous if it exhibits certain hazardous properties ("characteristics") or if it is included on a specific list of wastes the U.S. EPA has determined are hazardous ("listing" a waste as hazardous). U.S. EPA's regulations in the CFR define four hazardous waste characteristic properties: ignitability, corrosivity, reactivity, and toxicity (40 CFR 261.21-261.24; U.S. EPA 2010).

Exposure to hazardous materials or wastes can occur during normal use, handling, storage, transportation, and disposal. Exposure may also occur due to hazardous compounds existing in the environment such as fuels in USTs, pipelines, or areas where chemicals have leaked into the soil or groundwater.

Hazardous Waste Sites and Permitted Facilities

Existing and past land use activities with potential for encountering hazards and hazardous materials within the Eldorado Valley area could be related to mining and industrial activities. Currently, the most intensive use in the area is power generation and transmission; however, past uses in the area also included mining, grazing, and recreational activities (DAQEM 2009). There is no evidence of previous agricultural development within the study area. The closest industrial

facilities located within or adjacent to the study area include fossil fuel and solar generation plants in the Energy Zone (Eldorado Energy, Copper Mountain Solar, Nevada Solar One), and associated substations and switching stations (Eldorado Substation, McCullough Switching Station, and Marketplace Substation). A third facility, the Mead Substation, is located adjacent to the study area in the north, south of Boulder City.

Additionally, the Boulder City wastewater treatment plant is located 1.1 miles north of the study area and is authorized to discharge a 30-day average of 1.8 million gallons per day of secondarily treated effluent into two dry washes. Another permitted facility identified within the study area is a small arms ammunition factory (PMC Ammunition, former Eldorado Cartridge Corp), located on the northwest of the Eldorado Valley.

In 1993, the BLM Stateline Resource area completed an initial Level 1 hazardous materials survey of the area to be transferred to Clark County; no evidence or recorded information related to stored hazardous substances was found. A review of the NDEP Bureau of Corrective Actions, NDEP Bureau of Waste Management, and EPA online databases indicates that there are two active underground storage tank sites located within the study area. No brownfields, active remediation sites, or waste management facilities have been identified within the study area. No past or current landfills are located within the study area (DAQEM 2009). However, there are some locations along the road system within the Eldorado Valley where desert dumping and littering take place. Much of the reported refuse include paint, solvents, and used motor oil (DAQEM 2009). Permitted facilities near the study area, including underground storage tanks and land disposal sites are summarized in Table 3-17.

Table 3-17 Permitted Facilities in the Study Area

Site Name	Site/Facility Type	Environmental Interest
Eldorado Energy, LLC 701 Eldorado Valley Drive Boulder City	Electric Power Generation, Transmission and Distribution	• UST program (TANKS-15491) • State Cleanup Site (ISL-C508072340) • Groundwater Program • Hazwaste (WAD988485793) • Water Quality Formal Enforcement Action
Nevada Solar One 602 Eldorado Valley Drive Boulder City	Electric Power Generator (Solar Based)	UST Program (TANKS-28967 and TANKS-03832)
So Cal Edison Eldorado Substation 801 Eldorado Valley Drive Boulder City	Electric Bulk Power Transmission and Control	Resource Conservation and Recovery Act Information System; Active NDEP LUST correction action (confirmed gasoline release on soil).
Copper Mountain Power, LLC Eldorado Valley Drive Boulder City	Electric Power Generation, Transmission and Distribution	Registered in Air Facility System only (Minor source/Inactive)

Sources:
Nevada Division of Environmental Protection 2011, USEPA 2011a (EnviroMapping)
CERCLIS: No additional results
USACE FUDS: No additional results
NPL: No additional results

Key:
AST = Aboveground storage tank
MP = Milepost
UST = Underground storage tank

Additional potential sources of contamination to soil and water could pertain to the transport, use, storage, and disposal of fuels and chemicals that would be used for construction and operation activities. On a case-by-case basis, each project within the study area and the BLM transmission and utility corridors would be required to conduct Phase I Environmental Site Assessments or similar hazardous material studies in areas of planned ground disturbance prior to project construction to identify potential contamination in areas to be graded or excavated as part of the proposed connected actions.

Airports

Aboveground transmission lines may pose a threat to aviation safety if they are near airports or flight paths. Currently, the Boulder City Municipal Airport is the only public airport located in the proximity of the study area. This airport has a total surface of 530 acres, with capacity for 180 single engine aircraft, 20 multi-engine aircraft, 1 jet engine aircraft, and 30 helicopters (FAA 2012). Furthermore, existing substations located in the study area (Eldorado and Mead Substations) have privately owned heliports associated. The Eldorado Substation heliport has a total capacity of 12 helicopters (FAA 2012).

Additionally, the Clark County Department of Aviation is proposing to build the Southern Nevada Regional Heliport, approximately 12 miles from the study area. This heliport is proposed to be located east of I-15 on a vacant, unincorporated Clark County parcel, 5 miles south of Saint Rose Parkway. The proposed heliport would be built to accommodate the demand for helicopter tour services in the Las Vegas area (CCDOA 2008).

Schools and Residential Receptors

There are no schools within 1 mile of the study area. Closest schools are located in Boulder City. The northern border of the study area is approximately 2 miles south of residential developments in Boulder City.

Utility Crossings

In addition to existing overhead lines along the existing transmission and utility corridors, the study area is traversed by pipelines that transmit gasoline, diesel, jet fuel, and natural gas. Major utility crossings within the study area include the Kern River Gas Pipeline and powerlines administered by the Los Angeles Department of Water and Power, NV Energy, and Southern California Edison. Existing corridors include high-voltage transmission lines, such as the Eldorado-Lugo, Eldorado-Mohave, Mead-Perkins, Mead-Marketplace-McCullough, and Mead-Liberty. Potential hazardous incidents or power outages associated with utility crossings along the BLM transmission and utility corridors would be evaluated on a project-by-project basis.

Mining Claims

The U.S. Geological Survey Mineral Resource Data System indicates that there are a few past and current mining locations in the vicinity of the Eldorado Valley area, but none are located within 1,000 feet of either side of the utility corridors (USGS 2012). Existing sand and gravel surface mining producers in the area are Dry Lake Pit & Mill and Searchlight Pit & Mill. Additional mining locations adjacent to the study area include Quo Vadis (unknown gold and silver past producer), Blue Quartz Mine (unknown operation producing copper, gold, and barium-barite), and several underground prospects, such as Oro Plata Mine (silver), M & E No. 2 and 12 claims (uranium), and Boulder City Deposit (magnesium). Based on the available data, any projects proposed within BLM transmission and utility corridors are not expected to impact any mining activities.

Outdoor Shooting

Outdoor shooting is a common recreational activity within the study area, with existing permitted facilities located in the vicinity, such as the Desert Lake Shooting Club and Boulder Rifle and Pistol Club. Outdoor shooting outside permitted facilities is regulated by state and federal law. Although the BLM Las Vegas RMP does not prohibit outdoor shooting as a recreational activity, the 43 CFR and Nevada statutes prohibit shooting across roads and at facilities. Additionally, U.S.C. Title 18 Part I Chapter 65 § 1361 prohibits shooting at government facilities, or facilities located on public land.

3.16.2 Applicable Laws, Regulations, and Standards

Clark County Hazardous Materials Emergency Response Plan

The Clark County Hazardous Materials Emergency Response Plan (Clark County 2008) establishes guidelines for responding to hazardous material incidents throughout the county. The plan provides emergency response procedures and evacuation plans for dealing with accidental chemical releases and establishes notification procedures for response. The plan also provides information on how to notify the public and on emergency equipment available to the community if an accidental release occurs. A training schedule for local emergency response workers is outlined, and community and facility coordinators are designated. The responsibility for control of hazardous materials lies with the owner; however, if an incident results in loss of control of a hazardous material, local governments must take action to limit the effect on life, property, and the environment.

Clark County Multi-Jurisdictional Hazard Mitigation Plan

The Clark County Multi-Jurisdictional Hazard Mitigation Plan establishes a strategy to implement improvements and programs to reduce community and regional impacts in the event of a natural disaster. The Hazard Mitigation Plan identifies the potential hazards, the extent of the risks posed by the hazards, the vulnerabilities of each jurisdiction to these hazards, and actions that are currently in place or would be initiated to mitigate or reduce the potential impact of the hazards. The Clark County Fire Department is the lead agency for hazardous events. The Clark County and Las Vegas Fire Departments are responsible for the continued update of emergency evacuation plans for wildland fire incidents as an extension of the agency's responsibility for Hazard Mitigation Planning in Clark County (Clark County 2005).

U.S. Environmental Protection Agency

In response to the growing public demand for cleaner water, air, and land, the U.S. EPA was established in 1970 to consolidate a variety of federal research, monitoring, standard-setting, and enforcement activities into one agency whose mission is to protect human health and the environment. The U.S. EPA develops and enforces congressional laws and regulations, offers financial assistance to state environmental programs, performs environmental research, and furthers environmental education. Where national standards are not met, the U.S. EPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality (U.S. EPA 2008a). Additionally, the U.S. EPA administers the Land Disposal Restrictions program, which includes standards for hazardous waste treatment and land disposal (U.S. EPA 2008b).

U.S. Department of Transportation

The U.S. Department of Transportation has regulatory responsibility for the safe transportation of hazardous materials under the Hazardous Materials Transportation Act, as amended and codified in 49 U.S.C. 5101 et seq. Vehicles transporting hazardous materials must comply with strict containment, safety, labeling, and manifesting requirements.

Federal Toxic Substances Control Act and Resource Conservation and Recovery Act 42 U.S.C. §6901 et seq.

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act (RCRA) of 1976 established a program administered by the U.S. EPA for regulating the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the "cradle to grave" system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by the Hazardous and Solid Waste Act.

RCRA regulates hazardous waste from the time that waste is generated through to its management, storage, transport, and treatment, and final disposal. Hazardous waste is regulated under RCRA subtitle C. The U.S. EPA has authorized the Department of Toxic Substances Control in California and the NDEP to administer their respective RCRA programs. A RCRA hazardous waste is a waste that appears on one of the four hazardous wastes lists or exhibits at least one of four characteristics—ignitability, corrosively, reactivity, or toxicity.

To keep track of hazardous waste activities, treatment, storage, and disposal (TSD) facility owners and operators must keep certain records and submit reports to the U.S. EPA at regular intervals. All facilities that generate, transport, recycle, treat, store, or dispose of hazardous waste are required to notify the U.S. EPA (or its state agency) of their hazardous waste activities. A U.S. EPA Identification Number must be obtained unless the solid waste has been excluded from regulation or the hazardous waste has been exempted. National Biennial RCRA Hazardous Waste Reports – §3002 and 3004 of RCRA require that the U.S. EPA collect information pertaining to hazardous waste management from hazardous waste generators and hazardous waste TSD treatment, storage, and disposal facilities on a two-year cycle.

Comprehensive Environmental Response, Compensation, and Liability Act (Superfund) of 1980, 42 U.S.C. §9601 et seq.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) provides a federal Superfund to clean up uncontrolled or abandoned hazardous waste sites, as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment. The U.S. EPA generally administers CERLCA. The U.S. EPA has the power to seek out those parties responsible for any release and require their cooperation in the cleanup. Congress enacted CERCLA, commonly known as Superfund, on December 11, 1980. This law provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that could endanger public health or the environment. CERCLA established requirements for closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List. CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

The Superfund Amendments and Reauthorization Act of 1986, Title III 40 CFR § 68.110 et seq.

SARA amended CERCLA, establishing a nationwide emergency planning and response program and imposing reporting requirements for businesses that store, handle, or produce significant quantities of extremely hazardous materials. Administered by the U.S. EPA, the act requires

states to implement a comprehensive system to inform local agencies and the public when a significant quantity of such materials is stored or handled at a facility. Additionally, SARA identifies requirements for planning, reporting, and notification concerning hazardous materials.

Clean Water Act, 33 U.S.C. Section 1251 et seq.

The CWA is the principal federal statute protecting navigable waters and adjoining shorelines from pollution. The law was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. Since its enactment, the CWA has formed the foundation for regulations detailing specific requirements for pollution prevention and response measures. The U.S. EPA implements provisions of the CWA through a variety of regulations, including the NCP and the Oil Pollution and Prevention Regulations. Implementation of the CWA is the responsibility of each state. The CWA establishes basic structure for regulating discharges of pollutants into the waters of the United States, establishes pollution control programs such as setting wastewater standards for industry, and sets water quality standards for all contaminants in surface waters. Under CWA, it is unlawful for any person to discharge any pollutant from a point source into navigable waters without a permit.

Oil Pollution Prevention, 40 CFR Part 112

The goal of the oil pollution prevention regulation in 40 CFR Part 112 is to prevent oil discharges from reaching navigable waters of the United States or adjoining shorelines. The rule was also written to ensure effective responses to oil discharges. The rule further specifies that proactive measures be used to respond to oil discharges. The oil pollution regulation contains two major types of requirements: prevention requirements (Spill Prevention, Control, and Countermeasure [SPCC] rule), and Facility Response Plan requirements.

Facilities that could reasonably be expected to discharge oil into navigable waters in quantities that may be harmful are required to develop and implement SPCC plans per the SPCC rule. U.S. EPA amended the SPCC Rule in 2006 to extend the SPCC compliance dates in §112.3(a), (b), and (c) for all facilities until October 31, 2007. SPCC plans must be prepared, certified (by a professional engineer), and implemented by facilities that store, process, transfer, distribute, use, drill, produce, or refine oil or oil production.

Occupational Safety and Health Administration

The Occupational Safety and Health Administration (OSHA) administers Occupational Safety and Health Standards (29 CFR §§1910 and 1926). These standards (1) provide regulations for safety in the workplace, (2) regulate construction safety, and (3) require a Hazard Communication Plan. The Hazard Communication Plan must include identification and inventorying of all hazardous materials for which material safety data sheets would be maintained, and must provide for employee training in safe handling of said materials.

Title 29 CFR, Part 1910.302, Sub-part S: Design Safety Standards for Electrical Systems, and 1910.331, Electrical Safety-Related Work Practices Standard (1990), describes concepts and principles associated with electrical hazards and basic electrical safety for individuals. OSHA's electrical standards for construction recommend general industry electrical standards whenever possible for hazards that are not addressed by industry-specific standards. The standards address concerns that relate to electrical hazards and exposures to dangers such as electrical shock, electrocution, burns, fires, and explosions. OSHA's electrical standards help minimize these potential hazards by specifying safety aspects in the design and use of electrical equipment and systems.

Federal Aviation Administration Regulations

Federal Aviation Administration (FAA) regulations address potential aircraft obstruction for structures taller than 200 feet or within 20,000 feet of an airport. Specifically, Federal Regulation Title 14, Part 77, establishes standards and notification requirements for objects that have the potential to affect navigable airspace. The Part 77 standards are intended to (1) evaluate the effect of the construction or alteration of structures on airport operating procedures; (2) determine if there is a potential hazard to air navigation; and (3) identify measures to enhance safety. Specifically, the FAA requires notification through the filing of FAA Form 7460, Notice of Proposed Construction or Alteration, if a structure is over 200 feet in height or closer than 20,000 feet to an existing or proposed airport or airport under construction (Title 14, Part 77.13).

Nevada State Plan

The Nevada State Plan is administered by the Division of Industrial Relations, Department of Business and Industry. Enforcement of the plan is provided by the Nevada Occupational Safety and Health Administration, and consultation is provided by the Nevada Safety Consultation and Training Section. The State of Nevada, under an agreement with OSHA, operates an occupational safety and health program in accordance with Section 18 of the Occupational Safety and Health Act of 1970. Initial approval of the Nevada State Plan was published on January 4, 1974, and final approval was published on April 18, 2000 (Nevada Occupational Safety and Health Administration 2000).

Nevada Revised Statute – Hazardous Materials, Chapters 459 and 477

NRS Chapter 459 regulates hazardous materials in Nevada, including radioactive materials, highly hazardous substances, and explosives. Section 459.400 et seq. also includes provisions, definitions and jurisdictional responsibilities for hazardous waste disposal. NRS 477.045 and NRS 477.047 establish provisions for training programs for response to spills, permits for the storage of hazardous materials, surcharges for permits, and a mobile training team for volunteer firefighters to respond to incidents involving hazardous materials.

Nevada Revised Statute – Emergency Management, Chapter 414

General provisions of the Emergency Management Statute (NRS 414.200 et seq.) include the following:

- Eliminating or reducing the probability that an emergency would occur, or reducing the effects of unavoidable disasters;
- Testing periodically the plans for emergency operations to ensure that the activities of state and local government agencies, private organizations, and other persons are coordinated;
- Restoring the operation of vital community life-support systems and returning persons and property affected by an emergency or disaster to a condition that is comparable to, or better than, what existed before the emergency or disaster occurred.

Nevada Division of Environmental Protection, Department of Conservation and Natural Resources

NDEP is the state agency responsible for the response and remediation of hazardous materials incidents, as designated by the State Comprehensive Emergency Management Plan. NDEP's Bureau of Corrective Actions (BCA) maintains the BCA Spill Reporting Hotline. Spills in excess of quantities established under NRS (Chapter 459) or U.S. EPA guidelines (40 CFR Part 302) must be reported (NDEP 2010).

Nevada Division of Emergency Management, Nevada Department of Public Safety

The Nevada Division of Emergency Management operates under the authority of NRS 414. The Nevada Division of Emergency Management is responsible for staffing the State Emergency Operations Center when a disaster or emergency threatens, as well as prior to and during large-scale events. The Clark County and Las Vegas Fire Departments provide emergency response.

Nevada Task Force 1

Nevada Task Force 1 is one of 28 FEMA Urban Search and Rescue task forces that are prepared to respond to state or federal disasters throughout the United States. The task force can be deployed by FEMA to rescue victims of human-caused or natural disasters. Nevada Task Force 1 consists of members from the Clark County Fire Department, Las Vegas Fire and Rescue, and the Henderson and North Las Vegas fire departments, as well as civilians from several private companies.

Nevada Firearm Regulations

The Nevada statutes prohibit shooting across roads and facilities. NRS 202.285 regulates and establishes penalties to discharging firearm at or into structures, vehicles, or aircraft. Similarly, NRS 202.287 also establishes penalties for shooting within or from structure or vehicles, in both populated and non-populated areas, as designated by county or city ordinance. NRS 503.175 also sets penalty for discharging firearm from or over federal or state highway or main or general county roads.

Clark County Fire Department

The Clark County Fire Department maintains first responder responsibility for incidents within unincorporated areas of Clark County. Specific responsibilities include Urban Fire Services; Rural Fire Services; Aircraft Rescue Fire Fighting; Emergency Medical Services, including Basic, Intermediate and Advanced Life Support (Paramedic Program); Hazardous Materials Response Team; Fire Prevention; Fire Investigation; Disaster and Emergency Preparedness; Public Education; and Technical Rescue, including:

- Urban Search and Rescue Team (FEMA National Response Team)
- Confined Space Rescue
- Heavy Rescue
- Swift Water Rescue

Clark County Office of Emergency Management (Code, Chapter 3.04)

The Clark County Office of Emergency Management created an integrated emergency management public safety division that facilitates coordination of multi-agency public safety projects, including emergency management planning, preparation activities such as training and exercises, and response support coordination during emergencies (Ord. 2762 (part), 2002; Ord. 1881 §1 (part), 1996). The agency provides coordination support for the mitigation, preparation, response, and recovery activities necessary for protection of lives and property within Clark County (Clark County 2005).

Clark County Multi-Jurisdictional Hazard Mitigation Plan

The Clark County Multi-Jurisdictional Hazard Mitigation Plan establishes a strategy to implement improvements and programs to reduce community and regional impacts in the event of a natural disaster. The plan covers the unincorporated area of Clark County and the cities of

Boulder, Henderson, Las Vegas, North Las Vegas, and Mesquite. The Clark County Fire Department is the lead agency for hazardous events. The Clark County and Las Vegas fire departments are responsible for continued update of emergency evacuation plans for wildland fire incidents as an extension of the agency's responsibility for Hazard Mitigation Planning in Clark County (Clark County 2005).

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Chapter 4. Environmental Consequences

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4.1 Overview of Development

ROW applications for infrastructure development within, over, under, or crossing BLM transmission and utility corridors in the study area are currently under consideration with the BLM Las Vegas Field Office. The BLM is also aware of reasonably foreseeable future projects as discussed in Chapter 5, Cumulative Impacts. In addition to applications currently being evaluated and known, upcoming applications that will be evaluated in the near future, the BLM could receive additional ROW applications for similar development in the BLM transmission and utility corridors.

Under the proposed action, ROW applications for upgrades to existing infrastructure or applications for new construction within the study area would adhere to the recommended BMPs outlined in this EA. However, as discussed in Chapter 2, this EA neither approves nor denies any specific applications for ROW grants within the area. With adoption of the proposed action, all applications for ROW grants would continue to be subject to individual review under NEPA.

For the purposes of analysis, development in BLM transmission and utility corridors in the study area would consist of upgrades to the existing transmission infrastructure but may also include construction of new or replacement transmission lines or other linear infrastructure features such as water or gas pipelines. In addition, the applications may require interconnections and upgrades to existing substations.

Stationary energy development projects would not be allowed within BLM transmission and utility corridors in the study area; however, they could be approved in the Boulder City Energy Zone (next to existing energy projects) or on land controlled by the County or City or on private land. Energy development projects are not permitted within the BCCE; however, they could be constructed somewhere near the Eldorado Valley Dry Lake (outside of the BCCE but within the study area) or outside of the study area altogether. Such projects would be permitted by Boulder City. Any energy generation project that proposes to connect to a BLM utility corridor would be considered a connected action.

As a result of the types of development expected with the BLM transmission and utility corridors, a range of activities could occur, such as transmission pole installation or removal, site preparation/grading, vegetation removal (which could include clearing, grubbing, or other forms of vegetation removal), roadway construction or improvements, noxious weed control, erosion control, fencing, and possibly helicopter construction. In addition, subsurface linear projects could also include trenching activities. All projects could also include site restoration and maintenance activities.

Many ROW applications include connected actions, such as solar and wind energy generation projects or mining facilities and other projects. Although energy generation projects could be developed on non-BLM land and permitted by local agencies, such as Boulder City or Clark County, any project that requires improvements or connections to infrastructure in BLM transmission and utility corridors must legally comply with NEPA. For example, although connected actions generally do not require the same level of analysis as a proposed action, they nonetheless must meet a certain level of survey detail and could be subject to other federal guidelines, depending upon the type of development proposed. These requirements are detailed throughout this chapter.

4.2 Land Use

4.2.1 Environmental Consequences

Proposed Action

ROW applications for transmission and pipeline upgrades or new construction in BLM's transmission and utility corridors in the study area would be similar to and compatible with existing development in the Eldorado Valley. Land use policies in the BLM's Las Vegas RMP encourage the placement of new transmission and pipelines within designated corridors to minimize randomly placed infrastructure. Clark County also prefers the placement of infrastructure in existing corridors, as outlined in their Comprehensive Plan. In addition, there are already existing industrial uses in Boulder City's Energy Zone that connect to existing transmission lines in BLM's transmission and utility corridors.

While the operation of transmission and pipelines in the study area would have no impact on land use, during construction there could be temporary land use impacts if construction restricts access or is disruptive to existing uses, such as recreational uses or conservation uses in or near the study area. Therefore, the BLM recommends adopting several BMPs to reduce impacts.

No Action

Under the no action alternative, review of ROW applications would not be expedited, and applications would continue to be processed on a case-by-case basis. Applicants' projects could be delayed in order to meet NEPA requirements if they did not adhere to the BMPs outlined under the proposed action alternative; however, similar to the proposed action alternative, adoption of the no action alternative would have no impact.

4.2.2 Best Management Practices

Following are recommended BMPs. Adoption of the following practices would reduce impacts on land use and would help expedite the NEPA review process.

LAND-1: Minimize Restricted Access to Existing Land Uses. To the extent possible, applicants shall not restrict access to existing land uses in or near the study area during construction or operation.

LAND-2: Comply with Land Use Restrictions in the Study Area. Applicants shall comply with all land use restrictions in the study area, such as speed limits, and shall fully comply with the Amendment to the Interlocal Agreement between Clark County and Boulder City, including Exhibit D, regarding the BCCE.

LAND-3: Obtain Approval from Appropriate Jurisdiction for Activities Outside of BLM Transmission and Utility Corridors in the Study Area. Applicants shall obtain approval from Clark County and the City of Boulder City for activities outside of BLM's transmission and utility corridors in the study area.

4.3 Special Status Species

4.3.1 Environmental Consequences

Proposed Action

Reptiles

Sixteen special-status reptile species may occur within the study area and would all be subject to similar types of impacts. Ground-disturbing activities could result in injury and death to slower-moving reptiles or reptiles occupying subsurface burrows. The project could also result in loss of habitat due to installation of new transmission and telecommunications towers, although most impacts would be temporary during construction. Compaction of soils and introduction of exotic plant species due to grading and removal of vegetation during construction, operation, and maintenance activities could also result in indirect adverse habitat loss over time.

Desert Tortoise

Construction could cause adverse impacts on desert tortoise and its habitat. These impacts could be both short term and long term, and both localized and extensive. Desert tortoises maintain large home ranges between 10 and 200 acres, depending on sex of the individual and on precipitation levels (USFWS 1994, 2008). Individual desert tortoises have been documented to make periodic forays of up to 7 miles at a time (USFWS 2008). Tortoises that maintain burrows in areas adjacent to the BLM transmission and utility corridors could be impacted if they were to travel into construction areas.

Desert tortoises would be susceptible to death or injury from collisions with vehicles and equipment during clearing and grading, or any activities where vegetation would be crushed. Project-related traffic on access roads and spur roads as well as any construction activities at work sites could also result in the death or injury of desert tortoise through collisions. Desert tortoises could be harmed by inadvertent hazardous materials spills, including equipment fuel and hydraulic fluid leaks. All crew activities, as well as trash and debris associated with construction, would have the potential to attract predators of the desert tortoise, including common ravens and domestic and feral dogs. In addition, both permanent and temporary structures, including fencing, towers, and buildings, would provide common ravens with perches. Handling desert tortoises for relocation, even by approved biologists, could lead the tortoises to void their bladders. Bladder voiding would cause tortoises to lose potentially critical water reserves and in some cases might lead to death. Handling desert tortoises also increases the risk of transmitting upper respiratory tract disease from infected individuals to healthy individuals. This condition often leads to death and is one of the reasons for the decline of many desert tortoise populations in the Mojave Desert. Construction of any new access or spur roads could increase the volume of human recreational traffic, which could indirectly increase the potential for collection or for death by vehicle strike.

Desert tortoise habitat would be lost in areas where permanent structures, access roads, or spur roads would be located. In all areas where vegetation and soil would be disturbed, but especially in areas that would be cleared or graded, the quality of desert tortoise habitat would be negatively affected. Introduced nonnative and invasive plant species could out-compete existing annual vegetation that desert tortoises largely rely on for forage. There is a greater risk for loss of desert tortoise habitat due to increased scope and intensity of wildfires as invasive grasses become established in areas (USFWS 2008). Direct removal of succulent plant species would likewise remove available forage and an important source of moisture. The loss of mature shrub vegetation

in cleared and graded areas would reduce the available shelter used by desert tortoises for shade and predator evasion.

Vehicles and equipment used during operations and maintenance would make desert tortoises susceptible to death or injury from collision. Such activities would also potentially introduce nonnative and invasive plant species to project sites, further degrading the quality of desert tortoise habitat in terms of native plant species composition and increasing the risk of wildfires; however, considering that the corridors are currently developed, maintenance activities would be similar to current practices.

The study area is adjacent to the Piute-Eldorado Critical Habitat Unit. Though the majority of the disturbance would be temporary during construction, it would be considered permanent if it caused new disturbance areas within the Critical Habitat Unit. Impacts on the unit would be adverse, localized, and both short term and long term, depending on the location and type of construction activity considered (for example, for connected actions outside of BLM transmission and utility corridors).

Gila Monster and Chuckwalla

The chuckwalla and the Gila monster would be susceptible to the same impacts as were discussed for special-status reptiles in general. The chuckwalla and Gila monster are known to inhabit the McCullough Range and may be present in other places in the Eldorado Valley. Both lizards prefer habitat characterized by rocky terrain that provides adequate crevices for use as winter hibernacula and summer dens. Therefore, depending upon the location and timing of construction, minor, adverse, short- and long-term impacts on individuals of these species could occur.

Mammals

There is the potential for 12 protected mammal species to occur within the study area.

Desert Bighorn Sheep

Impacts to bighorn sheep would be adverse, moderate, and localized. Although the preferred habitat for desert bighorn sheep near the study area is found within adjacent mountain ranges surrounding the Eldorado Valley, upgrades to linear infrastructure traversing BLM transmission and utility corridors within the study area would likely extend outside of the study area into the McCullough Range, Highland Range, or Eldorado Mountains, which contain crucial habitat and overwintering habitat. Proposed or connected actions within these surrounding mountain ranges would also have the potential to impact lambing areas for bighorn sheep. Construction activities within these ranges could cause visual and noise disturbance that could lead to avoidance of the lambing areas by bighorn sheep, which could result in the loss of a breeding opportunity for that season, or could increase the competition at alternate lambing sites in the area. Visual (including human presence and night lighting) and noise disturbance could also decrease reproductive success through abandonment of the lambing grounds during the lambing season. Construction and operation and maintenance within surrounding mountain ranges would have adverse, moderate impacts that would be both short and long term.

Construction activities could interfere with the movement of sheep through surrounding mountain ranges and might impede natural colonization and inhibit the annual migration of the bighorn sheep from these overwintering ranges to the summer ranges north of the study area. The bighorn sheep migrate to specific locales during the summer to access water sources. One known water source is the “Linda” guzzler, approximately 1.3 miles north of the north McCullough Pass. There may be others in the surrounding Eldorado Valley mountain ranges.

American Badger

Suitable habitat for the American badger exists within the study area. Badgers are most likely to occur on upper bajadas, where greater plant species diversity and cover provides better habitat for prey species. If badgers were present during construction, there would be the potential for death due to the collapse of occupied burrows during clearing and grading. Visual and noise disturbances could trigger habitat avoidance behavior that could hinder successful foraging and breeding for individuals in the immediate area. Badgers are primarily nocturnal animals, and thus, any night lighting or construction could disturb this species. Loss of forage and nest habitat would reduce available suitable habitat within the badger's range.

Birds

Construction in BLM transmission and utility corridors could cause adverse impacts on avian species, including nesting raptors and birds protected by the MBTA. Impacts on these bird species would typically result from activities that would cause nest abandonment or destruction of chicks or eggs in active nests or death of adults due to collision, or activities that would reduce potential forage and nesting habitat. For most species, impacts would be confined to BLM transmission and utility corridors and areas immediately adjacent. For other species such as raptors, project-related impacts could extend up to a mile or more beyond construction areas, depending on the location and topography.

Active bird nests in shrubs or near the ground would be susceptible to being crushed during clearing and grading operations, and during any activities where vegetation would be crushed. Noise and visual disturbance caused by construction and project-related traffic, including construction at work sites and traffic along access roads and spur roads, could cause nest abandonment or habitat avoidance by birds nesting on or off site in adjacent areas. Nest abandonment would result in death to chicks and hatching failure of eggs. Alternatively, construction might cause birds to avoid suitable habitat and opt to nest or forage in less suitable habitat. Such impacts could cause energetic costs to these birds and could indirectly contribute to stress, unsuccessful reproductive efforts, or death. Decreased foraging success due to habitat avoidance or removal of foraging habitat could decrease the survival of chicks in nests near BLM transmission and utility corridors or near the site of a connected action. Because these impacts could occur at isolated nest sites along BLM transmission and utility corridors, and because the BLM transmission and utility corridors are relatively small compared with the amount of similar habitat in the region, impacts on nesting birds would be localized.

Construction of new access roads or spur roads could increase the volume of recreational traffic, and, in turn, indirectly increase the potential for nest abandonment due to noise and visual disturbances by humans. Construction of earthen berms or gates to restrict post-construction recreational vehicle access tends to have low success rates, as most off-road vehicles can simply bypass these structures in the relatively flat topography of the desert. Construction of new transmission line towers, or larger ones to replace old towers, could increase the risk of death of adult raptors and larger non-raptor species by collision (APLIC 2006).

Disturbances associated with the operation and maintenance could cause impacts similar to those caused by construction, although operations and maintenance impacts would likely be less intense. Noise and visual disturbances caused by operations and maintenance crews could cause abandonment of active nests, which would result in the death of chicks or hatching failure of eggs. Raptors often occupy nests built onto towers or poles. Nest abandonment caused by noise and visual disturbances is likely, as well as increased susceptibility of chicks to death and/or hatching failure of eggs from falls or from being crushed if active nests were moved or disturbed

during operations and maintenance. Such impacts could occur to active nests on towers or other project facilities, but could also occur outside of established access roads, spur roads, and tower sites. The potential for these impacts on nesting birds after the construction phase of a proposed action is relatively small. In general, due to the lower levels of disturbance associated with operation and maintenance activities, post-construction adverse impacts on raptors would be short term and localized. Due to the lower levels of disturbance associated with operations and maintenance activities, any adverse impacts on birds or raptor species would be minor, short term, and localized.

Burrowing Owl

The study area is within the range of the Western burrowing owl, and suitable burrowing owl habitat exists in most of the study area. Suitable burrowing owl habitat exists within the BLM transmission and utility corridors, and it is likely that burrowing owls nest within the BLM transmission and utility corridors.

Construction could cause adverse impacts on western burrowing owls and burrowing owl habitat. Impacts on this species would result from nest abandonment or direct death of adults and/or chicks, or hatching failure of eggs in active nests, or because the project otherwise led to lowered reproductive success.

Burrowing owl nests in underground burrows would be susceptible to crushing during clearing and grading, or during any other activity where vegetation would be crushed. This would likely cause the mortality of chicks (and adults if they remained in the burrow) and hatching failure of eggs. Although adult and juvenile owls would likely flee occupied burrows at the threat of on-coming construction equipment, a small potential for death by crushing exists outside of breeding season. As previously discussed, all project construction and traffic could cause abandonment of nearby active nests due to the noise and visual disturbances associated with these activities, and would thus result in mortality of chicks or hatching failure of eggs. These disturbances could cause habitat avoidance if owls avoided using suitable burrows for nesting or avoided high-quality foraging habitat. Burrowing owl nesting and foraging habitat could be lost due to ground disturbance and construction of permanent structures. The impacts resulting from construction as described above would be adverse, moderate, short and long term, and localized.

Disturbances associated with project operations and maintenance would have the potential to cause impacts similar to those caused by construction, although these disturbances are infrequent and thus impacts would likely be less intense. Burrowing owls usually occupy abandoned mammal burrows, which are often found in disturbed areas. Once construction activities were complete, burrowing mammals would be likely to re-colonize project areas, providing new burrows for potential owl nests. Burrowing owls that move into areas after construction is complete would be susceptible to vehicle collision or being crushed by operations and maintenance vehicles. The likelihood of this happening is low, given that maintenance activities would be infrequent. Nearby active nests could be abandoned due to the noise and visual disturbances associated with operations and maintenance crews; however, in general, due to the lower levels of disturbance associated with operations and maintenance activities, any adverse impacts on burrowing owls would be short term, localized, and minor.

No Action

Under the no action alternative, review of ROW applications would not be expedited, and applications would continue to be processed on a case-by-case basis. Applicants' projects could be delayed in order to meet NEPA requirements if they did not adhere to the BMPs outlined

under the proposed action alternative; however, similar to the proposed action alternative, adoption of the no action alternative would have no impact.

Although adoption of the no action alternative would have no impact on application processing, applicants should nonetheless be aware of survey windows for special status species. Surveys would be required for connected actions as well as proposed actions. If applicants miss survey windows for a connected action, this could in turn cause delays for proposed ROW applications.

Survey windows for special status species in the study area are listed in Table 4-1. However, additional surveys may be required by USFWS due to updates in protocols and procedures that could be revised after this EA is produced. Therefore, prior to conducting any surveys, the BLM recommends that the applicant contact the USFWS for feedback on survey designs and methodology.

Table 4-1 Survey Windows for Special Status Species in the Study Area

Resource	Protocol	Timing
Sensitive Plants; Vegetation Mapping; Noxious Weeds Mapping	BLM 2009, Survey Protocols Required for NEPA and ESA Compliance for BLM Special Status Plant Species, Special Status Plant Management Handbook 6840-1.	Spring-Summer
Desert Tortoise	USFWS 2010, Preparing for Any Action That May Occur Within the Range of the Mojave Desert Tortoise (*Gopherus agassizii*); 2010 Field Season.	April to May or September to October
Burrowing Owl	Clark County MSHCP Burrowing Owl survey protocols (http://www.rctlma.org/mshcp/volume1/Appendix_E.html	Generally April 15 to July 15
Golden Eagle	USFWS 2010, Interim Golden Eagle Inventory and Monitoring Guidelines	April to May
Bendire's Thrasher	No official protocol	Summer
LeConte's Thrasher	No official protocol	Anytime
Loggerhead Shrike	No official protocol	Anytime
Prairie falcon	No official protocol	Anytime
American badger	No official protocol	Anytime
California leaf-nosed bat	Acoustical monitoring for connected actions may be required, depending upon the type of connected action (e.g., wind farms).	March 1 to October 29
Nelson's bighorn sheep	No official protocol	Anytime

4.3.2 Best Management Practices

Following are recommended BMPs. Adoption of the following practices would reduce impacts on special status species and would help expedite the NEPA review process.

BIO-1: Avoidance. Final tower, spur road, and pipeline trench locations shall be adjusted to avoid sensitive biological resources to the greatest extent feasible.

BIO-2: Preconstruction Surveys. The applicant shall conduct preconstruction surveys using USFWS-approved biologists according to the most current USFWS protocols, where available by species. These surveys shall include surveying brush clearing areas and ground disturbance areas within habitat deemed suitable for sensitive species by a qualified biologist. These surveys shall be conducted for the presence of special-status plants, and the presence of general and special-status wildlife species to prevent direct loss of vegetation and wildlife.

BIO-3: Flagging. Biological monitors shall be assigned to construction zones containing sensitive biological resources. The monitors shall be responsible for ensuring that impacts on

special-status species, native vegetation, wildlife habitat, or unique resources would be avoided to the fullest extent possible. Where appropriate, monitors shall flag the boundaries of areas where activities would need to be restricted in order to protect native plants and wildlife or special-status species. Those restricted areas shall be monitored to ensure their protection during construction. A minimum of one monitor per crew is needed for construction crews using heavy equipment (e.g., backhoes, large trucks). One roving monitor shall monitor multiple times per day in other active construction zones where heavy equipment is not in use.

BIO-4: Worker Environmental Awareness Program (WEAP). The applicant shall design a WEAP, and all construction crews and contractors shall participate in WEAP training prior to starting work on any project. The WEAP training shall include a review of the special-status species and other sensitive resources that could exist in the project area, the locations of sensitive biological resources and their legal status and protections, and measures to be implemented for avoidance of these sensitive resources. A record of all trained personnel shall be maintained.

BIO-5: Desert Tortoise Measures. The applicant or a qualified consultant shall provide for the following to reduce impacts on desert tortoise:

- The applicant cannot begin construction until issuance and acceptance of a Section 7 USFWS Biological Opinion and NDOW authorization. Additionally, compliance discussions with Clark County and Boulder City must occur prior to construction that resolve and outline the specific compensation fees or additional mitigation measures needed for loss of desert tortoise habitat outside of BLM transmission and utility corridors within the BCCE. A copy of the USFWS Biological Opinion and documentation of any compliance discussions with Clark County and Boulder City should be provided to the BLM.
- Construction monitoring shall employ a designated field contact representative, approved by the BLM during the construction phase. A field contact representative is defined as a person designated by the project proponent who is responsible for overseeing compliance with desert tortoise protective measures and for coordination with agency compliance officer(s). The field contact representative shall also oversee all compliance documentation including daily observation reports, non-compliance and corrective action reports, and final reporting to any authorized agency upon project completion.
- Construction monitoring shall employ an authorized biologist(s) and qualified biologist(s) approved by the BLM during the construction phase. At a minimum, qualified biologist(s) shall be present during all activities in which encounters with tortoises could occur. A qualified biologist is defined as a person with appropriate education, training, and experience to conduct tortoise surveys, monitor project activities, provide worker education programs, and supervise or perform other implementing actions. An authorized biologist is defined as a wildlife biologist who has been authorized to handle desert tortoises by the USFWS. The BLM shall recommend qualified and authorized biologists to the USFWS and shall approve all biological monitors.
- Qualified and/or authorized biologists shall conduct preconstruction surveys according to the most current USFWS protocol at the time of construction.
- Qualified and/or authorized biologists shall monitor all construction activities year-round in desert tortoise habitat, regardless of the time of year or weather conditions, as tortoises are often active outside of their "active" season.

- Authorized biologists shall handle desert tortoises following the most current Desert Tortoise Council handling guidelines (2009 or newer).
- All work area boundaries associated with temporary and permanent disturbances shall be conspicuously staked, flagged, or otherwise marked to minimize surface disturbance activities. All workers shall strictly limit activities and vehicles to the designated work areas.
- Crushing/removal of perennial vegetation in work areas shall be avoided to the maximum extent practicable.
- All trash and food items generated by construction and maintenance activities shall be promptly contained and regularly removed from the project site(s) to reduce the attractiveness of the area to common ravens.
- Pets shall not be allowed in working areas unless restrained in a kennel.
- Where possible, motor vehicles shall be limited to maintained roads and designated routes. Vehicle speed within the project area, along ROW maintenance routes, and along existing access roads shall not exceed 20 miles per hour. Speed limits shall be clearly marked and all workers shall be made aware of these limits.
- Preconstruction clearance surveys shall be conducted within 48 hours of initiation of site-specific project activities, following USFWS protocol (USFWS 2009). The goal of a clearance survey is to find all tortoises on the surface and in burrows that could be harmed by construction activities. Surveys shall cover 100 percent of the acreage to be disturbed. All potential tortoise burrows within 100 feet of construction activity shall be marked.
- Biological monitors shall clear ahead of construction crews in desert tortoise habitat during all clearing and grading activities, or during activity where undisturbed vegetation would be crushed. In addition, biological monitors shall clear ahead of larger, non-rubber-tired equipment when that equipment is being driven on access and spur roads.
- Biological monitors shall clear all active work sites located in desert tortoise habitat each morning before construction begins and throughout the day if crews move from construction site to construction site.
- Results of biological monitoring and status of construction shall be detailed in daily reports by biological monitors. These reports shall be submitted to the authorized biologist on a daily basis and to the field contact representative on a weekly basis (at minimum). The authorized biologist shall notify the field contact representative within 24 hours of any action that involves harm to a desert tortoise. The authorized biologist shall submit to the USFWS, NDOW, and the BLM a summary of all desert tortoises seen, injured, killed, excavated, and handled at the end of each project or within 2 working days of when desert tortoises are harmed. GPS locations of live tortoises shall be reported.
- Should any desert tortoise be injured or killed, all activities shall be halted, and the field contact representative and/or authorized biologist immediately contacted. The field contact representative and/or authorized biologist shall be responsible for reporting the incident to the authorizing agencies.
- Desert tortoise relocations shall only occur from an active construction zone to an area that is not under active construction. Any tortoise found on the surface shall be relocated to less than 1,000 feet away. Tortoises shall be handled carefully following the guidelines

given in Guidelines for Handling Desert Tortoise during Construction Projects (Desert Tortoise Council 1999). Tortoises shall be handled with new latex gloves each time to avoid transmission of disease, and handlers shall especially note guidelines for precautions to be taken during high-temperature periods.

- If a potential tortoise burrow were required to be excavated, the biologist shall proceed according to the guidelines given in Guidelines for Handling Desert Tortoise during Construction Projects (Desert Tortoise Council 1999). Tortoises removed from burrows shall be relocated to an artificial burrow (Desert Tortoise Council 1999). The entrance of the artificial burrow shall be blocked until construction activities in the area were over (Desert Tortoise Council 1999).
- For activities conducted between March 15 and November 1 in desert tortoise habitat, all activities in which encounters with tortoises might occur shall be monitored by a qualified or authorized biologist. The biologist shall be informed of tortoises relocated during preconstruction surveys so that he or she could watch for the relocated tortoises in case they attempted to return to the construction site. The qualified or authorized biologist shall watch for tortoises wandering into the construction areas, check under vehicles, examine excavations and other potential pitfalls for entrapped animals, examine exclusion fencing, and conduct other activities to ensure that death or injuries of tortoises were minimized.
- No overnight hazards to desert tortoises (e.g., auger holes, trenches, pits, or other steep-sided depressions) shall be left unfenced or uncovered; such hazards shall be eliminated each day prior to the work crew and biologist leaving the site. Large or long-term project areas shall be enclosed with tortoise-proof fencing. Fencing shall be removed when restoration of the site is completed.
- Any incident considered by the biological monitor to be in non-compliance with the mitigation plan shall be documented immediately by the biological monitor. The field contact representative shall ensure that appropriate corrective action was taken. Corrective actions shall be documented by the monitor. The following incidents shall require immediate cessation of the construction activities causing the incident, including (1) imminent threat of injury or death to a desert tortoise; (2) unauthorized handling of a desert tortoise, regardless of intent; (3) operation of construction equipment or vehicles outside a project area cleared of desert tortoise, except on designated roads; and (4) conducting any construction activity without a biological monitor where one was required. If the monitor and field contact representative do not agree, the federal agency's compliance officer shall be contacted for resolution. All parties could refer the resolution to the federal agency's authorized officer.
- All construction personnel, including subcontractors, shall complete a WEAP. This instruction shall include specific desert tortoise training on distribution, general behavior and ecology, identification, protection measures, reporting requirements, and protections afforded by state and federal endangered species acts.
- Parked vehicles shall be inspected prior to being moved. If a tortoise were found beneath a vehicle, the authorized biologist shall be contacted to move the animal from harm's way, or the vehicle shall not be moved until the desert tortoise left of its own accord. The authorized biologist shall be responsible for taking appropriate measures to ensure that any desert tortoise moved in this manner was not exposed to temperature extremes that could be harmful to the animal.

- No desert tortoise shall be captured, moved, transported, released, or purposefully caused to leave its burrow for whatever reason when the ambient air temperature is above 95 degrees Fahrenheit (35°C). If the ambient air temperature exceeds 95°F during handling or processing, desert tortoises shall be kept shaded in an environment which does not exceed 95°F, and the animals shall not be released until ambient air temperature declines to below 95°F. For relocation, captured tortoises may be held overnight and moved the following morning within these temperature constraints.
- During all handling procedures, desert tortoises shall be treated in a manner to ensure that they do not overheat, exhibit signs of overheating (e.g., gaping, foaming at the mouth, hyperactivity, etc.), or are placed in a situation where they cannot maintain surface and core temperatures necessary to their well-being. Desert tortoises shall be kept shaded at all times until it is safe to release them. Ambient air temperature shall be measured in the shade, protected from wind, and at a height of 2 inches above the ground surface.
- If a desert tortoise voids its bladder as a result of being handled, the animal shall be rehydrated. The process of rehydrating a desert tortoise shall take place at the location where the animal was captured (or to be released, for translocated tortoises), and consist of placing the desert tortoise in a tub with a clean plastic disposable liner. The amount of water that is placed in the lined tub shall not be higher than the lower jaw of the animal. Each desert tortoise shall be rehydrated for a minimum of 10 to 20 minutes. During the period when the desert tortoise is in the tub, the tub shall be placed in a quiet protected area. Desert tortoises shall be soaked individually.
- If a desert tortoise is injured as a result of project-related activities, it shall be immediately taken to an approved wildlife rehabilitation or veterinary facility. The applicant shall identify the facility prior to the start of ground- or vegetation-disturbing activities. The applicant shall bear any costs associated with the care or treatment of such injured covered species. The applicant shall notify NDOW of the injury immediately unless the incident occurs outside of normal business hours. In that event NDOW shall be notified no later than noon on the next business day. Notification to NDOW shall be via telephone or email, followed by a written incident report. Notification shall include the date, time, location, and circumstances of the incident, and the name of the facility where the animal was taken.
- The applicant shall produce a Raven Management Plan that is acceptable to the BLM. Details in the plan shall include information on procedures, frequency, and recommended season for conducting raven nest surveys, procedures and responsibilities for raven nest removal, USFWS/NDOW authorization and/or permitting requirements for conducting raven control, and compensation measures for raven reduction programs in Nevada. The plan shall be submitted to the BLM at least 60 days prior to construction for review and approval.

BIO-6: Water Usage. Water used for fugitive dust control shall not be allowed to pool on access roads or other project areas, as this can attract desert tortoises. Similarly, leaks on water trucks and water tanks shall be repaired to prevent pooling water.

BIO-7: Desert Bighorn Sheep. The applicant shall consult with the BLM, USFWS, and NDOW regarding conservation measures to avoid impacts on desert bighorn sheep during construction. The following measures are recommended to reduce impacts:

- Construction requiring the use of helicopters within mountain passes shall be conducted outside the dry summer months of June 1st through September 30th when bighorn may need to access artificial water sources in the surrounding mountain ranges.
- Preconstruction surveys for desert bighorn sheep should be conducted within suitable bighorn sheep habitat within 1 week prior to construction activities in the mountain ranges of the Eldorado Valley. The occurrence and location of any desert bighorn sheep shall be reported to NDOW.
- Biological monitoring for desert bighorn sheep shall be conducted by a qualified biologist during duration of construction within suitable bighorn sheep habitat. The occurrence and location of any desert bighorn sheep shall be reported to NDOW. If bighorn are found to be within 500 feet of construction activities, construction in that area shall be stopped until the sheep vacate the area.
- Avoid all construction activities (with the exception of vehicle use of access roads during emergencies) in lambing areas from December to March in the North McCullough Pass area during the duration of construction and all maintenance events.

BIO-8: Western Burrowing Owl. To reduce impacts on burrowing owl, the following measures shall be taken:

- A qualified biologist shall conduct preconstruction surveys within 30 days prior to construction for burrowing owl within suitable habitat prior to breeding season (February 1 through August 31). All areas within 50 m (approximately 150 feet) of a project area shall be surveyed.
- All inactive burrows, holes, crevices, or other cavities in suitable habitat, within the limits of proposed ground disturbance, shall be thoroughly inspected by a qualified biologist before being collapsed. This would discourage owls from breeding on the construction site. Other species using burrows shall be relocated prior to collapsing burrows.
- If an active nest is identified, there shall be no construction activities within 50 m (approximately 150 feet) of the nest location to prevent disturbance until the chicks have fledged, as determined by a qualified biologist.
- The occurrence and location of any burrowing owl shall be documented by biological monitors in daily reports and submitted to the authorized biologist on a daily basis. The authorized biologist shall report all incidents of disturbance or harm to burrowing owls within 24 hours to the appropriate resource agencies (USFWS, BLM, and NDOW).
- If construction were to be initiated after the commencement of the breeding season and burrowing owls could be seen within areas to be affected by ground construction activities, a qualified biologist shall observe behavior to determine their breeding status. If breeding is observed, the nest area shall be avoided, with an appropriately sized buffer sufficient to prevent disturbance during construction activities until the chicks fledged.

BIO-9: Gila Monster and Chuckwalla Measures. The following measures are the current NDOW construction site protocols for the Gila monster (NDOW 2007). To reduce impacts on Gila monster, all locations of Gila monster found within a project area during surveys and construction work shall be reported to NDOW. In addition, the following measures shall be taken:

- Through the WEAP, workers and other project personnel should (at a minimum) know how to (1) identify Gila monsters and distinguish them from other lizards such as

chuckwallas and banded geckos, (2) report any observations of Gila monsters to the biological monitor for NDOW, (3) be alerted to the consequences of a bite resulting from carelessness or unnecessary harassment, and (4) be aware of protective measures provided under state law.

- Live Gila monsters found in harm's way on the construction site shall be captured and then detained in a cool, shaded environment (<85°F) by the project biologist or equivalent personnel until an NDOW biologist arrives for documentation purposes. Although a Gila monster is venomous and can deliver a serious bite, its relatively slow gait allows for it to be easily coaxed or lifted into an open bucket or box, carefully using a long handled instrument such as a shovel or snake hook (note: it is not the intent of NDOW to request unreasonable action to facilitate captures; additional coordination with NDOW will clarify logistical points). A clean 5-gallon plastic bucket with a secure, vented lid; an 18-inch x 18-inch x 4-inch plastic sweater box with a secure, vented lid; or a tape-sealed cardboard box of similar dimension may be used for safe containment. Additionally, written information identifying the mapped capture location (e.g., GPS record), date, time, and circumstances (e.g., biological survey or construction) and habitat description (vegetation, slope, aspect, and substrate) shall also be provided to NDOW.
- Injuries to Gila monsters may occur during excavation, blasting, road grading, or other construction activities. If a Gila monster is injured, it shall be transferred to a veterinarian proficient in reptile medicine for evaluation of appropriate treatment. Rehabilitation or euthanasia expenses would not be covered by NDOW. However, NDOW shall be immediately notified during normal business hours. If an animal is killed or found dead, the carcass shall be immediately frozen and transferred to NDOW with a complete written description of the discovery and circumstances, habitat, and mapped location.
- Should NDOW's assistance be delayed, biologists or equivalent acting personnel on site may be requested to remove and release the Gila monster out of harm's way. Should NDOW not be immediately available to respond for photo-documentation, a 35-millimeter camera or equivalent (5 mega-pixel digital minimum preferred) shall be used to take good quality images of the Gila monster in situ at the location of live encounter or dead salvage. The pictures, preferably on slide film (.tif or .jpg digital format) shall be provided to NDOW. Pictures shall include the following information: (1) Encounter location (landscape with Gila monster in clear view); (2) a clear overhead shot of the entire body with a ruler next to it for scale (Gila monster should fill camera's field of view and be in sharp focus); (3) a clear, overhead close-up of the head (head should fill camera's field of view and be in sharp focus).

BIO-10: American Badger Impacts Reduction Measures. The following measures would reduce impacts to American badger:

- Qualified biologists shall be notified if badgers are observed within the construction area. Work shall immediately be stopped in the area if the biologists find occupied burrows within 100 feet of construction activities during preconstruction surveys.
- Qualified biologists shall ensure passive relocation of the occupied burrow by installing one-way trap doors on the burrow. The burrow shall be collapsed after the badger vacates.
- During the spring months when young may be present in burrows, burrows must be checked for young before the installation of the one-way trap door. If young are present

during relocation efforts, all work shall stop within 100 feet of the burrow until the young have left the burrows within the construction area.

- Work shall be allowed to resume once the badger has relocated outside the 100-foot zone.

BIO-11: Special-Status Plants Restoration and Compensation. The applicant shall mitigate for the loss of special-status plant species following the completion of all construction activities at a particular site and within 1 year of post-construction according to the requirements of resource agency authorizations. Special-status plants shall be restored by relocation of plants and/or re-seeding, replacing topsoil with existing topsoil that was removed, and re-grading to pre-existing soil contours. Measures to restore special-status plants shall be implemented through the Reclamation Plan (see BIO-23). Additionally, the plan shall provide a matrix showing how the applicant shall address each species considered sensitive or special-status in terms of mitigation type (e.g., seed collection, transplanting, fencing certain population, and compensation measures). If special-status plant communities cannot be restored, the applicant shall provide compensation if required, in consultation with appropriate agencies (USFWS, BLM, and NDOW). In order to ensure enforceability, documentation of consultations with all appropriate agencies shall be provided to the BLM.

4.4 Migratory Birds

4.4.1 Environmental Consequences

Proposed Action

All construction activities and traffic related to the proposed development would have the potential to cause adverse impacts on MBTA-protected birds and nesting bird species. It is likely that the study area provides suitable nesting habitat for at least some bird species that are protected by the MBTA. Much of the study area supports healthy and mature creosote shrubs, interspersed with yucca and cactus species on flats, and acacia and other desert riparian species along the edges of washes. These areas provide suitable nesting habitat for a number of desert-dwelling bird species, including smaller raptor species.

The study area is within the range of a number of raptor species. Golden eagles are known to be present in the study area; however, trees and cliff sides in nearby mountain ranges likely provide more suitable nesting habitat for raptors than the relatively flat creosote shrub areas that typify the study area. Golden eagles are known to frequent the north McCullough Pass area adjacent to the study area. Any portion of a proposed action that would cross higher elevations could cross areas that provide higher quality raptor nesting habitat.

Because no standardized disturbance buffers exist for birds in this region, potential developers should consult the USFWS and NDOW to determine appropriate buffer sizes. Buffers would remain in effect until all eggs hatched and chicks fledged, unless otherwise authorized by the USFWS and NDOW. All raptor and raptor nest surveys should use recommended USFWS and NDOW buffer guidelines when determining appropriate survey corridor widths. The BMPs below outline reporting procedures if active nests are detected in or near the study area. Any portion of proposed development that would pass by the Wee Thump Joshua Tree Wilderness area would require consultation with NDOW if construction is scheduled to occur during breeding season.

Special-status bird species are susceptible to visual and noise disturbance, potentially resulting in alteration of foraging behaviors to avoid the site and nest abandonment. Individuals of these species would be at risk if they were using onsite vegetation for nesting, as clearing of vegetation

could result in the direct loss of nests and would also remove potential forage habitat. Proposed development could result in direct, short- and long-term loss of food and shelter for special-status birds.

Golden Eagle

Construction and operation of projects within BLM transmission and utility corridors, as well as on the site of connected actions, could cause adverse impacts on golden eagles and golden eagle habitat. Impacts on this species could result from mortality of adults and/or chicks, hunting and energetic interference, nest abandonment, hatching failure of eggs in active nests, or because a project otherwise led to lowered reproductive success.

Construction of proposed development may result in "take" of this species. Project construction and traffic could cause abandonment of potential active nests located in onsite mountain ranges due to the noise and visual disturbances associated with these activities and could thus result in mortality of chicks or hatching failure of eggs. Potential for this impact to occur is less likely in areas with no known active eagle nests; however, it is very likely that construction disturbances could cause avoidance of suitable foraging habitat or nesting habitat within or adjacent to the study area. Considering the substantial amount of foraging or potential nesting habitat within or near the study area, impacts related to loss of foraging or nesting habitat are expected to be minor and not likely to reduce the success of eagles with known breeding territory. The impacts resulting from construction would likely be adverse, minor, short- and long-term, and localized.

Project operations and maintenance would also have the potential to cause injury and/or mortality as a result of injuries suffered from accidental collision or electrocution with power lines and other associated structures. The risk of collisions and electrocution are likely low from transmission line upgrades because they would primarily be constructed in the ROW of existing lines to which birds would already be habituated. However, collisions and electrocutions could still occur to some individuals during operations. Due to a lack of current data on eagle mortalities from collision and electrocution in the study area, it is currently unknown to what extent such incidents would have on any breeding population of golden eagles. However, a lack of documented mortalities in the area implies that eagles currently co-exist with the existing transmission line infrastructure and that collision risks associated with potential linear development are not expected to be significantly greater than the existing condition. Thus, the impacts resulting from operations as described above would be adverse, minor, short-term, and localized.

No Action

Under the no action alternative, review of ROW applications would not be expedited, and applications would continue to be processed on a case-by-case basis. Applicants' projects could be delayed in order to meet NEPA requirements if they did not adhere to BMPs outlined under the proposed action alternative; however, similar to the proposed action alternative, adoption of the no action alternative would have no impact.

Although adoption of the no action alternative would have no impact on application processing, applicants should nonetheless be aware of survey windows for special status species. Surveys would be required for connected actions as well as proposed actions. If applicants miss survey windows for a connected action, this could in turn cause delays for proposed ROW applications.

Survey windows for special status species in the study area are listed in Table 4-1. However, additional surveys may be required by USFWS due to updates in protocols and procedures that could be revised after this EA is produced. Therefore, prior to conducting any surveys, the BLM

recommends that the applicant contact the USFWS for feedback on survey designs and methodology.

4.4.2 Best Management Practices

Following are recommended BMPs. Adoption of the following practices would reduce impacts on migratory bird species and would help expedite the NEPA review process.

BIO-12: Breeding Season Preconstruction Surveys. If a project that may alter any breeding habitat has to occur during the breeding season, then a qualified avian biologist must survey the area for nests prior to commencement of construction activities. This shall include burrowing and ground nesting species in addition to those nesting in vegetation or on existing manmade structures. The applicant shall conduct project-wide raptor and nesting bird surveys according to the most current USFWS protocols, in consultation with the USFWS, BLM, and NDOW. For raptors specifically, the applicant shall use the USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (1999) to determine appropriate survey areas for active nests.

BIO-13: Schedule Construction Outside of Breeding Season. To prevent undue harm, habitat-altering projects or portions of projects should be scheduled outside of bird breeding season (generally late February to July in this region). In upland desert habitats and ephemeral washes containing upland species, the season generally occurs between March 15th and July 30th.

BIO-14: Vegetation Removal During Nesting Season. The applicant shall remove trees or other vegetation, if necessary, outside of the nesting season (nesting season in the study area is late February to early July). If vegetation or existing structures containing a raptor nest or other active nest needed to be removed during the nesting season, or if work was scheduled to take place in close proximity to an active nest on an existing transmission tower or pole, the applicant shall coordinate with the USFWS and NDOW as appropriate to obtain written verification prior to moving the nest.

BIO-15: Avian Protection Plan, Including Nesting Bird Management Plan. To reduce impacts on golden eagles and raptors, the applicant shall submit an Avian Protection Plan for approval to the BLM within 6 months of the issuance of any ROW grant. The Plan shall be prepared according to guidance provided by the USFWS (USFWS 2010).The Avian Protection Plan must be implemented within one year from the date of any ROW grant Notice to Proceed. As part of this plan, the applicant shall also develop a Nesting Bird Management Plan. Because there are no standardized disturbance buffers for active bird nests, the applicant shall consult with the appropriate agencies (BLM, USFWS, and NDOW) during development of the to determine species-specific buffers and agency consultation protocols when active nests are found in project areas during construction and operation activities.

BIO-16: Additional Best Management Practices for Migratory Birds and Raptors. To reduce impacts on migratory birds and raptors, the applicant shall implement the following practices:

- Biological monitors shall monitor and enforce disturbance buffers around all active (containing eggs or young) bird nests (for raptors and species protected by the MBTA) found in project areas during construction until the young have fledged, unless otherwise agreed upon in consultation with the wildlife agencies.

- Active bird nests shall not be moved during breeding season, unless the project is expressly permitted to do so by the USFWS, BLM, or NDOW depending on the location of the nest.
- All active nests and disturbance or harm to active nests shall be reported within 24 hours to the USFWS, BLM, and NDOW upon detection.
- The biological monitor shall halt work if it is determined that active nests would be disturbed by construction activities, until further direction or approval to work is obtained from the appropriate agencies.
- Seasonal work stoppages may be required by NDOW for project areas that pass near wilderness areas if construction activities occur within the breeding season. The applicant shall consult with NDOW prior to construction.
- As outlined by the *Suggested Practices for Avian Protection on Power Lines* (APLIC 2006), the following avian safe practices shall be employed during construction of transmission lines: cover phase conductors with manufactured covers, include perch discouragers on crossarms and on top of poles, exceed the minimal distance between phase conductors to prevent electrocution by perched birds and their wingspan, utilize longer horizontal insulators, suspend phase conductors on pole top and cross arms, install horizontal jumper support to increase the phase-to-ground separation, replace tension members with fiberglass or non-conducting materials, cover tension members with dielectric material, utilize fiberglass poles or switches, and install standard nest discouragers. All transmission and subtransmission towers and poles shall be designed to be avian-safe in accordance with the *Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006* (APLIC 2006).

4.5 Wildlife

4.5.1 Environmental Consequences

Proposed Action

Clearing and grading or other ground-disturbing activities could directly cause the mortality of wildlife species in the study area. Collisions with equipment and vehicles could occur for slower-moving species, species that have subsurface burrows, or ground-nesting birds. Nesting birds, bats, and reptiles are very susceptible to visual and noise disturbances caused by the presence of humans, construction equipment, and generated dust. Such disturbances could cause wildlife to alter foraging and breeding behavior and to avoid suitable habitat inside and outside the boundaries of a proposed project. For instance, nesting birds could abandon nests due to these disturbances, and if night construction were to be conducted, bats would be highly susceptible to night lighting. Many species of wildlife can be impacted by night lighting activities, particularly nocturnal bird, reptile, and bat species. Night lighting can alter foraging, migration, and breeding behaviors of these species. Night lighting can also induce disorientation in animals, thus increasing risk of collision with objects and potential susceptibility to predation.

Wildlife would also be indirectly impacted. Grading and construction activities would remove and/or modify natural vegetation communities. These vegetation communities provide forage, shelter, and nesting opportunities to non-listed wildlife and multiple special-status wildlife. Loss and degradation of habitat would cause wildlife to rely more heavily on habitat in surrounding areas. The loss and degradation of habitat would have the potential to impact wildlife within adjacent special management areas, such as the BCCE, Eldorado-Piute ACEC, South

McCullough Wilderness Area, Sloan Canyon National Conservation Area, and North McCullough Wilderness Area. Loss of burrows due to construction, ground vibration, or avoidance behavior would cause wildlife to search for and/or dig new burrows. The searching and/or digging would expend more energy, which could result in an increased susceptibility to disease and predation and lowered reproductive success. Substation infrastructure built could alter wildlife movement, as animals might avoid construction areas such as those for the microwave tower and other permanent structures. Wildlife movement could also be altered due to the presence of new infrastructure, which could indirectly cause death of wildlife by increasing the risk of predation on certain species by native predators such as ravens and raptors due to additional perching and/or nesting habitat.

Construction activities are sources of potential adverse impacts to listed or sensitive wildlife species. The mechanisms of potential impact as described for special status species as well as for non-listed species and include direct and indirect impacts. To further avoid and reduce impacts, in addition to the BMPs proposed in Section 4.3, additional measures are recommended below.

No Action

Under the no action alternative, review of ROW applications would not be expedited, and applications would continue to be processed on a case-by-case basis. Applicants' projects could be delayed in order to meet NEPA requirements if they did not adhere to the BMPs outlined under the proposed action alternative; however, similar to the proposed action alternative, adoption of the no action alternative would have no impact.

Although adoption of the no action alternative would have no impact on application processing, applicants should nonetheless be aware of survey windows for special status species. Surveys would be required for connected actions as well as proposed actions. If applicants miss survey windows for a connected action, this could in turn cause delays for proposed ROW applications.

Survey windows for special status species in the study area are listed in Table 4-1. However, additional surveys may be required by USFWS due to updates in protocols and procedures that could be revised after this EA is produced. Therefore, prior to conducting any surveys, the BLM recommends that the applicant contact the USFWS for feedback on survey designs and methodology.

4.5.2 Best Management Practices

Following are recommended BMPs. Adoption of the following practices would reduce impacts on wildlife and would help expedite the NEPA review process.

BIO-17: Night Lighting Reduction. Night lighting shall be reduced in all natural areas to avoid unnecessary visual disturbance to wildlife. Night lighting during construction, operations, and maintenance shall be reduced in natural areas using directed lighting, shielding methods, and/or reduced lumen intensity.

BIO-18: Wildlife Entrapment Prevention. To prevent entrapment of wildlife, all steep-walled trenches, auger holes, or other excavations shall be covered at the end of each day. Fencing shall be maintained around the covered excavations at night. For open trenches, earthen escape ramps shall be maintained at intervals of no greater than 0.25 miles. A biological monitor shall inspect all trenches, auger holes, or other excavations a minimum of twice per day during non-summer months and a minimum of three times per day during the summer (hotter) months, and also immediately prior to back-filling. Any wildlife species found shall be safely removed and

relocated out of harm's way, using suitable tools such as a pool net when applicable. For safety reasons, biological monitors shall under no circumstance enter open excavations.

4.6 Vegetation and Non-Native Plant Species

4.6.1 Environmental Consequences

Proposed Action

Clearing and grading or other ground disturbing activities for project infrastructure, such as transmission tower foundations or installation of pipelines, would cause the direct loss of vegetation communities within the study area. Some disturbance would be temporary, such as for the installation of temporary spur roads and staging areas, which would all be removed upon construction completion. Impacts to vegetation in some of these areas would be temporary, as some vegetation communities would likely re-colonize these areas over time. Other project infrastructure would be permanent, and vegetation would be permanently impacted for those project areas (access roads and transmission or telecommunication tower foundations). The extent of disturbance impact would vary by vegetation community and location within the study area. There could be both temporary and permanent impacts, depending on whether plant individuals would re-colonize on their own (a species-specific factor) and whether the impact is a permanent disturbance, which would also depend on whether the existing seedbank and biotic soil crust were still present after clearing.

Grading activities would disturb soil within the BLM transmission and utility corridors, thus indirectly impacting the vegetation communities by creating opportunities for non-native invasive weed species to colonize the disturbed work areas. Invasive weed species could out-compete native plants for resources such as water and space. Additionally, soil disturbance could reduce native seed banks. Dust generated during construction could adversely affect onsite and offsite native vegetation communities by reducing photosynthetic and respiratory activity, which could lead to lower growth rates and/or lower fitness of native plant species. Removal of native plant species would leave denuded areas at risk for the potential spread of non-native and invasive weed species. Non-native invasive weeds could also be spread during operation and maintenance activities, such as from additional vehicle traffic due to maintenance activities. Additional vehicles and crews could indirectly impact the native vegetation by inadvertently tracking clinging seeds and/or parts of invasive weeds, thus facilitating their spread.

The spread of invasive weeds could also impact the current fire regime, as an increase in weeds could increase the biofuel present, resulting in an increase in the intensity and/or frequency of fires. The increase in fire intensity and/or frequency could indirectly impact the native vegetation community by creating conditions in which plant species that are fire tolerant would have a competitive advantage. In general, invasive weeds tend to be more adaptive to frequent fires than the native desert vegetation. Some invasive/invasive species (e.g., *Erodium* spp., *Bromus* spp., and *Schismus* spp.) are already widespread in the area and thus proposed actions within BLM transmission and utility corridors would have little effect on further impacts from these species. The proliferation of other weeds such as saltcedar and thistles could adversely impact native vegetation in the study area because these species would require aggressive control strategies.

Proposed actions in BLM transmission and utility corridors in the study area would have moderate adverse impacts on native vegetation communities and individuals of special-status plants species. There would be both short- and long-term impacts (depending on whether the ground disturbance was permanent or temporary) localized within the BLM transmission and

utility corridors. Impacts also could be extensive due to the potential spread of introduced nonnative and invasive plant species adjacent to the BLM transmission and utility corridors. To avoid and minimize impacts, BMPs are recommended as described below. Preconstruction surveys proposed by applicants need to include specific measures related to vegetation. All areas where clearing and grading and general ground-disturbance would occur need to be surveyed.

No Action

Under the no action alternative, review of ROW applications would not be expedited, and applications would continue to be processed on a case-by-case basis. Applicants' projects could be delayed in order to meet NEPA requirements if they did not adhere to the BMPs outlined under the proposed action alternative; however, similar to the proposed action alternative, adoption of the no action alternative would have no impact.

Although adoption of the no action alternative would have no impact on application processing, applicants should nonetheless be aware of survey windows for special status plant species. Surveys would be required for connected actions as well as proposed actions. If applicants miss survey windows for a connected action, this could in turn cause delays for proposed ROW applications.

Survey windows for special status plant species in the study area are listed in Table 4-1. However, additional surveys may be required by USFWS due to updates in protocols and procedures that could be revised after this EA is produced. Therefore, prior to conducting any surveys, the BLM recommends that the applicant contact the USFWS for feedback on survey designs and methodology.

4.6.2 Best Management Practices

Following are recommended BMPs. Adoption of the following practices would reduce impacts on vegetation and impacts due to invasive weeds. Implementing these BMPs would help expedite the NEPA review process, and depending upon the specifics of a proposed application, the following could be required by the BLM.

BIO-19: Preconstruction Surveys for Vegetation. The applicant shall conduct preconstruction surveys to determine the composition of the vegetation community to establish baseline conditions prior to construction for post-construction restoration efforts. These surveys shall also document the presence of invasive weeds. For the invasive weeds survey, the level of effort and extent of the surveys shall be outlined by the Invasive Plant Management Plan (BIO-22).

BIO-20: Minimize Vegetation Removal. Applicants shall make every effort to minimize vegetation removal and permanent loss at construction sites. If necessary, native vegetation shall be flagged for avoidance.

BIO-21: Minimize Soil Disturbance. Applicants shall make every effort to minimize soil disturbance to the extent practical, consistent with project objectives.

BIO-22: Invasive Plant Management Plan. The applicant shall develop an Invasive Plant Management Plan, which shall be modeled on the BLM Las Vegas Office Draft Weed Plan. The plan shall include operation and maintenance activities, as well as construction activities. The content of the plan shall include results of the invasive weed inventory, identification and mapping of problem areas (i.e., infestations), preventative measures, treatment methods and

prioritization, agency-specific requirements, monitoring requirements, and herbicide treatment protocol (as allowable by BLM in this area). The plan shall include BMPs that require that any biological material brought on-site (e.g., hay bales that may be used for controlling stormwater and native mixes for vegetation) shall be certified weed-free. The plan shall clearly outline the responsibility by party for present and future weed monitoring and weed abatement activities on the project. The plan shall be submitted to the BLM and NDOW for approval prior to construction authorization.

BIO-23: Reclamation, Restoration, and Revegetation Plan (RRRP). The applicant shall develop a RRRP that shall guide restoration and revegetation activities for all disturbed lands associated with construction and the eventual termination and decommissioning of a proposed action. The RRRP shall be part of the applicant's final Plan of Development for each proposed action and should address all federal and private land disturbances, including areas where restoration activities have been funded by the Clark County MSHCP and initiated by resource agencies. The RRRP shall be developed in consultation with appropriate agencies (BLM, NDOW, USFWS, and Clark County DCP) and be provided to these agencies for review and approval. NDOW and the BLM Las Vegas Field Office shall be consulted for restoration efforts concerning Nevada State protected cacti and yucca species, which may include preparation of a separate Cactus and Yucca Reclamation Plan. The RRRP shall also provide details including but not limited to topsoil segregation and conservation, vegetation treatment and removal, salvage of succulent species, revegetation methods including seed mixes, rates and transplants, and criteria to monitor and evaluate revegetation success. Post-construction monitoring shall be performed for 1 to 5 years, depending on the disturbance level and restoration level as outlined in the BLM's 2001 Restoration Plan for Energy Projects in the Las Vegas Field Office.

BIO-24: BLM Guidance Documents for Treatments and Herbicides. The applicant's RRMP and Invasive Plant Management Plan shall comply with requirements within Vegetation Treatments on BLM Lands in 17 Western States (2007) and Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States Programmatic EIS (2007).

BIO-25: Avoid Areas with Nonnative or Noxious Weed Species. The applicant shall begin project operations in areas without nonnative or noxious weed species, and locate and use weed-free project staging areas. Additionally, applicants shall avoid or minimize all types of travel through weed-infested areas or restrict travel to periods when the spread of seed or propagules is least likely (e.g. periods of high winds or rainfall).

BIO-26: Pretreatment. The applicant shall pretreat high risk sites for weed establishment and spread before implementing projects.

BIO-27: Clean Vehicles and Equipment. The applicant shall clean vehicles and equipment (remove soil and plant parts) before entering public land, and clean all equipment before leaving the site if operating in areas infested with weeds. The applicant shall employ standard contract provisions to ensure that contractors adhere to this guideline.

4.7 Cultural Resources

4.7.1 Environmental Consequences

Proposed Action

Cultural resources are known to exist within the BLM transmission and utility corridors in the study area. Any kind of ground-disturbing activity has the potential to disturb cultural resources. Depending on the type of project, avoidance of cultural resources may be achieved through appropriate design modifications. Early surveys can provide information to allow design modification to achieve avoidance and early consultation under Section 106, especially consultation with the Native American community, can identify sensitivities early to allow these to be addressed in the project design process.

Most of the land crossed by the BLM utility corridors is Quaternary Alluvium, a geological unit that has a high potential for containing fossils in this area. Any kind of ground-disturbing activity has the potential to disturb such paleontological resources.

No Action

Under the no action alternative, review of ROW applications would not be expedited, and applications would continue to be processed on a case-by-case basis. Applicants' projects could be delayed in order to meet NEPA requirements if they did not adhere to the BMPs outlined under the proposed action alternative; however, similar to the proposed action alternative, adoption of the no action alternative would have no impact.

Although adoption of the no action alternative would have no impact on application processing, identification of the requirement for NEPA review late in the application process can result in significant project delays. Consultation under Section 106 of the National Historic Preservation Act, including good-faith, government-to-government consultation with concerned Native American communities would have to be conducted by BLM, and cultural resource and paleontological surveys would have to be completed. Identification of significant cultural or paleontological resources or issues of Native American concern late in the process often precludes redesigning to avoid impacts, or at least makes redesign a costly alternative. If significant cultural or paleontological resources cannot be avoided, expensive data recovery programs may be required, causing both timing and financial impacts to a project. If Native American concerns cannot be addressed with appropriate redesign, costly measures may be required to mitigate impacts to the resources.

4.7.2 Best Management Practices

Following are recommended BMPs. Adoption of the following practices would reduce impacts on cultural and paleontological resources and would help expedite the NEPA review process.

Cultural Resources

CUL-1: Archaeological and Cultural Resources Inventory. On behalf of the applicant, a qualified archaeologist shall conduct an intensive archaeological inventory of all areas that may be disturbed during construction and operation of projects proposed in BLM transmission and utility corridors. A complete cultural resources inventory of the specific project area shall be conducted, the details of which shall be contained in a technical report. Should the project substantially change throughout the course of development and areas not previously inventoried for cultural resources become part of the construction plan, the applicant shall ensure that such additional areas are inventoried for cultural resources prior to any disturbance. All surveys shall be conducted and documented according to applicable laws, regulations, and professional standards.

CUL-2: Avoid Archaeological and Cultural Resources Impacts. The applicant shall avoid and minimize impacts on significant or potentially significant cultural resources wherever feasible. To

the extent practical, the applicant shall avoid or minimize impacts on archaeological resources, regardless of its NRHP eligibility status. This includes siting all ground-disturbing activities and other project components outside a buffer zone established around each recorded archaeological site within or immediately adjacent to the right-of-way.

CUL-3: Site Components to Avoid Impacts on Resources. Final design for all projects shall avoid direct impacts on significant or potentially significant cultural resources to the extent practical. All ground-disturbing activities and project components shall be sited to avoid or minimize impacts on cultural resources listed as or potentially eligible for listing as, archaeological sites, historical resources, or historic properties in the NRHP.

CUL-4: Include Cultural and Archaeological Resources Training in the WEAP. The WEAP shall include training regarding cultural resources in the area for all personnel who have the potential to encounter and alter unique archaeological sites, historical resources, or historic properties, or properties that may be eligible for listing in the NRHP. This includes construction supervisors as well as field construction personnel. No construction worker shall be involved in ground-disturbing activities without having participated in the WEAP. Training shall include ARPA training.

CUL-5: Archaeological Buffer Zones. The applicant shall establish and maintain a protective buffer zone around each recorded archaeological site within or immediately adjacent to the ROW. A protective buffer zone shall be established around each recorded archaeological site and treated as an "environmentally sensitive area" within which construction activities and personnel are not permitted. Monitoring shall be conducted to ensure that the protective areas are maintained.

CUL-6: Evaluation of Unavoidable Resources. The applicant's archaeologist shall evaluate the significance of all cultural resources that cannot be avoided. Cultural resources that cannot be avoided and which have not been evaluated to determine their eligibility for listing in the NRHP shall be evaluated to determine their historical significance. Evaluation studies shall be conducted and documented according to applicable laws, regulations, guidelines, and professional standards.

CUL-7: Evaluation of Archaeological Resources for NRHP Listing Eligibility. The applicant's archaeologist shall evaluate the significance of archaeological resources potentially eligible for NRHP listing. Evaluation of archaeological sites could include scientific excavation of a sample of site constituents sufficient to understand the potential of a site to yield information to address important scientific research questions per NRHP eligibility Criterion D. Sites with rock art shall be evaluated to consider their eligibility per NRHP Criteria A, C, and D.

CUL-8: Evaluation of Buildings and Structures for NRHP Listing Eligibility. The applicant's archaeologist shall evaluate the significance of buildings and structures potentially eligible for NRHP listing. Evaluation shall take into account engineering, aesthetic, architectural, and other relevant attributes of each property. Buildings and structures shall be evaluated for historical significance per NRHP Criteria A, B, and C. A report of the evaluation of each building or structure shall be prepared providing a rationale for an assessment of significance consistent with professional standards and guidelines. The report shall be filed with the state cultural resource archive at the Harry Reid Center for Environmental Studies at the University of Nevada, Las Vegas.

CUL-9: Assist BLM with Native American Consultation. If necessary, the applicant shall assist BLM in consultations with Native Americans regarding traditional cultural values that may be associated with locations within the APE. Archaeological or other cultural resources

associated with specific proposed construction within BLM transmission and utility corridors may have cultural values ascribed to them by Native Americans. The applicant shall assist the BLM during consultation with Native Americans regarding Native American cultural remains.

CUL-10: Additional Measures to Minimize Unavoidable Impacts, Including Data Recovery. Prior to construction and during construction, the applicant shall implement the following measures to minimize unavoidable impacts on significant archaeological sites:

- To the extent practical, all activities shall minimize ground surface disturbance within the bounds of significant archaeological sites, historical resources, or historic properties.
- Portions of significant archaeological sites, historical resources, or historic properties that can be avoided shall be protected as environmentally sensitive areas and shall remain undisturbed by construction activities.
- Monitoring by qualified professionals and/or Native Americans to ensure that impacts on sites are minimized shall be carried out at each affected cultural resource for the period during which construction activities pose a potential threat to the site, and for as long as there is the potential to encounter unanticipated cultural or human remains.
- Additional archaeological studies shall be carried out at appropriate sites to ascertain whether project facilities could be located on a portion of a site and cause the least amount of disturbance to significant cultural materials.
- If impacts on significant archaeological sites eligible under NRHP Criterion D cannot be avoided, archaeological data recovery shall be carried out in the portions of affected significant sites that would be impacted. A data recovery plan shall be prepared, reviewed by the appropriate agencies, and then implemented in order to recover an adequate sample of cultural remains that can be used to address important eligibility research questions for NRHP Criterion D. Archaeological data recovery shall involve scientific excavations; identification of recovered cultural and ecological remains; cataloging, scientific analysis, and interpretation of recovered materials; and preparation of a scientific technical report that describes the methods and results of the data recovery program.
- Reports of any excavations at archaeological sites shall be filed with the BLM and the state cultural resource archive at the Harry Reid Center for Environmental Studies at the University of Nevada, Las Vegas.

CUL-11: Minimize Unavoidable Impacts on Significant Buildings and Structures. Prior to and during construction, the applicant shall implement the following measures to minimize unavoidable impacts on significant buildings and structures associated with construction:

- Locate project components to minimize effects on significant buildings or structures.
- If impacts on significant buildings or structures cannot be avoided, document significant architectural and engineering attributes consistent with the documentation standards of the NPS Historic American Buildings Survey/Historic American Engineering Record.
- File reports and other documentation with the BLM, the NPS, if appropriate, and appropriate state cultural resource archive at the Harry Reid Center for Environmental Studies at the University of Nevada, Las Vegas.

CUL-12: Construction Monitoring and Unanticipated Cultural Resources Discovery Plan. During construction it is possible that previously unknown archaeological or other cultural resources or human remains could be discovered. Prior to construction, the applicant shall prepare a Construction Monitoring and Unanticipated Cultural Resources Discovery Plan to be implemented if an unanticipated discovery is made. At a minimum the plan shall detail the following elements:

- Worker and supervisor training in the identification of cultural remains that could be found in construction areas, and the implications of disturbance and collection of cultural resources pursuant with ARPA.
- Worker and supervisor response procedures to be followed in the event of an unanticipated discovery, including appropriate points of contact for professionals qualified to make decisions about the potential significance of any find.
- Identities of persons authorized to stop or redirect work that could affect the discovery, and their on-call contact information.
- Procedures for monitoring construction activities in archaeologically sensitive areas
- A minimum radius around any discovery within which work shall be halted until the significance of the resource has been evaluated and mitigation implemented as appropriate.
- Procedures for identifying and evaluating the historical significance of a discovery.
- Procedures for consulting Native Americans when identifying and evaluating the significance of discoveries involving Native American cultural materials.
- Procedures to be followed for treatment of discovered human remains per current state law and protocol developed in consultation with Native Americans.

CUL-13: Treatment of Human Remains on BLM Land. The provisions of the Native American Grave Protection and Repatriation Act are applicable when Native American human remains are found on federal land (BLM land). The discovery of human remains shall be treated as defined in the Construction Monitoring and Unanticipated Cultural Resources Discovery Plan.

CUL-14: Treatment of Human Remains on State or Private Land. Any human remains discovered on state or private land as part of a connected action (e.g., construction of an energy generating facility) during project activities shall be protected in accordance with current state law, specifically NRS Section 383.160. If human remains determined to be Native American, the individual identified as responsible in the Construction Monitoring and Unanticipated Cultural Resources Discovery Plan shall notify the Nevada Historic Preservation Division who shall, in turn consult with the Nevada Indian Commission. The Commission shall notify the appropriate tribe. The tribe may, with permission, inspect the site, and make recommendations as to disposition of the remains. If recommendations are not provided within 48 hours, or in the event that the land owner rejects the recommendation and any subsequent mediation, the landowner must, at his expense, reinter the remains. If human remains are determined not to be Native American, they shall be treated under the appropriate State of Nevada statutes, including but not limited to NRS Chapter 440 and the regulations of the applicable land management agency. In the event that human remains are recovered on private lands, the landholder shall have the right to designate the repository for the remains if they are determined not to be Native American and if their family affiliation cannot be determined.

CUL-15: Native American Consultation During Development of the APE. Prior to construction, BLM shall consult with appropriate Native Americans having cultural ties to particular areas associated with a proposed project or connected action. Native Americans shall be invited to participate in development of the APE, significance evaluations and data recovery excavations at archaeological sites with Native American cultural remains, as well as in monitoring during project construction. Native Americans shall be consulted to develop a protocol for working with each group should human remains affiliated with that group be encountered during project activities.

CUL-16: Qualified Professional Archaeologist. The applicant's cultural resources monitor shall meet the Secretary of the Interior Standards of a Qualified Professional Archaeologist prior to commencing construction or geotechnical test trenching for proposed development. The archaeologist shall be approved by the BLM and shall provide construction monitoring for any geotechnical studies that require trench excavation. The archaeologist shall present the monitoring plan to the BLM for approval, no less than 60 days prior to commencement of construction. The archaeologist shall also provide a report of findings after the monitoring has been completed. Because geoarchaeological sensitivity has not been widely tested in the study area, the BLM may require only a small sample of monitoring; further monitoring shall only be required if the need is proven.

Paleontological Resources

PAL-1: Paleontological Resource Management and Monitoring Plan (PRMMP). Prior to construction, applicants shall be required to retain a certified paleontologist to supervise monitoring of construction excavations and to produce a PRMMP. This PRMMP shall be prepared and implemented under the direction of the paleontologist and shall address and incorporate PAL-2 through PAL-8. Paleontological monitoring shall include inspection of exposed rock units and microscopic examination of matrix to determine whether fossils are present. The monitor shall have authority to temporarily divert grading away from exposed fossils in order to recover the fossil specimens. More specific guidelines for paleontological resource monitoring could be found in the PRMMP.

PAL-2: WEAP Training for Paleontological Resources. The paleontologist and/or his or her designated representative shall conduct a pre-construction field survey of any area underlain by Quaternary alluvium. Results of the field inventory and associated recommendations shall be incorporated into the PRMMP.

PAL-3: A WEAP shall be provided to construction supervisors and crew for awareness of requirements regarding the protection of paleontological resources and procedures to be implemented in the event fossil remains are encountered by ground-disturbing activities.

PAL-4: Ground-disturbing activities shall be monitored on a part-time or full-time basis by a paleontological construction monitor only in areas where proposed activities would disturb previously undisturbed strata in rock units of moderate and high sensitivity.

PAL-5: If fossils are encountered during construction, construction activities shall be temporarily diverted from the discovery, and the monitor shall notify all concerned parties and collect matrix for testing and processing as directed by the project paleontologist. In order to expedite removal of fossil-bearing matrix, the monitor may request heavy machinery to assist in moving large quantities of matrix out of the path of construction to designated stockpile areas. Construction shall resume at the discovery location once the necessary matrix is stockpiled, as determined by the paleontological monitor. Testing of stockpiles shall consist of screen washing small samples

to determine if important fossils are present. If such fossils are present, the additional matrix from the stockpiles shall be water screened to ensure recovery of a scientifically significant sample. Samples collected shall be limited to a maximum of 6,000 pounds per locality.

PAL-6: The project paleontologist shall document interim results of the construction monitoring program with monthly progress reports. Additionally, at each fossil locality, field data forms shall record the locality, stratigraphic columns shall be measured, and appropriate scientific samples shall be submitted for analysis.

PAL-7: The project paleontologist shall direct identification, laboratory processing, cataloging, analysis, and documentation of the fossil collections. When appropriate, and in consultation with the BLM, splits of rock or sediment samples shall be submitted to commercial laboratories for microfossil, pollen, or radiometric dating analysis. After analysis, the collections shall be prepared for curation (see PAL-8). A final technical report shall be prepared to summarize construction monitoring and present the results of the fossil recovery program. The report shall be prepared in accordance with Society of Vertebrate Paleontology guidelines and BLM requirements. The final report shall be submitted to the BLM and the curation repository.

PAL-8: Prior to construction, the applicant shall enter into a formal agreement with a recognized museum repository, and shall curate the fossil collections, appropriate field and laboratory documentation, and final Paleontological Resource Recovery Report in a timely manner following construction.

4.8 Visual Resources

This section describes the environmental consequences for visual resources that could occur if projects are constructed in the study area and lists BMPs that would reduce impacts. As discussed in Chapter 3, the area was evaluated against a VRM Class III designation. Appendix D contains the visual contrast rating worksheets (Form 8400-4) from the BLM Visual Resource Inventory Handbook H-8410-1.

4.8.1 Environmental Consequences

Proposed Action

Minor upgrades to existing transmission facilities would consist largely of replacing existing conductors (i.e., reconductoring) with new conductors and possibly replacing existing insulators with new insulators. Existing structures would remain in place. New conductors and insulators are not anticipated to be substantially different in appearance than the existing ones and new conductors may be less noticeable if they are non-specular. For these reasons, and with the application of BMPs described below in Section 4.8.2, visual contrast would be weak to none and long-term visual impacts associated with upgrades to existing transmission facilities are anticipated to be low to negligible for views from all KOPs and throughout the study area. Changes to the existing environment for minor upgrades to existing transmission facilities would be consistent with VRM Class III and would result in a negligible adverse effect; therefore, no additional mitigation would be required.

Visual impacts would occur during construction of minor upgrades to existing transmission facilities and would likely consist of views of construction equipment, materials storage areas, and access routes. Some temporary ground disturbance may occur as a result of construction activities near the existing structures and access routes for construction vehicles. The duration of

visual impacts resulting from construction of a project for a potential upgrade to existing transmission facilities is anticipated to be less than two years and would therefore be considered temporary and short-term. Visual contrast resulting from temporary construction activities is anticipated to be moderate to weak. For these reasons, and with the application of BMPs described below in Section 4.8.2, short-term visual impacts associated with construction of upgrades to existing transmission facilities are anticipated to be low to negligible for views from all KOPs and throughout the study area. Changes to the existing environment during construction of minor upgrades to existing transmission facilities would be consistent with VRM Class III and would result in a negligible adverse effect; therefore, no additional mitigation would be required.

Visual impacts associated with upgrades to or new underground linear infrastructure features such as water or gas pipelines would be similar to those described above for both long- and short-term visual impacts of transmission facility upgrades. Ground disturbance resulting from construction activities would be repaired with the application of BMPs. However, long-term visual impacts could result from the introduction of new, small, above-ground metering or pumping stations that could be required for gas or water line features within the BLM transmission and utility corridors. If these types of features were required, it is anticipated they would be small in scale and have the appearance of a small rectilinear building or shed. Although they may contrast in form and color with the surrounding landscape, their small size would likely result in moderate to weak contrast. For these reasons, and with the application of BMPs described below in Section 4.8.2, long-term visual impacts associated with upgrades to or new construction of underground linear infrastructure features would be low to negligible for views from all KOPs and throughout the study area. Changes to the existing environment for upgrades to or new underground linear infrastructure features would be consistent with VRM Class III and would result in a negligible adverse effect; therefore, no additional mitigation would be required.

Major upgrades to existing transmission line facilities could entail replacing existing structures with ones of a different height; replacing existing structures with structures of a different design (e.g., replacing lattice tower with mono-pole or H-frame structures); or replacing existing transmission facilities with new ones having structures with a different height, design, or spacing. A new transmission line facility could also be built parallel to existing lines within a BLM corridor, introducing an additional feature in the corridor. Because visual contrast and resulting visual impacts of major upgrades to or new transmission facilities may vary with viewer location, these are described below for each KOP.

For purposes of this assessment, it is assumed that a project could be introduced into the BLM corridor located nearest to each KOP. Also, it is assumed that the duration of visual impacts resulting from construction of a project for major upgrades to or new transmission facilities would be two years or less and would therefore be considered temporary and short-term. Visual contrast resulting from temporary construction activities is anticipated to be moderate to weak. For these reasons, and with the application of BMPs described below in Section 4.8.2, short-term visual impacts associated with construction of major upgrades to or new transmission facilities are anticipated to be low to negligible for views from all KOPs and throughout the study area.

For views from KOP 1, major upgrades to or new transmission facilities would introduce new features in the view. However, the form, line, color, and texture of these new features would be similar to and more distant than those of existing transmission features visible in the near foreground-middleground distance zone. The new features would therefore be subordinate to these existing features and contrast would be weak to none. Although new structures could be proposed to be different in design or height from the existing dull-gray steel lattice structures, implementation of BMPs would ensure their form, line, color, and texture remains similar to the

existing structures. For these reasons, and with the application of BMPs described below in Section 4.8.2, visual impacts associated with major upgrades to or new transmission facilities are anticipated to be low to negligible for views from KOP 1. Changes to the existing environment for major upgrades to or new transmission facilities would be consistent with VRM Class III and would result in a negligible adverse effect; therefore, no additional mitigation would be required.

For views from KOP 2, major upgrades to or new transmission facilities would introduce new features in the view. However, the form, line, color, and texture of these new features would be similar to and more distant than those of existing transmission features visible about two miles south in the foreground-middleground distance zone. Existing transmission lines in BLM transmission and utility corridors within the study area are three or more miles away and are barely distinguishable in this view. New transmission features similar in height and design to existing transmission features that could be introduced within BLM transmission and utility corridors in the study area would be barely distinguishable and subordinate to the existing features in the view. Therefore, contrast would be weak to none. Although new structures could be proposed to be different in design or height from the existing dull-gray steel lattice structures, implementation of BMPs would ensure their form, line, color, and texture remains similar to the existing structures. For these reasons, and with the application of BMPs described below in Section 4.8.2, visual impacts associated with major upgrades to or new transmission facilities are anticipated to be low to negligible for views from KOP 2. Changes to the existing environment for major upgrades to or new transmission facilities would be consistent with VRM Class III and would result in a negligible adverse effect; therefore, no additional mitigation would be required.

For views from KOP 3, major upgrades to or new transmission facilities would introduce new features in the view. New transmission structures could be proposed that would be different in design and noticeably taller than the exiting transmission structures visible in the near foreground-middleground distance zone of the view. Implementation of BMPs described below in Section 4.8.2 would ensure the form, line, color, and texture of new structures remains similar to those of existing structures. However, major upgrades to or new transmission facilities may require that structures be noticeably taller and more widely spaced than existing structures in the view. If new structures are substantially taller, they may, depending on their locations, extend above the horizon line of distant mountains, be silhouetted against the sky, and begin to attract attention and dominate the characteristic landscape. Contrast would therefore be moderate to moderately high even with the application of BMPs. For these reasons, and with the application of BMPs described below in Section 4.8.2, visual impacts associated with major upgrades to or new transmission facilities are anticipated to be moderate for views from KOP 3. However, changes to the existing environment for major upgrades to or new transmission facilities would be consistent with VRM Class III because the existing character of the landscape would be partially retained. This would result in a negligible adverse effect, and no additional mitigation would be required.

For views from KOP 4, major upgrades to or new transmission facilities would introduce new features in the view. However, the form, line, color, and texture of these new features would be similar to and more distant than those of existing transmission features barely distinguishable in the distant middleground and background in this view. In addition, the other energy generation facilities and substations in the view are closer to the viewer and dominate the view in form, line, color, and texture. The new transmission features would therefore be subordinate to these existing features and contrast would be very weak to none. Although new structures could be proposed to be different in design or height from the existing dull-gray steel lattice structures, implementation of BMPs would ensure their form, line, color, and texture remains similar to the existing structures. For these reasons, and with the application of BMPs described below in Section 4.8.2,

visual impacts associated with major upgrades to or new transmission facilities are anticipated to be low to negligible for views from KOP 4. Changes to the existing environment for major upgrades to or new transmission facilities would be consistent with VRM Class III and would result in a negligible adverse effect; therefore, no additional mitigation would be required.

No Action

Under the no action alternative, review of ROW applications would not be expedited, and applications would continue to be processed on a case-by-case basis. Applicants' projects could be delayed in order to meet NEPA requirements if they did not adhere to the BMPs outlined under the proposed action alternative; however, similar to the proposed action alternative, adoption of the no action alternative would have no impact.

4.8.2 Best Management Practices

Following are recommended BMPs. Adoption of the following practices would reduce impacts on visual resources and would help expedite the NEPA review process.

- **VIS-1: Restore Areas of Ground Disturbance to an Appearance Similar to Pre-project Conditions after Construction.** If grading or other ground disturbance is determined by the BLM to be necessary for access, it shall be the minimum required and the applicant shall consult with the BLM to identify and implement feasible methods to restore the area to an appearance that would blend with the overall landscape character. Any widening or grading of access roads that must be constructed shall be the minimum required for access by construction equipment.
- **VIS-2: Consult with the BLM Regarding Appearance of New Roads.** If new roads are required for construction or permanent access to new or existing infrastructure, the applicant shall consult with the BLM to identify and implement feasible methods to restore the area to an appearance that would blend with the overall landscape character. Treatments shall include seeding and/or inter-planting into the disturbed areas.
- **VIS-3: Design Transmission Projects to be Similar in Design to Existing Structures.** For transmission projects, new or redesigned transmission structures must be similar in design to existing structures. The finish on transmission structures shall be a non-reflective finish, such as steel that has been galvanized and treated to create a dulled finish that reduces light reflection and helps blend the structures into the landscape setting. Any new transmission conductors shall be non-specular to minimize conductor reflectivity and help blend them into the landscape setting.
- **VIS-4: Consult with the BLM Regarding Appearance of New Transmission Lines.** Clearing and ground disturbance required for construction shall be the minimum required, and the applicant must consult with the BLM to identify and implement feasible methods to restore the area to an appearance that would blend with the overall landscape character. Areas around new or rebuilt transmission structures that must be cleared during the construction process or other areas of ground disturbance shall be regraded and revegetated to restore these areas to an appearance that would help blend them into the overall landscape character.
- **VIS-5: Dust Suppression Measures.** During the construction period, dust suppression measures shall be used to minimize the creation of dust clouds potentially associated with ground disturbance activities and the use of the access roads.

4.9 Recreation

4.9.1 Environmental Consequences

Proposed Action

ROW applications for transmission and pipeline upgrades or new construction in BLM transmission and utility corridors in the study area would be similar to and compatible with existing development in the Eldorado Valley, which already coexists with recreational uses in and near the study area. However, effects on recreation could occur if a proposed action restricts access to recreational uses in the Eldorado Valley during construction or operation. In particular, construction activities that minimize access to the Eldorado Valley Dry Lake or interrupt permitted race events in or near the study area could be considered an impact. In addition, increased construction traffic along Highway 95 could impact recreational uses by restricting the ability of visitors to access the Eldorado Valley Dry Lake or visitors traveling north along Highway 95 toward Las Vegas, Lake Mead, or other dispersed recreational activities in or near the Eldorado Valley and Boulder City.

Impacts could also occur if construction activities were viewable by recreational users of Wilderness Areas and National Recreation Areas, the Eldorado Valley Dry Lake, the Boulder City Conservation Easement, and golf courses in Boulder City. However, most construction activities would likely not be viewable by the majority of users of these areas due to topography. Visual impacts on sensitive receptors, such as recreational users, are discussed in Section 4.8, Visual Resources.

No Action

Under the no action alternative, review of ROW applications would not be expedited, and applications would continue to be processed on a case-by-case basis. Applicants' projects could be delayed in order to meet NEPA requirements if they did not adhere to the BMPs outlined under the proposed action alternative; however, similar to the proposed action alternative, adoption of the no action alternative would have no impact.

4.9.2 Best Management Practices

Following are recommended BMPs. Adoption of the following practices would reduce impacts on recreation and would help expedite the NEPA review process.

REC-1: Coordinate with Recreational Events. Applicants shall coordinate with the BLM, Clark County, and Boulder City regarding the timing of any recreational events, such as permitted races and events, in or near the study area.

REC-2: Coordinate Temporary Recreational Facility Closures. Applicants shall not restrict access to recreational uses in or near the study area during construction or operation, especially the Eldorado Valley Dry Lake. However, if temporary short-term closures to recreational areas are necessary for construction activities, the applicant shall coordinate closures with recreational facility owners. To the extent practicable, the applicant shall schedule construction activities to avoid heavy recreational use periods (e.g., holidays or tournaments). The applicant shall post notice of the closure near recreational facilities 14 calendar days prior to the closure.

REC-3: Restrict Construction Workspaces in Recreational Areas. Applicants shall restrict construction workspace areas, such as contractor yards, in recreation areas to minimize impacts on recreational users during construction.

REC-4: Notification of Road Closures during Hunting Season. Although hunting is not permitted in the study area, applicants shall notify NDOW of any road closures during hunting season that could impact hunting in the vicinity of the study area.

4.10 Air Quality and Climate

4.10.1 Environmental Consequences

Proposed Action

All projects anticipated to be developed within BLM transmission and utility corridors in the study area would be required to comply with all federal, state and local laws and regulations as set forth in the CAA.

Criteria air pollutant and GHG emissions would be generated during various activities associated with the construction and operations of proposed utility projects within the study area. Emissions generated from construction activities of potential linear projects would temporarily increase ambient air pollutant concentrations along the route of utility lines, in the vicinity of access roads used by project vehicles, and at the proposed ancillary stations and facilities. Similarly, construction of connected actions, such as renewable or fossil fuel power generation projects, mining facilities, and other developments would contribute to an increase of ambient air pollutant concentrations.

Primary emission sources during construction include fossil-fueled non-road diesel construction equipment and fugitive dust from earth moving activities and vehicle traffic on local/access roads. Construction of transmission infrastructure would include removal of existing conductor, towers, foundations, and wood poles; installation of tower foundations; and assembly, hauling, and restoration activities. For underground utility lines, major construction activities would involve the use of large trenchers, excavators, side boom tractors, automatic welding equipment, trucks and tracked vehicles. Additionally, underground projects could involve the use of grading for access road use during construction. Upgrades at nearby substations would involve grading, civil, and electrical phases. Installation of telecommunications lines could include both overhead and underground construction.

Due to the linear nature of the type of development expected in BLM transmission and utility corridors, numerous activities would occur at different locations spread out over the length of the corridors. Thus, it is expected that construction equipment use would be spread out over a wide geographical area.

No long-term impacts associated with operation and maintenance of linear infrastructure are anticipated The emissions of criteria air pollutants during project operation would be primarily from maintenance vehicles used by workers to patrol the transmission lines and visit nearby substations. It is assumed that most of the GHG emissions during project operation would result from potential leaks of sulfur hexafluoride (SF_6) from substation/transmission equipment. However, operational emissions associated with connected facilities, such as compressor stations, fossil fuel power generation plants, and other potential stationary sources associated with energy

development that proposes to connect to a BLM utility corridor would be considered a connected action.

To assess the potential air quality impacts associated with linear utility projects proposed within BLM transmission and utility corridors in the study area, the potential air pollutant emissions from construction and operational phase (including maintenance activities) should be evaluated based on comparison with applicable thresholds, or by predicting atmospheric impacts from emissions sources obtained from air dispersion models (e.g., AERMOD or SCREEN) using on-site or representative meteorological data representing at least one year. Emissions of criteria pollutants and GHGs should be estimated using data on vehicle/equipment operation and published emission factors. GHGs emissions should be derived based on estimated equipment types and run-time, additional estimates for worker commute, and operational fugitive emissions of SF_6 estimated based on applicant-provided information.

General Conformity Applicability

The BLM transmission and utility corridors are located in an area classified as non-attainment for ozone and PM_{10}; therefore, the air quality assessment for federal actions within this area could be subject to a General Conformity applicability determination under 40 CFR 93. The General Conformity Rule is a statutory obligation under Section 176(c) (4) of the 1990 CAA Amendments as set forth by Congress. All federal proposed actions and connected actions require a determination of the applicability of the General Conformity Rule. If the General Conformity Rule is determined to be applicable, a detailed analysis of emissions would be performed, so that a full determination could be made and appropriate mitigation would be required. It is expected that the General Conformity Rule would be more likely to apply to connected actions, such as certain types of energy generation projects.

The U.S. EPA sets *de minimis* conformity thresholds, which refer to the maximum allowable increase in direct and indirect emissions between each projected year and the baseline year for each criteria pollutant in nonattainment and maintenance areas. Emissions below these levels are presumed to conform to the State Implementation Plan within the meaning of the General Conformity Rule. Since the BLM transmission and utility corridors would be located in an area designated as nonattainment for both ozone and PM_{10}, a conformity applicability review would be required for NO_x, VOCs, and PM_{10} for proposed and connected actions to determine if they would exceed *de minimis* conformity thresholds. Table 4-2 presents the applicable *de minimis* levels for exemption from general conformity for potential projects to be built along the proposed BLM transmission and utility corridors.

Table 4-2 *De Minimis* Levels for Exemption from General Conformity Rule Requirements

Pollutant	Tons per Year
O_3 (VOCs or NO_x)	
Moderate non-attainment and ozone maintenance areas inside an O_3 transport region	
VOCs	50
NO_X	100
PM_{10}	
Serious non-attainment areas	70

Source: 40 CFR 51.

Key: O_3 = ozone; VOCs = volatile organic compounds; NO_x = nitrogen oxides; PM_{10} = particulate matter less than 10 microns in diameter.

If an action is in a nonattainment area and the total emissions for each year of the action are below *de minimis* levels, a determination of whether the project is regionally significant is still needed.

Potential projects being proposed within BLM transmission and utility corridors would be exempted from the Conformity Determination if their connected actions would not involve the development of major new or modified stationary sources that require a permit under the New Source Review program or the prevention of significant deterioration program, or direct emissions from hazardous waste remedial and removal actions carried out under CERCLA. The General Conformity rule was recently amended to exclude minor stationary sources permits from the conformity emissions analysis (75 Federal Register, April 5 2010, pages 17254-17279).

No Action

Under the no action alternative, review of ROW applications would not be expedited, and applications would continue to be processed on a case-by-case basis. Applicants' projects could be delayed in order to meet NEPA requirements if they did not adhere to the BMPs outlined under the proposed action alternative; however, similar to the proposed action alternative, adoption of the no action alternative would have no impact.

Although adoption of the no action alternative would have no impact on application processing, connected actions such as power generation facilities and other permanent emission sources associated with linear utility projects (e.g., compressor and pumping stations) could be subject to other federal air quality regulations, such as the New Source Review program, Title V Operating Permits, and control hazardous air pollutants emissions through application of maximum achievable control technology, depending on the anticipated operational annual and daily emissions obtained as a result of a detailed emissions inventory and ground level concentrations obtained from air pollutant dispersion modeling. The permitting process associated with connected actions would add delays into the environmental review process for each project.

For new emission sources to be located on federal land, 40 CFR Ch.1 Subpart B states that "[n]o department agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit or approve any activity that does not conform to an applicable implementation plan." Therefore, applicants would need to ensure that both direct and indirect emissions from new emission sources are included when demonstrating conformity with the applicable implementation plan. Since the timeline to obtain a finding of conformity can take over a year, the applicant should include the conformity finding from the appropriate federal land manager with the project application.

4.10.2 Best Management Practices

Following are recommended BMPs. Adoption of the following practices would reduce impacts on air quality and climate, and would help expedite the NEPA review process.

AIR-1: Compliance with Clark County DAQEM Regulations. Each ROW application shall include a local air quality management district determination of compliance or authority to construct. Ideally, for more timely review of applications include the draft determination of compliance.

AIR-2: Air Quality Permits. The applicant shall apply for, secure, and comply with all appropriate air quality permits for project construction and operations from the Clark County

DAQEM and from the U.S. EPA, if appropriate, prior to construction mobilization. The appropriate air quality permits should be valid and remain in force for the life of the project.

AIR-3: Ambient Air Quality Data. The applicant shall gather ambient air quality data early in the exploration phase and the planning phases of project design and use standard and well established procedures for assessing air quality impacts. For this purpose, it is recommended to gather meteorological data or establish a meteorological station (to collect at least one year of data) using siting and operational criteria for these stations.

AIR-4: Baseline Air Quality Conditions. The applicant shall document background or baseline air quality conditions. Site-specific monitoring provides the most definitive baseline data. It is recommended the applicant collects or monitors routine and periodic samples over the course of at least one year, and document physical parameters of emission sources and of local topography and nearby structures.

AIR-5: Air Quality Modeling. The applicant use the air dispersion models (e.g., AERMOD or SCREEN) to predict atmospheric impacts from emissions sources and fugitive dust. Run models using on-site or representative meteorological data representing at least one year of data. Use models to assess and reduce predicted impacts to sensitive receptors.

AIR-6: Emissions Inventory. The applicant shall obtain emissions inventory data from existing facilities with similar technology to their proposed project.

AIR-7: Project Design Considerations. Consider prevailing wind directions and the nearest sensitive receptors when configuring proposed project facilities, particularly for connected actions. Include in project designs locations of source-testing sampling monitors.

AIR-8: Offset/Mitigation. For emissions of criteria pollutants in non-attainment areas from stationary sources, the applicant shall provide a detailed list of the offsets/mitigation that could be purchased / secured to offset/mitigate the emissions so there are no net emission increases attributed to facility operations. Include emissions associated power plants operations, fuel transport and preparation, delivery of consumables, and other operations associated with the operation of the project.

AIR-9: Combustion Emission Controls. The applicant shall ensure that construction and maintenance vehicles and equipment comply with U.S. EPA emissions standards. The use low sulfur and low aromatic fuel meeting U.S. EPA standards for motor vehicle diesel fuel, ultra-low sulfur diesel with a 15 part per million sulfur contact, biodiesel or alternative fuels shall be also considered to reduce project criteria and GHG pollutants. The applicant shall also consider the use of vehicle and equipment exhaust filters and catalysts to reduce air emissions during construction and operation.

AIR-10: Low-emission Construction Equipment. All construction equipment with a rating between 100 and 750 horsepower shall be required to use engines compliant with U.S. EPA Tier 2 non-road engine standards. In the event a Tier 2 engine is not available for any off-road engine larger than 100 horsepower, that engine shall be equipped with a Tier 1 engine. The applicant shall substitute small electric-powered equipment for diesel- and gasoline-powered construction equipment where feasible. The applicant shall maintain construction equipment according to manufacturing specifications and use low-emission equipment.

AIR-11: GHG Inventory and Reporting. The applicant shall prepare a report outlining the sources and amounts of GHG from the project construction, equipment transportation, operation, and maintenance activities and identify measures to reduce or mitigate greenhouse gas emissions, depending on attainment status. The applicant shall also be required to enforce and follow limits for idling time for commercial vehicles, including delivery and construction vehicles. The applicant shall be also required to consider the following BMPs to reduce the potential for GHG emissions:

- Joining U.S. EPA's SF6 Emission Reduction Partnership for Electric Power Systems (http://www.epa.gov/highgwp/electricpower-sf6/basic.html);
- Performing annual inspections and estimation of SF6 emissions using an emission inventory protocol;
- For equipment that would contain SF6, purchasing only new equipment that meets International Council on Large Electric Systems standards for leak rates;
- Implementing SF6 recovery and recycling;
- Ensuring that only knowledgeable personnel handle SF6; and
- Providing a vanpool for construction workers.

AIR-12: Dust Control Plan. The applicant shall prepare and comply with a dust control plan in cooperation that addresses emissions of fugitive dust during construction and operation of the project. Provisions for monitoring fugitive dust should be part of the dust control plan and follow protocols and requirements established by the Clark County DAQEM. The following measures shall be implemented as part of the plan:

- Frequent watering or stabilization of excavations, spoils, access roads, storage piles, and other sources of fugitive dust (parking areas, staging areas, other) if construction activity causes persistent visible emissions of fugitive dust beyond the work area.
- Use of dust suppressant applications or other suppression techniques to control dust emissions from onsite unpaved roads and unpaved parking areas, as well as to mitigate fugitive dust emissions from wind erosion on areas disturbed by construction activities. When considering use of water or chemical dust suppressants take into account water supply and chemical dust suppressant issues.
- Pre-watering of soils prior to clearing and trenching.
- Pre-moistening of, prior to transport, import and export dirt, sand, or loose materials.
- Covering of all trucks hauling soil, sand, and other loose materials or require all such trucks to maintain at least two feet of freeboard.
- Inspection and cleaning, as necessary, of construction equipment vehicle tires so they are free of dirt prior to entering paved roadways.
- Traffic speed limits on all unpaved site areas to 10 miles per hour.
- Postage and enforcement of speed limits on the project site and all project access roads.
- Provision of gravel ramps of at least 20 feet in length at tire cleaning stations.
- Use of gravel or treatment of unpaved exits from construction sites to prevent track-out to public roadways.

- Directions to all construction vehicles to enter the construction site through gravel or treated entrance roadways, unless alternative routes are approved by the air quality management district.
- Provision of sandbags or other measures in areas adjacent to paved roadways, as specified in the SWPPP, to prevent run-off to roadways.
- Sweeping of paved roads to prevent accumulation of dirt and debris.
- Dedication of water truck or high-capacity hose to any soil screening operations.
- Minimization of drop height of material through screening equipment.
- Reduction of the amount of disturbed area where possible.
- Planting of vegetative ground cover in disturbed areas after construction activities have ceased within a time period that is consistent with the Project's Reclamation Plan.

AIR-13: Wind Erosion Control. The applicant shall ensure wind erosion control techniques (e.g., windbreaks, water, and vegetation) are used on all access and maintenance routes and materials stockpiles that may be disturbed during project maintenance and operation. Use of chemical dust suppressants should be avoided in and around areas occupied by special status species. Any windbreaks used should remain in place until the soil is stabilized or permanently covered with vegetation.

4.11 Geology and Soils

4.11.1 Environmental Consequences

Proposed Action

The study area is located in Seismic Zone 2B, which has moderate potential for damage by seismic hazards associated with known faults (UBC 1997). However, the only known fault in the Eldorado Valley is the Black Hills Fault, located east of Boulder City in the McCullough Range. Although the Black Hills Fault may be capable of producing a magnitude 6.4 to 6.8 earthquake, there have been few earthquakes (USGS 2008) greater than magnitude 3.0 reported within the Eldorado Valley.

Although the probability of an earthquake increases as longer time periods are considered, due to the short duration of construction periods, the likelihood that people would be exposed to adverse effects related to earthquakes within the study area is limited. There is also some potential for project infrastructure to experience an earthquake during operation; however, due to the infrequency of large seismic events in the study area, impacts related to the potential for damage to project infrastructure or the potential to expose people to injuries or death related to fault rupture, strong seismic ground shaking, seismic-related ground failure, or landslides would be low to negligible.

The BLM transmission and utility corridors do not cross the Eldorado Valley Dry Lake bed, which has medium to high potential for expansive soils. However, proposed actions near the dry lake bed in corridors N-02795 and CC-18367 could be more susceptible to structural failures due to expansive soils depending upon on site-specific subsurface conditions, which should be determined by site-specific geotechnical sampling, testing, and analysis. Building on expansive soils could lead to structural failure of transmission facilities as expansive soils shrink or swell with changes in moisture content, affecting the stability of foundations. While proposed actions

near the Eldorado Valley Dry Lake could be more susceptible seismic activity in expansive soils, with proper engineering design, impacts related to structural failure due to expansive soils would be low.

Corridors CC-18307 and N-33006 pass through areas with moderately steep topography, which could have alluvial fans and be susceptible to landslides, mudflows, debris flows sheet flows and rapid channel avulsion within or adjacent to the BLM transmission and utility corridors. This type of erosion and mass wasting can have potentially damaging effects; however, these conditions would be local, and the impact from construction-caused landslides on people or structures would be localized. Impacts related to landslides in the study area would be low to negligible. Mapping and assessment of active lobes of alluvial fans and channels should be performed during evaluation and development of new projects in these BLM transmission and utility corridors.

Proposed actions in BLM transmission and utility corridors would cause erosion in areas where project components and construction equipment disturb the existing ground surface and natural drainages. In areas where biological soil crusts would be disturbed, effects due to soil disturbance would be more severe. Biological soil crusts help control erosion and stabilize soil but, if disturbed, can take from 5 to 250 years to regenerate (USGS 2002). Therefore, disturbing biological soil crusts would be considered an impact. Operation and maintenance of roads and infrastructure within BLM transmission and utility corridors would also result in erosion; however, such activities would be similar to existing maintenance procedures.

Ground subsidence or collapse due to groundwater withdrawal or dehydration of clays between the soil surface and the water table could lead to structural failure of transmission and telecommunication line towers. This adverse impact, ranging from negligible to minor, could be localized to extensive, depending on the degree to which continued and/or increased groundwater withdrawal from the Eldorado Valley causes an overdraft condition or dehydration resulting in settling of the ground surface due to compaction of underlying unconsolidated sediments. The likelihood of this impact could increase over time with continued and/or increased groundwater withdrawal.

Soils in the study area have a low corrosively potential with respect to concrete and high corrosively potential with respect to steel; however, applicants would take this into consideration when engineering their projects. Therefore, impacts related to corrosive soils would be negligible.

No Action

Under the no action alternative, review of ROW applications would not be expedited, and applications would continue to be processed on a case-by-case basis. Applicants' projects could be delayed in order to meet NEPA requirements if they did not adhere to the BMPs outlined under the proposed action alternative; however, similar to the proposed action alternative, adoption of the no action alternative would have no impact.

4.11.2 Best Management Practices

Following are recommended BMPs. Adoption of the following practices would reduce impacts on geology and soils and would help expedite the NEPA review process.

GEO-1: Limit Biological Crust Disturbance. In order to minimize erosion, applicants shall limit biological crust disturbance.

GEO-2: Geotechnical Engineering and Engineering Geology Study, including Active Flood Zone Mapping. A geotechnical engineering and engineering geology study shall be required prior to final design to identify site-specific geologic conditions and potential geologic hazards in sufficient detail to support sound engineering practices. Map active flood zones and lobes of alluvial fans and channels adjacent to and within the BLM transmission and utility corridors.

GEO-3: Minimize Ground Disturbance from Grading for New Access Roads. New access roads, if required, shall be designed to minimize ground disturbance from grading. Roads shall follow natural ground contours as closely as possible, and shall include specific features for road drainage. Soil erosion protection measures shall be outlined in the SWPPP. Measures could include water bars, drainage dips, side ditches, slope drains, and velocity reducers.

4.12 Hydrology and Water Resources

4.12.1 Environmental Consequences

Proposed Action

The Eldorado Valley Dry Lake is located within a FEMA Zone A 100-Year Flood Zone. The BLM transmission and utility corridors cross Zone A 100-Year Flood Zones, as depicted on Figure 3-13. In addition, the majority of the study area is located on alluvial fans. During flood events, sediments could be transported across alluvial fans by water in desert washes, debris flows, and sheet floods during large storm events, resulting in flooding hazards. However, although the area experiences seasonal flooding, with proper design and placement of project components, impacts related to flooding would be low to negligible.

Depending upon the location of construction, there could also be some potential for increased erosion or siltation due to alteration of surface drainage patterns during construction. In general, construction activities causing ground disturbance, such as grading, may change natural runoff patterns, thereby affecting natural erosion and siltation processes. Water used for dust suppression during construction could also suspend and transport more sediment than is typically moved in an arid climate. However, with adherence to regulations and best management, such as the preparation of a SWPPP and a Drainage Erosion, and Sedimentation Control Plan, in addition to BMPs listed below, impacts related to increased erosion and siltation would be low to negligible.

Potential for interference with aquifer recharge would generally be negligible for most types of construction that would be proposed within BLM transmission and utility corridors in the study area. In general, increasing the area of impervious surfaces in an area can result in local wells or aquifers receiving fewer groundwater inputs; however, linear infrastructure typically does not require the introduction of impervious surfaces, except minimally at the base of transmission towers. New substation construction is not expected within the corridors, and improvements to existing substations or other infrastructure would likely not include the introduction of new impervious surfaces. However, while construction within the BLM transmission and utility corridors would generally not introduce impervious surfaces, impervious surfaces could be introduced by connected actions outside of the BLM transmission and utility corridors, such as energy generation projects. Impacts associated with a connected action would be evaluated on a case-by-case basis and should implement standard BMPs to reduce impacts.

No Action

Under the no action alternative, review of ROW applications would not be expedited, and applications would continue to be processed on a case-by-case basis. Applicants' projects could

be delayed in order to meet NEPA requirements if they did not adhere to the BMPs outlined under the proposed action alternative; however, similar to the proposed action alternative, adoption of the no action alternative would have no impact.

4.12.2 Best Management Practices

Following are recommended BMPs. Adoption of the following practices would reduce impacts on hydrology and water resources and would help expedite the NEPA review process. Depending upon the specifics of a proposed application, the following could be required by the BLM.

W-1: Avoid Placement of Equipment in Intermittent Stream Channels. Applicant shall not keep construction equipment in intermittent stream channels during storm events.

W-2: Erosion Control Plan. Applicant shall create an erosion control plan, which shall be incorporated into the construction bidding specifications to ensure compliance.

W-3: Appropriate Design of Tower Footing Foundations. The applicant shall appropriately design tower footing foundations, such as raised foundations and/or enclosing flood control dikes, which shall be used to prevent scour and/or inundation by a 100-year flood.

W-4: Alluvial Fan Mapping. The applicant shall perform mapping of alluvial fans within the project area, identifying active zones such as channels and active fan lobes. As much as possible, the applicant shall locate infrastructure to avoid active fan areas and channels to minimize the potential for damage by flash flooding and mud and debris flows.

W-5: Diversion Dikes. Diversion dikes shall be required to divert runoff around a tower structure or a substation site if (a) the location in an active channel (or channels) could not be avoided; and (b) where there is a very significant flood scour/deposition threat, unless such diversion is specifically exempted by the BLM Authorized Officer.

W-6: Divert Slope Runoff. The applicant shall collect and divert runoff from steep, disturbed, or otherwise unstable slopes.

W-7: Ditch and Drainage Design. Ditches and drainage devices shall be designed to handle concentrated runoff and located to avoid disturbed areas. They shall have energy dissipations at discharge points that could include rip-rap, concrete aprons, and stepped spillways. Where diversion dikes are required to protect towers or other structures from flooding or erosion, these dikes shall be designed to avoid increasing the risk of erosion or flooding onto adjacent property.

W-8: Storm Water Pollution Prevention Plan. As a part of the SWPPP, soil disturbance at construction sites and access roads shall be the minimum necessary for construction and designed to prevent long-term erosion through the following activities: restoration of disturbed soil, re-vegetation, and/or construction of permanent erosion control structures. New access roads shall be designed to minimize ground disturbance from grading. They shall follow natural ground contours as closely as possible, and shall include specific features for road drainage. Measures could include water bars, drainage dips, side ditches, slope drains, and velocity reducers. Where temporary crossings shall be constructed, they shall be restored and repaired as soon as possible after completion of the discrete action associated with construction.

W-9: Onsite Flow Modeling. Depending upon the type and location of construction, the applicant may be required to employ a hydrologist who is expert with desert hydrology (i.e.,

alluvial fans) to develop an onsite flow model to predict any alteration in flow path that would result from construction and operation and maintenance. The applicant shall coordinate with the BLM on model parameters and assumptions used in modeling.

W-10: Restoration Plan for Eldorado Valley Dry Lake. If construction disturbs the Eldorado Valley Dry Lake, the applicant shall employ a hydrologist and a restoration specialist to develop a Restoration Plan for disturbance of the dry lake bed. The BLM would review the plan prior to the start of construction. The BLM would also assess the success of the restoration and determine whether the Eldorado Valley Dry Lake surface had been restored to preconstruction conditions.

W-11: Site Components on Inactive Portions of Alluvial Fan. Where feasible, the applicant shall locate project components on inactive portions of the alluvial fan to minimize risk associated with flash flooding and alluvial fan failure.

W-12: Drainage, Erosion, and Sedimentation Control Plan. The applicant shall prepare and implement a Drainage, Erosion, and Sedimentation Control Plan that ensures proper protection of water quality and soil resources, demonstrates no increase in off-site flooding potential, and includes provisions for stormwater and sediment retention for the project site. The plan should be designed to minimize disturbance of the site during construction, operation, repowering/retrofit, and decommissioning, and achieve the following:

- Stabilize disturbed areas that would not be covered with structures or pavement following grading and/or cut and fill operations by means such as moisturizing and compacting.
- Save removed topsoil for reuse, when possible, by segregating and stockpiling the material. Cover material to prevent erosion.
- Natural drainages and pre-project hydrographs for the area should be maintained.

W-13: Avoid Use of Invasive Species for Soil Stabilization. The applicant shall avoid using invasive species for seeding or planting for erosion control and soil stabilization purposes.

W-14: Jurisdictional Delineation. Conduct a formal jurisdictional delineation within the boundaries of the project area once final engineering for the location of project-specific features is complete. This shall be conducted prior to construction and is required in order to apply for permits, if needed, with the USACE. A copy of the jurisdictional delineation shall be provided to the BLM.

W-15: Drainage Crossings Design. If drainages cannot be avoided by infrastructure placement, then the applicant shall design drainage crossings to accommodate estimated peak flows and ensure that natural volume capacity can be maintained throughout construction and upon post-construction restoration. This measure is necessary to minimize the amount of erosion and degradation to which drainages are subject.

W-16: Mitigation Monitoring Plan for Affected Jurisdictional Areas. The applicant shall develop a Mitigation Monitoring Plan for affected jurisdictional areas within established riparian areas, as needed, for submittal to the USACE for review and approval. The plan shall outline measures to accomplish restoration, provide criteria for restoration success, and/or provide compensation ratios. This measure is needed to compensate for loss of waters and riparian vegetation that provide suitable habitat for special-status and sensitive species, and provide important hydrological and water quality functions in the desert environment. Monitoring and

reporting, likely for up to 3 to 5 years post-construction, shall be required, pending consultation with agencies. A copy of the approved Mitigation Monitoring Plan shall be provided to the BLM.

4.13 Noise

4.13.1 Environmental Consequences

Proposed Action

Projects that could be proposed in BLM transmission and utility corridors predominantly include transmission structure infrastructure upgrades but could also include other linear infrastructure such as water or gas pipelines. In addition, development could include new construction, such as the construction of a new or replacement transmission line. Given that the study area is located in an open space more than 0.85 miles away from noise sensitive areas, it is anticipated that development in BLM transmission and utility corridors, on a case-by-case basis, would result in temporary minor and localized impacts along linear project routes during construction.

Construction of linear utility projects would produce noise from the operation of heavy duty off-road equipment, vehicles, concrete batch plants, and helicopters (often required during transmission line construction). Construction of underground pipelines would also involve the use of heavy duty equipment and vehicles, especially during trenching, pipe installation, back filling, hydrostatic testing, cleanup and commissioning. Additionally, pipeline projects could involve the use of horizontal directional drilling and blasting, which result in noticeable temporary noise levels at specific locations. Horizontal directional drilling and blasting are anticipated to occur during short-time periods and at long distances from identified noise sensitive receptors and would be performed following BMPs.

Based on reference noise levels obtained from the Roadway Construction Noise Model User's Guide (FHWA 2006), the loudest equipment would generally emit noise in the range of 80 to 90 dBA at 50 feet, with usage factors of 40 percent to 50 percent that account for the fraction of time that the equipment is in use over the specified time period. Noise at any sensitive receptor would be typically dominated by the closest and loudest equipment. For projects proposed in BLM transmission and utility corridors, the type of construction equipment and the number of equipment pieces near any specific receptor location would vary over time; therefore, project-specific noise modeling and analysis may be required.

The Federal Transit Administration provides guidelines for reasonable criteria for assessment of construction noise (FTA 2006), which indicate that construction noise that exceeds a 1-hour L_{eq} of 90 dBA or an 8-hour L_{eq} of 80 dBA during the day would provoke adverse community reaction. The nearest receptors would be located near the Southern Nevada Veteran's Memorial Cemetery within a mile from the northern tip of corridor CC18367. Additional potential receptors would be recreational users located in open space areas at the Eldorado Valley Dry Lake, other dispersed recreational uses in the area, or users of the Boulder Creek Golf Club. There are no hospitals, libraries, schools, places of worship, or other facilities within the study area.

If helicopters are used for transmission line tower construction, noise from the helicopters operated on a regular basis would be audible at staging areas, at tower construction sites, and along flight paths. Helicopters would pick up the towers from staging areas and place them at each location. Using helicopters would allow tower placement to be performed in a relatively

short time, with an average flying time of 4 to 6 minutes between two sites. In general, heavy-duty helicopters could be used during construction in remote locations. These locations would be less likely to be near populated areas as compared to locations accessible by truck. Available data indicate that the sound exposure level from the over flight of one heavy-duty helicopter flying at an elevation of 1,000 feet would likely be in the range of 85 to 93 dBA. This corresponds to an hourly L_{eq} of 49 to 57 dBA.

Construction activities would be limited to daytime hours, and Clark County regulations provide an exemption for noise from daytime construction activities. On a project-by-project basis, the applicant would be required to comply with local noise ordinances and implement BMPs into the project design, such as maintaining construction equipment in working order and adhering to the manufacturer's maintenance recommendations; muffling construction equipment; and minimizing the amount of time that equipment is idled.

The operation of linear transmission projects and associated telecommunication lines and substations would not result in adverse noise impacts. Corona is the noise generated from the strong electric field at the surface of a high voltage power line conductor ionizing the nearby air, resulting in an audible continuous low level noise or "buzz." Corona noise would be barely audible and would not change current conditions in the study area. Maintenance activities associated with substations and transmission lines would typically result in noise levels below those associated with construction-related activities and are anticipated to involve fewer pieces of heavy equipment, occur less frequently, and be of shorter duration and would result in negligible adverse noise impacts.

Operation of pipelines and power generation facilities would also involve temporary and permanent noise sources. In the case of gas pipelines, temporary noise impacts would result from aboveground facilities (e.g., pressure relief safety systems at metering station and valves) and from infrequent rapid and impulsive depressurization events (also known as "blowdowns"), which are necessary for safe operation of the pipeline facilities (also applicable to piping equipment located within solar and fossil-fuel generation facilities). Pressure safety valves activate only when the pressure exceeds the safe operating parameters of piping, with an audible sound over 120 dB. Blowdowns are usually loud and noticeable but would last five to ten seconds.

In addition, gas pipeline projects generally include the operation of compressor stations, which would result in a permanent and continuous noise source. Similarly, water and oil pipeline projects would require the operation of pumping stations within or near the utility corridors, which would be a continuous noise source associated with each specific project. Permanent and continuous noise sources would require the implementation of detailed noise surveys prior construction and monitoring during operations.

Maintenance activities associated with linear utility projects would typically result in noise levels below those associated with construction-related activities, and are anticipated to involve fewer pieces of heavy equipment, occur less frequently, and be of shorter duration than construction activities. Maintenance activities are primarily inspection-related (for example, annual inspection of the utility line from vehicles). Noise from vehicles would occur on a short-term and intermittent basis and would comply with the state regulations. In addition, aerial inspections, if proposed, would require the use of helicopter or similar aircraft, causing a temporary minor disturbance at those areas located close to landing and take-off and along the flyover area. For transmission lines, other maintenance activities include washing of insulators to ensure proper function, which would be conducted on an as-needed basis but anticipated to occur less than once

per year. As with construction noise, the applicant would use noise reduction measures to be compatible with local plans and zoning to the extent practicable.

No Action

Under the no action alternative, review of ROW applications would not be expedited, and applications would continue to be processed on a case-by-case basis. Applicants' projects could be delayed in order to meet NEPA requirements if they did not adhere to the BMPs outlined under the proposed action alternative; however, similar to the proposed action alternative, adoption of the no action alternative would have no impact.

Although adoption of the no action alternative would have no impact on application processing, if a specific utility project requires the operation of a continuous permanent noise source, such as pumping or compressor stations and/or a generation facility as a connected action, then detailed background noise surveys and further modeling would need to be addressed for those facilities located within the proximity of noise sensitive receptors.

4.13.2 Best Management Practices

Following are recommended BMPs. Adoption of the following practices would reduce impacts on ambient noise and would help expedite the NEPA review process.

NOI-1: Compliance with Local Noise Ordinances. Construction shall comply with Clark County and Boulder City noise ordinances. When there may be a need to work outside the aforementioned local ordinances to take advantage of low electrical draw periods during the nighttime hours, the applicant shall comply with variance procedures requested by local authorities if required.

NOI-2: Conduct Construction Activities during Daytime Hours. The applicant shall conduct construction activities only during daytime hours while in the vicinity of residential receptors, particularly for proposed actions that extend outside of the study area and traverse areas that contain more residences, such as Boulder City.

NOI-3: Construction Equipment Working Order and Maintenance. Construction equipment shall be in good working order and maintained per manufacturer’s recommendations.

NOI-4: Construction Equipment Muffled. Construction equipment shall be adequately muffled.

NOI-5: Construction Equipment Idling Minimized. Idling of construction equipment and vehicles shall be minimized during the construction.

NOI-6: Hearing Protection for Workers. Workers shall be provided appropriate hearing protection, if necessary, as described in the Health and Safety Plan.

NOI-7: Public Notice. The applicant shall give at least 15 days’ advance notice that construction shall be starting.

NOI-8: Noise Control Program. The applicant shall control noise emissions from permanent and temporary noise sources during construction and at operational facilities. The noise control program shall involve conducting ambient and occupational noise surveys to determine receptors

and employee noise exposure; it requires reports and, if necessary, mitigation to comply with regulations.

NOI-9: Noise Complaints Procedures. The applicant shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints. Procedures shall also require conducting noise surveys documenting specific levels at sensitive receptor areas if complaints are received.

NOI-10: Impulsive Noise Control. The applicant shall restrict noise from high- and low-pressure steam blows to 56 dBA in the proximity of noise sensitive receptors, as required by the Clark County Code Sec 30.68.020 (e) for impulsive type noises. Documentation may be provided showing that noise levels from either high or low pressure steam blows shall not exceed the Clark County and Boulder City noise ordinances at the nearest residential location.

4.14 Fuels and Fire Management

4.14.1 Environmental Consequences

Proposed Action

In general, linear projects that could be proposed within BLM transmission and utility corridors in the study area would affect fuels and fire management resources because they could potentially interfere with actions being implemented throughout the Southern Nevada area as part of BLM's Fire Prevention and Hazardous Fuels Reduction Programs to manage the presence of tamarisk (*Tamarix* sp.) and invasive grass species including red brome (*Bromus rubens*).

Introduction or Spread of Invasive or Noxious Weeds

The historic natural vegetation condition within the study area normally doesn't support fire. The increase or spread of invasive or noxious weeds may increase the chance for an ignition and spread of fire. Invasive species such as red brome (*bromus rubens*) or schismus (*Schismus arabicus or Schimus barbatus*) which are considered a fine flashy fuels in their cured state can increase risk of a fire start. The species can increase fuel continuity allowing for large, rapid rates of spread. These species tend to dominate in post-fire environments and may replace native vegetation.

Burned over conditions allow invasive weeds such as red brome in upland areas and tamarisk in riparian areas to establish quickly and thrive. Cheatgrass, tamarisk, and many other invasive species can establish dense stands providing high amounts of flammable biomass. If more fire occurs or if humans continually disturb an area through construction and operation and maintenance activities, further weed establishment can occur. Unless monitored, fire and weeds can create a positive feedback cycle that can degrade the ecological health of an area allowing future fires to spread more rapidly and burn more intensely (Howard 2006).

Effects of Mowing on Native Vegetation

Mowing activities associated with potential development within BLM transmission and utility corridors and their connected actions may lead to a loss in native vegetation and a potential increase in invasive species. Because invasive species are the primary cause for fire spread in creosotebush-bursage vegetation group, increasing invasive species is counter to wildfire management objectives. Mowing may increase the dead fuel load on site. While mowing may reduce flame length, fire risk may increase due to increased dead fuel load and an increase of invasive species such as schismus or red brome. Should a wildfire threaten any infrastructure

associated with a proposed action, access roads would allow fire crews and their vehicles safe ingress and egress, and safe access to structures.

Proposed linear project sites could trend towards invasive and weedy species, which have the potential to result of an increased seed bank of said species, increased vectoring and expansion which may lead to increased wildfire. In order to minimize long-term impacts, applicants shall implement integrated weed management plans to include maintaining natural vegetation where plant species are non-flammable or are dispersed to prevent fuel continuity and active fire spread. Further, native seed or other similar activities may be used to promote native vegetation. Another alternative, for connected actions, may be to maintain zero vegetation.

Effects on Fire Suppression Resources

Wildland fires associated with construction or operation shall be managed with appropriate management responses. The most common response shall be full suppression. The naturally dry and windy conditions associated with desert shrub communities of the Mojave Desert, especially during peak fire season with warm temperatures and proportionally low fuel moisture content, can spread large fires from other areas into the BLM transmission and utility corridors.

Should a fire occur as a result of development within BLM transmission and utility corridors, adverse impacts to fuel and fire resources in the study area would be dependent on pre-fire conditions. If a large fire occurs due to continuous annual grass fuels, the effects may be long-term with potential large scale increase of invasive and noxious weedy species. This condition may lead to increased fire frequency. Otherwise effects would be isolated to small burned areas. Short-term effects in small burned areas are likely to increase invasive and noxious weed species

No Action

Under the no action alternative, review of ROW applications would not be expedited, and applications would continue to be processed on a case-by-case basis. Applicants' projects could be delayed in order to meet NEPA requirements if they did not adhere to the BMPs outlined under the proposed action alternative; however, similar to the proposed action alternative, adoption of the no action alternative would have no impact.

4.14.2 Best Management Practices

Following are recommended BMPs. Adoption of the following practices would reduce impacts on fuels and fire management and would help expedite the NEPA review process.

FIRE-1: Fuel Break. Applicants shall design and maintain an adequate fuel break around proposed sites or ROWs during construction, operation, maintenance, and decommissioning.

FIRE-2: Mowing Control. Applicants shall keep vegetation within the ROW mowed to less than 12 inches in height during construction and operation. Mowing would minimize the start and spread of natural or human-caused fires and would contribute to maximizing ecological health in the study area.

FIRE-3: Weed Management Plan. Applicants shall prepare and implement a Weed Management Plan in compliance with BLM and Clark County requirements in order to control weed and invasive species and limit residual effects to manageable levels. This can be done through maintaining discontinuous, dispersed native vegetation, nonflammable native vegetation, native seeding, or complete removal of all vegetation. The Plan shall also include regular

monitoring and actions for treating weed infestations to eliminate colonization and minimize spread of weed species.

FIRE-4: Fire Management and Response Plan. As part of the overall Emergency Response Plan for each proposed project, applicants shall include specific response plans for brush or equipment fires. The Fire Management and Response Plan shall assign roles and actions for on-site personnel and fire suppression responders, as well as designate assembly areas for fire suppression equipment and response actions. Coordination with the LVICC in case of fire emergencies shall also be considered during preparation and implementation of this Plan.

FIRE-5: Consult with the BLM Regarding Fire Restrictions. Any future undertaking that crosses BLM transmission and utility corridors is subject to Fire Restrictions, when applicable. Fire restriction guidelines and a description of wildland fire in the Mojave will be provided by the BLM when responding to proposals for projects.

4.15 Socioeconomics

4.15.1 Environmental Consequences

Proposed Action

Boulder City has lower percentages of minorities and low income residents than the overall populations of Clark County and Nevada. Therefore, there would be no adverse impacts on socioeconomics as a result of a proposed action in the area. Instead, construction projects could have a beneficial impact on the local and regional economy during the construction period by creating local jobs.

No Action

Under the no action alternative, review of ROW applications would not be expedited, and applications would continue to be processed on a case-by-case basis. Applicants' projects could be delayed in order to meet NEPA requirements if they did not adhere to the BMPs outlined under the proposed action alternative; however, similar to the proposed action alternative, adoption of the no action alternative would have no impact.

4.15.2 Best Management Practices

There are no recommended BMPs related to socioeconomics or environmental justice.

4.16 Human Health and Safety/Hazardous Materials

4.16.1 Environmental Consequences

Proposed Action

Construction and operation within BLM transmission and utility corridors would take place on land containing existing infrastructure. Potential safety risks associated with development range from accidental spills or releases of hazardous substances, mobilization of existing contamination, handling and disposal of hazardous materials, and potential exposure to electrical, flood, fire, explosion, and aircraft operation hazards.

Hazards associated with construction and operation within BLM transmission and utility corridors would be minor, short term, and localized, if proper measures and management

practices are implemented. Impacts from accidents involving the release of hazardous materials into the environment would likely be minor, localized, and short term for electric transmission, water and telecommunication projects; however, in the case of gas and oil pipelines, moderate to severe effects could occur as the result of an accident.

Additionally, the potential to expose the public to previously unidentified contamination or to mobilize existing contaminants already existing in soils during construction or major maintenance activities could result in minor, short-term, and localized impacts. On a case-by-case basis, applicants shall determine if a proposed action would traverse any known contaminated sites, or would be in close proximity to fuel pipelines. Applicants shall conduct site-specific assessments to identify recognized environmental conditions in the vicinity of the ROW prior to the start of construction and prepare and submit a work plan to the appropriate agency for its review and approval prior to initiating the environmental assessment or any remedial activities.

Hazardous Materials

Construction of proposed linear utility projects would involve a sequence of activities inside and outside fenced areas and would have associated potential human health and safety effects due to the use, transport, and disposal of petroleum products and hazardous materials. Hazardous materials that could be used during construction include substances such as gasoline, diesel fuel, motor oil, hydraulic fluids and lubricants, paints, solvents, adhesives, batteries, welding materials, and mineral oil for transformers. Construction materials would be delivered to each project site by truck and temporarily stored in designated staging areas.

Applicants would comply with the standards of the required hazardous material permits to be issued by the Nevada State Fire Marshal and the Clark County Fire Department for the proper storage of hazardous materials on-site. Localized spills or releases of these hazardous materials could occur due to improper handling, storage, or maintenance. These leaks or spills could result in soil contamination. Potential for interference with aquifer recharge would generally be negligible for most types of construction that would be proposed within BLM transmission and utility corridors in the study area; therefore, contamination of a water body is unlikely. Through the proper implementation of the applicant's SPCC Plan and an Emergency Response Plan, any spills would be cleaned up and the resultant waste disposed of according to state and federal standards.

Hazardous Waste

Hazardous waste generated as a result of development within BLM transmission and utility corridors in the study area would include soil materials from trenching and excavation, water used for pipeline hydrotesting, water pipe flushing and cleaning fluids, passivating fluids (fluids used to prepare water pipes for use), solvents, dried paints, empty hazardous material containers, spent welding materials, oil filters, waste hydraulic oil, discarded, waste lubricating oil, oily rags used during maintenance, waste oil sorbents used for cleanup of small spills. Additionally, during construction, vehicle fuel, oils, and other fluids for vehicle maintenance would be used and stored in construction vehicles.

Since there are no permanent surface water bodies in the study area, any accidental releases of petroleum products or hazardous substances during construction would likely result in only localized soil contamination. Adherence to federal, state, and local regulations, as well as proper implementation and monitoring of the applicant's SWPPP, SPCC Plan for construction, Emergency Response Plan, and Health and Safety Program would reduce the likelihood of a release. Potential construction sites within the study area would be located over a mile from the closest residential receptors. Therefore, potential populations that could be directly exposed to

hazardous materials would be limited to workers and occasional recreational users of the Eldorado Valley Dry Lake.

Unearthing of Contaminated Soils or Groundwater

Currently, there is no evidence to suggest that on-site soils or groundwater within the study area are contaminated, but these resources have not been sampled and characterized, and mining activity has been reported within the vicinity. Moreover, there are existing underground pipelines operating along the BLM transmission and utility corridors, and there is the possibility that small amounts of contaminated soils may be present in the study area. Construction activities could unearth this contamination and construction, workers or wildlife could be exposed. To reduce the potential exposure of the public and ecological receptors to contaminated soils or groundwater due to construction, applicants shall implement site-specific environmental assessments in addition to appropriate Health and Safety Programs.

Fire and Explosion Hazard

During construction, activities and equipment could expose people or structures to an increased risk of loss, injury, or death as a result of electrocution or exposure to wildland fires, including those wildlands adjacent to urbanized areas in Boulder City and occasional recreational visitors of the Eldorado Valley Dry Lake. The risk of fire danger would be related to the combustion of native materials due to smoking, refueling, and operating vehicles and other equipment off roadways. Brushing activities for vegetation control and removal during construction could present a fire hazard if the vegetation debris were not removed from areas used for welding.

Radio Interference/Electric and Magnetic Fields

Transmission line-related radio-frequency interference is an indirect effect of line operation and is produced by the physical interactions of line electric fields. The degree of radio-frequency communication interference is usually related to the magnitude of involved electric fields and the proximity of the line to inhabited areas.

Electrical Hazard and Fire Risk

Construction of the overhead transmission lines or other electrical power facilities could also expose workers to potential electrocution and fire hazards. Additionally, oil and gas pipelines and storage facilities have a higher fire and explosion risk. In order to ensure compliance with worker health and safety regulatory requirements, applicants shall implement protective measures for equipment and employees, as required in the federal Occupational Safety and Health Standards (29 CFR, Part 1910), Subpart S and Sections 1910.331-1910.335. During operation and maintenance, workers would also be exposed to potential electrocution and fire hazards; however, applicants would comply with federal and industrial safety standards, in addition to implementation of proper health and safety and emergency plans required for employees and contractors during construction, operations, and decommissioning. Therefore, the risk of exposure of people or structures to loss, injury, or death involving electrocution or excessive exposure to wildland fires would be minor, resulting in minor, localized short-term effects.

No Action

Under the no action alternative, review of ROW applications would not be expedited, and applications would continue to be processed on a case-by-case basis. Applicants' projects could be delayed in order to meet NEPA requirements if they did not adhere to the BMPs outlined under the proposed action alternative; however, similar to the proposed action alternative, adoption of the no action alternative would have no impact.

4.16.2 Best Management Practices

Following are recommended BMPs. Adoption of the following practices would reduce impacts on human health and safety and would help expedite the NEPA review process.

HEALTH 1: Compliance with General Design and Construction Standards. Applicants shall design projects in accordance with federal and industrial standards including the American Society of Mechanical Engineers, National Electrical Safety Code, International Energy Conservation Code, International Building Code, Uniform Plumbing Code, Uniform Mechanical Code, the National Fire Protection Association standards, and OSHA regulations. For construction activities, applicants shall also comply with the federal regulations and industrial standards mentioned above, as well as with applicable state and local codes. Local Clark County codes to be considered include Title 13 – Fire and Fire Prevention, Title 22 – Buildings and Construction, Title 24 – Water, Sewage, and Other Utilities, and Title 25 – Plumbing and Electrical Regulations.

HEALTH-2: Storm Water Pollution Prevention Plan. A project-specific construction SWPPP shall be prepared and implemented prior to the start of construction of the linear utility projects and auxiliary facilities. The SWPPP shall use BMPs to address the storage and handling of hazardous materials and sediment runoff during construction activities.

HEALTH 3: Spill Prevention, Control, and Countermeasure Plan. In accordance with Title 40 of the CFR, Part 112, applicants shall prepare an SPCC Plan for proposed or expanded facilities involving operation and storage of petroleum products and dielectric fluid for transformers. The plan shall include engineered and operational methods for preventing, containing, and controlling potential releases, and provisions for quick and safe cleanup.

HEALTH 4: Spill Control at Substations. At substations, transformers shall contain dielectric fluid (mineral oil), and shall be located on a concrete pad surrounded by an earthen or concrete containment berm or curb. Mineral oil is not considered a hazardous material; however, during operation, leaks or spills of mineral insulating oil could occur in cases of damage to the transformers due to a seismic event, fire, or other unforeseen incident. Applicants shall implement an SPCC plan to prevent spills associated with these transformers.

HEALTH 5: Underground Alert Service. Before any grading and trenching activities, applicants shall be required to utilize the appropriate Underground Service Alert organization to identify the location of existing underground utilities and pipelines. In addition, the applicant shall not use mechanical equipment within 3 feet of high-pressure pipelines, and a representative for the pipelines shall be present to observe excavation activities around buried pipelines during construction. In Nevada, the NDEP BCA Spill Hotline (888-331- 6337) shall be contacted if the quantity of impacted material is greater than 3 cubic yards.

HEALTH 6: Health and Safety Program. Applicants shall ensure that all health and safety and emergency plans to be required for employees and contractors during construction, operations, and decommissioning shall comply with the Occupational Safety and Health Standards provided in federal regulation 29 CFR, Part 1910, as well as with applicable state and local occupational health and safety regulations. All construction and operation contractors shall be required to operate under a health and safety program that meets industry standards. All contractors shall be required to maintain and carry health and safety materials including the Material Safety Data Sheets of hazardous materials used on site.

HEALTH 7: Hazardous Materials Management. Applicants shall implement a Hazardous Materials Management Program. Hazardous materials used and stored onsite shall be managed according to the specifications outlined below as follows:

- **Hazardous Materials Handling Program.** A project-specific hazardous materials management program shall be developed prior to initiation of construction. The program shall outline proper hazardous materials use, storage, and disposal requirements. The program shall identify types of hazardous materials to be used during construction activities. All personnel shall be provided with project-specific training. This program shall be developed to ensure that all hazardous materials are handled in a safe and environmentally sound manner. Employees shall receive hazardous materials training and shall be trained in: hazardous waste procedures; spill contingencies; waste minimization procedures; and TSD facility training in accordance with OSHA Hazard Communication.
- **Transport of Hazardous Materials**. Hazardous materials that shall be transported by truck include fuel (diesel fuel and gasoline), and oils and lubricants for equipment. Containers used to store hazardous materials shall be properly labeled and kept in good condition. Written procedures for the transport of hazardous materials used shall be established in accordance with U.S. Department of Transportation and Nevada Department of Transportation regulations. A qualified transporter shall be selected to comply with federal and state transportation regulations.
- **Fueling and Maintenance of Construction Equipment**. Written procedures for fueling and maintenance of construction equipment shall be prepared prior to construction. Vehicles and equipment shall be refueled on site or by tanker trucks. Procedures shall include the use of drop cloths made of plastic, drip pans, and trays to be placed under refilling areas to ensure that chemicals do not come into contact with the ground. Refueling stations shall be located in designated areas where absorbent pads and trays shall be available. The fuel tanks shall also contain a lined area to ensure that accidental spills do not occur. Drip pans or other collection devices shall be placed under the equipment at night to capture drips or spills. Equipment shall be inspected daily for potential leakage or failures. Hazardous materials such as paints, adhesives and solvents, shall be kept in an approved locker or storage cabinet.
- **Fueling and Maintenance of Helicopters.** Written procedures for fueling and maintenance of helicopters shall be prepared prior to construction. Helicopters shall be refueled at helicopter staging areas or local airports. Procedures shall include the use of drop cloths made of plastic, drip pans, and trays to be placed under refilling areas to ensure that chemicals do not come into contact with the ground. Refueling areas shall be located in designated areas where absorbent pads and trays are available.

HEALTH-8: Emergency Response Plan. An Emergency Response Plan detailing responses to releases of hazardous materials shall be developed prior to construction activities. It shall prescribe hazardous materials handling procedures for reducing the potential for a spill during construction, and shall include an emergency response program to ensure quick and safe cleanup of accidental spills. All hazardous materials spills or threatened release, including petroleum products such as gasoline, diesel, and hydraulic fluid, regardless of the quantity spilled, shall be immediately reported if the spill has entered a water body or storm drain if the spill impacted any sensitive area, including conservation areas and wildlife preserved, or if the spill causes injury to a person or threatens injury to public health. All construction personnel, including environmental monitors, shall be aware of state and federal emergency response reporting guidelines.

HEALTH-9: Soil Management Plan. A Soil Management Plan shall be developed and implemented during construction. The objective of the Soil Management Plan is to provide guidance for the proper handling, on-site management, and disposal of impacted soil that might be encountered during construction activities. The plan shall include practices that are consistent with OSHA regulations, as well as appropriate remediation standards that are protective of the planned use. Appropriately trained professionals shall be on-site during preparation, grading, and related earthwork activities to monitor soil conditions encountered. In the event that potentially contaminated soils were encountered within the footprint of construction, soils shall be tested and stockpiled. The Soil Management Plan shall provide guidelines for the following:

- Identifying impacted soil
- Assessing impacted soil
- Soil excavation
- Impacted soil storage
- Verification sampling
- Impacted soil characterization and disposal

HEALTH-10: Environmental Site Assessment. Applicants shall perform a site-specific environmental assessment at new or expanded project locations and along newly acquired ROWs. Site Assessments shall be compliant with American Society for Testing and Materials procedures. The Environmental Site Assessment shall include an electronic records search of federal, state, and local databases. The electronic records search shall be contracted to a company which specializes in this type of work and who shall produce a comprehensive report for the new or expanded ROW. The report is used to identify sites located on federal, state, and local government agency databases which may have the potential to impact proposed development. The report shall be reviewed and, based on such review; any potential areas of concern along the ROW shall be identified for further assessment. Based on the results of the Environmental Site Assessment, additional assessment, characterization, and remediation of potential or known subsurface impacts may be conducted prior to construction activities. Such remediation could include the relocation of transmission line structures as necessary to avoid impacted areas, or the removal and disposal of impacted soils and/or groundwater according to applicable regulations.

HEALTH-11: Waste Management Plan. Applicants shall prepare a Waste Management Plan describing the storage, transportation, and handling procedures for wastes and emphasizing the recycling of construction wastes where possible. The plan shall also identify the specific landfills that would receive construction wastes that could not be recycled. Applicants shall manage construction wastes in accordance with RCRA (42 USC. 6901, et seq. and RCRA's implementing regulations at 40 CFR 260, et seq.) and other applicable state and local regulations.

HEALTH-12: Weed Management Plan. Under the guidance of BLM staff, applicants shall prepare and submit for BLM approval a Weed Management Plan. The plan shall follow the Las Vegas RMP (BLM 1998), Weed Management Plan, and the BLM's interagency guidance Partners Against Weeds for an active integrated weed management program using weed control BMPs. This plan shall include an herbicide use proposal, which establishes the coordination responsibilities for weed control activities, particularly regarding proposed herbicide treatments.

HEALTH-13: Fire Prevention Measures. The following fire prevention measures shall be implemented by applicants or their contractors during construction and operation:

- Maintain a list of all relevant firefighting authorities. The closest resources to respond to a wildland fire within the study area would come from Boulder City Fire Department. Coordination with the LVICC shall also be considered as part of the fire prevention plan.

- Have and maintain available fire suppression equipment in all construction areas, including but not limited to: water trucks, potable water pumps, and chemical fire extinguishers. Ensure an adequate supply of fire extinguishers for welding and brushing crews;

    - Include mechanisms for fire suppression in all heavy equipment, including fire extinguishers and spark arresters or turbo-charging (which eliminates sparks in exhaust);

    - Remove any flammable wastes generated during construction on a regular basis;

    - Vegetation clearing shall be accomplished in a manner that reduces vegetation and does not create a fire hazard;

    - Store all flammable materials used at the construction site;

    - Allow smoking only in designated smoking areas; and

    - Require all work crews to park vehicles away from flammable vegetation, such as dry grass and brush. At the end of each workday, heavy equipment should be parked over mineral soil, asphalt, or concrete, where available, to reduce the chance of fire.

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Chapter 5. Cumulative Impacts

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5.1 Introduction to Cumulative Impacts Discussion

A cumulative impact, as defined by the CEQ, "results from the incremental impact of [an] action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions" (40 CFR 1508.7). The cumulative impacts analyses presented in the following sections encompass the direct and indirect impacts associated with both construction and operation, and the potential impacting factors for activities associated with reasonably foreseeable future actions (Table 5-1).

Although the proposed action, as described herein, would have no impacts that would contribute to a cumulative effect, any future actions for which the BLM receives ROW applications could contribute to cumulative effects and would require cumulative analysis. Major projects that could contribute to cumulative impacts in the study area are listed in Table 5-1 and shown on Figure 5-1. This list of cumulative projects was generated according to information received from the Boulder City Community Development Department and other publically available information, such as NEPA documentation; maps of the Eldorado Valley; and the BLM's Meridian, Township, and Range Report. In addition, there are numerous existing ROWs running throughout the study area both within and outside of BLM transmission and utility corridors, including transmission lines, telecommunication lines, and pipelines, which are listed in Appendix 2.

Cumulative impacts can be additive, less than additive, or more than additive (synergistic). Because the contributions of individual actions, including those related to corridor development under the proposed action, to an impacting factor were uncertain or not well-known (since specific projects are not yet planned to such a level that adequate data was available), a qualitative evaluation of cumulative impacts was necessary. A qualitative evaluation covers the locations of impacts, the times they would occur, the degrees to which the impacted resource is at risk, and the potential for long-term and/or synergistic effects.

5.2 Cumulative Effects Study Area

To analyze cumulative effects, each action analyzed under NEPA must define its cumulative effects study area (CESA). The analysis of cumulative effects considers a number of variables including geographic (spatial) limits, time (temporal) limits, and the characteristics of the resource being evaluated. For example, noise impacts tend to be localized, while air and biology impacts are typically dispersed over larger areas. The geographic scope of each analysis is based on the topography surrounding the proposed action and the natural boundaries of the resource affected, rather than jurisdictional boundaries.

For the purposes of this programmatic environmental assessment, the CESA includes all known projects and activities within four miles of the study area. Depending upon the location of a proposed action and connected action, the CESA for future cumulative analyses for proposed actions in the study area may vary from what is presented in this EA.

Table 5-1 Potential Cumulative Projects Within or Near the Eldorado Valley

Project Name	Location	Owner	Project Description	Project Type	Status
Existing Projects					
El Dorado Combined Cycle Power Plant	Boulder City Energy Zone	Sempra Energy	480-megawatt (MW) natural gas fired power plant, 138-acres[11]	Power Plant	Existing. Operational since May 2000.[1]
Nevada Solar One Project[3]	Boulder City Energy Zone	Acciona/ Solargenix Energy	64-MW CSP plant, 400 acres	Solar	Existing. Operating since June 2007.[4]
Copper Mountain Solar I	Boulder City Energy Zone	Sempra Generation	48-MW PV project, 380 acres	Solar	Existing. The plant is currently under operation.
Boulder City Municipal Airport	1201 Airport Road, Boulder City, NV	Boulder City	Personal and commercial flights serving the citizens of Boulder City.	Airport	Existing. A communications tower could be constructed within the next few years for safety.
Eldorado Valley Dry Lake	North of Boulder City Energy Zone, Southwest of Boulder City	Boulder City	Recreational ATV day use area.	Dry Lake	Existing.
El Dorado Quarry	SEC 22 T23S R63E Off of Highway 95 on Silverline Road	CEMEX Construction Materials Pacific LLC	Crushing screening of sand/gravel.	Aggregate Mine	Abandoned.
Boulder Ranch Quarry	SEC 22 T23S R63E	CTC Crushing LLC	Crushing screening of sand/gravel.	Aggregate Mine	Existing.
Construx Aggregates	SEC 22 T23S R63E	CalPortland	Crushing screening of sand/gravel.	Aggregate Mine	Existing.
Red Rock Mine #5	SEC 19 T25S R61E	RL McVane	Crushing screening of sand/gravel.	Aggregate Mine	Existing.
Eldorado Energy Solar[8]	Boulder City Energy Zone	Sempra	10 MWs, 130 acres	Solar	Existing
NTDSC[8]	Boulder City Energy Zone	University of Las Vegas (UNLV)	0 MW (Boulder City ROW grant); project includes solar equipment; however, this is a test facility used for educational purposes and is not a utility-scale project. Joint venture between Nevada Test Site (former nuclear test site), the Department of Energy, and UNLV.	Solar	The site is not currently in use. [9]
Foreseeable Future Projects					
TransWest Express Transmission Project	Wyoming, Colorado, Utah, and Nevada; ends near the Marketplace Substation in the Boulder City Energy Zone	TransWest Express, LLC	660 kilovolt (kV) direct current transmission line, traverses within and adjacent to BLM utility corridor N33006	Transmission	Notice of Intent published on January 4, 2011. The BLM is currently reviewing the ROW application and POD. EIS has not yet been published. Construction anticipated to begin in 2015.[6]

Table 5-1 Potential Cumulative Projects Within or Near the Eldorado Valley

Project Name	Location	Owner	Project Description	Project Type	Status
Eldorado-Ivanpah Transmission Project	Traverses BCCE mostly within BLM corridors, terminates at the Eldorado Substation	Southern California Edison	220-kV 35-mile transmission line reconductoring project	Transmission	Existing transmission line. Reconductoring has been approved and is scheduled to begin construction in 2012.[2]
Copper Mountain Solar III (Copper Mountain North) NVN 089424	Boulder City Energy Zone	Sempra Generation	220 MWs, 1,400 acres, with associated gen-tie line	Solar & Transmission	Application for gen-tie ROW submitted to the BLM and EA (for gen-tie portion) published November 2011.[7] Proponent is currently performing field tests and testing soil conditions for substation design and siting of solar components. Project is not yet under construction.[9]
Townsite Southwest	Adjacent to northern boundary of the study area, south of Boulder City, NV	Korean Western Power Company	100 MWs (estimated), 884 acres	Wind or Solar	Project is still in the early stages, probably 3 years away from construction. [8]
Dry Lake Bed West[8]	Western portion of the Eldorado Valley Dry Lake bed	Techren Solar	300 MWs, 2,200 acres	Solar	Proposed, project is not yet under construction. Proponent is currently performing drainage studies. This will likely be the next project to be constructed according to Boulder City Community Development Department. [9]
Dry Lake Bed South[8]	Southern portion of the Eldorado Valley Dry Lake bed	Korean Midland Power Company	300 MWs, 1,550 acres	Solar	Proposed, project is not yet under construction.
Nevada Solar Two	Adjacent to the south of Nevada Solar One	Acciona	95 MWs, 553 acres	Solar	Project has been approved by Boulder City.
Nevada Solar Expansion	Adjacent to the west of Nevada Solar One	Acciona	unknown MWs, 133 acres	Solar	Proposed, project is not yet under construction.
Las Vegas RMP Revision	Las Vegas Field Office District	BLM	Update of 1998 Las Vegas RMP	Plan	The BLM's Las Vegas Field Office/Southern Nevada District Office is currently updating its 1998 RMP.

Sources/Notes:
[1] Sempra Generation n.d.; [2] SCE 2012; [3] Acciona 2009; [4] Ann 2010; [5] BLM 2012; [6] BLM 2011a; [7] BLM 2011b; [8] Boulder City 2012a [9] Boulder City 2012b
Note: Boulder City 2012a and 2012b refer to verbal information received from the Director of the Boulder City Community Development Department, Brok Armantrout

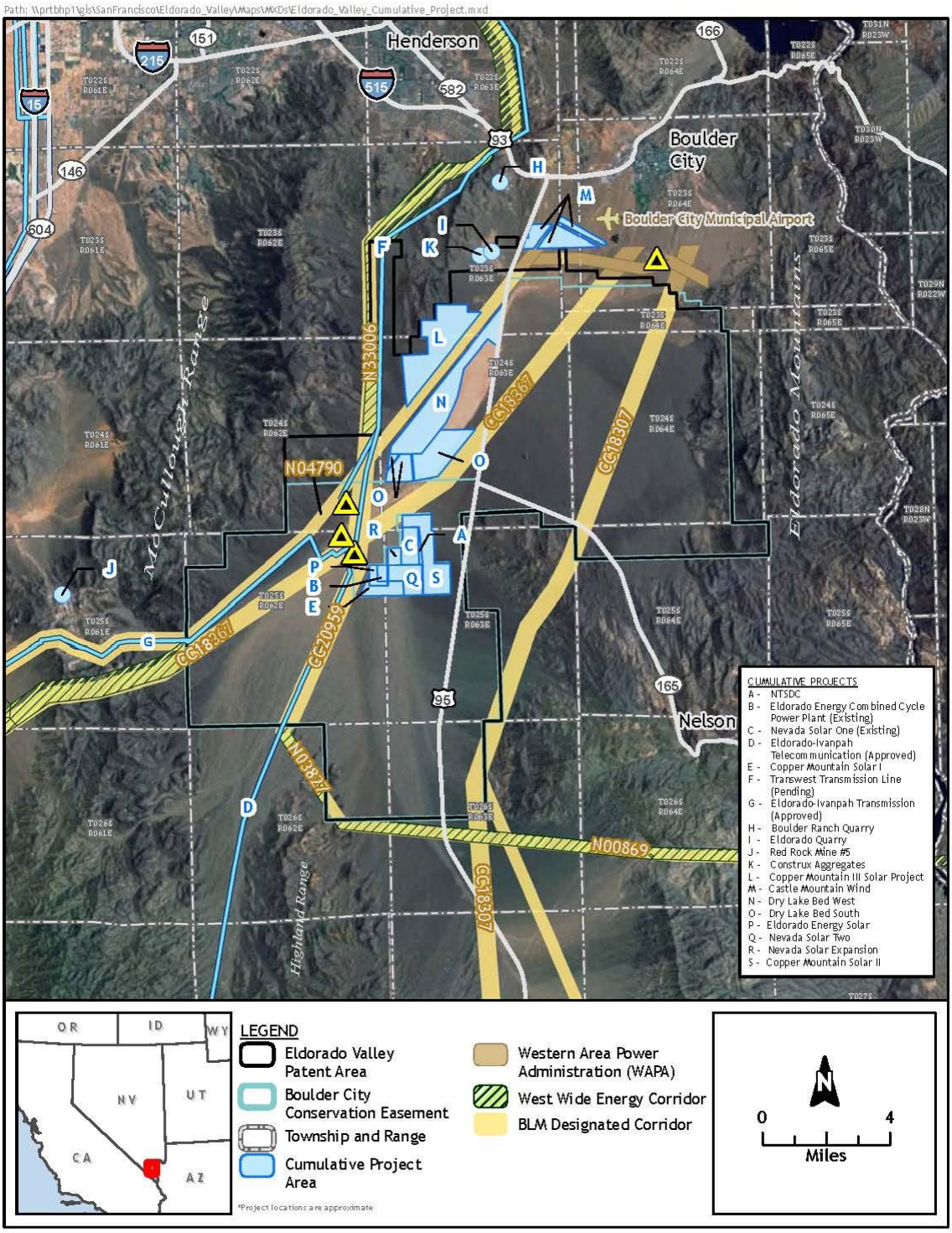

Figure 5-1: Eldorado Valley Cumulative Projects Overview
Clark County, Nevada

5.3 Types of Actions

The following provides a discussion of the potential impacts of projects within the CESA. Specific projects are in various phases of planning and permitting as shown in Table 5-1, and limited site-specific information is available for most projects. Therefore, a quantitative discussion of cumulative projects is provided to the extent available. Where specific information was not available, the construction and operational impacts that are typical of various types of projects are generally described below. Depending upon the location and nature of a proposed action and its connected action, the general impacts described below could contribute to cumulative impacts. To determine cumulative impacts, each proposed action within BLM transmission and utility corridors is required to update the list of cumulative projects, gather additional data if it becomes available, and conduct its own robust cumulative analysis.

5.3.1 Solar Energy Development

Photovoltaic (PV) and concentrating solar power (CSP) are the two dominant solar energy technologies on the market. PV technology creates electricity directly from sunlight, using solar cells. Solar cells have traditionally been made of monocrystalline silicon, but other material technologies exist. PV solar cells produce alternating current electricity, which is converted to direct current electricity with an inverter and then integrated directly into the power grid (rooftop applications) or transferred along distribution lines (utility-scale applications). The Copper Mountain Solar Facility, located within Boulder City's Energy Zone, is currently the largest PV project in the United States.

CSP technology, or "solar thermal" technology, concentrates sunlight to heat a liquid that produces steam that turns a simple turbine to create electricity. Parabolic troughs, solar power towers, and solar dishes are all forms of CSP technology that focus mirrors on a single point to generate steam. Generally, CSP technologies have been developed for utility-scale applications. Nevada Solar One, located within Boulder City's Energy Zone, is a CSP facility.

Both PV and CSP technologies have similar impacts, although CSP usually has a significant requirement for water for cleaning and cooling, which increases impacts. Typically, both types of construction projects cause a:

- Temporary increase in air pollutants and dust emissions;
- Temporary increase in noise;
- Temporary or permanent disruption of wildlife patterns from construction activities;
- Possible loss of cultural or historic resources; and
- Temporary disruption of local traffic patterns and road use.

Most of the construction impacts can be mitigated through site-specific best management practices and other mitigation measures, such as the ones outlined in this EA. Because solar projects may result in a single use for the land, however, several permanent impacts could occur as a result of operations, including:

- Permanent loss of wildlife habitat;
- Impact to existing recreational activities;

- Increase in impermeable surfaces that could lead to increased magnitude or frequency of flooding events; and
- Permanent alteration of visual or aesthetic characteristics.

Other construction-related impacts are typical of construction projects in general, such as generation of noise and dust from construction activities and a temporary increase in traffic from the movement of construction vehicles and equipment on local streets. Construction of a solar generation facility also temporarily increases local employment, including non-local workers requiring housing; however, these facilities typically employ only 5 permanent workers (approximately) and therefore do not have a significant impact on local economies.

According to the Boulder City Community Development Department (2012b), the following assumptions can be made about planned solar projects within the CESA:

Design and Construction

- Solar projects would use fixed panels (as opposed to tracking panels).
- There would be 100% site disturbance for grading and vegetation removal.
- Project design would include 6-foot-tall security fencing.
- Project design would also include desert tortoise fencing, which would be installed to USFWS standards. Current standards include burying a galvanized welded fence 12 inches below ground, with 22 to 24 inches extending above ground. Fencing could be penetrated by other small mammals and reptiles but not by desert tortoise.
- For a 1,100 acre site, 18 months of construction would be anticipated, including site preparation, panel installation, and substation construction.
- Projects would generally be expected to have 200 workers max on site at one time.
- Workers would use single passenger vehicles to commute to the site and park in employee parking lots. In the past, Sempra has bussed in workers; however, it is assumed that most workers would commute via single passenger vehicles.
- Contractors would hire private security companies to secure the main entrance of the site. There are generally four security guards onsite during the day, and they check all vehicles entering and exiting the site. They also generally have a patrol at night during construction.

Operation

- Security cameras would be present at the administrative building. According to the Boulder City Community Development Department, plants near the dry lake may choose to have more security due to recreational activities on the lake bed; however, this would still likely include only cameras and remote surveillance.
- The projects would employ a maximum of five workers.
- An existing water pipeline would provide water for dust suppression during construction and another existing water pipeline would provide water for sanitary use during operation. There are no numbers with respect to specific water quantities required.

- According to the Boulder City Community Development Department, project proponents would construct a dam structure that slows the flow of water over the site during heavy rain, which would minimize damage from rain events. The water would then be diverted back into existing channels on the other side of the site. The frequency of heavy rain events varies; however, it may be up to 4 to 5 times per year on average (2012b).

According to the Boulder City Community Development Department, the Copper Mountain III Project is completing drainage studies. Construction is anticipated to commence in Fall 2013 and could overlap with the Dry Lake Bed West and Dry Lake Bed South projects' construction schedules. The Dry Lake Bed West and Dry Lake Bed South projects are closer to Highway 95, so they will not require access roads; however, the Copper Mountain III Project will require an access road (2012). Using the Boulder City Community Development Department's estimate that there would be a maximum of 200 workers required onsite at one time during construction for each solar project, there could be up to 600 workers commuting to this area if construction schedules overlap. It is possible that they could be constructed by the same contractor and, therefore, may use common parking lots.

As stated above, water quantities required during construction and operation are currently unknown; however, the EIS for the Silver State Solar Project, which was constructed in the Ivanpah Valley near the California border, states that the 400 MW Silver State Project would require 600 acre feet (AF) of water during construction (no more than 200 AF per year) and 21 AF per year during operation. The Silver State Solar Project, as described in its Final EIS, would disturb approximately 3,000 acres. Therefore, because the projects listed in Table 5-1 consist of fewer MWs and require less acreages of disturbance (estimating 100% disturbance), it is assumed that water use during construction would not exceed 200 AF per year for each project.

5.3.2 Wind Energy Development

Wind generation facilities typically are comprised of multiple wind turbines that are connected to a substation through a network of underground and overhead lines. In addition to erecting the wind turbines, installing a wind generation system typically requires constructing access roads, substations, and a switchyard as well as connecting the substation to a transmission line. The equipment for all the structures is stored at a staging area prior to construction. Many of the impacts associated with wind generation facilities result from their large footprint. Therefore, installation of these types of facilities could:

- Temporarily increase in air pollutants and dust emissions;
- Temporarily increase in noise;
- Disturb wetlands or water bodies;
- Remove or alter vegetation and potential wildlife habitat;
- Temporarily displace wildlife; or
- Disturb cultural resources.

Likewise, operation of a wind generation facility typically:

- Alters the visual landscape;
- Causes the death or injury of birds and bats;

- Permanently displaces wildlife; and
- Influences migration patterns.

As discussed above under Section 5.2.1, other construction-related impacts are typical of construction projects in general, such as generation of noise and dust from construction activities and a temporary increase in traffic from the movement of construction vehicles and equipment on local streets. Construction of a wind generation facility also temporarily increases local employment, including non-local workers requiring housing; however, these facilities typically employ only 30 permanent workers (approximately) and, therefore, do not have a significant impact on local economies.

Currently, there are no proposed wind projects within the CESA; however, it is possible that this type of project could be proposed. If a wind project was proposed and would require upgrades to transmission lines in BLM transmission and utility corridors, these projects would be evaluated as connected actions, regardless of whether they were within or outside of the CESA. Such projects could contribute to cumulative impacts that would be similar in nature to the general impacts listed above.

5.3.3 Surface Mining

Surface mining facilities typically require constructing access roads; materials handling, separation, and processing facilities; waste storage areas and tailings facilities; rock and ore stockpiles; water management infrastructure (e.g., treatment ponds); chutes; hopper; and conveyor belts to transport raw aggregate from the site of extraction to an onsite processing facility, and other infrastructure (e.g., power lines). Many of the impacts associated with surface mining facilities result from their large footprint, the high volume of truck traffic transporting materials and aggregate to and from the site, temporary camps to house workers during exploration and construction, and air and water quality impacts due to extraction and processing methods. Therefore, during the mining exploration and construction phases, installation of these types of facilities could:

- Disturb wetlands, water bodies, or groundwater;
- Remove or alter vegetation and potential wildlife habitat;
- Generate different types of wastes, such as tailings and waste rock dumps, leach pad waste, workshop scrap, waste oils, chemicals, and other potential hazardous wastes;
- Temporarily increase in air pollutant emissions, especially fugitive dust from blasting, exposed surfaces such as tailings facilities, stockpiles, waste dumps, haul roads, and combustion equipment and vehicles;
- Temporarily increase in noise from vehicles engines, loading and unloading of rock, chutes, power generation, and other sources related to construction and mining activities;
- Temporarily displace wildlife; or
- Disturb cultural resources.

Likewise, operation of a surface mining facility typically:

- Alters the visual landscape;

- May cause groundwater contamination, particularly if minerals or chemicals are unintentionally released into groundwater during aggregate processing;
- Causes air quality impacts due to increases in PM_{10} and $PM_{2.5}$ concentrations in the area, particularly considering that the study area is out of attainment for these contaminants;
- May cause geological impacts depending upon the types of extraction methods (i.e., blasting);
- Cause an increase in noise emissions and vibration from mining activities such as shoveling, ripping, drilling, blasting, transport (including corridors for rail, road, and conveyor belts), crushing, grinding, and stockpiling;
- Increase in water consumption, mostly in processing plants and related activities , but also in dust suppression, with a potential reduction of local surface water and/or groundwater availability;
- Increase the demand in energy consumption;
- Permanently increases truck traffic in the area;
- Causes the death or injury of wildlife;
- Permanently removes vegetation and potential wildlife habitat;
- Introduces noxious and invasive plant species; or
- Permanently displaces wildlife.

Construx Aggregates and the Boulder Ranch Quarry, both of which are sand/gravel aggregate mines, likely contribute to the area's nonattainment status for PM_{10} and $PM_{2.5}$. Additional surface mines in the CESA that could contribute to contaminated soil conditions include the Red Rock Mine #5 (active) and the El Dorado Quarry (abandoned).

5.3.4 Combined Cycle Power Generation

Combined cycle plants are fossil fuel generation facilities that typically are comprised of combustion turbines and auxiliary boilers, steam generators, steam turbines, heat rejection equipment (e.g., condenser and cooling tower), air quality control systems, and electrical equipment. In addition to these major components, installing a combined cycle plant typically requires constructing access roads, water treatment systems, fuel storage, generator step-up (GSU) transformers, breakers, battery system, and a switchyard connecting the GSU to a transmission line. The equipment for all the structures would be stored at a staging area prior to construction. Many of the impacts associated with combined cycle power generation facilities result from their large footprint. Therefore, installation of these types of facilities could:

- Temporary increase in air pollutants and dust emissions;
- Disturb wetlands or water bodies;
- Remove or alter vegetation and potential wildlife habitat;
- Temporarily displace wildlife; or
- Disturb cultural resources.

Likewise, operation of a combined cycle power generation facility typically:

- Alters the visual landscape;
- Causes incremental emissions of criteria air pollutants (e.g., NO_x, CO, VOC, particulate matter (PM_{10} and $PM_{2.5}$), and SO_x) and potentially hazardous air pollutants from combustion sources;
- Increases noise due to the operation of permanent sources, such as turbine generators, boilers, diesel engines, fans and ductwork, pumps, compressors, piping and valves, motors, transformers, circuit breakers, and cooling towers;
- Alters surface water quality due to thermal discharges (e.g., from evaporative cooler blowdown and cooling towers), wastewater effluents (e.g., wastestream (brine) from reverse osmosis water treatment plant and effluents from the oil-water separator pumped to evaporation ponds), water from floor drains and washdown, and sanitary wastewater. In addition, incident stormwater and the runoff from concrete pads under the turbines are usually drained to the evaporation ponds;
- Increases water and fuel consumption;
- Generates solid and hazardous waste;
- Increases the potential for contamination of groundwater due to the use of evaporation ponds; and
- Permanently displaces wildlife.

As discussed above, other construction-related impacts are typical of construction projects in general, such as generation of noise and dust from construction activities and a temporary increase in traffic from the movement of construction vehicles and equipment on local roads. Construction of a combined cycle generation facility also temporarily increases local employment (over 300 workers at the peak of construction, depending on the plant size), including non-local workers requiring housing; however, these facilities typically employ only 30 permanent workers (approximately) and, therefore, do not have a significant impact on local economies during operation.

Currently, there are no proposed combined cycle projects within the CESA; however, the existing El Dorado Energy Combined Cycle Natural Gas Turbine Power Plant is a 465 MW facility located on 138 acres in the Boulder City Energy Zone. The site is served by a light duty asphalt road that provides access for three adjacent switchyards, the Copper Mountain Solar Project, and the Nevada Solar One facility. Groundwater below the plant and within a 6-mile radius is in excess of 300 feet below ground surface.

5.3.5 Geothermal Energy Development

Geothermal power generation facilities typically are comprised of a brine processing facility (includes geothermal wells and associated pipelines, brine and steam handling facilities, solids handling system, and brine and freshwater ponds), turbine-generator facilities for power generation, cooling system, evaporation and service water ponds, electric interconnection line, and other components. The type of geothermal system is dependent upon the temperature, depth, and quality of water and steam. The equipment for all the structures would be stored at a staging

area prior to construction. Many of the impacts associated with geothermal facilities result from their large footprint. Therefore, installation of these types of facilities could:

- Temporary increase in air pollutants and dust emissions;
- Temporary increase in noise;
- Disturb wetlands or water bodies;
- Remove or alter vegetation and potential wildlife habitat;
- Temporarily displace wildlife; or
- Disturb cultural resources.

Likewise, operation of a geothermal facility typically:

- Alters the visual landscape;
- Causes incremental emissions of criteria air pollutants (e.g., NOx, CO, VOC, particulate matter (PM_{10} and $PM_{2.5}$), and SO_x); and hazardous air pollutant emissions from the geothermal noncondensable gases through the power plant cooling tower and from the operation of standby diesel engine-generators;
- Alters surface water quality due to thermal discharges (e.g., from cooling towers and turbine-generator heat rejection systems), wastewater effluents, and sanitary wastewater;
- Increases water and fuel consumption;
- Increases noise due to the operation of permanent sources, such as turbine generators, boilers, diesel engines, pumps, compressors, piping and valves, motors, transformers, circuit breakers and cooling towers;
- Increases the potential for contamination of groundwater due to the use of evaporation ponds; and
- Permanently displaces wildlife.

As discussed above, other construction-related impacts are typical of construction projects in general, such as generation of noise and dust from construction activities and a temporary increase in traffic from the movement of construction vehicles and equipment on local roads. Construction of a geothermal facility also temporarily increases local employment, including non-local workers requiring housing; however, these facilities do not have a significant impact on local economies.

Although there are currently no geothermal energy plants existing or proposed within the CESA, in the past Boulder City received a proposal for a 250-MW geothermal plant (Clark County 2009). This proposal was later abandoned due to speculative geothermal resources in the vicinity; however, if this type of project is proposed and constructed, it could require connection to BLM transmission and utility corridors.

5.3.6 Linear Projects

Linear projects, such as transmission, telecommunications, transportation, and pipeline projects would generally have the same impacts as those described in Chapter 4 of this EA. Simultaneous construction of linear infrastructure within BLM transmission and utility corridors could cause cumulative effects such as:

- Temporary increase in air pollutants and dust emissions;
- Temporary increase in noise;
- Disturb wetlands, water bodies, or groundwater;
- Remove or alter vegetation and potential wildlife habitat;
- Temporarily displace wildlife; or
- Disturb cultural resources.

In general, most impacts associated with linear infrastructure upgrades are temporary during construction; however, if numerous new transmission lines were constructed, which were larger or otherwise more visible than current lines, there would be greater potential for cumulative visual impacts. The proposed TransWest Express Transmission Line Project would traverse the CESA within and adjacent to BLM utility corridor N33006. This project includes the construction of a new 600-kV direct current converter station on private land in the Boulder City Energy Zone. The converter station would connect the Marketplace, McCullough, and Eldorado substations. In addition, the Eldorado–Ivanpah Transmission Project, which is currently under construction, traverses BLM utility corridor N04790, crosses through the BCCE, traverses part of BLM utility corridor CC18367, and terminates at the Eldorado Substation. The Copper Mountain Solar III Project also includes construction of approximately 8.5 miles of a 230-kV gen-tie line, which would traverse N04790.

5.4 Cumulative Impacts

5.4.1 Land Use

The cumulative impacts of past, present, and reasonably foreseeable future actions on land use would be primarily related to the transformation of the Eldorado Valley for more industrial uses. In general, the land uses range from open space and conservation/preserve areas to commercial, public, private, and recreation; utility/energy uses; industrial and mining uses; and transportation. Portions of the Eldorado Valley have already been converted, and the area has become increasingly industrialized over the past decade. Introducing new infrastructure, particularly large energy development projects, would further contribute to a cumulative impact on land uses in the area. For example, long-term or permanent conversion of large acreages of land for industrial purposes would preclude other uses, such as recreation or conservation.

According to the Boulder City Community Development Department, potential cumulative projects in the area would convert approximately 6,670 acres to industrial uses (Copper Mountain Solar III: 1,400 acres; Dry Lake Bed West: 2,200 acres; Dry Lake Bed South: 1,500 acres; Townsite Southwest: 884 acres; Nevada Solar Two: 553 acres; and Nevada Solar Expansion: 133 acres). Although the construction of solar projects is an allowable use on Boulder City land, some of the conversion (approximately 1,000 acres) would occur on the Eldorado Valley Dry Lake bed,

which would preclude recreational uses. Also, converting lands to industrial uses would contribute to habitat fragmentation in the CESA.

Development of these cumulative projects would require connection to and possibly upgrades of transmission lines within BLM transmission and utility corridors. Upgrades or construction of new transmission lines within BLM transmission and utility corridors could result in further conversion of land uses in the area to industrial uses; however, impacts from linear infrastructure would be temporary during construction and would have minimal impacts during operation. For example, TransWest would disturb 451 acres, Eldorado–Ivanpah would disturb 324 acres, and the Copper Mountain III gen-tie line would disturb 123 acres; however, these areas would be revegetated after construction, so cumulative impacts on land use would be temporary. Implementation of the BMPs discussed in Chapter 4 would reduce impacts on surrounding land uses—for example, by requiring that construction workers observe speed limits within the BCCE, land use impacts with respect to conservation would be reduced, and projects traversing BLM transmission and utility corridors would have a minor contribution to cumulative effects.

5.4.2 Special Status Species

The cumulative impacts of past, present, and reasonably foreseeable future actions on special status species could be significant. As described in Chapter 3, a number of special status wildlife and plant species have potential to occur within the study area, including desert tortoise. Adverse impacts include injury to individuals during construction and long-term or permanent impacts on various species due to habitat loss and fragmentation. For example, current potential cumulative projects (Copper Mountain Solar III, Dry Lake Bed West, Dry Lake Bed South, Townsite Southwest, Nevada Solar Two, and Nevada Solar Expansion) would convert 6,670 acres of habitat to industrial uses. Although these cumulative projects are not within the BCCE, desert tortoise are present throughout the Eldorado Valley and would be kept out of the project sites by desert tortoise exclusion fencing, which would result in further habitat fragmentation in the CESA.

In addition, constructing new transmission (such as the TransWest and Eldorado–Ivanpah transmission lines, and the Copper Mountain III gen-tie line) or telecommunications lines would provide common ravens with perches, which would increase predation on desert tortoise and other species. The introduction of new buildings and structures related to energy development projects would also provide perches, further contributing to long-term cumulative impacts.

Individual take permits would be required for solar development projects under the MSHCP. In order to acquire permits, the projects would demonstrate that species impacts were reduced to the maximum extent practicable; however, it is nonetheless likely that constructing the more than 1,000 MWs of solar capacity in the CESA would contribute to unavoidable impacts on special status species—particularly desert tortoise. Development within BLM transmission and utility corridors would contribute to these cumulative impacts; however, with implementation of BMPs such as revegetation, projects such as the TransWest and Eldorado–Ivanpah transmission lines, and the Copper Mountain III gen-tie line, which would collectively disturb 898 acres during construction, would have reduced cumulative impacts during operation.

5.4.3 Migratory Birds

The cumulative impacts of past, present, and reasonably foreseeable future actions on migratory bird species could be significant. As described in Chapter 3, migratory bird species have potential

to occur within the study area. Adverse impacts on bird species include injury to individuals during construction and cumulative impacts on various species due to habitat loss and fragmentation. In particular, disturbing 6,670 acres of land to construct more than 1,000 MWs of solar projects (Copper Mountain Solar III, Dry Lake Bed West, Dry Lake Bed South, Townsite Southwest, Nevada Solar Two, and Nevada Solar Expansion) would destroy nesting and foraging habitat and harm, kill, or displace individuals during construction; these impacts would likely be unavoidable, even with the demonstration of mitigation required to acquire project-specific take permits. However, for proposed actions within BLM transmission and utility corridors, such as the TransWest and Eldorado–Ivanpah transmission lines, and the Copper Mountain III gen-tie line, 898 acres would be disturbed only temporary during construction. With the implementation of BMPs discussed in Chapter 4, the contribution of projects within BLM corridors to cumulative impacts would be reduced.

5.4.4 Wildlife

The cumulative impacts of past, present, and reasonably foreseeable future actions would impact common wildlife species, due to habitat loss and fragmentation. As described in Chapter 3, a number of common wildlife species have potential to occur within the study area. The introduction of new buildings and structures related to reasonably foreseeable solar projects in the CESA (Copper Mountain Solar III, Dry Lake Bed West, Dry Lake Bed South, Townsite Southwest, Nevada Solar Two, and Nevada Solar Expansion) would dedicate 6,670 acres of land to energy development purposes, which could lead to long-term cumulative impacts on wildlife, such as affecting breeding habits and migration patterns, depending upon which species are present on or traverse these sites. Site-specific surveys, such as those described in the BMPs in Chapter 4, would identify which wildlife species are present on the site; however, the introduction of large, utility-scale infrastructure would alter the use of these sites by wildlife species, resulting in a long-term cumulative impact on wildlife in the CESA.

For proposed actions within BLM transmission and utility corridors, wildlife habitat would be disturbed during construction. For example, the TransWest and Eldorado–Ivanpah transmission lines, and the Copper Mountain III gen-tie line would disturb 898 combined acres. However, with the implementation of BMPs discussed in Chapter 4, these areas would be revegetated during operation, which would reduce the contribution of such projects to cumulative impacts.

5.4.5 Vegetation and Non-Native Plant Species

The cumulative impacts of past, present, and reasonably foreseeable future actions on plant communities would be related to vegetation removal. As described in Chapter 3, a number of plant communities exist within the study area. Site-specific surveys, as described in the BMPs in Chapter 4, would identify which communities are present prior to construction; however, according to the Boulder City Community Development Department, cumulative solar projects would result in 100% vegetation removal and grading of 6,670 acres (Copper Mountain Solar III, Dry Lake Bed West, Dry Lake Bed South, Townsite Southwest, Nevada Solar Two, and Nevada Solar Expansion). This would be considered a cumulative impact on vegetation communities and could provide opportunities for invasive and non-native plant species to colonize areas over time. Projects in BLM transmission and utility corridors, such as the TransWest and Eldorado–Ivanpah transmission lines, and the Copper Mountain III gen-tie line (which would temporarily disturb 898 acres during construction), would be required to revegetate disturbed areas prior to operation, and therefore, would have a reduced contribution to cumulative effects in the CESA.

5.4.6 Cultural Resources

The cumulative impacts of past, present, and reasonably foreseeable future actions on cultural resources relate to the potential for damage or destruction of artifacts and their context and increased pedestrian and vehicular traffic, which may increase accessibility to artifacts and areas of significance to Native Americans. As described in Chapter 3, there are 60 known archaeological and historical resources within the study area. Much of the area has not been surveyed, so there is a high potential for unanticipated discoveries, particularly during ground disturbance. The area also contains Quaternary Alluvium, which may have a high potential for fossils.

The Copper Mountain Solar III, Dry Lake Bed West, Dry Lake Bed South, Townsite Southwest, Nevada Solar Two, and Nevada Solar Expansion projects would disturb 6,670 acres of land within the CESA, which could cause a cumulative impact on cultural and paleontological resources in the area. In particular, the Dry Lake Bed West and Dry Lake Bed South projects would disturb1,000 acres of the Eldorado Valley Dry Lake, which likely contains a number of archaeological artifacts. If these projects would degrade or require removal of resources, this could contribute to cumulative impacts on cultural resources in the CESA.

Implementation of BMPs described in Chapter 4, such as avoidance, evaluation, and recordation, would reduce impacts for projects proposed in BLM transmission and utility corridors, such as the TransWest and Eldorado–Ivanpah transmission lines, and the Copper Mountain III gen-tie line. Therefore, the contribution of these projects, and other projects in BLM transmission and utility corridors, would be reduced.

5.4.7 Visual Resources

The cumulative impacts of past, present, and reasonably foreseeable future actions on visual resources could be temporary and permanent. Viewer groups in the CESA include motorists along Highway 95 travelling for work or pleasure; recreational users in the area, including OHV enthusiasts, go-cart racers, and golfers; residents of the community of Boulder City, Nevada; visitors to the Veteran's Memorial Cemetery; and dispersed recreationists in the area. During construction, the presence of construction equipment and crews would contribute to cumulative impacts on visual resources due to multiple projects being constructed simultaneously. For example, the Copper Mountain III Project, the Dry Lake Bed West Project, and the Dry Lake Bed South Project would be constructed within overlapping timeframes and would be viewable from Highway 95, which could be considered a cumulative effect. Constructing over 1,000 MWs of solar projects within the area would have a cumulative impact by permanently transforming the visual character of the Eldorado Valley for motorists traveling along Highway 95 and dispersed recreational users.

Construction of linear infrastructure within BLM transmission and utility corridors, such as the TransWest and Eldorado–Ivanpah transmission lines, and the Copper Mountain III gen-tie line, would contribute to cumulative impacts during construction if their construction schedules overlapped with other projects. This is possible, particularly in the case of the Copper Mountain III gen-tie line, which would overlap with construction of the Copper Mountain III Project (solar field), the Dry Lake Bed West Project, and the Dry Lake Bed South Project. However, projects within BLM transmission and utility corridors are not likely to introduce significant new features into the CESA and would not have a cumulatively considerable contribution to long-term visual cumulative impacts.

5.4.8 Recreation

The cumulative impacts of past, present, and reasonably foreseeable future actions on recreation in the area would be both temporary and permanent. As described in Chapter 3, the Eldorado Valley contains a number of resources conducive to recreational opportunities or experiences, such as the Eldorado Valley Dry Lake. During construction, increased traffic on local roadways could restrict access to recreational opportunities, particularly during construction of the Copper Mountain III Project, the Dry Lake Bed West Project, and the Dry Lake Bed South Project, which would likely have overlapping construction schedules and be constructed adjacent to each other. In addition, the Dry Lake Bed West Project and the Dry Lake Bed South Project would convert approximately 1,000 acres of the Eldorado Valley Dry Lake bed from recreational uses to industrial use, thus precluding recreational opportunities, which could be considered cumulatively considerable. In addition, in the long term, transforming the visual character of the Eldorado Valley by constructing the solar projects listed in Table 5-1 could make the area less attractive for dispersed recreational users.

Construction of linear infrastructure within BLM transmission and utility corridors, such as the TransWest and Eldorado–Ivanpah transmission lines, and the Copper Mountain III gen-tie line, would contribute to cumulative impacts during construction if their construction schedules overlapped with other projects; however, the only project that is currently likely to be constructed within the same time frame would be the Copper Mountain III gen-tie line, which would require only 10 to 20 construction workers. The additional traffic generated by 10 to 20 workers would not be cumulatively considerable when added to the traffic generated by the 600 construction workers that could be required during construction of the Copper Mountain III Project (solar field), the Dry Lake Bed West Project, and the Dry Lake Bed South Project. With the implementation of BMPs discussed in Chapter 4, impacts of projects within BLM transmission and utility corridors related to restricting recreational access would be reduced.

5.4.9 Air Quality and Climate Change

The cumulative impacts of past, present, and reasonably foreseeable future actions on air quality and climate change would occur if projects had overlapping construction schedules or if there were future projects constructed that would be considered stationary sources of emissions. The Eldorado Valley is in nonattainment for ozone and PM_{10}, so projects such as the El Dorado Combined Cycle Power Plant, Boulder Ranch Quarry, Construx Aggregates, and Red Rock Mine #5 likely contribute to current emissions in the CESA.

According to the Boulder City Community Development Department, the Copper Mountain III, Dry Lake Bed West, and Dry Lake Bed South would have overlapping construction schedules. Therefore, these projects would contribute to temporary increases in ozone and $PM_{10,}$ as well as GHGs, during construction. All current potential projects are expected by Boulder City to use dust suppression techniques to control fugitive dust; however, these projects would nonetheless contribute to increased PM_{10} and GHG emissions during construction.

In addition, without site-specific surveys, it is unknown to what extent biological crusts exist in the CESA. The destruction of biological crusts would lead to increased erosion, which could also increase PM_{10} emissions in the CESA.

With the implementation of the BMPs described in Chapter 4, the cumulative impacts of linear projects within BLM transmission and utility corridors would be reduced. Generally, linear projects, such as the TransWest and Eldorado–Ivanpah transmission lines, and the Copper

Mountain III gen-tie line, would be more likely to contribute to increased levels of ozone, PM_{10}, and GHGs during construction and would have negligible air quality or climate change impacts during operation.

In addition, constructing over 1,000 MWs of solar projects would have a beneficial cumulative impact on air quality and climate change and could help offset the impacts of traditional energy generation projects in the CESA.

5.4.10 Geology and Soils

The cumulative impacts of past, present, and reasonably foreseeable future actions on soils could include both temporary and permanent impacts. For example, vegetation removal during construction could cause impacts related to erosion. The Copper Mountain Solar III, Dry Lake Bed West, Dry Lake Bed South, Townsite Southwest, Nevada Solar Two, and Nevada Solar Expansion projects would disturb 6,670 acres of land within the CESA, which would include vegetation removal and grading. Disturbance of 6,670 acres of land in the CESA could cause a cumulative impact related to soils erosion. In addition, if biological crusts were present in disturbed areas, this would also contribute to erosion and would likely be considered a permanent impact.

Construction within BLM transmission and utility corridors, such as the disturbance of 898 acres during construction of the TransWest and Eldorado–Ivanpah transmission lines, and the Copper Mountain III gen-tie line, could also disturb biological crusts, which would likely be a permanent impact. However, with the implementation of BMPs in Chapter 4, such as restoration and revegetation, cumulative erosion impacts related to projects in BLM transmission and utility corridors would be reduced.

5.4.11 Hydrology and Water Resources

The cumulative impacts of past, present, and reasonably foreseeable future actions on groundwater resources could be significant, depending upon the source of water required for construction and operations. For linear projects, water required during construction is generally used for dust suppression and negligible quantities of water are required during operation. In contrast, the amount of water required for energy generation projects varies widely depending upon the type of project.

Currently, according to the Boulder City Community Development Department, all projects proposed within the CESA would be PV projects. Although projects are expected to use water from a local pipeline for dust suppression and other uses during construction, the exact quantity of water available through this pipeline is unknown. As discussed in Section 5.3.1 above, the current potential projects within the CESA are not expected to exceed 200 AF per year per project during construction, according to water requirements disclosed in the Silver State Solar EIS prepared by the BLM Las Vegas Field Office. However, it is likely that the Copper Mountain III Project, the Dry Lake Bed West Project, and the Dry Lake Bed South Project would have overlapping construction schedules. Therefore, there could be up to 600 AF per year required for these three projects during construction, which could be a cumulative impact if the AF required for construction exceeds available water supplies.

Groundwater recharge in the CESA is 1,100 AF per year, depending upon the number and severity of annual rain events. Therefore, depending upon the quantities of water required for potential cumulative projects when added to other municipal and industrial uses in the Eldorado

Valley, impacts could be cumulatively considerable. In addition, stationary infrastructure associated with potential projects (such as administration buildings, substations, and other buildings) would increase impervious surfaces in the CESA, which could result in local wells or aquifers receiving fewer groundwater inputs. This could also contribute to cumulative impacts on groundwater recharge.

In addition to groundwater impacts, proposed actions and particularly other large-scale actions in the CESA, could contribute to cumulative impacts on hydrologic processes. The Eldorado Valley is located on alluvial fans, for which hydrologic processes can be random and difficult to model. Altering hydrologic processes could contribute to greater cumulative impacts due to seasonal flooding. Also, the introduction of impervious surfaces and new structures could contribute to a cumulative impact on surface runoff patterns. According to the Boulder City Community Development Department, it is expected that proponents of reasonably foreseeable future solar projects in the CESA would design their projects to divert the flow of water back into natural runoff channels, which would reduce this impact; however, it is unknown to what extent these projects would affect hydrologic processes without hydrologic modeling.

With the implementation of BMPs in Chapter 4, the contribution of linear infrastructure in BLM transmission and utility corridors to cumulative impacts on hydrology and water quality would be reduced. However, if the construction schedules of linear projects overlapped with the construction of energy generation projects, there could be a cumulative impact related to the quantity of available water for dust suppression and other purposes. Although the Eldorado–Ivanpah Transmission Project would not use groundwater in the Eldorado Valley, and therefore would not contribute to cumulative impacts on groundwater, other projects could contribute to cumulative impacts. For example, the Copper Mountain III gen-tie line would require a total of 600 AF of water over the life of construction from the existing water line that services the Eldorado Valley. The construction schedule of this project is likely to overlap with the Copper Mountain III Project (solar field), the Dry Lake Bed West Project, and the Dry Lake Bed South Project, which would contribute to cumulative impacts on the availability of water in the CESA. Although the source and quantity of water required for the TransWest Project is unknown, if this project also required water from the existing pipeline and was constructed within the same timeframe of any other cumulative solar projects listed in Table 5-1, this could also lead to a cumulative impact on available water quantity.

Further, as more energy generation projects are constructed within the CESA, more water will be required for operation. Although the exact quantity of required water is unknown, the Final EIS for the Silver State Solar Project disclosed a requirement of 21 AF per year during operation for a 400 MW PV project. If 21 AF per year were required for each potential cumulative solar project in Table 5-1, this would be a combined amount of up to 121 AF per year during operation. Therefore, as each project is constructed and requires operational water, the amount of water available for future construction purposes and other municipal uses would be further reduced.

In addition, although the operational water requirements of transmission lines are generally negligible, according to the EA for the Copper Mountain III gen-tie line, the gen-tie line would require 30 AF per year during operations, which would contribute to cumulative impacts on available water in the CESA. For the TransWest transmission line, it is unknown how much water would be required for either construction or operation. Therefore, it is unknown to what extent known potential cumulative projects proposed in BLM ROWs would contribute to cumulative impacts on water quantity; however, it could be cumulatively considerable.

5.4.12 Noise

The cumulative impacts of past, present, and reasonably foreseeable future actions due to noise would be mostly temporary during construction. The primary existing environmental noise source contributing to the ambient noise levels within the CESA is vehicular traffic on Highway 95 and other local roadways, occasional distant aircraft over flights over Eldorado Valley, and noise from dispersed recreational uses, such as OHV use or shooting.

Most of the potential projects in Table 5-1 (solar and transmission projects) would not contribute to noise impacts during operation; however, the Copper Mountain III, Dry Lake Bed West, and Dry Lake Bed South would have overlapping construction schedules. Therefore, these projects could have cumulative noise impacts during construction; however, the study area is rural and undeveloped. Motorists on Highway 95 would have temporary exposure to construction noise, and recreational users at the Eldorado Valley Dry Lake may already be engaged in noisy activities, such as OHV use, and thus would not be sensitive to construction noise.

Given that the CESA is not located near a noise sensitive area, it is anticipated that development in BLM transmission and utility corridors, on a case-by-case basis, would result in temporary minor and localized impacts along linear project routes during construction. If construction schedules overlapped with other potential projects and activities took place in proximity to those projects, there could be a temporary cumulative noise impact; however, the impact would be temporary and would not be cumulatively considerable.

Linear infrastructure does not typically create noise during operation, with the exception of corona noise from transmission lines. However, corona noise quickly dissipates the further a receptor moves from the source. Therefore, because there are no sensitive receptors within a close enough distance to BLM transmission and utility corridors in the CESA to be affected by corona noise, new construction or upgrades to transmission lines would not contribute to cumulative impacts during operation unless they traversed outside of the CESA through areas with sensitive receptors, such as residences.

5.4.13 Fuels and Fire Management

The cumulative impacts of past, present, and reasonably foreseeable future actions due to fuels and fire management would be related to the introduction of invasive weeds in the study area, which could increase the potential for fire. Although the historic natural vegetation does not normally support fire, any construction that removes native vegetation could introduce weed species, which could contribute to a cumulative effect on fuel and fire management. The increase or spread of invasive or noxious weeds may increase the chance for an ignition and spread of fire. For example, the removal of 6,670 acres of vegetation (Copper Mountain Solar III, Dry Lake Bed West, Dry Lake Bed South, Townsite Southwest, Nevada Solar Two, and Nevada Solar Expansion) could result in an increase in invasive species that could support fire, which could be cumulatively considerable.

Development within BLM transmission and utility corridors, such as TransWest and Eldorado–Ivanpah transmission lines, and the Copper Mountain III gen-tie line, would also lead to an increase in invasive species that could support fire; however, with the implementation of the BMPs discussed in Chapter 4, this would not result in an impact that was cumulatively considerable during operation.

5.4.14 Socioeconomics

The cumulative impacts of past, present, and reasonably foreseeable future actions on socioeconomics in the study area would likely be beneficial. According to the Boulder City Community Development Department, each project would require an average of approximately 200 workers during construction. The Copper Mountain Solar III Project, the Dry Lake Bed West Project, and the Dry Lake Bed South Project are expected to be constructed at the same time, which would be a combined average of 600 workers during the period of overlap. The creation of large numbers of construction jobs would be a beneficial short-term cumulative impact on the local economy.

During operation, solar projects would employ only five people per project. Five people for each potential cumulative solar project in Table 5-1 would be 30 permanent jobs, the cumulative impact of which would be negligible.

Development within BLM corridors would require additional workers; however, the amounts of workers required for transmission line construction would be fewer than for construction of solar projects. For example, for the Copper Mountain III gen-tie, there are 10 to 20 workers estimated for construction of the line. For the Eldorado–Ivanpah Transmission Project, there would be up to 100 workers at a construction yard at a time. Likewise, the TransWest Project could employee approximately 380 people; however, only some of these jobs would be created within Clark County. Regardless, the construction of new infrastructure in the CESA would likely contribute to a beneficial cumulative impact on employment.

5.4.15 Human Health and Safety/Hazardous Materials

The cumulative impacts of past, present, and reasonably foreseeable future actions on human health and safety are related mainly to construction; however, depending upon the types of proposed actions and other actions proposed in the CESA, there would be greater potential for cumulative impacts. For example, while the construction of the proposed solar projects listed in Table 5-1 would not be likely to cause human health and safety impacts, particularly due to the use of security firms during construction, if other projects are proposed that require the use of hazardous materials, such as the construction of gas pipelines or energy generation plants other than solar projects, there could be a greater cumulative impact on human health and safety because such projects would have a higher potential for accidental spills or releases of hazardous substances.

There are no oil or gas pipelines currently proposed within BLM transmission and utility corridors; however, oil and gas pipelines currently traverse the area. If new oil or gas pipelines were proposed and constructed in the future, these projects could result in accidental pills and releases. Implementation of the BMPs discussed in Chapter 4 would reduce these impacts, which would reduce these projects contribution to cumulative effects.

Chapter 6. List of Agencies Contacted

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This section identifies the agencies that were contacted during the preparation of this EA.

6.1 Federal Agencies

U.S. Fish and Wildlife Service, Southern Nevada Field Office,

6.2 Tribal Governments

- Las Vegas Paiute Tribe
- Timbisha Shoshone Tribe
- Pahrump Paiute Tribe
- Fort Mojave Indian Tribe
- Chemehuevi Indian Tribe
- Colorado River Indian Tribes

6.3 State Agencies

Nevada Department of Wildlife, Southern Region Office

6.4 Local Agencies

Boulder City Community Development Department
Clark County Desert Conservation Program

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Chapter 7. List of Preparers

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This section identifies the individuals that were responsible for the preparation of this EA.

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- Lisa Christianson – Air Quality, Greenhouse Gas Emissions, and Visual Resources
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- Mark Slaughter – Wildlife, Migratory Birds, and Special Status Species
- Susanne Rowe – Cultural Resources, Paleontology, and Native American Concerns
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- Sean McEldery – Fire Management
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- Jill Craig – Invasive Species and Noxious Weeds
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Ecology and Environment, Inc.

- Tina Willis – Project Director
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- Tom Ferraro – Geology and Hydrology
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Chapter 8. References

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Appendix A

U.S. Patent 27-95-0022

Form 1860-9
(January 1988)

The United States of America

To all to whom these presents shall come, Greeting:

Nev-048100

WHEREAS

Colorado River Commission of the State of Nevada, Acting for the State of Nevada, is entitled to a land patent pursuant to the Act of March 6, 1958 (72 Stat. 31), as amended by the Act of October 10, 1962 (76 Stat. 804), for the following described land:

Mount Diablo Meridian, Nevada

T. 24 S., R. 62 E.
sec. 22, all;
sec. 23, all;
sec. 24, all;
sec. 25, all;
sec. 26, all;
sec. 27, all;
sec. 34, all;
sec. 35, all;
sec. 36, all.

T. 25 S., R. 62 E.
sec. 1, lots 5, 6, 7 and 8, S½N½, S½;
sec. 2, lots 5, 6, 7 and 8, S½N½, S½;
sec. 3, lots 5, 6, 7 and 8, S½N½, S½;
sec. 4, lots 5, 6, 7 and 8, S½N½, S½;
sec. 5, lots 5, 6, 7 and 8, S½N½, S½;
sec. 7, lots 5, 6, 7, 8, 9, 10, 11 and 12; E½, E½W½;
sec. 8, all;
sec. 9, all;
sec. 10, all;
sec. 11, all;
sec. 12, all;
sec. 13, all;
sec. 14, all;
sec. 15, all;
sec. 16, all;
sec. 17, all;
sec. 18, lots 5, 6, 7, 8, 9, 10, 11 and 12; E½, E½W½;

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sec. 19, lots 5, 6, 7, 8, 9,
10, 11 and 12;
E½, E½W½;
sec. 20, all;
sec. 21, all;
sec. 22, all;
sec. 23, all;
sec. 24, all;
sec. 25, all;
sec. 26, all;
sec. 27, all;
sec. 28, all;
sec. 29, all;
sec. 30, lots 5, 6, 7, 8, 9,
10, 11 and 12;
E½, E½W½;
sec. 31, lots 5, 6, 7, 8, 9,
10, 11 and 12;
E½, E½W½;
sec. 32, all;
sec. 33, all;
sec. 34, all;
sec. 35, all;
sec. 36, all.

T. 26 S., R. 62 E.,
sec. 1, lots 5, 6, 7 and 8,
S½N½, S½;
sec. 2, lots 5, 6, 7 and 8,
S½N½, S½;
sec. 11, all;
sec. 12, all;
sec. 13, all;
sec. 14, all.

T. 23 S., R. 63 E.,
sec. 19, lots 1, 2, 3, and 4,
NE¼, E½W½, W½SE¼;
sec. 23, lot 2, N½NW¼;
sec. 25, all;
sec. 26, E½, N½NE¼NW¼, S½SW¼NE¼NW¼,
SE¼NE¼NW¼, N½S½NW¼NW¼,
S½NE¼SW¼NW¼, W½SW¼NW¼,
SE¼SW¼NW¼, SE¼NW¼, SW¼;
sec. 27, all;
sec. 28, E½;
sec. 30, lots 1, 2, 3, and 4,
W½E½, E½W½;

sec. 31, lots 1, 2, 3, and 4,
W½E½, E½W½;
sec. 32, SE¼;
sec. 33, all;
sec. 34, all;
sec. 35, all;
sec. 36, all.

T. 24 S., R. 63 E.,
sec. 1, lots 5, 6, 7 and 8,
S½N½, S½;
sec. 2, lots 5, 6, 7 and 8,
S½N½, S½;

sec. 3, lots 5, 6, 7 and 8,
S½N½, S½;
sec. 4, lots 5, 6, 7 and 8,
S½N½, S½;
sec. 5, lots 5 and 6;
S½NE¼, S½;
sec. 6, lots 10, 11, 12, 13 and 14,
SE¼NW¼, E½SW¼, SE¼;
sec. 7, lots 5, 6, 7 and 8,
E½, E½W½;
sec. 8, all;
sec. 9, all;
sec. 10, all;
sec. 11, all;
sec. 12, all;
sec. 13, all;
sec. 14, all;
sec. 15, all;
sec. 16, all;
sec. 17, all;
sec. 18, lots 5, 6, 7 and 8,
E½, E½W½;
sec. 19, lots 5, 6, 7 and 8,
E½, E½W½;
sec. 20, all;
sec. 21, all;
sec. 22, all;
sec. 23, all;
sec. 24, all;
sec. 25, all;
sec. 26, all;
sec. 27, all;
sec. 28, all;
sec. 29, all;
sec. 30, lots 5, 6, 7 and 8,
E½, E½W½;
sec. 31, lots 5, 6, 7 and 8,
E½, E½W½;
sec. 32, all;
sec. 33, N½, SW¼;
sec. 34, N½;
sec. 35, N½;
sec. 36, all;

T. 25 S., R. 63 E.,
sec. 4, lots 7 and 8,
S½NW¼, SW¼;
sec. 5, lots 5, 6, 7 and 8,
S½N½, S½;
sec. 6, lots 8, 9, 10, 11,
12, 13 and 14, S½NE¼,
SE¼NW¼, E½SW¼, SE¼;
sec. 7, lots 5, 6, 7 and 8,
E½, E½W½;
sec. 8, all;
sec. 9, W½;
sec. 15, SW¼;
sec. 16, W½, SE¼;
sec. 17, all;
sec. 18, lots 5, 6, 7 and 8,
E½, E½W½;

Nev-048100

sec. 19, lots 5, 6, 7 and 8, E½, E½W½;
sec. 20, all;
sec. 21, all;
sec. 22, W½;
sec. 27, W½;
sec. 28, all;
sec. 29, all;
sec. 30, lots 5, 6, 7 and 8, E½, E½W½;
sec. 31, lots 5, 6, 7 and 8, E½, E½W½;
sec. 32, all;
sec. 33, all;
sec. 34, W½.

T. 26 S., R. 63 E.,
sec. 4, lots 5, 6, 7 and 8, S½N½, S½;
sec. 5, lots 5, 6, 7 and 8, S½N½, S½;
sec. 6, lots 8, 9, 10, 11, 12, 13 and 14; S½NE¼, SE¼NW¼, E½SW¼, SE¼;
sec. 7, lots 5, 6, 7 and 8, E½, E½W½;
sec. 8, all;
sec. 9, all;
sec. 16, all;
sec. 17, all;
sec. 18, lots 5, 6, 7 and 8, E½, E½W½.

T. 23 S., R. 63½ E.,
sec. 25, lots 1, 2, 3 and 4, S½SE¼;
sec. 36, lots 1, 2, 3 and 4, E½.

T. 23 S., R. 64 E.,
sec. 30, lot 8, SE¼SW¼;
sec. 31, lot 5, 6, 7 and 8, E½, E½W½;
sec. 32, all;
sec. 33, SW¼NE¼, NW¼NW¼, S½NW¼, S½;
sec. 34, NW¼SW¼, S½SW¼, SW¼SE¼.

T. 23½ S., R. 64 E.,
sec. 31, lots 1, 2, 3, 4, 5 and 6, NE¼, E½NW¼;
sec. 32, lots 1, 2, 3 and 4, N½;
sec. 33, lots 1, 2, 3 and 4, N½;
sec. 34, lots 1, 2, 3 and 4, N½;
sec. 35, lots 1, 2, 3 and 4, N½.

PATENT NO. 27-95-0022

NEV-048100

T. 24 S., R. 64 E.,
sec. 2, lots 5, 6, 7 and 8, S½N½, S½;
sec. 3, lots 5, 6, 7 and 8, S½N½, S½;
sec. 4, lots 5, 6, 7 and 8, S½N½, S½;
sec. 5, lots 5, 6, 7 and 8, S½N½, S½;
sec. 6, lots 8, 9, 10, 11, 12, 13 and 14, S½NE¼, SE¼NW¼, E½SW¼, SE¼;
sec. 7, lots 5, 6, 7 and 8, E½, E½W½;
sec. 8, all;
sec. 9, all;
sec. 10, all;
sec. 11, all;
sec. 14, all;
sec. 15, all;
sec. 16, all;
sec. 17, all;
sec. 18, lots 5, 6, 7 and 8, E½, E½W½;
sec. 19, lots 5, 6, 7 and 8, E½, E½W½;
sec. 20, all;
sec. 21, all;
sec. 22, all;
sec. 23, all;
sec. 26, all;
sec. 27, all;
sec. 28, all;
sec. 29, all;
sec. 30, lots 5, 6, 7 and 8, E½, E½W½;
sec. 31, lots 5, 6, 7 and 8, E½, E½W½;
sec. 32, all;
sec. 33, all;
sec. 34, all;
sec. 35, all.

T. 25 S., R. 64 E.,
sec. 1, lots, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 15, SW¼NE¼, S½NW¼, SW¼, W½SE¼;
sec. 2, lots 5, 6, 7 and 8, S½N½, S½;
sec. 3, lots 5, 6, 7 and 8, S½N½, S½;
sec. 4, lots 5, 6, 7 and 8, S½N½, S½;
sec. 5, lots 5, 6, 7 and 8, S½N½, S½;
sec. 6, lots 8, 9, 10, 11, 12, 13 and 14, S½NE¼, SE¼NW¼, E½SW¼, SE¼.

containing 107,412.24 acres.

Nev-048100

NOW KNOW YE, that there is, therefore, granted by the UNITED STATES, unto the above named Colorado River Commission of Nevada, Acting for the State of Nevada, the land described above; TO HAVE AND TO HOLD the said land with all the rights, privileges, immunities and appurtenances of whatsoever nature, thereunto belonging unto the said Colorado River Commission of Nevada, Acting for the State of Nevada, its successors and assigns, forever; and

EXCEPTING AND RESERVING TO THE UNITED STATES;

1. A right-of-way thereon for ditches or canals constructed by the authority of the United States. Act of August 30, 1890 (43 U.S.C. 945).

2. Certain right-of-way corridors for transportation and public utilities as designated in Exhibit A attached hereto and made a part hereof.

3. Those rights for power transmission line purposes granted to the Bureau of Reclamation, its successors or assigns, by right-of-way No. CC-024550, pursuant to the Act of December 5, 1924 (43 Stat. 672).

4. Those rights for road purposes granted to the Bureau of Reclamation, its successors or assigns, by right-of-way No. Nev-046127, pursuant to the Act of December 5, 1924 (43 Stat. 672).

5. Those rights for power transmission line and road purposes granted to the Bureau of Reclamation, the City of Los Angeles and Nevada Power Company, their successors or assigns, by right-of-way No. N-4790, pursuant to the Act of March 4, 1911 (43 U.S.C. 961).

6. Those rights for power transmission line purposes granted to the Bureau of Reclamation, its successors or assigns, by right-of-way No. N-29605, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761).

7. Those rights for material site purposes granted to the Federal Highway Administration, its successors or assigns, by right-of-way No. N-38190, pursuant to the Act of August 27, 1958 (23 U.S.C. 317(A)).

8. Those rights for power transmission line purposes granted to the Department of Energy, its successors or assigns, by right-of-way No. N-56872, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761).

9. Those rights for highway purposes granted to Nevada Department of Transportation, its successors or assigns, by right-of-way No. CC-019651, pursuant to the Act of November 9, 1921 (42 Stat. 216).

10. Those rights for highway purposes granted to Nevada Department of Transportation, its successors or assigns, by right-of-way No. CC-020655, pursuant to the Act of August 27, 1959 (23 U.S.C. 317(A)).

11. Those rights for highway purposes granted to Nevada Department of Transportation, its successors or assigns, by right-of-way No. CC-020733, pursuant to the Act of November 9, 1921 (42 Stat. 216).

12. Those rights for material site purposes granted to Nevada Department of Transportation, its successors or assigns, by right-of-way No. CC-020962, pursuant to the Act of November 9, 1921 (42 Stat. 216).

13. Those rights for highway purposes granted to Nevada Department of Transportation, its successors or assigns, by right-of-way No. CC-020965, pursuant to the Act of November 9, 1921 (42 Stat. 216).

14. Those rights for highway purposes granted to Nevada Department of Transportation, its successors or assigns, by right-of-way No. N-13085, pursuant to the Act of August 27, 1958 (23 U.S.C. 317(A)).

15. Those rights for material site and road purposes granted to Nevada Department of Transportation, its successors or assigns, by right-of-way No. N-33203, pursuant to the Act of August 27, 1958 (23 U.S.C. 317(A)).

SUBJECT TO:

1. Those rights for power transmission line, telephone line, and road purposes granted to Southern California Metropolitan Water District, its successors or assigns, by right-of-way No. CC-018307, pursuant to the Act of December 21, 1928 (43 U.S.C. 617D).

2. Those rights for power transmission line purposes granted to the City of Los Angeles, its successors or assigns, by right-of-way No. CC-018367, pursuant to the Act of December 21, 1928 (43 U.S.C. 617D).

3. Those rights for power transmission line and road purposes granted to Southern California Edison Company, its successors or assigns, by right-of-way No. CC-018486, pursuant to the Act of December 21, 1928 (43 U.S.C. 617D).

4. Those rights for power transmission line purposes granted to Nevada Power Company, its successors or assigns, by right-of-way No. CC-020736, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761).

5. Those rights for power transmission line purposes granted to the City of Los Angeles, its successors or assigns, by right-of-way No. CC-020824, pursuant to the Act of December 21, 1928 (43 U.S.C. 617D).

6. Those rights for power transmission line, telephone line, and road purposes granted to Southern California Edison Company, its successors or assigns, by right-of-way No. CC-020959, pursuant to the Act of December 21, 1928 (43 U.S.C. 617D).

7. Those rights for gas pipeline purposes granted to Southwest Gas Corporation, its successors or assigns, by right-of-way No. Nev-015814, pursuant to the Act of February 25, 1920 (30 U.S.C. 185 Sec 28).

8. Those rights for power transmission line and telephone line purposes granted to Southern California Edison Company and Nevada-California Electric Corporation, their successors or assigns, by rights-of-way No. Nev-043265 and Nev-043265 (01), pursuant to the Act of December 21, 1928 (43 U.S.C. 617D).

9. Those rights for gas pipeline purposes granted to Southwest Gas Corporation, its successors or assigns, by right-of-way No. Nev-043646, pursuant to the Act of February 25, 1920 (30 U.S.C. 185 Sec 28).

10. Those rights for power transmission line, power generation station, road and drainage area purposes granted to Southern California Edison Company, its successors or assigns, by right-of-way No. Nev-066156, pursuant to the Act of March 4, 1911 (43 U.S.C. 961).

11. Those rights for power transmission line and road purposes granted to Southern California Edison Company, its successors or assigns, by right-of-way No. N-869, pursuant to the Act of March 4, 1911 (43 U.S.C. 961).

12. Those rights for power transmission line purposes granted to Southern California Edison Company, its successors or assigns, by right-of-way No. N-1127, pursuant to the Act of March 4, 1911 (43 U.S.C. 961).

13. Those rights for power transmission line purposes granted to Nevada Power Company, its successors or assigns, by right-of-way No. N-1909, pursuant to the Act of March 4, 1911 (43 U.S.C. 961).

14. Those rights for communication site purposes granted to Central Telephone Company, its successors or assigns, by right-of-way No. N-2217, pursuant to the Act of March 4, 1911 (43 U.S.C. 961).

15. Those rights for power transmission line purposes granted to Nevada Power Company, its successors or assigns, by right-of-way No. N-2557, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761).

16. Those rights for power substation, road and drainage area purposes granted to Nevada Power Company, Salt River Project and Southern California Edison Company, their successors or assigns, by right-of-way No. N-2655, pursuant to the Act of March 4, 1911 (43 U.S.C. 961).

17. Those rights for telemetry and telephone line purposes granted to Southern California Edison Company, its successors or assigns, by right-of-way No. N-2629, pursuant to the Act of March 4, 1911 (43 U.S.C. 961).

18. Those rights for power switching station and road purposes granted to the City of Los Angeles, its successors or assigns, by right-of-way No. N-2763, pursuant to the Act of March 4, 1911 (43 U.S.C. 961).

19. Those rights for power transmission line purposes granted to Nevada Power Company, Salt River Project and Southern California Edison Company, their successors or assigns, by right-of-way No. N-2795, pursuant to the Act of March 4, 1911 (43 U.S.C. 961).

20. Those rights for power transmission line purposes granted to Nevada Power Company, Salt River Project, Los Angeles Department of Water and Power and Southern California Edison Company, their successors or assigns, by right-of-way No. N-3827, pursuant to the Act of March 4, 1911 (43 U.S.C. 961).

21. Those rights for power transmission line purposes granted to Nevada Power Company, its successors or assigns, by right-of-way No. N-7299, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761).

22. Those rights for gas pipeline purposes granted to Southwest Gas Corporation, its successors or assigns, by right-of-way No. N-7841, pursuant to the Act of February 25, 1920 (30 U.S.C. 185 Sec 28).

23. Those rights for power transmission line purposes granted to Intermountain Power, its successors or assigns, by right-of-way No. N-10683, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761).

24. Those rights for power transmission substation purposes granted to Nevada Power Company, its successors or assigns, by right-of-way No. N-11629, pursuant to the Act of February 15, 1901 (43 U.S.C. 959).

25. Those rights for road and water pipeline purposes granted to Gornowich Sand and Gravel, its successors or assigns, by right-of-way No. N-15857, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761).

26. Those rights for power transmission line purposes granted to Nevada Power Company, its successors or assigns, by right-of-way No. N-17394, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761).

27. Those rights for power transmission line purposes granted to Nevada Power Company, its successors or assigns, by right-of-way No. N-33006, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761).

28. Those rights for road purposes granted to Pan Metal Corporation, its successors or assigns, by right-of-way No. N-35549, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761).

29. Those rights for power transmission line purposes granted to the City of Los Angeles, its successors or assigns, by right-of-way No. N-39980, pursuant to the Act of October 21, 1976 (43 U.S.C. 176).

30. Those rights for power switching station, power transmission line and road purposes granted to Los Angeles Department of Water and Power, its successors or assigns, by right-of-way No. N-46054, pursuant to the Act of October 21,1976 (43 U.S.C. 1761).

31. Those rights for power transmission line and road purposes granted to Southern California Edison Company, its successors or assigns, by right-of-way No. N-47835, pursuant to the Act of October 1, 1976 (43 U.S.C. 1761).

32. Those rights for fiber optic telephone line and regeneration facilities purposes granted to American Telephone & Telegraph Company, its successors or assigns, by right-of-way No. N-52050, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761).

33. Those rights for fiber optic telephone line purposes granted to Central Telephone Company, its successors or assigns, by right-of-way No. N-52985, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761).

34. Those rights for gas pipeline purposes granted to Southwest Gas Corporation, its successors or assigns, by right-of-way No. N-53117, pursuant to the Act of February 25, 1920 (30 U.S.C. 185 Sec. 28).

35. Those rights for power transmission line purposes granted to Nevada Power Company, its successors or assigns, by right-of-way No. N-53121, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761).

36. Those rights for gas pipeline purposes granted to Southwest Gas Corporation, its successors or assigns, by right-of-way No. N-54045, pursuant to the Act of February 25, 1920 (30 U.S.C. 185 Sec. 28).

37. Those rights for telephone line purposes granted to Sprint/Central Telephone-Nevada, its successors or assigns, by right-of-way No. N-57817, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761).

38. Those rights for fiber optic line and regeneration site purposes granted to Citizens Communications Services, its successors or assigns, by right-of-way No. N-58566, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761).

39. Those rights for road purposes granted to Henderson City, its successors or assigns, by right-of-way No. N-58592, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761).

40. An easement 50 feet in width along the north boundary of lot 2 and the N½NW¼, of Section 23, Township 23 South, Range 63 East, west of Highway 95, in favor of Clark County, to insure continued ingress and egress to adjacent lands.

41. An easement 50 feet in width along the north boundary, and 30 feet in width along the south boundary of the NE¼NW¼ of Section 26, Township 23 South, Range 63 East, west of Highway 95, in favor of Clark County, to insure continued ingress and egress to adjacent lands.

Form 1860-10
(April 1988)

Nev-048100

42. An easement 50 feet in width along the west boundary of the N½S½NW¼NW¼, Section 26, Township 23 South, Range 63 East, in favor of Clark County, to insure continued ingress and egress to adjacent lands.

43. An easement 30 feet in width along the north boundary of the SE¼NW¼, Section 26, Township 23 South, Range 63 East, in favor of Clark County, to insure continued ingress and egress to adjacent lands.

IN TESTIMONY WHEREOF, the undersigned authorized officer of the Bureau of Land Management, in accordance with the provisions of the Act of June 17, 1948 (62 Stat. 476), has, in the name of the United States, caused these letters to be made Patent, and the Seal of the Bureau to be hereunto affixed.

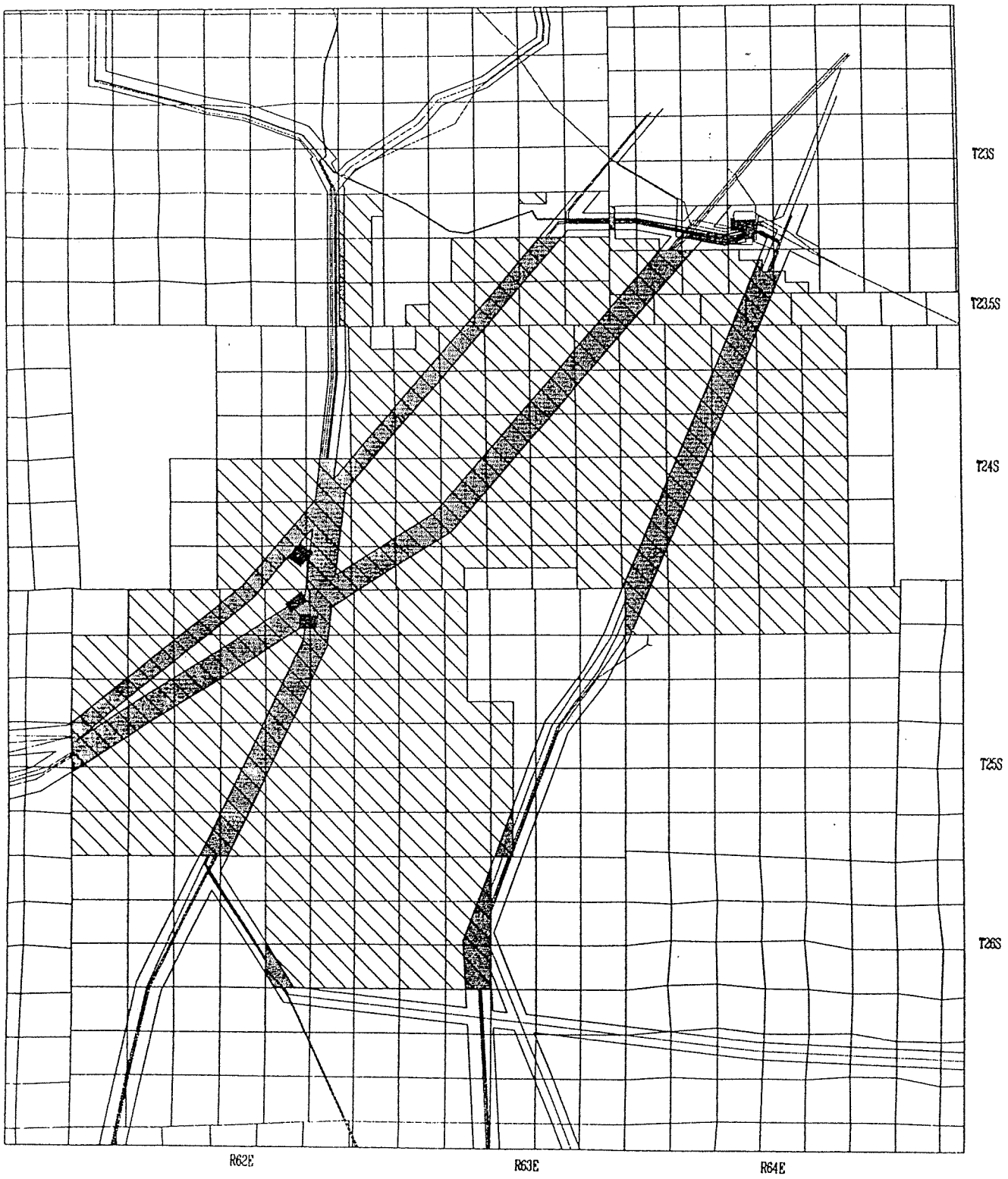
[SEAL]

GIVEN under my hand, in Las Vegas, Nevada
the NINTH day of JULY
in the year of our Lord one thousand nine hundred and NINETY-FIV
and of the Independence of the
United States the two hundred and TWENTIETH

By _____
Bruce Babbitt,
Secretary of the Interior

Patent Number 27-95-0022

Exhibit A



July 9, 1995

Approximate Land Sale Acreage: 107,412 acres

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Appendix B

BLM Sensitive Species

Appendix B. BLM Sensitive Species with Potential to Occur in the Project Area

Fish

Meadow Valley Wash desert sucker (*Catostomus clarkii ssp.)*
Ash Meadows Amargosa Pupfish (*Cyrpinodon nevadensis mionectes)*
Devils Hole Pupfish (*Cyrpinodon diabolis)*
Warm Springs Pupfish (*Cyrpinodon nevadensis pectoralis)*
Pahrump Poolfish (*Empetrichthys latos)*
Bonytail chub (*Gila elegans)*
Virgin River chub (Muddy River pop.) (*Gila seminuda pop.)*
Moapa dace (*Moapa coriacea)*
Woundfin (*Plagopterus argentissimus)*
Moapa speckled dace (*Rhinichthys osculus moapae)*
Ash Meadows speckled dace (*Rhinichthys osculus nevadensis)*
Meadow Valley speckled dace *(Rhinichthys osculus ssp 11)*
Oasis Valley speckled dace *(Rhinichthys osculus ssp. 6)*
Razorback sucker (*Xyrauchen texanus)*

Invertebrates

Large aegialian scarab (*Aegialia magnifica)*
Mojave gypsum bee (*Andrena balsamorhizae)*
Big Dune aphodius scarab (*Aphodius sp. 1)*
northern Mojave blue (*Euphilotes mojave virginensis)*
MacNeill sooty wing skipper (*Hesperopsis gracielae)*
Mt Charleston Blue Butterfly (*Icaricia shasta charlestonensis)*
Big Dune miloderes weevil (*Miloderes sp. 1)*
Mojave poppy bee (*Perdita meconis)*
Giuliani's dune scarab (*Pseudocotalpa giulianii)*
Devils Hole warm spring riffle beetle (*Stenelmis calida calida)*
Moapa Warm Spring riffle beetle (*Stenelmis moapa)*
Ash Meadows Naucorid (*Ambrysus amargosus)*
Moapa pebblesnail (*Pygulopsis avernalis)*
Moapa Valley pyrg (*Pyrgulopsis carinifera)*
Crystal springsnail (*Pyrgulopsis crystalis)*
Spring Mountains pyrg (*Pyrgulopsis deaconi)*
Ash Meadows pebblesnail (*Pyrgulopsis erythropoma)*
Fairbanks springsnail (*Pygulopsis fairbanksensis)*
Elongate gland springsnail (*Pyrgulopsis isolatus)*
Distal gland springsnail (*Pyrgulopsis nanus)*
Median gland Nevada pyrg (*Pyrgulopsis pisteri)*
Southeast Nevada pyrg (*Pyrgulopsis turbatrix)*
Sportinggoods tryonia (*Tryonia angulata)*
Point of Rocks tryonia (*Tryonia elata)*
Minute tryonia (*Tryonia ericae)*
Amargosa tryonia (*Tryonia variegata)*

Plants

Rough angelica *(Angelica scabrida)*
Sticky ringstem *(Anulocaulis leiosolenus var. leiosolenus)*
Torrey milkvetch *(Astragalus calycosus var. monophyllidius)*
Black woollypod *(Astragalus funereus)*
Threecorner milkvetch *(Astragalus geyeri var. triguetrus)*
Gilman's milkvetch *(Astragalus gilmanii)*
Straw milkvetch *(Astragalus lentiginosus var. stramineus)*
Halfring milkvetch *(Astragalus mohavensis var. hemigyrus)*
Mokiak milkvetch *(Astragalus mokiacensis)*
Ash Meadows milkvetch *(Astragalus phoenix)*
Spring Mountains milkvetch *(Astragalus remotus)*
Pahrump silverscale *(Atriplex argentea var. longitrichoma)*
Alkali mariposa lily *(Calochortus striatus)*
Spring-loving centaury *(Centaurium namophilum)*
Virgin River thistle *(Cirsium mohavense)*
Tecopa birdbeak *(Cordylanthus tecopensis)*
Stream stippleback lichen *(Dermatocarpon luridum)*
Gold Butte moss *(Didymodon nevadensis)*
Silverleaf sunray *(Enceliopsis argophylla)*
Ash Meadows sunray *(Enceliopsis nudicaulis var. corrugata)*
Nevada willowherb *(Epilobium nevadense)*
Antelope Canyon goldenbush *(Ericameria cervina)*
Sheep fleabane *(Erigeron ovinus)*
Pahrump Valley buckwheat *(Eriogonum bifurcatum)*
Darin buckwheat *(Eriogonum concinnum)*
Las Vegas buckwheat *(Eriogonum corymbosum var. nilesii)*
Clokey buckwheat *(Eriogonum heermannii var. clokeyi)*
Sticky buckwheat *(Eriogonum viscidulum)*
Smooth dwarf greasebush *(Glossopetalon pungens var. glabrum)*
Ash Meadows gumplant *(Grindelia fraxinopratensis)*
Red Rock Canyon aster *(Ionactis caelestis)*
Rock purpusia *(Ivesia arizonica var. saxosa)*
Jaeger ivesia *(Ivesia jaegeri) – ISEGS possible*
Ash Meadows mousetails *(Ivesia kingii var. eremica)*
Bullfrog Hills sweetpea *(Lathyrus hitchcockianus)*
Ash Meadows blazingstar *(Mentzelia leucophylla)*
Polished blazingstar *(Mentzelia polita)*
Amargosa niterwort *(Nitrophila mohavensis)*
Beaver Dam breadroot *(Pediomelum castoreum)*
Death Valley beardtongue *(Penstemon fruticiformis ssp. amargosae)*
Pahute Mesa beardtongue *(Penstemon pahutensis)*
Beatley scorpionflower *(Phacelia beatleyae)*

Appendix C

Visual Contrast Rating Forms

Form 8400-4
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date 1/31/12

District Las Vegas District

Resource Area Hydrographic Basin 212 (Boulder City, Clark Co., NV)

Activity (program) Programmatic EA/Utility Corridors

SECTION A. PROJECT INFORMATION

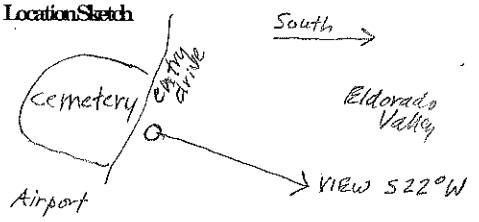
1. Project Name
Eldorado Valley Utility Corridor Programmatic EA

2. Key Observation Point
KOP 1 (Veteran's Cemetery)

3. VRM Class
III

4. Location
Township 023S
Range 064E
Section

5. Location Sketch



SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	Sloping gently to west from BG mountains; undulating topography.	Low shrubs and grasses; shrubs dominated by creosote. Vegetation is sparse, but regularly distributed and generally even in height. Form is low and even.	Strong vertical lattice towers. Some vertical single-pole (distribution) structures in immediate FG. Some buildings in FG with blocky form.
LINE	Horizontal striations in FG, MG. Rugged peaks (irregular, angular) in BG.	Low, even grasses/creosote.	Vertical transmisison structures in FG dominant.
COLOR	Shades of dark brown and greenish gray. Some light tans and yellowish browns intermixed.	Yellow-green creosote with some orangish cast. Yellow and tan grasses.	Gray, dark gray, brown. transmisison structures. Beige race track with some pinks and browns of buildings.
TEXTURE	FG, MG is fine textured. BG is coarse-textured (Mountains, rugged peaks)	Fine textured FG, MG, BG. No trees.	Medium textured structures.

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	No change.	No change.	Assume taller monopole or lattice tower transmisison structures with strong vertical linear forms.
LINE	No change.	No change.	Assume strong vertical linear elements of taller monopoles or lattice towers. Horizontal conductors are unlikely to be noticeable except in immediate FG.
COLOR	No change.	No Change.	Assume dull-galvanized light gray to dark gray or self-weathering dark reddish-brown monopoles or dull-galvanized light gray to dark gray lat rfice towers.
TEXTURE	No change.	No change.	Medium textured transmisison structures.

SECTION D. CONTRAST RATING ☒ SHORT TERM ☒ LONG TERM

1. DEGREE OF CONSTRAST

ELEMENTS	FEATURES: LANDWATER BODY (1) Strong	Moderate	Weak	None	VEGETATION (2) Strong	Moderate	Weak	None	STRUCTURES (3) Strong	Moderate	Weak	None
Form	☐	☐	☐	☒	☐	☐	☐	☒	☐	☐	☒	☐
Line	☐	☐	☐	☒	☐	☐	☐	☒	☐	☐	☒	☐
Color	☐	☐	☐	☒	☐	☐	☐	☒	☐	☐	☒	☐
Texture	☐	☐	☐	☒	☐	☐	☐	☒	☐	☐	☒	☐

2. Does project design meet visual resource management objectives? ☒ Yes ☐ No (Explain on reverse side)

3. Additional mitigating measures recommended? ☒ Yes ☐ No (Explain on reverse side)

Evaluator's Names
Joe Donaldson
Rachel Wilkinson
Lisa Christianson

Date
1/31/12

SECTION D. (Continued)

Comments from item 2.

The form, line, color, and texture of potential new features would be similar to and more distant than those of existing transmission features visible in the near foreground-middleground distance zone. The new features would therefore be subordinate to these existing features and contrast would be weak to none. Changes to the existing environment for major upgrades to or new transmission facilities would be consistent with VRM Class III.

Additional Mitigating Measures (See item 3)

Although new structures could be proposed to be different in design or height from the existing dull-gray steel lattice structures, implementation of BMPs described would ensure their form, line, color, and texture remains similar to the existing structures, and other visual impacts would be minimized during construction and in the the long-term.

- VIS-1: Unless determined by the BLM to be infeasible, the applicant will use existing access routes. If existing access routes are not available, the applicant will access areas within the BLM corridors by staying entirely within the corridors in the study area.
- VIS-2: Unless determined by the BLM to be infeasible, access to areas within the BLM corridors will be by overland travel (i.e., drive and crush). If grading or other ground disturbance is determined by the BLM to be necessary for access, it will be the minimum required and the applicant must consult with the BLM to identify and implement feasible methods to restore the area to an appearance that would blend with the overall landscape character. Any widening or grading of access roads that must be constructed will be the minimum required for access by construction equipment.
- VIS-3: If new roads are required for construction or permanent access to new or existing infrastructure, the applicant must consult with the BLM to identify and implement feasible methods to restore the area to an appearance that would blend with the overall landscape character. Treatments would include seeding and/or inter-planting into the disturbed areas.
- VIS-4: For transmission projects, new or redesigned transmission structures must be similar in design to existing structures. The finish on transmission structures will be a non-reflective finish, such as steel that has been galvanized and treated to create a dulled finish that reduces light reflection and helps blend the structures into the landscape setting. Any new transmission conductors will be non-specular to minimize conductor reflectivity and help blend them into the landscape setting.
- VIS-5: Clearing and ground disturbance required for construction will be the minimum required and the applicant must consult with the BLM to identify and implement feasible methods to restore the area to an appearance that would blend with the overall landscape character. Areas around new or rebuilt transmission structures that must be cleared during the construction process or other areas of ground disturbance will be regraded and revegetated to restore these areas to an appearance that would help blend them into the overall landscape character.
- VIS-6: During the construction period, dust suppression measures would be used to minimize the creation of dust clouds potentially associated with ground disturbance activities and the use of the access roads.

U.S. GOVERNMENT PRINTING OFFICE: 1985-461-988/33094

Form 8400-4
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date 1/31/12

District Las Vegas District

Resource Area Hydrographic Basin 212 (Boulder City, Clark Co, NV)

Activity (program) Programmatic EA/Utility Corridors

SECTION A. PROJECT INFORMATION

1. Project Name
Eldorado Valley Utility Corridor Programmatic EA

2. Key Observation Point
KOP 2 (Golf Course)

3. VRM Class
III

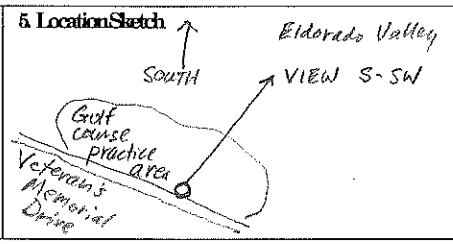
4. Location

Township 023S

Range 064E

Section

5. Location Sketch



SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	Sloping gently to west from BG mountains. Open, broad plain, level. Lakebed is horizontal, round/curvilinear. BG mountains are rugged, angular.	Manicured turf, low shrubs, and a few trees in FG. Vegetation not apparent in MG, BG., but forms an low, even surface on land.	Some vertical lattice towers and vertical single-pole (distribution) structures visible in FG/MG.
LINE	Mostly horizontal in FG,/MG. Rugged peaks (irregular, angular) in BG.	Primarily low, horizontal with some low rounded trees in immediate FG.	Solar farm in BG is horizontal and linear from this low-angle view. Vertical linear transmission structures in FG/MG.
COLOR	Shades of gray and purplish-gray dominate. Some light orangeish browns.	Yellow-green and soft tans predominate with green turf in immediate FG.	Solar farm is bright white. Dry lakebed is yellowish tan. Transmission structures are soft gray.
TEXTURE	FG, MG is fine textured. BG is coarse-textured (mountains, rugged peaks).	Generaly fine textured FG, MG, BG with some coarser elements in FG (small trees).	Fine to medium textured structures.

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	No change.	No change.	Assume taller monopole or lattice tower transmission structures with strong vertical linear forms.
LINE	No change.	No change.	Assume strong vertical linear elements of taller monopoles or lattice towers. Horizontal conductors are unlikely to be noticeable.
COLOR	No change.	No Change.	Assume dull-galvanized light gray to dark gray or self-weathering dark reddish-brown monopoles or dull-galvanized light gray to dark gray lattice towers.
TEXTURE	No change.	No change.	Medium textured transmission structures.

SECTION D. CONTRAST RATING ☒ SHORT TERM ☒ LONG TERM

1. DEGREE OF CONSTRAST

ELEMENTS	FEATURES: LANDWATER BODY (1) Strong	Moderate	Weak	None	VEGETATION (2) Strong	Moderate	Weak	None	STRUCTURES (3) Strong	Moderate	Weak	None
Form	☐	☐	☐	☒	☐	☐	☐	☒	☐	☐	☒	☐
Line	☐	☐	☐	☒	☐	☐	☐	☒	☐	☐	☒	☐
Color	☐	☐	☐	☒	☐	☐	☐	☒	☐	☐	☒	☐

2. Does project design meet visual resource management objectives? ☒ Yes ☐ No (Explain on reverse side)

3. Additional mitigating measures recommended? ☒ Yes ☐ No (Explain on reverse side)

Evaluator's Names
Joe Donaldson
Rachel Wilkinson
Lisa Christianson

Date
1/31/12

	Texture	☐ ☐ ☐ ☒ ☐ ☐ ☐ ☒ ☐ ☐ ☒ ☐		

SECTION D. (Continued)

Comments from item 2.

The form, line, color, and texture of potential new features would be similar to and more distant than those of existing transmission features visible in the near foreground-middleground distance zone. The new features would therefore be subordinate to these existing features and contrast would be weak to none. Changes to the existing environment for major upgrades to or new transmission facilities would be consistent with VRM Class III.

Additional Mitigating Measures (See item 3)

Although new structures could be proposed to be different in design or height from the existing dull-gray steel lattice structures, implementation of BMPs described below would ensure their form, line, color, and texture remains similar to the existing structures. and other visual impacts would be minimized during construction and in the theh long-term.

- VIS-1: Unless determined by the BLM to be infeasible, the applicant will use existing access routes. If existing access routes are not available, the applicant will access areas within the BLM corridors by staying entirely within the corridors in the study area.
- VIS-2: Unless determined by the BLM to be infeasible, access to areas within the BLM corridors will be by overland travel (i.e., drive and crush). If grading or other ground disturbance is determined by the BLM to be necessary for access, it will be the minimum required and the applicant must consult with the BLM to identify and implement feasible methods to restore the area to an appearance that would blend with the overall landscape character. Any widening or grading of access roads that must be constructed will be the minimum required for access by construction equipment.
- VIS-3: If new roads are required for construction or permanent access to new or existing infrastructure, the applicant must consult with the BLM to identify and implement feasible methods to restore the area to an appearance that would blend with the overall landscape character. Treatments would include seeding and/or inter-planting into the disturbed areas.
- VIS-4: For transmission projects, new or redesigned transmission structures must be similar in design to existing structures. The finish on transmission structures will be a non-reflective finish, such as steel that has been galvanized and treated to create a dulled finish that reduces light reflection and helps blend the structures into the landscape setting. Any new transmission conductors will be non-specular to minimize conductor reflectivity and help blend them into the landscape setting.
- VIS-5: Clearing and ground disturbance required for construction will be the minimum required and the applicant must consult with the BLM to identify and implement feasible methods to restore the area to an appearance that would blend with the overall landscape character. Areas around new or rebuilt transmission structures that must be cleared during the construction process or other areas of ground disturbance will be regraded and revegetated to restore these areas to an appearance that would help blend them into the overall landscape character.
- VIS-6: During the construction period, dust suppression measures would be used to minimize the creation of dust clouds potentially associated with ground disturbance activities and the use of the access roads.

U.S. GOVERNMENT PRINTING OFFICE: 1985-461-988/33094

Form 8400-4
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date 1/31/12

District Las Vegas District

Resource Area Hydrographic Basin 212 (Boulder City, Clark Co., NV)

Activity (program) Programmatic EA/Utility Corridors

SECTION A. PROJECT INFORMATION

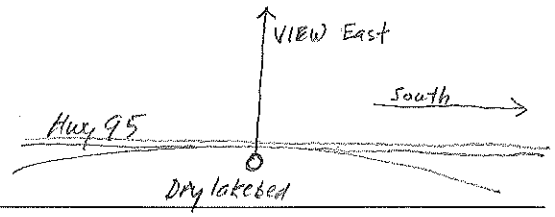
1. Project Name
Eldorado Valley Utility Corridor Programmatic EA

2. Key Observation Point
KOP 3 (Dry Lakebed)

3. VRM Class
III

4. Location
Township 024S
Range 063E
Section

5. Location Sketch



SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	Open and flat lakebed. Gently sloping and even in MG. Rugged and angular forms of BG mountains.	Low shrubs and grasses; difficult to distinguish. Form is low and even.	Strong vertical lattice towers and some vertical single-pole (distribution) structures in FG. Horizontal roadway in FG.
LINE	Generally horizontal in FG, MG. Rugged peaks (irregular, angular) in BG.	Horizontal, low, even grasses/creosote.	Vertical linear transmission structures dominant in FG. Straight, linear roadway in FG.
COLOR	Shades of tan, brown, yelowish-brown. Charcoal-gray BG mountains.	Yellow-green creosote with some orangish cast. Yellow and tan grasses.	Light gray transmission lattice towers. Dark brown wood monopole structures. Roadway is light gray.
TEXTURE	FG/MG is fine textured. BG is coarse textured (mountains, rugged peaks)	Fine textured FG, MG, BG. No trees.	Medium textured structures and fine textured roadway.

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	No change.	No change.	Assume taller monopole or lattice tower transmission structures with strong vertical linear forms.
LINE	No change.	No change.	Assume strong vertical linear elements of taller monopoles or lattice towers. Horizontal conductors are unlikely to be very noticeable except in immediate FG.
COLOR	No change.	No Change.	Assume dull-galvanized light gray to dark gray or self-weathering dark reddish-brown monopoles or dull-galvanized light gray to dark gray latrtice towers.
TEXTURE	No change.	No change.	Medium textured transmission structures.

SECTION D. CONTRAST RATING ☒ SHORT TERM ☒ LONG TERM

1. DEGREE OF CONSTRAST

ELEMENTS	FEATURES: LANDWATER BODY (1) Strong	Moderate	Weak	None	VEGETATION (2) Strong	Moderate	Weak	None	STRUCTURES (3) Strong	Moderate	Weak	None
Form	☐	☐	☐	☒	☐	☐	☐	☒	☐	☒	☐	☐
Line	☐	☐	☐	☒	☐	☐	☐	☒	☐	☒	☐	☐
Color	☐	☐	☐	☒	☐	☐	☐	☒	☐	☐	☒	☐

2. Does project design meet visual resource management objectives? ☒ Yes ☐ No (Explain on reverse side)

3. Additional mitigating measures recommended? ☒ Yes ☐ No (Explain on reverse side)

Evaluator's Names
Joe Donaldson
Rachel Wilkinson
Lisa Christianson

Date
1/31/12

	Texture	☐ ☐ ☐ ☒ ☐ ☐ ☐ ☒ ☐ ☐ ☒ ☐		

SECTION D. (Continued)

Comments from item 2.

Assuming new structures would be substantially taller than the existing structures, they may, depending on their locations, extend above the horizon line of distant mountains, be silhouetted against the sky, and begin to attract attention and dominate the characteristic landscape. Contrast in form and line would therefore be moderate to moderately high even with the application of BMPs described below. For these reasons, and with the application of BMPs described below, visual impacts associated with major upgrades to or new transmission facilities are anticipated to be moderate for views from KOP 3. Changes to the existing environment for major upgrades to or new transmission facilities would be consistent with VRM Class III because the existing character of the landscape would be partially retained.

Additional Mitigating Measures (See item 3)

Although new structures could be proposed to be different in design or height from the existing dull-gray steel lattice structures, implementation of BMPs described would ensure their form, line, color, and texture remains similar to the existing structures, and other visual impacts would be minimized during construction and in the the long-term.

- VIS-1: Unless determined by the BLM to be infeasible, the applicant will use existing access routes. If existing access routes are not available, the applicant will access areas within the BLM corridors by staying entirely within the corridors in the study area.
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- VIS-3: If new roads are required for construction or permanent access to new or existing infrastructure, the applicant must consult with the BLM to identify and implement feasible methods to restore the area to an appearance that would blend with the overall landscape character. Treatments would include seeding and/or inter-planting into the disturbed areas.
- VIS-4: For transmission projects, new or redesigned transmission structures must be similar in design to existing structures. The finish on transmission structures will be a non-reflective finish, such as steel that has been galvanized and treated to create a dulled finish that reduces light reflection and helps blend the structures into the landscape setting. Any new transmission conductors will be non-specular to minimize conductor reflectivity and help blend them into the landscape setting.
- VIS-5: Clearing and ground disturbance required for construction will be the minimum required and the applicant must consult with the BLM to identify and implement feasible methods to restore the area to an appearance that would blend with the overall landscape character. Areas around new or rebuilt transmission structures that must be cleared during the construction process or other areas of ground disturbance will be regraded and revegetated to restore these areas to an appearance that would help blend them into the overall landscape character.
- VIS-6: During the construction period, dust suppression measures would be used to minimize the creation of dust clouds potentially associated with ground disturbance activities and the use of the access roads.

U.S. GOVERNMENT PRINTING OFFICE: 1985-461-988/33094

Form 8400-4
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date 1/31/12

District Las Vegas District

Resource Area Hydrographic Basin 212 (Boulder City, Clark Co., NV)

Activity (program) Programmatic EA/Utility Corridors

SECTION A. PROJECT INFORMATION

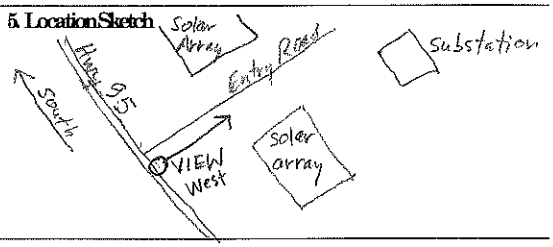
1. Project Name
Eldorado Valley Utility Corridor Programmatic EA

2. Key Observation Point
KOP 4 (Entry to Nevada Solar One - View West from Hwy 95)

3. VRM Class
III

4. Location
Township 025S
Range 063E
Section

5. Location Sketch



SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	Flat and open in FG/MG. Sloping gently to west from BG mountains; are somewhat rugged, undulating. Strong, massive forms of mountains dominate view..	Low shrubs and grasses; shrubs dominated by low, even creosote. Vegetation is evenly distributed and generally even in height. Form is low and even.	Solar arrays and structures are generally rectilinear and horizontal. Some vertical lattice towers and monopole structures are visible.
LINE	Horizontal alluvial fans sloping gently from more rugged mountains. Strong, linear ridgelines are somewhat angular. Strong horizontal lines are dominant.	Low, even, horizontal grasses/creosote.	Horizontal linear elements are generally dominant. Some vertical transmission structures and buildings are apparent.
COLOR	Shades of tan, brown, and yellow tan in FG/MG. BG is dark gray, dark brown, interspersed with yellow, light tan.	Yellow-green creosote with some orangeish and yellowish cast. Yellow and tan grasses.	Light gray, whitish, and tan structures (building, solar array,) Dark blue/black solar panels. Other structures appear light gray.
TEXTURE	FG, MG is fine textured. BG is medium to coarse-textured (mountains).	Fine textured FG, MG, BG. No trees.	Fine to medium textured structures.

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	No change.	No change.	Assume taller monopole or lattice tower transmission structures with strong vertical linear forms.
LINE	No change.	No change.	Assume strong vertical linear elements of taller monopoles or lattice towers. Horizontal conductors are unlikely to be noticeable except in immediate FG.
COLOR	No change.	No Change.	Assume dull-galvanized light gray to dark gray or self-weathering dark reddish-brown monopoles or dull-galvanized light gray to dark gray latrtice towers.
TEXTURE	No change.	No change.	Medium textured transmission structures.

SECTION D. CONTRAST RATING ☒ SHORT TERM ☒ LONG TERM

1. DEGREE OF CONSTRAST

ELEMENTS	FEATURES: LANDWATER BODY (1) Strong	Moderate	Weak	None	VEGETATION (2) Strong	Moderate	Weak	None	STRUCTURES (3) Strong	Moderate	Weak	None
Form	☐	☐	☐	☒	☐	☐	☐	☒	☐	☐	☒	☐
Line	☐	☐	☐	☒	☐	☐	☐	☒	☐	☐	☒	☐
Color	☐	☐	☐	☒	☐	☐	☐	☒	☐	☐	☒	☐

2. Does project design meet visual resource management objectives? ☒ Yes ☐ No (Explain on reverse side)

3. Additional mitigating measures recommended? ☒ Yes ☐ No (Explain on reverse side)

Evaluator's Names	Date
Joe Donaldson Rachel Wilkinson Lisa Christianson	1/31/12

	Texture	☐ ☐ ☐ ☒ ☐ ☐ ☐ ☒ ☐ ☐ ☒ ☐	

SECTION D. (Continued)

Comments from item 2.

The form, line, color, and texture of potential new features would be similar to and more distant than those of existing transmission features barely distinguishable in the distant middleground and background in this view. Other energy generation facilities and substations in the view are closer to the viewer and dominate the view in form, line, color, and texture. The new transmission features would therefore be subordinate to these existing features and contrast would be very weak to none. Changes to the existing environment for major upgrades to or new transmission facilities would be consistent with VRM Class III.

Additional Mitigating Measures (See item 3)

Although new structures could be proposed to be different in design or height from the existing dull-gray steel lattice structures, implementation of BMPs described below would ensure their form, line, color, and texture remains similar to the existing structures and other visual impacts would be minimized during construction and in the the long-term.

- VIS-1: Unless determined by the BLM to be infeasible, the applicant will use existing access routes. If existing access routes are not available, the applicant will access areas within the BLM corridors by staying entirely within the corridors in the study area.
- VIS-2: Unless determined by the BLM to be infeasible, access to areas within the BLM corridors will be by overland travel (i.e., drive and crush). If grading or other ground disturbance is determined by the BLM to be necessary for access, it will be the minimum required and the applicant must consult with the BLM to identify and implement feasible methods to restore the area to an appearance that would blend with the overall landscape character. Any widening or grading of access roads that must be constructed will be the minimum required for access by construction equipment.
- VIS-3: If new roads are required for construction or permanent access to new or existing infrastructure, the applicant must consult with the BLM to identify and implement feasible methods to restore the area to an appearance that would blend with the overall landscape character. Treatments would include seeding and/or inter-planting into the disturbed areas.
- VIS-4: For transmission projects, new or redesigned transmission structures must be similar in design to existing structures. The finish on transmission structures will be a non-reflective finish, such as steel that has been galvanized and treated to create a dulled finish that reduces light reflection and helps blend the structures into the landscape setting. Any new transmission conductors will be non-specular to minimize conductor reflectivity and help blend them into the landscape setting.
- VIS-5: Clearing and ground disturbance required for construction will be the minimum required and the applicant must consult with the BLM to identify and implement feasible methods to restore the area to an appearance that would blend with the overall landscape character. Areas around new or rebuilt transmission structures that must be cleared during the construction process or other areas of ground disturbance will be regraded and revegetated to restore these areas to an appearance that would help blend them into the overall landscape character.
- VIS-6: During the construction period, dust suppression measures would be used to minimize the creation of dust clouds potentially associated with ground disturbance activities and the use of the access roads.

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Appendix D

Letter to Tribal Governments

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Southern Nevada District Office
Las Vegas Field Office
4701 N. Torrey Pines Drive
Las Vegas, Nevada 89130
http://www.blm.gov/nv/st/en.html

MAY 29 2012

In Reply Refer To:
1790 (NVS0000)
Nev-48100

CERTIFIED MAIL 7009 2820 0001 6804 3840 – RETURN RECEIPT REQUESTED

Tonia Means, Chair
Las Vegas Paiute Tribe
One Paiute Drive
Las Vegas, NV 89106

Dear Chairwoman Means:

Due to the number of renewable energy projects currently being proposed in the Eldorado Valley (just southeast of Las Vegas), the Bureau of Land Management (BLM) Las Vegas Field Office (LVFO) is preparing a Programmatic Environmental Assessment (EA) to help expedite the environmental review of these proposed projects. The focus of this Programmatic EA is to analyze the potential impacts of granting rights-of-ways (ROWs) across public lands within the Valley and ensure that any future projects are constructed and operated in a safe and environmentally sound manner that complies with the National Environmental Policy Act (NEPA). In addition, this EA will address certain policy issues so that these issues do not need to be reanalyzed in subsequent NEPA reviews.

The BLM administers several transportation and utility corridors within the Eldorado Valley. Through these corridors BLM has previously authorized various rights-of-ways (ROWs), and will continue to authorize future project ROWs when appropriate. Currently, BLM has a number of proposed projects that will require ROWs within the utility corridors so there is an immediate need for the BLM to prepare this programmatic EA. The EA, however, will neither approve nor deny any specific applications for ROWs. All applications would continue to be subject to project-specific review under NEPA.

The study area shown in Figure 1 is located immediately south of Boulder City property. A large portion of this area includes the Boulder City Conservation Easement (BCCE), which is preserved and protected for the desert tortoise and other species. At this time, the BLM is requesting that the [name of tribe] share any concerns you may have about resources within the study area. Please provide any information you consider appropriate to John Evans, NEPA Coordinator/Project Lead and copy Susanne Rowe, District Archeologist.

If you have any questions or concerns at this time, or wish to arrange a meeting or field visit with our office, please contact John Evans at jhevans@blm.gov or (702) 515-5097.

Sincerely,

Robert B. Ross, Jr.
Field Manager

Appendix E

Valid Existing Rights

VALID EXISTING RIGHTS WITHIN AND/OR ADJACENT TO THE ELDORADO VALLEY CORRIDOR STUDY AREA

BLM Serial #	***ROW Holder***	***Type of ROW***
N-52050	AT&T CRE Lease Administration	Underground Conduit Line/Two Regeneration Facilities
N-48712	Bureau of Land Management	Community Pit/Sand & Gravel
N-04790	Bureau of Reclamation, Nevada Power Company, City of Los Angeles	Transmission Line and Roads
Nev-67374	Bureau of Reclamation	Transmission Line
N-29605	Bureau of Reclamation	Transmission Line
N-61859	Boulder City	Water Pipeline
N-02217	Central Telephone Company/DBA/CenturyLink	Eldorado Telecomunication/Microwave Site
N-52985	Central Telephone Company/DBA/CenturyLink	Fiber Optic Cable
N-57817	Central Telephone Company/DBA/CenturyLink	Underground Telephone Cable
CC-018367	City of Los Angeles	Transmission Line
CC-20824	City of Los Angeles	Transmission Line
N-02763	City of Los Angeles	McCullong Switching Station and Access Road
N-39980	City of Los Angeles	Transmission Line
N-89424	Copper Mountain Land Development, LLC	Generation Tie Powerlines
N-89424-01	Copper Mountain Land Development, LLC	Generation Tie Powerlines
N-56872	Department of Energy	Transmission Line
N-57992	Department of Energy	Transmission Line
N-35549	Eldorado Hills LLC	Access Roads
N-58566	Electric Lightwave LLC	Fiber Optic Line and Two Regeneration Sites
N-38190	Federal Highway Administration	Material Site
N-10683	Intermountain Power Project	Transmission Line
N-61851	IXC Carrier Group Inc.	Fiber Optic Cable
N-62110	IXC Communication Inc.	Fiber Optic Line
N-46054	Los Angeles Department of Water & Power	Transmission Line/Switching Station and Access Road
CC-019651	Nevada Department of Transportation	Federal Aid Highway
CC-020655	Nevada Department of Transportation	Federal Aid Highway
CC-020733	Nevada Department of Transportation	Federal Aid Highway
CC-020965	Nevada Department of Transportation	Federal Aid Highway
CC-020962	Nevada Department of Transportation	Material Site
N-13085	Nevada Department of Transportation	Federal Aid Highway
N-33203	Nevada Department of Transportation	Material Site and Access Road
CC-020736	Nevada Power Company	Transmission Line
N-11629	Nevada Power Company	Transmission Line/Substation
N-17394	Nevada Power Company	Transmission Line
N-01909	Nevada Power Company	Transmission Line
N-02557	Nevada Power Company	Transmission Line
N-33006	Nevada Power Company	Transmission Line
N-53121	Nevada Power Company	Transmission Line
N-53657	Nevada Power Company	Transmission Line
N-07299	Nevada Power Company	Transmission Line
N-76327	Nevada Power Company	Transmission Line
N-82824	Nevada Energy	Transmission Line
N-02655	Nevada Power Co., Salt River Project, Southern California Edison Co.	Transmission Substation, Access Road and Drainage
N-02795	Nevada Power Co., Salt River Project, Southern California Edison Co.	Transmission Line
N-03827	Nevada Power Co., LADWP, Salt River Project, S. California Edison Co.	Transmission Line and Substation
N-61858	Nevada Power Co., Copper Mountain Power, San Diego Gas/Electric Co.	Transmission line
N-15857	Quarry 187 LLC	Access Road and Water Pipeline
N-77387	Quarry 187 LLC	Mineral Material - Sand/Gravel Lease
CC-018486	Southern California Edison Company	Transmission Line and Access Roads
CC-020959	Southern California Edison Company	Transmission and Telephone and Access Roads
N-01127	Southern California Edison Company	Transmission Line
N-02629	Southern California Edison Company	Telemetry and Telephone line
N-47835	Southern California Edison Company	Transmission Line and Access Road
N-00869	Southern California Edison Company	Transmission Line and Access Roads
Nev-66156	Southern California Edison Company	Transmission Line, Generating Site, Access Roads, Drainage
Nev-43265	Southern California Edison and Nevada-California Electric Corp.	Transmission and Telephone Lines
Nev-43265-01	Southern California Edison and Nevada-California Electric Corp.	Transmission and Telephone Lines
N-75473	Sempra Energy Resources	Natural Gas Pipeline
CC-018307	Southern California Metropolitan Water District	Transmission and Telephone Lines and Access Roads
Nev-15814	Southwest Gas	Natural Gas Pipeline
Nev-43646	Southwest Gas	Natural Gas Pipeline
N-07841	Southwest Gas	Natural Gas Pipeline
N-53117	Southwest Gas	Natural Gas Pipeline
N-54045	Southwest Gas	Natural Gas Pipeline
N-57100	Valley Electric Association	Transmission Line
CC-024550	Western Area Power Administration	Transmission Line
Nev-46127	Western Area Power Administration	Access/Ancillary Roads for Davis-Boulder TL
Nev-65524	Western Area Power Administration	Transmission Line